

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Continue
Implementation and Administration, and
Consider Further Development, of
California Renewables Portfolio Standard
Program.

Rulemaking 18-07-003
(Filed July 12, 2018)

**SAN DIEGO GAS & ELECTRIC COMPANY (U 902 E)
DRAFT 2019 RENEWABLES PORTFOLIO
STANDARD PROCUREMENT PLAN**

(PUBLIC VERSION)

LAURA M. EARL
8330 Century Park Ct
San Diego, CA 92123
Telephone: (858) 654-1541
Facsimile: (619) 699-5027
E-mail: LEarl@semprautilities.com

Counsel for
SAN DIEGO GAS & ELECTRIC COMPANY

June 21, 2019

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Continue Implementation and Administration, and Consider Further Development, of California Renewables Portfolio Standard Program.

Rulemaking 18-07-003
(Filed July 12, 2018)

**SAN DIEGO GAS & ELECTRIC COMPANY (U 902 E)
DRAFT 2019 RENEWABLES PORTFOLIO
STANDARD PROCUREMENT PLAN**

In accordance with the Rules of Practice and Procedure of the California Public Utilities Commission (the “Commission”), the Assigned Commissioner and Assigned Administrative Law Judge’s Ruling (“the ACR”), issued in the above-captioned docket on April 19, 2019, as modified by ALJ Atamturk’s Ruling modifying the procedural schedule dated May 7, 2019, San Diego Gas & Electric Company (“SDG&E”) hereby submits its Draft 2019 Renewables Portfolio Standard (“RPS”) Procurement Plan and related appendices (together, the “Plan”).

In the ACR, the Commission established a schedule for submission of the draft 2019 Plans. In accordance with the direction set forth in the ACR, SDG&E’s 2019 Draft RPS Plan is attached hereto as Attachment A. The Plan includes the following Appendices:

- Appendix 1 – 2019 Quantitative Information
- Appendix 2 – 2019 Cost Quantification Table
- Appendix 3 – 2019 Safety Considerations
- Appendix 4 – Important Changes from Final 2018 Plan to Draft 2019 Plan

- Appendix 5 – 2019 RPS Long-Term Model Power Purchase Agreement (“PPA”)^{1/}
- Appendix 6 – 2019 RPS Short-Term Model PPA
- Appendix 7 – 2019 RPS Renewable Energy Credit (“REC”) Agreement
- Appendix 8 – 2019 Least-Cost Best-Fit (“LCBF”)
- Appendix 9 – 2019 RPS Sales Request for Proposals (“RFP”)
- Appendix 9.A – 2019 RPS Sales Model PPA (Bundled Product)
- Appendix 9.B – 2019 RPS Sales Model PPA (Unbundled Product)
- Appendix 9.C – 2019 RPS Sales Offer Form
- Appendix 9.D – 2019 Framework for Assessing Potential RPS Sales
- Appendix 10 – Redline of Draft 2019 RPS Plan (Attachment A)
- Appendix 11 – Redline of Draft 2019 RPS Plan (Appendix 1 – Appendix 9.D)

Respectfully submitted this 21st day of June, 2019.

/s/ Laura M. Earl

LAURA M. EARL

8330 Century Park Ct

San Diego, CA 92123

Telephone: (858) 654-1541

Facsimile: (619) 699-5027

E-mail: LEarl@semprautilities.com

Counsel for

SAN DIEGO GAS & ELECTRIC COMPANY

^{1/} As discussed in Attachment A, SDG&E proposes that it not issue a Request for Offers (“RFO”) for RPS purchases in the 2019 cycle. Accordingly, it does not include herewith bid solicitation protocol documents. Although SDG&E does not intend to issue a solicitation in 2019, it has attached a Long-Term and Short-Term RPS Model PPA, an RPS REC Agreement, and an LCBF methodology to prevent these documents from becoming outdated.



ATTACHMENT A

**SAN DIEGO GAS & ELECTRIC COMPANY
2019 RPS PROCUREMENT PLAN**

TABLE OF CONTENTS

1.	IMPORTANT CHANGES TO DRAFT 2019 RPS PLAN	1
2.	EXECUTIVE SUMMARY	1
3.	SUMMARY OF RECENT LEGISLATIVE AND/OR REGULATORY CHANGES	3
4.	ASSESSMENT OF RPS PORTFOLIO SUPPLIES AND DEMAND.....	4
	A. Portfolio Supply & Demand	4
	B. Alignment with Load Curves.....	13
	C. Responsiveness to LSE Policies & Goals, Statutes, & Commission Policies	20
	D. Portfolio Diversity & Reliability	24
	E. Lessons Learned & Trends	25
	F. Conformance with IRP	29
5.	PROJECT DEVELOPMENT STATUS UPDATE	29
	A. Impact of Project Development Status	30
6.	POTENTIAL COMPLIANCE DELAYS.....	30
	A. Transmission and Permitting	30
	C. Debt Equivalence and Accounting.....	32
	D. Regulatory Factors Affecting Procurement	33
	E. Unanticipated Curtailment.....	34
	F. Insufficient Supply of Renewable Resources	34
	G. Unanticipated Increases in Retail Sales	34
	H. Impact of Potential Delays.....	35
7.	RISK ASSESSMENT.....	35
	A. Project Risk.....	35
	B. Diversity & Reliability.....	37
	C. Impact	37
8.	QUANTITATIVE INFORMATION.....	37
9.	MINIMUM MARGIN OF OVER-PROCUREMENT	38

A.	Methodology & Inputs.....	38
B.	Scenarios.....	39
10.	BID SOLICITATION PROTOCOL, INCLUDING LEAST-COST, BEST-FIT	39
A.	Solicitation Protocols for Renewables Sales.....	39
B.	Bid Selection Protocols.....	42
C.	LCBF Criteria	42
11.	CONSIDERATION OF PRICE ADJUSTMENT MECHANISMS.....	43
12.	ECONOMIC CURTAILMENT FREQUENCY, COSTS, & FORECASTING	44
A.	Market & Operational Observations.....	44
B.	Analysis, Initiatives, & Strategy.....	45
C.	Activities.....	46
D.	2019 RPS Plan	48
13.	COST QUANTIFICATION	49
14.	SAFETY CONSIDERATIONS.....	50
15.	COORDINATION WITH IRP PROCEEDING.....	50
16.	IMPERIAL VALLEY.....	50
17.	RENEWABLE AUCTION MECHANISM	51
A.	Procurement Need.....	51
B.	Documents & Updated Parameters.....	51
C.	Approval Process	51
18.	GREEN TARIFF SHARED RENEWABLES PROGRAM.....	51
A.	Program History and Status	51
B.	Progress Towards Target and Reservations.....	52
C.	Reporting.....	52
19.	OTHER RPS PLANNING CONSIDERATIONS AND ISSUES.....	53

1. IMPORTANT CHANGES TO DRAFT 2019 RPS PLAN

Important changes made to SDG&E's Draft 2019 RPS Plan are detailed in Appendix 4.

2. EXECUTIVE SUMMARY

San Diego Gas & Electric Company's ("SDG&E's") 2019 Renewable Portfolio Standard ("RPS") Procurement Plan (the "RPS Plan") describes the processes used by SDG&E to determine its RPS procurement need, as well as the methods it will use to manage its RPS portfolio to meet RPS program compliance targets in a cost-effective manner.¹ The RPS Plan establishes guidelines for SDG&E's procurement of Least-Cost Best-Fit ("LCBF") RPS-eligible resources that have enabled and, in the future, will enable SDG&E to achieve the required level of renewable procurement during each Compliance Period ("CP").

The year 2019 falls within CP3, which requires renewable procurement equivalent to 33% of retail sales by December 31, 2020, with reasonable progress made in 2017-2019. Following CP3, the renewable procurement requirements are: (a) 44% of retail sales by December 31, 2024, with reasonable progress made in 2021-2023 ("CP4"); (b) 52% of retail sales by December 31, 2027, with reasonable progress made in 2025-2026 ("CP5"); (c) 60% of retail sales by December 31, 2030, with reasonable progress made in 2028-2029 ("CP6"); and (d) 60% of retail sales for all subsequent CPs.² The RPS Plan also accounts for the requirement that beginning in 2021, 65% of the procurement a retail seller counts towards its RPS compliance must be from long-term contracts ("65% long-term contracting requirement").³ To date,

¹ SDG&E reserves the right to update its 2019 RPS Plan, including all Appendices attached hereto, as necessary.

² Compliance towards CPs 1, 2, and 3 shall be measured in accordance with Decision ("D.") 11-12-020, Ordering Paragraphs ("OP") 1-3. SB 350 added CPs 4, 5, 6, and three-year compliance periods beginning in 2031. On December 15, 2016, the California Public Utilities Commission ("Commission") issued D.16-12-040 implementing the new compliance periods and procurement quantity requirements per SB 350, which changed the RPS target to 50% by 2030. On September 10, 2018, SB 100, which sets new RPS targets for the final year of each CP and changes the 2030 RPS target to 60%, was signed into law by Governor Brown. This Commission is in the process of implementing this law as explained in its May 22, 2019 Proposed Decision (PD). *See* <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M292/K932/292932713.PDF>. SDG&E's Draft 2019 RPS Plan reflects the changes in the specified RPS targets per 399.15(b)(2)(B) and estimates the interim targets for each year in each CP using the straight-line method adopted by D.11-12-020 and D.16-12-040, which is also consistent with the PD.

³ SB 350 added a new long-term contracting requirement under 399.13(b), which was formalized in D.17-06-026, issued on July 5, 2017. To count towards this requirement, RPS-eligible procurement must be

SDG&E is one of the leaders in the State in RPS procurement, achieving 44% renewable energy in 2017. In 2018, SDG&E achieved 43% renewable energy, 97% of which was from long-term contracts; see Appendix 1 for further detail.

To determine the quantity of renewable generation that must be procured to meet SDG&E's RPS procurement need in each CP, SDG&E will follow the Need Determination Methodology described below. To determine its optimal portfolio mix, SDG&E manages its portfolio to conform to the portfolio content, balance, and 65% long-term contracting requirements established through the RPS program. SDG&E will implement a work plan to fulfill its need, if any, including potentially soliciting additional multi-product and multi-term contracts through RPS solicitations, considering bilateral proposals, utilizing banked procurement, selling surplus RPS generation when appropriate, and pursuing utility investment opportunities and/or utility ownership when economic and prudent. SDG&E will use all tools available to seek to manage its existing RPS portfolio and the investment in SDG&E's banked procurement in the best interest of its customers. As explained in more detail below, based on SDG&E's current portfolio and forecasted position, the most reasonable course of action for SDG&E is to not hold an RPS Request for Offer ("RFO") during the 2019 procurement cycle. The authorization not to hold an RPS RFO should span from the time the Final RPS Plans are approved through the time the subsequent years' RPS Plan is approved.

Edits throughout the RPS Plan reflect the direction provided by the *Assigned Commissioner and Assigned Administrative Law Judge's Ruling Identifying Issues and Schedule of Review for 2019 Renewables Portfolio Standard Procurement Plans* ("the ACR"), issued on April 19, 2019, as modified by the ALJ's May 7, 2019 Ruling modifying the procedural schedule. SDG&E's 2019 RPS Plan also addresses recent legislation as required (such as Senate Bills ("SB") 350, 100, and 901, described in more detail below under Section 3), incorporates updates necessary due to the passage of time,⁴ and includes edits to explain SDG&E's proposed

from: (i) facilities owned by the retail seller; (ii) facilities in which the retail seller has an ownership agreement for a duration of 10 years or more; and (iii) contracts with a duration of 10 years or more. Grandfathered contracts, which are those meeting the requirements of 399.16(d), also count in full towards the long-term contracting requirement per D.17-06-026. SDG&E elected early compliance (beginning in CP3) with the 65% long-term contracting requirement, submitting its letter to the Director of Energy Division on July 17, 2017, and has incorporated this requirement into its RPS Plan. All statutory references herein are to the Public Utilities Code unless otherwise noted.

⁴ The use of "passage of time" in this document denotes basic updates (e.g., decision issuance since prior plan version).

changes. Pursuant to D.19-02-007, SDG&E is actively participating in the stakeholder process to develop information-only Time of Delivery factors (“TODs”), which SDG&E will utilize going forward. SDG&E has removed all reference to TOD factors within its RPS Plan, RPS long-term and short-term model PPA, and Least-Cost Best-Fit methodology. Once the stakeholder process is complete and the Commission has approved the information-only TODs, SDG&E will update its RPS Plan in subsequent cycles as necessary.

3. SUMMARY OF RECENT LEGISLATIVE AND/OR REGULATORY CHANGES

SDG&E’s 2019 RPS Plan accounts for recent RPS-related legislation, specifically California Senate Bill (“SB”) 350 (2015), SB 100 (2018), and SB 901 (2018), as well as related proceedings, such as the Integrated Resource Plan (“IRP”), and Power Charge Indifference Amount (“PCIA”).

Regarding legislation, SB 350 and SB 100 made changes to the RPS section of the Public Utilities Code to establish new RPS targets for each CP and to increase the RPS target. The most current set of RPS targets, which can be found in SB 100, are listed above and included in SDG&E’s Renewable Net Short (“RNS”) table in Appendix 1. SB 350 also added the 65% long-term contracting requirement referenced above, which was unchanged by SB 100 and is included in SDG&E’s RNS table. SB 901 requires that retail sellers offer a 5-year extension to any contracts executed under the Bioenergy Renewable Auction Mechanism (“BioRAM”) program and is discussed below under Section 4.

Regarding related proceedings, SB 350 initiated the IRP, which is a wide-sweeping planning process that is discussed in more detail below under Section 4. SDG&E anticipates that this proceeding will optimize RPS planning and procurement, within a larger framework that looks at meeting State policies at the lowest possible cost. This is a shift away from the historical siloed approach to procurement, in which resource procurement mandates are imposed on a program-by-program basis without reference to other potential forms of supply and/or demand-side procurement. It is expected that the holistic process contemplated by the IRP will evaluate the costs and benefits of all available resources when developing portfolios that comply with the requirements set by SB 350 and will be able to better guide RPS planning and procurement, thereby maximizing the value of customer dollars and minimizing customer exposure to excessive costs. SDG&E remains focused on effective cost and risk management, as

described in more detail below under Section 4, and looks forward to assisting the Commission in its implementation of the new IRP regime.

And finally, the Power Charge Indifference Amount (“PCIA”) reform proceeding, discussed further in Section 4, may impact the RPS proceeding going forward. The PCIA reform proceeding, which is currently in process, is re-examining the method for allocating costs under a departing load scenario and will be resolved through a series of decisions. SDG&E will incorporate any required changes into subsequent RPS Plans.

4. ASSESSMENT OF RPS PORTFOLIO SUPPLIES AND DEMAND

A. Portfolio Supply & Demand

SDG&E makes procurement decisions based on how its risk-adjusted RPS position forecast (referred to herein as its “RPS position”) compares to its RPS program compliance requirements, the result of which is its probability-weighted procurement need or Renewable Net Short (“RNS”). In order to calculate its RPS Position, SDG&E conducts a qualitative and quantitative assessment and assigns a probability of success to the expected deliveries for each project that is not yet online in its portfolio,⁵ then adds the risk-adjusted expected deliveries across all projects in its entire RPS portfolio. These risks include approval (*e.g.*, Commission approval and the timing of such), development (*e.g.*, permitting, financing, or transmission interconnection), delivery (*e.g.*, generation fluctuations given the variant-intermittent nature of some renewable resources or operational challenges), and other factors (*e.g.*, under-development of transmission infrastructure common to a group of projects).

In general, if SDG&E’s RPS Position is less than its RPS requirements, SDG&E will plan to procure additional RPS resources on a schedule that will allow for the procurement and development of resources in time to provide deliveries to meet anticipated shortfalls. If, on the other hand, its RPS Position is greater than its RPS requirements, SDG&E will consider opportunities to bank or sell bundled and/or unbundled renewable energy credits (“RECs”). In addition, to optimize the relative value of renewable energy across compliance periods, SDG&E

⁵ For purposes of determining its RPS Position, SDG&E considers its portfolio to include all executed contracts until contract expiration (*e.g.*, it does not assume expiring contracts will be renewed and excludes contracts under-negotiation unless indicated otherwise) and investment and utility-owned generation (“UOG”) projects where relevant progress has been made.

also considers short-term contracts when, for example, it is short⁶ in the most immediate CP but long in the subsequent CP. SDG&E will also consider procurement strategies that are in the best interest of customers across compliance periods in order to secure greater value from approved RPS expenditures. For example, SDG&E strives to have a well-diversified RPS portfolio so that its RPS compliance, particularly in the most immediate compliance period, is not unduly exposed to any given risk (*e.g.*, a particular technology, region, counterparty, etc.). SDG&E's RPS portfolio management strategy involves identifying needs and risks and managing them in a cost-effective manner in the best interest of its customers.

The following sections explain SDG&E's methodology for determining its RNS. First, the process used to compute the RPS Position is explained. Then, procurement needs by compliance periods are inferred by comparing RPS requirements to RPS Positions.

i. Assessment of Probability of Success for Various Project Types as a Key Component of Calculating the Probability-Weighted RPS Position Forecast

SDG&E must assess the probability of success and/or expected generation of the following main types of projects: (a) delivering; (b) approved but not yet delivering; and (c) not yet approved.⁷ SDG&E evaluates the probability of success for each project in its portfolio on a monthly basis in order to calculate its RNS, which is the basis for its procurement need. To do this, SDG&E conducts a monthly review with an interdisciplinary team and uses the most up-to-date qualitative and quantitative information to assign a probability of success and/or determine the expected generation of each individual project. SDG&E's most up-to-date assessment as of April 2019 is set forth in Appendix 1. SDG&E applies the following methodology to analyze each project type:

a. Assessment of Performance of Delivering Projects

Projects that have already achieved commercial operation and have begun delivering energy provide the most stable source of RPS deliveries when forecasting RPS procurement need. These projects have overcome development hurdles and are supported by steady revenues under executed Power Purchase Agreements ("PPAs"). However, it is crucial to consider the

⁶ The term "short" is used herein to refer to an RPS Position that is lower than the relevant RPS program requirements. The term "long" is used to refer to an RPS Position that is higher than relevant RPS program requirements.

⁷ See the Renewable Net Short Calculation set forth in Appendix 1.

potential fluctuations in deliveries that these projects can experience and the impact that such fluctuations could have on SDG&E's need to procure additional resources to meet its RPS goals.⁸ As discussed further in Section 7, deliveries from these projects can be impacted by resource availability, regulatory changes, economic environment, evolving technologies, and third-party systems. These types of fluctuations can be significant. In order to ensure RPS compliance, SDG&E must account for potential fluctuations (while recognizing that swings in production could be positive). The monitoring of performance of delivering contracts and the assessment of probabilities focuses on: (i) understanding the historical generation profile of each project and how it has differed year-over-year and relative to forecasts; and (ii) the operational track record of any given project. SDG&E has found that a weighting of 100% is typically appropriate for delivering contracts. The forecast of future deliveries for delivering contracts is based on historical deliveries (up to the most recent three years, if available; if not available historical deliveries are used), which SDG&E will revise as appropriate. Adjusting forecasts when necessary is a crucial component of SDG&E's need assessment methodology.

b. Assessment of the Development Progress of Approved Projects that Have Not Yet Begun Delivering

Another important aspect of SDG&E's need assessment methodology is evaluating the development status of projects approved by the Commission but not yet delivering energy. These projects are typically much riskier than projects that have begun delivering due to the challenges that can arise during the development process that might prevent a project from completing construction and achieving commercial operation. Permitting, interconnection, regulatory factors, and other development issues are discussed further in Section 6. SDG&E must account for development risks when determining its procurement need, and the monitoring of development status is the most critical aspect of SDG&E's need assessment methodology. As with delivering contracts, SDG&E meets internally on a monthly basis to assign a probability of success to each of its developing projects. This factor is then applied to the expected deliveries

⁸ For example, contracts with solar photovoltaic ("PV") developers incorporate a degradation factor that is used to forecast the project's performance over time as the panels age and become less efficient. SDG&E utilizes this factor in its LCBF evaluation, and when calculating project deliveries for its RPS position calculation on both a nominal (assumes deliveries from contracts will occur as expected) and probability-weighted basis. To the extent deliveries are different than the provided estimates, SDG&E will adjust its RPS position calculation accordingly.

stated in the contracts. SDG&E's current assessment as of April 2019 is provided in the RNS Calculation in Appendix 1.

c. Assessment of the Approval Queue for Projects that Have Been Submitted to the Commission But Are Not Yet Approved

SDG&E typically meets monthly with its Procurement Review Group ("PRG"), which includes Energy Division staff, to discuss the likely approval timetable of projects that SDG&E has submitted to the Commission for approval. The discussion covers expected timing of Commission action and any potential constraints that might necessitate expedited Commission action or require additional information. SDG&E works collaboratively with the Commission to develop a work plan that results in timely approval. It is possible, however, that the shortage of Energy Division staff or other procedural challenges can result in approval delays that can impact a project's ability to achieve milestones. SDG&E must monitor this process closely to determine what impact, if any, delays may have on the timing of expected deliveries or sales.

ii. Assessment of Other Portfolio Impacts

Once SDG&E has determined the probability of success for each of the contracts in its portfolio, SDG&E must also consider a broader range of risk factors that can impact multiple projects or its entire portfolio. SDG&E evaluates the impact of these factors, which include but are not limited to the following load and resource factors on a monthly basis: (i) Retail Sales; (ii) Project Viability; and (iii) Existing RPS Contracts. A representative list of these major factors is described below. SDG&E also considers the impact of regulatory factors, which are described in more detail under Section 4.C.

a. Retail Sales – Related Factors

RPS compliance is based on an energy target (as opposed to a capacity target) and is calculated using a percentage of retail sales. Various factors (departing load for example) impact retail sales, and these factors are reflected in the forecast. SDG&E's most recent retail sales forecast is provided within the RNS table in Appendix 1.

- Impact of California Energy Commission ("CEC") Forecast: In accordance with Commission guidance, SDG&E uses the latest CEC forecast consistent with the standardized planning assumptions authorized in D.12-01-033. SDG&E monitors its retail sales forecasts on a monthly basis to identify potential fluctuations and their impact on its RPS requirements.

- Impact of Transportation Electrification: The sales forecast that supports SDG&E’s RPS filing is the CEC’s 2018 Integrated Energy Policy Report (“IEPR”) demand forecast, also known as California Energy Demand Update (“CEDU”) 2018, adopted by the CEC Commissioners at the CEC’s January 9, 2019 business meeting. For RPS purposes, SDG&E used the CEC’s 2018 IEPR Mid-Demand base-line forecast, with mid-case Additional Achievable Energy Efficiency (“AAEE”) and Additional Achievable Photovoltaics (“AAPV”). SDG&E reformatted the forecast to partition it into sales to bundled customers and sales to direct access and CCA customers. The CEC’s forecast accounts for electric vehicle (“EV”) charging within the Mid-Demand base-line segment of the scenario. SDG&E’s RPS assumes EV charging to be the same as presented in the CEC’s 2018 IEPR Mid-Demand base-line forecast. A description of the modeling approach and input assumptions made regarding forecasting EV charging can be found in three CEC publications that document CEDU 2018.⁹
- Impact of Departing Load: The State has recognized the potential for departing load from utility bundled service to alternative providers such as Electric Service Providers (“ESPs”) and Community Choice Aggregators (“CCAs”).¹⁰ Within SDG&E’s service territory, Solana Beach was the first CCA (operations began in June of 2018), and various other cities are actively exploring adoption of a CCA, including the City of San Diego, which represents around 40% of SDG&E’s load.¹¹ Load departure will reduce SDG&E’s volume of retail sales, thereby impacting its RPS position. A Final Decision was issued in Rulemaking (“R”)19-03-009, on June 3, 2019 implementing SB 237, which increases the current Direct Access cap. SDG&E’s share of the authorized cap is around 380 GWh.¹²

Additionally, the Commission adopted an Order Instituting Rulemaking (“OIR”) in 2017 initiating R.17-06-026, the Proceeding to Allocate Customer Costs. This proceeding will review the Power Charge Indifference Adjustment (“PCIA”), which is the methodology

⁹ https://www.energy.ca.gov/2018_energypolicy/documents/

¹⁰ The Commission held several En Bancs to further explore this topic in 2017.

¹¹ The City of San Diego published its CCA Feasibility Study in July 2017:

https://www.sandiego.gov/sites/default/files/san_diego_cca_feasibility_study_final_draft_main_report_7-11-17.pdf. On February 25, 2019 the San Diego City Council voted to move forward to implement a CCA via a Joint Powers Authority.

¹² D.19-05-043 at 6.

for allocating costs to departing load. Phase one of the PCIA OIR has concluded, and phase two is ongoing. The guidance within the final phase two decision may impact SDG&E's RNS as well as the volumes it may decide to sell (see Appendices 1 and 9-9.D, respectively), and changes to these documents may be required in subsequent versions of the RPS Plan. SDG&E looks forward to the expeditious resolution of the OIR and will modify its future RPS Plans as appropriate to reflect the outcome of this work.

b. Project Viability – Related Factors

Renewable project developers continue to face a challenging environment. For example, studying and constructing generator interconnection upgrades continues to take years to complete and can significantly influence project costs. In addition, as more projects are proposed, especially in desert regions, permitting approval timelines may extend due to increased scrutiny of environmental issues and permitting agency coordination efforts. SDG&E will closely monitor project viability factors, and any effects they may have on its portfolio.

- Impact of Key Transmission Upgrades and/or Infrastructure: Transmission availability has long been recognized as a potential barrier to achieving RPS goals, and SDG&E continues to monitor the progress of transmission upgrades on which SDG&E's RPS projects depend in order to assess potential delays and possible impacts. A more detailed discussion of transmission is provided under Section 6.
- Impact of Permitting Delays: Many projects have experienced local agency permitting delays. Delays occur when challenged by individuals and community groups and may also occur in meeting California Environmental Quality Act ("CEQA") requirements. These challenges can result in increased costs to the developer and significant project delays that can jeopardize project viability and potentially lead to project failure. A more detailed discussion of permitting is provided under Section 6.

c. Existing RPS Contracts – Related Factors

The contracts within SDG&E's portfolio may be renewed or terminated; additionally, the RECs from SDG&E's existing contracts may be sold. The factors considered in each of these potential scenarios are described below.

- Impact of Contract Renewal: SDG&E began signing RPS contracts in 2003, most of which had terms of 20 years. Some of these contracts are expected to deliver through 2023 and may impact SDG&E's procurement needs post-2020, while others are

scheduled to terminate in Compliance Period 3. As part of its RPS position calculation, and in accordance with Commission direction,¹³ SDG&E does not assume that these contracts will be renewed. Owners of these projects will be asked to bid such projects into future RFOs, and these bids will be required to conform with the need identified in the then-current RFO.¹⁴ The benefits of this are twofold – competition will be enhanced, and these facilities will have the opportunity to bid to extend their contracts past the original termination dates into later years when SDG&E has a need.

- Impact of Contract Termination: As part of its contract administration process, SDG&E actively monitors contractual requirements including conditions precedent that must be met (or waived) in order for the contract to be viable. When a condition precedent has not been met, or when parties can mutually agree to a termination, SDG&E may consider terminating the contract if it is in the best interest of customers.
- Impact of the Resale Market: SDG&E will closely monitor opportunities to sell excess procurement. SDG&E will assess the market when opportunities arise to determine whether it is more advantageous for SDG&E’s customers to bank such excess procurement for use in a future compliance period or sell the excess procurement. If SDG&E believes that the current market is favorable and expects that it will be able to fulfill any future needs with more economic options, it may choose to sell excess procurement instead of banking it,¹⁵ if such a transaction is viewed to be in the best interests of its customers. More detail is provided below and within Appendix 9, attached hereto.

iii. Determination of the Compliance Needs for Each Compliance Period

After probabilities are assigned to each project, SDG&E’s RNS is calculated by multiplying the expected contractual deliveries (including degradation) by each contract’s

¹³ R.11-05-005; *Administrative Law Judge’s Ruling on Renewable Net Short*, issued May 21, 2014.

¹⁴ Qualifying Facilities with expiring RPS contracts may be able to sign a Standard Contract for Qualifying Facilities with a Power Rating that is Less than or Equal to 20 MW, which was approved by the Commission on November 23, 2011 as part of the Qualifying Facilities and Combined Heat and Power Program Settlement (the “QF Settlement”).

¹⁵ Note that banking a REC may either mean that the REC is held in SDG&E’s active WREGIS sub-account to be used later in its 36-month active lifespan, or it can mean that the REC is retired before its 36-month active lifespan ends and is then held in SDG&E’s retirement account for use in future compliance periods.

probability weighting and then adding the resulting expected deliveries across the portfolio.¹⁶ The discussion below describes SDG&E's current forecasted RNS for each compliance period based on its assessment as of April 2019.

As explained above, SDG&E achieved 43% renewable energy in 2018,¹⁷ of which approximately 97% is from long-term contracts – therefore it is SDG&E's expectation that it will be able to meet its CP3 goals with RPS eligible procurement already under contract. Consistent with its assessment of supply (SDG&E's delivering and developing contracts) and demand (SDG&E's RPS targets in each CP),¹⁸ the most reasonable course of action at this time is to refrain from soliciting new renewable resources via an RPS-specific solicitation in the 2019 procurement cycle, and it is likely that SDG&E will not seek to hold an RPS RFO for the next several years, given its current forecasted position and considering future expected load departure. SDG&E notes that it continues to procure renewable energy projects under mandated procurement programs, and as described above, other procurement authorizations may result in additional renewable energy procurement in the future. SDG&E will seek permission from the Commission to procure any amounts, other than amounts separately mandated by the Commission, during the 2019 solicitation cycle.

SDG&E also continues to seek optimization opportunities, which may include the sale of RPS products via bilateral sales agreements and/or a request for proposals (“RFP”). These opportunities are market-driven.¹⁹ To the extent SDG&E determines that an RFP is appropriate, it will issue the RFP attached hereto as Appendix 9. SDG&E will determine if a need for either a buy RFO or sales RFP exists following approval of its Final 2019 RPS Plan based upon updated information available at that time. More detail on SDG&E's need in each compliance period is provided in Appendix 1.

a. Pre-CP3 Procurement Needs

¹⁶ As explained above, SDG&E's practice is to exclude contracts under-negotiation and estimates of deliveries from programs that are not yet fully implemented, and not to assume renewal for expiring contracts.

¹⁷ The change in percentage from SDG&E's 2017 RPS position to SDG&E's 2018 RPS position is due to contract expiration and REC sales. Other potential impacts that may affect SDG&E's future RPS position are contracts start/end dates, portfolio optimization and departing load.

¹⁸ See Appendix 1 for SDG&E's RNS as well as its list of probability weighted deliveries from contracts presently delivering and developing.

¹⁹ SDG&E may also be required to sell certain resources (*i.e.* as per D.18-12-003.)

The Commission confirmed that SDG&E met its RPS compliance requirements for CP1 on December 20, 2017. CP2 (2014-2016) has closed, and SDG&E anticipates also meeting its RPS compliance requirements for CP2; see Appendix 1 for further detail.

b. Current CP (CP3) Procurement Needs

SDG&E expects that it will meet its CP3 RPS goals with generation from contracts that have been executed, together with the deliveries from UOG initiatives. Based on SDG&E's current probability-weighted RPS position forecast, SDG&E will likely not require additional procurement in CP3. It is important to note, however, that this outlook is based on current data, and procurement needs are difficult to forecast for periods beyond several years into the future. The level of any new purchases required for CP3 will be a function of portfolio performance and will be subject to the level of banking, if any. SDG&E intends to fill any remaining RPS need with viable low-cost opportunities from future solicitations, bilateral transactions, and potential investments, and will continue to procure for mandated programs, to the extent required. SDG&E intends to manage potential over-procurement by banking it for future compliance needs, terminating contracts where conditions precedent are not met or where mutual agreement is reached, selling such excess procurement, or transferring the obligation to a new party as permitted by the contract.

c. Post-CP3 Compliance Period Needs

Based on SDG&E's current forecast, SDG&E anticipates meeting its RPS requirements for each CP through 2030 with procurement already under contract. As with CP3 above, however, it is important to note that this expectation is based on data available to date. SDG&E may undertake additional procurement at some point in the future to ensure compliance, with the understanding that any resulting excess can be either banked or sold bilaterally or through an RFP. Additional discussion regarding the analysis of selling versus banking can be found in Section 4.B below.

iv. Utility Tax Equity Investment and Utility Ownership Opportunities

SDG&E's participation as a tax equity investor or utility owner in renewable generation and/or associated transmission projects may enhance project viability (through securing of financing) and may decrease costs for customers (given SDG&E's cost of capital relative to the renewable financing market). SDG&E may consider additional investment opportunities where: (a) its involvement might enhance the viability or cost competitiveness of a project; and/or (b)

where a project may have a positive socioeconomic impact, potentially involving a Diverse Business Enterprise (“DBE”).

Additionally, SDG&E has also undertaken the construction of renewable energy facilities, for example under the Solar Energy Project program. SDG&E completed this program with the commercial operation of the 4.32 MW Ramona Solar Project on April 21, 2017.²⁰

B. Alignment with Load Curves

SDG&E evaluates load curves regularly to ensure that its portfolio meets hourly system needs. SDG&E’s renewable resource procurement process analyzes these curves in three phases: (i) need identification; (ii) solicitation; and (iii) resource operations. All steps within this process consider the load curves and their implications on overall portfolio performance and system requirements. The need identification phase outlines the required resource characteristics based on SDG&E’s existing portfolio and forecasted load. During the solicitation phase, projects with the characteristics identified in the first phase are sought, and portfolio and system requirements are incorporated into the analysis in the form of capacity value, congestion costs, and transmission costs (see the LCBF discussion below). And finally, once projects are operational, their generation can be managed as deemed necessary via curtailment and/or energy storage (see Section 12 for further detail).

SDG&E’s optimization strategy follows the phases outlined above and also includes SDG&E’s participation in proposed procurement programs and its evaluation of unique procurement opportunities. This optimization strategy is designed to allow SDG&E to meet and maintain its RPS compliance while minimizing customer costs, maximizing portfolio value and managing risk. SDG&E approaches this task from a variety of angles, as described below. SDG&E’s optimization strategy is aimed at ensuring an optimal cost-effective portfolio mix based on technology, location, and contract length. SDG&E continually assesses opportunities to increase the value of its existing portfolio of contracts and the investment in SDG&E’s RPS bank in order to continually mitigate potential compliance, financial, and cost-allocation risks.

²⁰ Approved by D.08-07-017. SDG&E was authorized to build up to 26 MWs of distributed utility-owned solar PV at a cost cap of \$3.50/W(dc). SDG&E held an RFP in the Fall of 2011 and executed a contract for up to a total of 17 MW at eight sites owned by SDG&E. To stay under the cost cap, the number of projects were subsequently reduced due to permitting, site, and contractor issues. SDG&E held another RFP in the Spring of 2015, and no contracts were executed as a result of the RFP.

i. RNS Optimization

The first step in SDG&E's portfolio optimization strategy is to determine its RPS need. As outlined above, the probability of success and/or the expected generation of each of the projects in SDG&E's portfolio is revised monthly in an interdepartmental meeting using the most current information. The result of this comprehensive review is a calculation of SDG&E's forecasted RPS position, which is then compared with SDG&E's RPS compliance requirements to determine its RNS. SDG&E uses this RNS to determine the appropriate level of procurement, including the necessary margin of over-procurement, going forward. Generally, if SDG&E were to foresee a shortfall it would then procure additional resources; if it foresees an excess then it may sell a portion or all of this excess pending the results of a detailed cost and benefit analysis of banking versus selling. Once SDG&E has determined its need, it proceeds to manage its procurement by continually reviewing its portfolio to minimize costs, maximize value and manage risk.

The *Administrative Law Judge's Ruling on Renewable Net Short*, issued May 21, 2014, included specific questions regarding the RNS calculation and assumptions. Responses to these questions are set forth below:

- a. *How do current and historical performance of online resources in your RPS portfolio impact future projections of RPS deliveries and your subsequent RNS?*

An explanation of SDG&E's methodology for forecasting project deliveries can be found in Section 4(A)(i).

- b. *Do you anticipate any future changes to the current bundled retail sales forecast? If so, describe how the anticipated changes impact the RNS.*

An explanation of SDG&E's methodology for forecasting bundled retail sales can be found in Section 4(A)(ii)(a).

- c. *Do you expect curtailment of RPS projects to impact your projected RPS deliveries and subsequent RNS?*

Curtailment is discussed in Section 12.

- d. *Are there any significant changes to the success rate of individual RPS projects that impact the RNS?*

The average success rate of SDG&E's contracts currently in effect is discussed in Section 4(A)(i), and the success rates of individual projects are shown in Appendix 1.

- e. *As projects in development move towards their COD, are there any changes to the expected RPS deliveries? If so, how do these changes impact the RNS?*

The average success rate of SDG&E's contracts currently in effect is discussed in Section 4(A)(i), and the success rates of individual projects are shown in Appendix 1.

- f. *What is the appropriate amount of RECs above the PQR ("Procurement Quantity Requirement") to maintain? Please provide a quantitative justification and elaborate on the need for maintaining banked RECs above the PQR.*

SDG&E's current level of RECs above its PQR is discussed in Section 9, and is shown in Appendix 1.

- g. *What are your strategies for short-term management (10 years forward) and long-term management (10-20 years forward) of RECs above the PQR? Please discuss any plans to use RECs above the PQR for future RPS compliance and/or to sell RECs above the PQR.*

An explanation of SDG&E's methodology for managing RECs above the PQR can be found in Sections 4(B)(ii)(b) and 4(B)(ii)(c).

- h. *Provide a voluntary margin of over-procurement ("VMOP") on both a short-term (10 years forward) and long-term (10-20 years forward) basis. This should include a discussion of all risk factors and a quantitative justification for the amount of VMOP.*

A discussion of risk factors affecting RPS procurement can be found in Sections 6 and 7, and SDG&E's current level of RECs above its PQR is discussed in Section 9 and is shown in Appendix 1.

- i. *Please address the cost-effectiveness of different methods for meeting any projected VMOP procurement need, including application of forecast RECs above the PQR.*

An explanation of SDG&E's methodology for managing RECs above the PQR can be found in Sections 4(B)(ii)(b) and 4(B)(ii)(c).

- j. *Are there cost-effective opportunities to use banked RECs above the PQR for future RPS compliance in lieu of additional RPS procurement to meet the RNS?*

An explanation of SDG&E's methodology for managing RECs above the PQR can be found in Sections 4(B)(ii)(b) and 4(B)(ii)(c).

- k. *How does your current RNS fit within the regulatory limitations for PCCs? Are there opportunities to optimize your portfolio by procuring RECs across different PCCs?*

An explanation of the content categorization of SDG&E's portfolio can be found in Section 4(A)(iii)(a), and an explanation of SDG&E's methodology for optimizing procurement across content categories can be found in Section 4(B)(iv)(a) and (d).

ii. Cost Optimization

Cost optimization begins before a contract is executed, with contract analysis methodology development and adoption. Once this analysis methodology is utilized and a contract is executed, if an opportunity to optimize this contract becomes apparent, SDG&E will investigate it to determine the best course of action for customers.

a. Least-Cost Best-Fit Analysis

SDG&E carefully analyzes bids and bilateral proposals according to its LCBF methodology. This methodology is intended to optimize SDG&E's procurement decisions by minimizing cost and maximizing value. It includes analysis of the PPA price, which inherently includes the counterparty's interest, carrying, and transaction costs. The analysis also takes into account the energy, green attributes, and capacity value provided by each of the projects, congestion costs, and transmission costs. The LCBF process results in the quantification and subsequent ranking of the costs and benefits of each bid based on these metrics. The formula deducts the PPA Price ("Levelized Contract Cost"), transmission cost, Renewable Integration Cost Adder ("RICA"), and congestion cost from the sum of the energy, green attributes, and capacity benefits to determine a project's Net Market Value ("NMV"). These NMVs can then be compared and used to create a quantitative ranking. SDG&E then evaluates any identifiable qualitative aspects, such as project viability, developer experience, and portfolio fit to determine the shortlist. The projects that are placed on the shortlist will have the highest value to customers and best portfolio fit when compared with other bids from the particular solicitation. D.14-11-042 directed several changes to the LCBF methodology, and these changes have been included in the LCBF methodology attached hereto as Appendix 8.²¹ SDG&E revises its LCBF methodology as necessary to incorporate new information, such as through the outcome of the LCBF review process currently underway at the Commission, as discussed in Section 6.

²¹ D.14-11-042, pp. 16, 19, 49, 61-63.

b. Banking vs. Sales Analysis

Another optimization tool related to contract management is the analysis of the option to bank or sell excess procurement.²² When SDG&E has excess RPS procurement in its portfolio, it will perform an analysis of both the short-term and long-term quantitative and qualitative costs and benefits associated with either banking this excess or selling it. The quantitative portion of the valuation includes consideration of SDG&E's RPS position, the time value of revenues from the potential REC sale, and the potential replacement cost. The qualitative portion includes consideration of the impact on market liquidity and SDG&E's RPS position. SDG&E will reflect current industry best practices in its sales contracts.²³ For more information regarding SDG&E's Sales Framework, please see Appendix 9.D.

c. Retirement Analysis

There is a significant link between SDG&E's banking versus sales analysis and its retirement analysis where SDG&E evaluates its compliance position and strategy to ensure that RECs are handled in the most cost-effective way in both the short-term and the long-term for SDG&E's customers. SDG&E's retirement decisions include consideration of its RPS position and the 36-month shelf-life of the RECs. RECs can be retired and used for compliance purposes within 36 months of the REC's issuance, and any RECs in excess of the CP's required targets can be banked and will not expire. Once a REC is banked, it can be used for compliance purposes at SDG&E's discretion. SDG&E also considers the time value of the impact of potential revenues or additional RPS procurement on rates for bundled customers when making the decision to buy, sell, bank, or retire RECs.

iii. Value Optimization

In addition to its contract analysis and management strategies, SDG&E also seeks to add value to the RPS procurement process by actively participating in the discussion of current and proposed procurement programs, and by evaluating unique procurement opportunities.

²² SDG&E's excess procurement is SDG&E's VMOP (discussed in more detail under Section 9).

²³ In Resolution E-4572, the Commission approved SCE's request to enter into a 19.5-month renewable energy sales contract with Energy America LLC. Contractual deliveries began on May 15, 2012, and the contract was filed with the Commission on July 6, 2012. The Commission also approved, in Resolution E-4639, PG&E's request to enter into two overlapping renewable energy sales agreements for a period of approximately 1 month and 9 days with Tenaska Power Services Company. Contractual deliveries began November 22, 2013, and the contract was filed with the Commission on December 19, 2013. In order to provide maximum flexibility and value to customers, SDG&E will also consider opportunities where deliveries begin before the contract is submitted and approval is granted retroactively.

a. Program Design

SDG&E actively participates in discussions regarding the initial design and future of renewable procurement programs via comments and workshops. SDG&E’s goal is to provide recommendations that contain costs and protect customers. Examples of these efforts are SDG&E’s contribution to the BioMAT and BioRAM program design process, as well as its recommendations regarding the future of the RAM program.

The BioMAT program began in February of 2016 and is in process. SDG&E met its BioRAM requirement in December of 2016. The RAM program, discussed in Section 17, is a tool to be used on an as-needed basis to efficiently procure low cost RPS resources.²⁴ As explained under Section 4.E, SDG&E anticipates that the IRP process signifies a shift away from separate programs and processes, towards a holistic planning and procurement process.

b. Utility Involvement

SDG&E evaluates both tax equity and utility ownership opportunities as procurement options and assesses the value of its involvement. SDG&E may participate in these types of projects if its participation would either augment the probability of project success or cost competitiveness of a project, and/or lead to a positive socioeconomic impact, for example involving a DBE.

c. Bilateral Transactions

SDG&E will enter into bilateral purchase or sales agreements to the extent that these transactions benefit customers. Not all products are well-suited for the RFO process due to, for example, deal timing and/or complexity. The ability to contract bilaterally is a valuable tool in maximizing value to customers – it is useful in addressing an unforeseen need in a timely manner and also allows an IOU to take advantage of opportunities that are too complex to solicit through an RFO, such as tax equity, utility ownership, or buy/sell transactions. In addition, the ability to engage in bilateral deals is necessary from a practical perspective; bilateral deals assist market development by offering an additional sales option, making project development less dependent on RPS solicitation cycles.

²⁴ Regarding the RAM program, the Commission determined that “the original objectives of RAM have been met... [however, as] suggested by SDG&E and [the Office of Ratepayer Advocates]... RAM may provide the IOUs with a procurement tool to facilitate more streamlined procurement for RPS needs... [therefore] starting with the 2015 annual RPS procurement plans filings, the utilities shall include, at the discretion of the utility, RAM as a streamlined procurement tool.” See D.14-11-042, pp. 91-92.

iv. Risk Optimization

SDG&E optimizes risk through several long-term and short-term mitigation strategies. SDG&E also seeks to add value by actively participating in discussions regarding compliance and enforcement rules.

a. Category 1 Procurement

SDG&E faces some degree of risk related to a procurement deficit, and therefore regularly reviews its RNS so that it has the best information available with which to manage its portfolio towards compliance. However, the most significant non-compliance risk faced by SDG&E relates to contract categorization under § 399.16(b),²⁵ *i.e.*, the risk that SDG&E's categorization of the contracts in its portfolio will not be accepted by the Commission. This issue has generally been alleviated by the Commission's verification of SDG&E's RPS compliance for CP1 on December 20, 2017.²⁶ SDG&E's long-term RPS compliance strategy will continue to emphasize the procurement of products it considers to be Category 1.

b. Voluntary Margin of Over-procurement

A second long-term procurement strategy utilized by SDG&E is the adoption of a "buffer" or Voluntary Margin of Over-procurement ("VMOP").²⁷ SDG&E's VMOP is intended to ensure to the extent possible that SDG&E is able to reach its RPS goals, as explained in more detail below under Section 9, which describes SDG&E's VMOP formula. Project development can present challenges that must be accounted for when determining need. In combination with the constant fluctuation of RPS targets (based on retail sales) and continual changes in RPS deliveries, it is essentially impossible to meet the RPS targets exactly. SDG&E undertakes conservative VMOP procurement as a prudent measure to guard against any unforeseen events that may impact its portfolio and jeopardize compliance.

²⁵ For reference, the categories are as follows: (i) Category 1 is a bundled (energy + REC) product, (ii) Category 2 is a firm-and-shaped product, and (iii) Category 3 is an unbundled product (REC only).

²⁶ Letter from Edward Randolph, Director, Energy Division, December 20, 2017.

²⁷ SDG&E adopts a VMOP consistent with Cal. Pub. Util. Code § 399.13(a)(4)(D):

(4) The commission shall adopt, by rulemaking, all of the following...

(D) An appropriate minimum margin of procurement above the minimum procurement level necessary to comply with the renewables portfolio standard to mitigate the risk that renewable projects planned or under contract are delayed or canceled. This paragraph does not preclude an electrical corporation from voluntarily proposing a margin of procurement above the appropriate minimum margin established by the commission.

c. Short-term Contracts

Due to unforeseen events, a situation may occur in which SDG&E needs to procure a small amount of renewable energy in the near-term. In this scenario, short-term contracting is a viable strategy, as it allows SDG&E to respond quickly to a sudden change in portfolio status and manage a short-term need without entering into an unnecessary long-term commitment.

d. Category 3 Procurement

SDG&E may consider Category 3 procurement to the extent that such products are shown to be cost-effective and a need for additional procurement becomes evident. However, SDG&E plans to maintain enough room below its Category 3 procurement limits so that Category 3 procurement is a potential strategy in the short-term, should SDG&E need to fill any unforeseen immediate need.

C. Responsiveness to LSE Policies & Goals, Statutes, & Commission Policies

SDG&E continually seeks to manage its portfolio prudently while ensuring compliance with the State’s clean energy goals. SDG&E’s renewable resource procurement decisions follow relevant laws and regulations while considering all relevant information, as described within this Plan (see Section 4.A. above). Section 3 addresses current statutes and Commission proceedings/policies, and above under Section 4.A is a discussion of the portion of SDG&E’s portfolio impact assessment that addresses retail sales, project viability, and existing RPS contracts. In addition to the parameters discussed in the above sections, SDG&E also considers the following regulatory factors in its portfolio impact assessment:

a. RPS Program Rules – Related Factors

Both the CEC and Commission oversee various parts of the RPS program. Regarding general RPS program rules, the relevant areas of responsibility as they relate to SDG&E are renewable facility eligibility and REC verification (both CEC), and RPS compliance rules (Commission). These factors impact the facilities with which SDG&E may contract, as well as SDG&E’s RPS compliance determination.

- Impact of CEC Requirements: The CEC revises its RPS Guidebook with relative frequency, which sometimes results in changes to eligibility requirements for renewable energy resources. SDG&E monitors this process and works with CEC staff to determine the effects, if any, on its portfolio as a result of these periodic RPS Guidebook revisions. The CEC is also tasked with verifying RPS procurement. SDG&E submits its

procurement data from the prior year to the CEC annually by July 1 and is prepared to work with the CEC in its review process.

- **Impact of Banking Rules:** The banking rules adopted by SB 350 and formalized in D.17-06-026 make several changes, which are now applicable to SDG&E per its election to utilize them beginning in CP3: (i) short-term Category 1 products can be banked;²⁸ (ii) Category 2 products cannot be banked;²⁹ and (iii) Category 2 and 3 products of any duration cannot be deducted from the bank.³⁰ In accordance with Commission direction,³¹ SDG&E has updated its RNS table under Appendix 1 to comport with the new SB 350 banking rules, assuming for RNS calculation purposes that eligible excess procurement³² will be utilized in future compliance periods.³³

b. Policy Procurement – Related Factors

California’s commitment to renewable distributed generation (“DG”) continues to influence proceedings, programs, and legislation. This commitment will ultimately shape the State’s renewable mix, and as load-serving entities (“LSEs”) reach compliance, they may be required to shift procurement from utility-scale projects to small-scale distributed generation (“DG”) projects. SDG&E is monitoring the legislative and policy activities related to this goal and any potential impacts to its portfolio.

Over the past several years, the California Legislature has passed SB 43 (“Green Tariff Shared Renewables” or “GTSR”), SB 1122 (“Bioenergy Market Adjusting Tariff” or “BioMAT”), and the Renewable Market Adjusting Tariff (“ReMAT”), which have required the Commission to implement new renewable procurement programs consistent with the State’s interest in DG. The Commission also implemented its own mandated renewable procurement program, the Renewable Auction Mechanism (“RAM”) program in 2010, as well as the

²⁸ 399.13(a)(4)(B)(i).

²⁹ 399.13(a)(4)(B)(ii).

³⁰ The current banking rules, established by D.12-06-038 (see p. 66), require that bankable excess procurement be calculated by deducting all short-term RECs of any category from the total volume of bankable excess procurement. SB 350 expressly changes this by allowing the banking of short-term Category 1 products (399.13(a)(4)(B)(i)), and prohibiting the deduction of any Category 2 and 3 products when determining bankable excess procurement (399.13(a)(4)(B)(ii)).

³¹ *Administrative Law Judge’s Ruling on Renewable Net Short*, issued May 21, 2014.

³² Rules regarding excess procurement are set forth in D.12-06-038, and D.17-06-026.

³³ Note that SDG&E may manage excess procurement by selling such products when doing so would benefit customers, or by utilizing a retired REC for RPS compliance in future compliance periods.

BioRAM in 2016, in response to Governor Brown’s Emergency Proclamation. These programs have resulted and will result in additional RPS procurement that SDG&E must include in its RNS calculation,³⁴ which will impact SDG&E’s position and procurement decisions.

Per D.18-12-003, SDG&E is required to make available for sale all of the future RECs associated with SDG&E’s BioRAM contract(s) as Portfolio Content Category (PCC) 1 RECs. SDG&E will utilize the Sales RFP documents attached herein (please see Appendices 9-9.C) and will file an Advice Letter with the Commission for approval of any resulting contracts. SDG&E will update its RNS table once sales have been completed and any resulting contracts have been approved.

Per Resolution E-4977, which implements Senate Bill 901, SDG&E is required to seek to extend its BioRAM contract for 5 years. SDG&E will indicate, through the Advice Letter process, the results of its negotiations with its BioRAM counterparty and, if necessary, will update its RNS table to reflect any resulting changes in the normal annual cycle.

SDG&E’s Schedule Re-MAT Tariff closed, effective June 30, 2016. Further information on GTSR, BioMAT, RAM, and BioRAM can be found in Sections 4, 17, and 18, respectively. As explained under Section 4.E, SDG&E anticipates that the IRP process signifies a shift away from separate programs such as these, towards a holistic planning and procurement process.

c. Other Procurement Authorizations – Related Factors

RPS-eligible procurement may occur both within and outside the RPS program. SDG&E continues to monitor the relevant initiatives, which are described in more detail below. If authorized to procure renewable resources as a part of these initiatives, SDG&E will count such resources towards its RPS goals.

- Impact of IRP: In D.18-02-081, the Commission implemented a two-year IRP cycle, and the first IRP for all LSEs was submitted on August 1, 2018. The IRP process may result in additional procurement authorizations, including the procurement of renewable resources, to meet the goals of the IRP.
- Impact of Local Capacity Resource Needs: In D.14-03-004, the Commission authorized SDG&E to procure 500-800 MW of local capacity resources (“LCR”) following the retirement of San Onofre Nuclear Generating Station (“SONGS”) to be on-line by 2022.

³⁴ SDG&E’s RNS calculation, attached hereto as Appendix 1, only includes programs that have been fully implemented.

This decision authorizes up to 600 MW from any source and requires that the remaining 200 MW be from preferred resources or energy storage (including a minimum of 25 MW of energy storage).³⁵ Pursuant to this decision, SDG&E submitted a conventional resource procurement plan and a preferred resources procurement plan, which were both approved in 2014. The Commission subsequently approved a power purchase tolling agreement (“PPTA”) for the 500 MW Carlsbad Energy Center in D.15-05-051, and mandated that the remaining 100 MW LCR authorization “consist of preferred resources and energy storage.”³⁶

SDG&E has issued two solicitations in accordance with its approved procurement plans and procurement authorization. On April 19, 2017 SDG&E filed A.17-04-017 requesting approval of 88 MW of in-basin capacity (83.5 MW from energy storage, and 4.5 MW from Demand Response). On May 31, 2018 the Commission issued D.18-05-024 approving SDG&E’s request for 88 MW of in-basin capacity. SDG&E may issue another solicitation for preferred resources, which may include renewable energy, to fill any remaining authorized LCR need.

- Impact of Energy Storage Procurement: SDG&E is required to incorporate into its RPS Procurement Plan any energy storage targets and policies that are adopted by the Commission as a result of its implementation of AB 2514.³⁷ The Commission issued D.13-10-040³⁸ on October 1, 2013, requiring SDG&E to procure 165 MW of energy storage by 2020.³⁹ The Commission in D.17-04-034 also authorized SDG&E to procure up to 166 MW of energy storage programs and investments pursuant to AB 2868. Energy storage itself is not explicitly RPS-eligible, as explained in the CEC’s RPS Guidebook.⁴⁰ However, SDG&E will count procured energy storage capacity towards its RPS targets in the future, if the CEC determines them to be RPS-eligible. Additional details can be found in SDG&E’s Energy Storage Plan.⁴¹

³⁵ D.14-03-004, OP 2, p. 143.

³⁶ D.15-05-051, p. 37, OP 2.

³⁷ See Cal. Pub. Util. Code §2837.

³⁸ This decision established the policies and mechanisms for procurement of electric energy storage pursuant to Assembly Bill 2514.

³⁹ D.13-10-040, mimeo, OP 3, p. 77.

⁴⁰ The CEC’s RPS Renewables Portfolio Standard Eligibility Commission Guidebook, 9th Edition, p. 40.

⁴¹ SDG&E’s Energy Storage Plan is available at:

<https://www.sdge.com/sites/default/files/regulatory/AB%202868%20application%20Final%20Draft.pdf>.

D. Portfolio Diversity & Reliability

A wide variety of procurement programs exist both within and in addition to the RPS program. This variety contributes to SDG&E's overall portfolio diversity. An overview of SDG&E's mandated RPS procurement programs and preferred resources solicitation is provided above under Section 4.C.b. Below, SDG&E describes the IRP process, and Section 12(D) includes information on SDG&E's flexible capacity and storage procurement efforts. Additionally, Section 4 provides detail regarding how transportation electrification is considered, and SDG&E's strategy for optimizing cost, value, and risk, which are also important considerations for both diversity and reliability purposes. Together, these sections clearly address how SDG&E will increase the diversity of its portfolio and contribute to grid reliability, thereby resulting in customer value.

Another factor that will influence SDG&E's portfolio diversity as well as help to appropriately address integration and overgeneration is the LCBF calculation that SDG&E will use to select shortlisted projects. The LCBF document is attached hereto as Appendix 8. The methodology outlined in this document includes the interim integration adder, the application of which will ensure that integration is factored into bid evaluation, with the objective of selecting a diverse portfolio in consideration of system needs and reliability. The LCBF document also contains qualitative evaluation metrics described in Appendix 8, which play a part in selecting a diverse portfolio.

Additionally, SDG&E's 2019 Plan includes a section dedicated to economic curtailment, Section 12, which outlines how SDG&E proposes to address the integration of renewables and the issue of overgeneration, both of which can contribute significantly to the incidence of economic curtailment. This section includes a discussion of SDG&E's analysis and activities, as well as information regarding contract modifications SDG&E has made over time to address curtailment. SDG&E notes that the ACR expressed an interest in how SDG&E is addressing the "under-utilization" of renewable energy. This term implies that renewable energy is not being used to the extent possible when generated, which is not the case. As explained further under Section 12, renewable generation is not load-following, and as such can result in overgeneration. One way to address overgeneration is through the use of energy storage. Section 12 includes an update on the status of SDG&E's energy storage portfolio, as well as more detail regarding the potential of this technology to address overgeneration.

The various procurement activities and continued refinement of both the project valuation methodology and contract are undertaken on behalf of SDG&E's customers to ensure that they receive a reliable and cost-effective portfolio of generation.

E. Lessons Learned & Trends

The following sections discuss how trends and lessons learned over the past several years impact RPS procurement and illustrate how SDG&E accounts for these factors in its RPS Plan and procurement activities.

i. Lessons Learned

a. Overbuilding

As described in all RPS Plans since 2013, SDG&E is concerned that developers provided profiles in prior solicitations that did not match the profiles of the facilities that were ultimately built.⁴² In other words, developers “overbuilt” facilities (*i.e.*, installed capacity above the amount bid and/or shaped the production profile to take advantage of higher-priced TOD periods). The resulting overgeneration has increased costs to customers through increased contract costs, and increased generation overall which increases the incidence of and payments for negative real-time energy pricing. SDG&E has modified its PPA several times to discourage this practice going forward and will continue to reevaluate its contract provisions in subsequent versions of the plan, as new information becomes available, to determine if and how its contracts should be updated.⁴³

b. Peak Shifting

Due to the success of the RPS program, a significant amount of renewable energy continues to be added to the grid. Substantial amounts of rooftop solar are also being added by customers behind the meter. As a result, the peak load net of variable energy resources has and will continue to shift as the California resource portfolio evolves. Renewable resources have low variable costs, and when delivering at high penetration levels during any single time during the day, may result in significant decreases in marginal energy prices and significant ramping events. SDG&E is monitoring the impacts of this issue in the IRP proceeding.

c. Capacity Value

⁴² SDG&E 2013 RPS Plan, p. 37; SDG&E 2014 RPS Plan, p. 25; SDG&E 2015 RPS Plan, p. 25; SDG&E 2016 RPS Plan, p. 28; SDG&E 2017 RPS Plan, p. 31; SDG&E 2018 RPS Plan, p. 44.

⁴³ SDG&E 2013 RPS Plan, p. 38; SDG&E 2015 RPS Plan, pp. 25-28.

SDG&E's method for calculating energy and capacity values uses a benchmark where energy values are shaped hourly based on a forecast of SP15 energy prices and the results of production cost modeling that yields an hourly energy shape that covers the contract term. The capacity value is shaped hourly using a Loss-of-Load Probability ("LOLP") study for a representative year of the contract term. The process assigns higher capacity value to hours of greater capacity need, which more accurately reflects the impact of variable energy resources upon capacity needs. The calculation provides annual capacity values for both local and IV/System area projects.⁴⁴ These annual values are then taken through a process which creates monthly capacity values using the LOLP mentioned above, then down to an hourly level using the monthly values.

These benchmark values are reasonable because, when evaluating a contract on a standalone basis, it should be measured against the avoided costs the utility might face had this contract not been part of the portfolio. For example, if SDG&E had a resource in its portfolio, and that resource was crucial to meeting local resource adequacy requirements, the marginal value of that resource is the amount that SDG&E must pay to replace that resource if it becomes unavailable plus the cost to replace the energy that resource would have generated in order to serve hourly retail load. SDG&E will update its calculations as the assumption sources are updated.

d. Delay of COD Declaration

SDG&E is concerned that a facility could reach commercial operation prior to the contractual commercial operation date ("COD"), but delay declaring COD until the COD date in the contract. As a result, the facility would be paid for this energy at the contract price, thereby extending the term of its contract, resulting in an additional cost to customers. To mitigate this issue, SDG&E revised its PPAs several years ago to change the price paid for energy delivered prior to COD to a fixed REC value plus CAISO revenues net of CAISO costs.

⁴⁴ For Local Area Projects: the Marginal Generation Capacity Cost of \$120/kW-year, which is intended to provide a proxy for the net cost of new entry, as discussed in Section 3 of the Revised Prepared Direct Testimony of David T. Barker, Chapter 5, On Behalf of SDG&E in connection with Application 11-10-002 (Application of SDG&E For Authority To Update Marginal Costs, Cost Allocation, And Electric Rate Design). Note that this value will need to be updated from time to time in correlation with market trends. The current value of \$120/kW-year is in 2012 dollars and a 2.5% annual escalation rate is applied to calculate the value beyond 2012. For IV Area Projects and System Area Projects: the CPUC penalty of \$40/kW-year associated with failure to meet system RA requirements. CPUC 2014 Filing Guide for System, Local and Flexible Resource Adequacy (RA) Compliance Filings, p. 27.

ii. Trends

a. Steady Project Success Rates

As the market for renewable energy has matured, SDG&E has observed a positive trend in project success rates. As explained above, SDG&E reviews the status of all projects in its portfolio on a monthly basis to incorporate the most recent information into its forecast and will continue this practice.

b. Evolving RA Requirements

The RA program is the subject of Commission rulemaking proceeding R.14-10-010. The Commission adopted multi-year Local RA requirements in D.18-06-030, issued on June 25, 2018. Beginning in 2020, LSEs will have 3 years of Local RA requirements. LSEs must meet 100% of Local RA requirements for 2020 and 2021 and 50% of Local RA requirements for 2022.

The Commission requested parties to hold workshops to attempt to reach consensus on a central buyer procurement framework in D.19-02-022 for Track 2 of the proceeding. SDG&E is actively participating in the workshops to help parties reach a consensus framework. Three different procurement frameworks (Full, Residual and Hybrid), were presented to the Commission in Track 2. Multiple alternate entities were also proposed. However, because there was no consensus reached, the Commission has asked parties to further discuss and submit implementable solutions for consideration. SDG&E is monitoring the active Commission RA proceeding to determine the impact any applicable decisions will have on SDG&E's procurement practices.

c. Integrated Resource Planning

SB 350 added a provision to the Public Utilities Code directing the Commission to implement a holistic integrated resource planning process. IRP is a wide-ranging effort at the Commission, undertaken along with staff from the CEC and the California Air Resources Board ("CARB"), that will/should combine the numerous planning processes currently undertaken in separate resource-specific cases into a single look to ensure that IOU and non-IOU load-serving entities will achieve the targets to be established by CARB related to GHG emission reductions.⁴⁵ As explained in the IRP OIR, prior planning has not addressed the comprehensive

⁴⁵ Senate Bill 350 (Stats. 2015, Ch. 547). at 14.

resource optimization challenge presented by IRP.⁴⁶ IRP incorporates at least 19 different procurement-related proceedings, including the RPS proceeding,⁴⁷ and is bound by the following constraints which are addressed in or related to the various incorporated proceedings: (i) GHG emissions; (ii) reliability; (iii) cost; (iv) the 50% by 2030 RPS goal;⁴⁸ (v) the goal of doubling cost-effective energy efficiency savings; and (vi) the Commission’s continuing responsibility to ensure safe and reliable service at just and reasonable rates.⁴⁹

RPS procurement is currently a composite of several different procurement programs and targets that are the results of separate mandates to address the needs of a particular technology, market segment, or policy goal. As described above, these programs do not necessarily address an identified resource need, cost-effectiveness or grid implications in the broader context – these elements are necessary to ensure that customers receive the least-cost best-fit resources.

SDG&E views the IRP process and associated constraints as a marked transition away from procurement made via numerous one-off programs and separate processes towards a comprehensive, optimized and cost-effective process that evaluates a portfolio of resources on a comparative basis. IRP should enable procurement in consideration of multiple data points, not only what is required by a particular policy-driven program, thereby providing cost and grid optimization opportunities to the benefit of SDG&E customers as well as customers statewide. SDG&E looks forward to participating in the IRP process, with the end goal of enhancing the cost-effectiveness of RPS and other procurement mandates. SDG&E believes that it is prudent to pause any incremental RPS-procurement, including the adoption of new procurement mandates, while IRP is being implemented, especially given SDG&E’s RPS performance to date.⁵⁰

d. Meeting Demand for Higher Levels of Renewables

In addition to the State’s goals (the most recent development of which was SB 100), many customers and communities within SDG&E’s service territory are interested in electricity

⁴⁶ R.16-02-007, p. 13.

⁴⁷ R.16-02-007, p. 11.

⁴⁸ SB 100 (2018) increased this goal to 60% by 2030.

⁴⁹ R.16-02-007, p. 13.

⁵⁰ With regard to R.16-02-007, IRP “Phase 1” was resolved as indicated in D.19-04-040. “Phase 2” of the IRP, the “Procurement Track,” will be initiated in the near future where the Commission will explore options for facilitating procurement that is determined to be necessary for maintaining system reliability and/or to facilitate renewable integration.

service with even higher levels of renewables than required by law. Related to SDG&E's RPS planning efforts, SDG&E will consider ways in which SDG&E can potentially support offerings that are made available to customers throughout the SDG&E service territory to help meet these goals.

F. Conformance with IRP

As described above under Section 4, SDG&E has no near-term RPS need, and therefore does not plan to procure renewable resources for the 2019 RPS Plan cycle. This is also consistent with SDG&E's 2018 IRP, which did not forecast a procurement need for RPS resources in the near term. Going forward, SDG&E will incorporate any RPS procurement authorized by the IRP into its RPS Plan as necessary.

5. PROJECT DEVELOPMENT STATUS UPDATE

As described further in Section 4, SDG&E regularly evaluates project development status to assess each project's ability to begin deliveries pursuant to contract terms and conditions. SDG&E's portfolio of renewable energy resources currently under contract but not yet delivering (either pre-construction or in construction) are in various stages of development. Projects under development generally require numerous permitting approvals, generator interconnection, financing, and completion of construction before they can achieve commercial operation. Each of the above issues adds significant risk to the development of a project and can directly impact the success or failure of a project. SDG&E's experience is that achieving all of these milestones represents a significant challenge for developers.

As of April 2019, SDG&E has or is developing contracts for four renewable projects that are in the pre-construction or construction phase (none of which are UOG), and 59 projects that are in commercial operation (twelve of which are UOG). Information regarding these projects, including the following data points requested by the ACR, can be found in Appendix 1: (i) name; (ii) capacity; (iii) term; (iv) location; and (v) COD. Generally, projects in the pre-construction phase are most at risk of failure. However, projects under construction may also encounter issues that could affect their ability to achieve commercial operation, such as successful litigation against the project. In general, projects that have achieved commercial operation have a high probability of meeting their contractual obligations; however, project failure or resource fluctuations (*e.g.*, a bad wind year) can create challenges. Although a

developer’s experience may improve the likelihood of a project achieving commercial operation, it does not ensure that a project will be successful. Sections 4, 6 and 7 of this plan discuss the various delays and risks that could impact projects in various stages of development.

A. Impact of Project Development Status

As a practical matter, until a project actually begins commercial operation, it bears significant development risk. SDG&E currently expects that a majority of the projects in its portfolio will meet their commercial operation dates either on schedule or within the prescribed cure period. SDG&E bases its forecasting, and therefore its RNS calculation, on its individual project assessments, as is described in more detail in Section 4. It also relies on the lessons it has learned and trends it has observed as a result of the RPS procurement process, as discussed in more detail in Section 4. The above factors contribute to SDG&E’s monthly project assessments of the likelihood of each project’s success. For example, a project that has been experiencing permitting issues would receive a probability weighting reduction to account for this risk until the issue is resolved. The result of these cumulative assessments is reflected in the RNS, which SDG&E will use to inform its procurement activities. The RNS as of April 2019 is provided in Appendix 1. For additional information on RPS products, please visit the Commission’s RPS Database at http://cpuc.ca.gov/RPS_Reports_Data.

6. POTENTIAL COMPLIANCE DELAYS

The market for renewable energy is dynamic and multiple factors can impact project development and SDG&E’s attainment of its RPS program goals. The following discussion covers the major issues affecting both renewable project developers and SDG&E. It begins with the transmission, permitting, and financing hurdles faced during project development, and continues through some of the challenges experienced as a project matures – *e.g.*, viability, debt equivalence, accounting issues, and regulatory uncertainty.

A. Transmission and Permitting

i. Interconnection

The timely approval, permitting, and completion of interconnection facilities is crucial to the successful implementation of SDG&E’s renewable portfolio. The completion of the East County (“ECO”) Substation and the Drew Switchyard, as well as the interconnection of six renewable projects to the Imperial Valley (“IV”) Substation, have all been positive

developments. However, issues may arise as a result of transmission facility planning that could impact project development timelines. SDG&E monitors these issues, and also actively participates in the CAISO's Transmission Planning Process ("TPP") by responding to competitive solicitations and proposing its own projects where appropriate, as discussed below.

a. Planned Facility Issues

In 2018, CAISO approved the S-Line Upgrade project ("S-Line") as an economic-driven project.⁵¹ The existing S-Line is an 18.1 mile, 230 kV single circuit wood pole line from Imperial Irrigation District's ("IID") El Centro substation to SDG&E's IV substation. The project would consist of a CAISO Participating Transmission Owner ("PTO") funding the upgrade of the existing wood pole line to a 230 kV double circuit steel tower design, and the necessary upgrades to termination equipment, in return for entitlements to a portion of the incremental transmission capacity created by the upgrade. It is anticipated that SDG&E, as a CAISO PTO, would fund the IID upgrades and obtain rights to a portion of the incremental transmission capacity. A preliminary target date of 2021 has been established, and additional siting, permitting and design activities will be necessary to establish the feasibility of that target date. The primary and most immediate benefit is a reduction in the local capacity requirement ("LCR") for the San Diego-IV area. Other anticipated benefits include a reduction of market congestion on the CAISO system and increased access to renewables in the IID and Arizona systems.

b. Project Proposals

Timely approval and construction of transmission facilities will support the development of renewable facilities, both within and external to California. SDG&E submitted the SWPL High-Voltage Direct Current ("HVDC") transmission line conversion project to both CAISO and WestConnect in March 2018 through their respective interregional transmission processes. SDG&E also resubmitted the project into the CAISO's 2018-2019 TPP as a reliability, economic, and policy-driven transmission project⁵² to mitigate identified thermal overload concerns on SWPL/SRPL and provide regional and interregional benefits in Southern California. The project would convert the SWPL to a three-terminal HVDC system with two fully independent poles at the North Gila, IV, and Miguel substations, along with system configuration

⁵¹ 2017-2018 CAISO Transmission Plan, p. 9.

⁵² 2018-2019 CAISO Transmission Plan, p. 325.

modification of the SRPL and the Miguel substation. As the project relies heavily on LCR reduction benefits, the CAISO's conservative assumptions used in the 2018-2019 planning cycle to assess those benefits have a material effect on the cost-effectiveness of the project.⁵³ The project is expected to be revisited in future planning cycles. Longer term direction regarding the projected cost savings associated with the reduced need for local generation should become more evident based on the results of the CPUC's IRP process.

ii. Jurisdictional Agency Permitting Delays

Uncertainty surrounding the timely issuance of key permits associated with California Environmental Quality Act ("CEQA") and National Environmental Policy Act ("NEPA") lead agency review continues to create risks for projects under development. The permitting timeline can vary greatly based on a multitude of factors including project location, project specific environmental issues, lead/other agency resources, and public participation. First, this uncertainty may lead to scheduling challenges and corresponding problems with project elements such as site control, financing, permitting, engineering, procurement including supplier and engineering, procurement, and construction ("EPC") contracts. Second, costs to mitigate environmental issues or respond to public concerns can lead to higher than expected costs for developers to complete a project.

C. Debt Equivalence and Accounting

Two additional issues may challenge SDG&E's ability to achieve its RPS goals. The first involves debt equivalence. The cumulative debt equivalence of executed PPAs could affect SDG&E's credit profile and, consequently, its financial standing. Rating agencies may include long-term fixed financial obligations, such as PPAs, in their credit risk analysis. These obligations could be treated as additional debt during their financial ratio assessment. Standard and Poor's ("S&P") views two core ratios, Funds From Operations ("FFO") to Debt and FFO to Earnings Before Interest, Tax, Depreciation and Amortization ("EBITDA"), as well as other supplementary ratios, as the critical components of a utility's credit profile. Debt equivalence could negatively impact all ratios. Unless this risk is mitigated, a PPA would negatively impact SDG&E's credit profile by degrading credit ratios.

The second issue relates to Accounting Standards Codification ("ASC") 810 Consolidation, which includes the subject of Consolidation of Variable Interest Entities

⁵³ *Id.* at 331.

(“VIEs”). Application of ASC 810 as it pertains to Consolidation of VIEs could also impact SDG&E’s ability to sign new contracts. As part of SDG&E’s overall internal review and approval process for new PPAs, SDG&E conducts a review of whether each PPA will be subject to consolidation under ASC 810. Under ASC 810, no renewable PPA has been deemed subject to such consolidation, however, ASC 810 requires SDG&E to perform an evergreen assessment for those contracts which are considered VIEs. For this reason, SDG&E believes that it is required to assess quarterly each contract or category of contracts to ensure continued compliance with ASC 810, to determine whether or not SDG&E must consolidate a seller’s financial information with SDG&E’s own quarterly financial reports to the Securities and Exchange Commission. The accounting rules associated with ASC 810 can change, thus wind, solar, geothermal and bio-gas renewable sellers could be impacted.

Application of ASC 810 could hinder SDG&E’s ability to achieve its RPS goals and add further costs and risk to execution of new renewable contracts. If SDG&E determines that consolidation is required, a seller must open its books to SDG&E and submit financial information, on a quarterly and monthly basis, as specified in SDG&E’s contract language for the duration of the relevant agreement.

All PPAs are affected by either debt equivalence or ASC 810 requirements. The Commission is well aware of the negative impact of debt equivalence on SDG&E’s credit profile. AB 57 requires that the Commission adopt procurement plans that, among other objectives, enhance the creditworthiness of the utility. ASC 810 will affect SDG&E’s reported financial data and may have a negative impact on SDG&E’s balance sheet and/or credit profile. ASC 810 could impact SDG&E’s capital structure on a consolidated basis and cause it to be misaligned with its authorized capital structure. To the extent SDG&E must seek to mitigate the impacts of debt equivalence and ASC 810, it will do so through a separate cost of capital filing.

D. Regulatory Factors Affecting Procurement

SDG&E currently expects to meet and exceed its near-term RPS program goals, including those established by SB 100, with procurement already under contract, as explained in Sections 2 and 4. As such, any RPS procurement related initiatives pending before the Commission (*e.g.*, LCBF reform) will likely have a greater impact on RPS procurement undertaken to meet future need.

On June 22, 2016, the Commission issued a ruling requesting comment on the LCBF

staff paper and requesting that the IOUs jointly submit a proposal for developing a standardized methodology and set of inputs and assumptions for estimating future capacity prices. Clarity surrounding the ultimate alterations to this calculation and the factors used in bid evaluation will help SDG&E understand and plan for any impacts. In addition to this initiative, the Commission is also in the process of developing a Common Resource Valuation Methodology (“CRVM”) as part of the IRP proceeding, and reviewing the expected qualifying capacity of new and existing wind and solar resources which will impact the Net Qualifying Capacity (“NQC”) of a resource for RA compliance purposes. It is unclear at this time how this work will impact the LCBF calculation, but SDG&E looks forward to participating in the development of these metrics, and will incorporate any new data points or methodologies into its LCBF evaluation when final.

E. Unanticipated Curtailment

As explained in more detail below under Section 12, the incidence of curtailment has increased and will continue to do so as more and more intermittent renewable generation is brought online. SDG&E’s current strategy inherently addresses curtailment as it seeks to mitigate the need to curtail by procuring a diverse portfolio of resources that account for system needs as described above in Section 4, and by refining its RPS PPA to ensure that the projects that are ultimately built reflect the project as bid, also described under Section 4. Additionally, SDG&E has taken steps in its RPS PPA to provide for economic curtailment rights, and these past RPS PPA modifications are referenced in Section 12 below.

F. Insufficient Supply of Renewable Resources

As described above under Section 4, it is SDG&E’s expectation that it will be able to meet its CP goals through 2030 with RPS eligible procurement already under contract, and as such, it is likely that SDG&E will not seek to hold an RPS RFO for the next several years given its current forecasted position. The majority of the facilities with which SDG&E has contracted are operating, as can be seen in the probability weighted tables in Appendix 1. It is unlikely that an event, or series of events, will undermine SDG&E’s ability to procure energy from these resources. However, as mentioned in Sections 4 and 9, SDG&E procures a VMOP to guard against unforeseen circumstances.

G. Unanticipated Increases in Retail Sales

SDG&E’s retail sales forecast methodology, which is intended to capture both increases and decreases, is explained above under Section 4. It is unlikely that an event or series of events

will increase SDG&E's retail sales to a level that would prevent RPS compliance. However, as mentioned above and in Sections 4 and 9, SDG&E procures a VMOP to guard against unforeseen circumstances.

H. Impact of Potential Delays

SDG&E bases its forecasting, and therefore its RNS calculation, on its individual project assessments, as described in more detail in Section 4. It also considers lessons learned and trends it has observed as a result of the RPS procurement process, as discussed in more detail in Section 4. The factors discussed in this section contribute to SDG&E's monthly assessment of the likelihood of each project's success. For example, a project that has been experiencing difficulty in obtaining a key permit would receive a probability weighting reduction to account for this risk until the issue is resolved. While the impacts of the regulatory proceedings mentioned above cannot be known until the final decisions are issued, SDG&E is monitoring these issues and will reflect their outcomes accordingly, when appropriate. The results of these cumulative assessments are reflected in the RNS, which SDG&E will use to inform its procurement activities. The RNS as of April 2019 is provided in Appendix 1.

SDG&E does not anticipate any compliance delays at this time. As required by the ACR, a summary of the justification for this position is provided above under "Insufficient Supply of Renewable Resources."

7. RISK ASSESSMENT

A. Project Risk

SDG&E assesses project risk on an ongoing basis utilizing written assessments from developers and periodic status update meetings with developers, especially as it relates to building new resources, delayed construction, and determining whether there is a risk that power will not be delivered. In assessing SDG&E's risk, it is important to first note that SDG&E has fewer projects in development than in prior years and current project development has been more successful. Developing projects represent only 3% of SDG&E's peak load. Further, SDG&E does not anticipate a large increase in the volume of future project build out. Given that information, SDG&E's risk assessment is mainly qualitative, such as the information referenced

in Sections 4 and 5, which provides more meaningful information in which SDG&E can make assumptions on project success.⁵⁴

SDG&E periodically evaluates the risk that delivering projects will underperform. In SDG&E's experience, developers are inherently motivated to achieve COD for their facilities and maintain successful operations due to several factors: (i) the significant investment required to achieve COD; (ii) the timely payments made for energy delivered once COD is reached; and (iii) the penalties incurred if the project does not meet contractual requirements to supply at least the minimum amount of energy contemplated. As explained above under Section 4, SDG&E expects to meet its CP goals through 2030 with RPS eligible procurement already under contract. However, risks are still present, and over the past decade, SDG&E has observed some dynamic factors that may affect power production from delivering projects:

- Resource Availability and Variable Generation: Renewable resources depend on natural sources of energy that are variable and can be impacted by various factors. For example, a bad wind year can greatly impact a wind facility's performance and cause lower than expected generation. Another factor that could also impact generation is the occurrence of unexpected mechanical failures, which could cause a facility to be partially or fully unavailable until the issue can be resolved.
- Regulatory Changes: The expiration of subsidies or additional requirements resulting from changes in regulations could lower the revenue stream and increase costs for RPS developers and could lead to reduced production if the project has difficulty in supporting this lower revenue stream.
- Economic Environment: The interest rates and flexibility of financing arrangements entered into by developers can impact a project's success. Long-term project financing arrangements with unfavorable terms can lead to project failure or reduced production if the project has difficulty in supporting the financing cost requirements. Additionally, economic factors that negatively impact a generator's supply chain could impact its ability to comply with contract terms.

⁵⁴ Per the ACR, SDG&E is providing this additional discussion regarding how it assesses project risk. SDG&E does not conduct an annual risk assessment via modeling, but rather evaluates each project on a monthly basis utilizing the most recent data available, as described under Section 4.

- Evolving Technology: Facilities with older generation technology that is no longer supported by the manufacturer can experience project failure or reduced production. This problem is arising now for older RPS projects, and could occur in the future as the projects built today begin to age.
- Issues with Third Party Mandatory Systems: CAISO and WREGIS systems have experienced technical issues in the past, and potential technical problems with these systems going forward could complicate the compliance process.

B. Diversity & Reliability

As explained under Section 4.D, a wide variety of procurement programs exist within and in addition to the RPS program. These programs contribute to SDG&E's overall portfolio diversity and support reliability. For a more detailed discussion, please see Section 4.D.

C. Impact

SDG&E's current overall assessment is that projects in its portfolio are at a low risk of non-performance, assuming the above risk factors remain relatively stable. As described herein, SDG&E bases its forecasting, and therefore its RNS calculation, on its individual project assessments, lessons learned and trends it has observed as a result of the RPS procurement process. The above factors contribute to SDG&E's monthly project assessments of the likelihood of each project's success. For example, the probability weighting for a project that has begun experiencing technical difficulties due to an aging system and has been unable to receive assistance from a manufacturer that no longer exists would receive a probability weighting reduction to account for its reduced generation until the issue is resolved. The result of these cumulative assessments is reflected in the RNS, which SDG&E will use to inform its procurement activities. The RNS as of April 2019 is provided in Appendix 1.

SDG&E does not anticipate any compliance delays at this time. As required by the ACR, a summary of the justification for this position is provided above under Section 6 (F), under "Insufficient Supply of Renewable Resources."

8. QUANTITATIVE INFORMATION

The analysis attached hereto in Appendix 1 shows the Commissions' prescribed RNS calculation with supporting probability weighting calculations by project as of April 2019. SDG&E intends to monitor the vintage and remaining life of RECs in order to maximize their

value to the portfolio by retiring them at the most opportune time, this is discussed in more detail in Section 4.

9. MINIMUM MARGIN OF OVER-PROCUREMENT

A. Methodology & Inputs

SDG&E's RPS Risk Adjusted⁵⁵ RNS Calculation, as shown in Appendix 1, provides a VMOP.⁵⁶ SDG&E's VMOP is composed of a "Minimum Margin of Procurement" that is intended to account for foreseeable project failures or delays, as well as an additional volume of procurement which is undertaken to ensure that SDG&E achieves its RPS requirements despite unforeseeable risks.

Due to constant fluctuations in RPS targets (as a result of changes in retail sales) and RPS deliveries, it is nearly impossible to meet RPS targets with the exact number of MWhs required. SDG&E's VMOP is designed to ensure that it achieves its RPS goals in consideration of foreseeable and unforeseeable risks such as those discussed in Sections 6 and 7. Because it is difficult to predict retail sales and project performance, particularly for periods farther into the future, SDG&E's VMOP may be higher in later years. SDG&E's portfolio (RPS resources necessary to reach compliance and provide a VMOP) is the result of the forecasts (including need, retail sales, and project success rates), the assessment of potential risks, and the project valuations made at the time of each individual contract execution and approval. SDG&E's RNS calculation, including its VMOP, for each year is based on the following formula:

$$\text{RPS Risk-adjusted Net Short} = (\text{Bundled Retail Sales Forecast} \times \text{RPS Procurement Quantity Requirement} + \text{Voluntary Minimum Margin of Procurement}) - (\text{Online Generation} + \text{Risk-adjusted Forecast Generation} + \text{Pre-approved Generic Generation})^{57}$$

⁵⁵ Probability weightings are used to adjust estimated deliveries based on the likelihood that each developing project will reach COD, as well as the likelihood that each delivering projects will continue to deliver as estimated. The probability weighting process identifies the volume of generation under contract that SDG&E is likely to receive and be able to apply towards its RPS compliance. Based on this analysis, SDG&E can determine what additional procurement is necessary to (i) reach its RPS targets, and (ii) provide a buffer against foreseen and unforeseen events (the VMOP).

⁵⁶ See Row D of the RNS Table.

⁵⁷ All generation data listed in any of SDG&E's RPS Plans, as well as any of its RPS Plan Appendices, are from contracts that have been approved or pre-approved by the Commission.

Where:

- a. Bundled Retail Sales Forecast = the forecast developed in accordance with Section 4(A)(ii)(a) of SDG&E's 2019 RPS Plan
- b. RPS Procurement Quantity Requirement = the target for the relevant CP or year
- c. Voluntary Minimum Margin of Procurement = up to the current anticipated net long position for the relevant CP or year
- d. Online Generation = the generation that SDG&E expects will be delivered by its portfolio of RPS projects that have achieved commercial operation, as discussed in Section 4(A)(i)(a) of SDG&E's 2019 RPS Plan
- e. Risk-adjusted Forecast Generation = the generation that SDG&E expects will be delivered by its portfolio of RPS projects that have not yet achieved commercial operation, as discussed in Section 4(A)(i)(b) of SDG&E's 2019 RPS Plan
- f. Pre-approved Generic Generation = unsubscribed volumes that SDG&E is required to procure under fully implemented CPUC-mandated procurement programs (RAM and Re-MAT)

B. Scenarios

As described above under Sections 2, 4 and 5, SDG&E's RPS portfolio is primarily composed of long-term contracts with facilities that have already commenced commercial operations. SDG&E is well-ahead of its RPS targets, and has no near-term procurement need. Given these facts, SDG&E's risk of noncompliance is low, therefore it does not test additional VMOP scenarios.

10. BID SOLICITATION PROTOCOL, INCLUDING LEAST-COST, BEST-FIT

A. Solicitation Protocols for Renewables Sales

i. Lessons Learned

SDG&E will enter into solicitations to the extent that these transactions benefit customers. The competitive bid solicitations such as RFPs bring together the largest possible number of market participants to make offers to buy, thus promoting market liquidity and competition. SDG&E regularly evaluates its portfolio needs to determine whether RFPs present advantages to the alternative of bilateral transactions. Through early iterations of the RPS REC sale RFP process, SDG&E identified the importance of adhering to a comprehensively

developed schedule when conducting a solicitation. Deliberate planning for potential delays in the contract execution and approval processes promotes meeting all objectives in a timely manner.

ii. Sales Solicitation Documents

Attached hereto in Appendices 9-9.D are SDG&E's proposed RPS Sales documents:

- Appendix 9 – 2019 RPS Sales RFP
- Appendix 9.A – 2019 RPS Sales Model PPA (Bundled Product)
- Appendix 9.B – 2019 RPS Sales Model PPA (Unbundled Product)
- Appendix 9.C – 2019 RPS Sales Offer Form
- Appendix 9.D – 2019 Framework for Assessing Potential RPS Sales

iii. Assignment Description

SDG&E may also issue a contract assignment RFP. As required by the ACR, the following is a description of the solicitation protocols:

- Overview: If it is determined that selling RECs provides a greater benefit to SDG&E's customers than banking excess RPS procurement, SDG&E may explore the option of assigning one or more entire RPS contracts to a third-party. Such assignment may be done in addition to, or instead of, selling a portion of a portfolio of RPS contracts as described in Appendix 9. This process may present challenges as SDG&E would need to secure approval from the renewable facility prior to the assignment of its contract to a third-party buyer.⁵⁸ In cases where SDG&E determines that an RFP for the assignment of RPS contracts may be beneficial, it may begin with a small volume to build knowledge and experience over time. The contract assignment RFP option may also present advantages to a third-party buyer, for example, portfolio fit. A third-party buyer may prefer a project with a certain geographic location, delivery schedule, or counterparty, and contract assignment may provide this option.
- Non-Binding Process: Although SDG&E has not yet held a Contract Assignment RFP, its RPS Sales RFP process offers a framework from which to design an RFP. SDG&E envisions conducting the Contract Assignment RFP in a similar manner, and potentially in parallel with, an RPS Sales RFP. SDG&E would anticipate:

⁵⁸ Note that consent cannot be unreasonably withheld.

- Hiring an IE to oversee the process;
- Taking reasonable measures to ensure renewable facilities that may be assigned remain informed;
- Consulting with PRG before, during and after offers are received;
- Marketing the RFP to a large group of potential Assignees;
- Publishing a clear and transparent set of RFO protocols, including an RFP document, proforma contract, and other necessary documents and/or agreements; and
- Performing an LCBF analysis to determine which bids (if any) would be beneficial for SDG&E's customers (see Section 10C).

Following selection of winning bids (if any), SDG&E anticipates allowing both the counterparty(ies) and SDG&E ample time for due diligence, and seeking consent from any project prior to the assignment of its contract to a third-party buyer. SDG&E will submit a Tier 2 AL to the CPUC for approval of any fully executed agreement(s), or a Tier 1 AL if no agreement(s) result from the RFP.

- Proforma Agreement: The proforma agreement for this transaction would involve a transfer from SDG&E to the Assignee of all liabilities and benefits included in the specific contract. If transfer of the agreement requires compensation, either from SDG&E to the Assignee or the Assignee to SDG&E, the agreement will include such terms and responsibilities. Additionally, SDG&E may need to enter into an agreement with the project that describes the duties, responsibilities, and any additional compensation for the contract to be assigned.
- LCBF Analysis: The LCBF analysis for a Contract Assignment would be similar to that used for SDG&E's RPS Sales RFP, and will include a comparison of the benefits of the contract assignment to that of the benefits from banking the RECs. In addition to the factors considered in SDG&E's RPS Sales RFP, Contract Assignment RFP analysis may include parameters such as payments or credits from either the Assignee or Project, administration cost savings, decrease in liability for SDG&E's customers, increased transaction viability, and decreased/increased counterparty risk.

B. Bid Selection Protocols

Although SDG&E does not intend to issue a solicitation for RPS purchases in 2019, it has attached RPS Long- and Short-Term Model PPAs,⁵⁹ an RPS REC Agreement, and an LCBF document to prevent these documents from becoming outdated. Attached hereto in Appendices 5-8 are SDG&E's proposed RPS Sales documents:

- Appendix 5 – 2019 RPS Long-Term Model PPA
- Appendix 6 – 2019 RPS Short-Term Model PPA
- Appendix 7 – 2019 RPS REC Agreement
- Appendix 8 – 2019 LCBF

C. LCBF Criteria

i. Workforce Development Assessment Proposal

A Workforce Development Assessment is included as a qualitative factor within SDG&E's LCBF. The information used in this Assessment will be gathered as part of the required bid information for any solicitations which include renewable resources. The Assessment results will be qualitatively compared among all renewable resource bids within the solicitation which will inform the final bid ranking, similar to all other qualitative factors.

ii. Assessment of Benefits to Disadvantaged Communities

In D.04-07-029, the Commission directed the use of "benefits to low income or minority communities" as a qualitative factor in the LCBF analysis. Consistent with this direction, SDG&E has applied this factor on a qualitative basis along with several other qualitative factors (see Appendix 8 for a full list). Benefits to the community are either described by the developer in the project description form, or can be requested by SDG&E if not provided. The results of SDG&E's LCBF analysis (quantitative as well as any additional qualitative) are shared with the PRG and also described in the AL seeking approval for SDG&E's shortlist.

iii. State Policies

SDG&E includes bid evaluation considerations that are policy-related and cannot be quantified in its qualitative bid review process, outlined in Appendix 8, attached hereto. These factors include equity (addressed by the Disadvantaged Communities component), the environment (addressed by environmental stewardship component), and economic development

⁵⁹ D.14-11-042, p. 78.

(addressed by the Workforce Development Assessment component). Additionally, to address the issue of safety, SDG&E has added a safety component to the qualitative portion of the LCBF process in this iteration of its Plan.

11. CONSIDERATION OF PRICE ADJUSTMENT MECHANISMS

SDG&E acknowledges that contracts with online dates occurring more than 24 months after the contract execution date can pose additional risk to customers. SDG&E has incorporated price adjustment mechanisms into some of its current contracts that are intended to alleviate some of these risks, including the following:

- Price adjustment for delay in Guaranteed Commercial Operation Date (“GCOD”): A lower price for a late GCOD provides additional incentive for developers to come online pursuant to the contract. However, this structure can create financing challenges if financing parties are not comfortable with the potentially lower price. It is also difficult to quantify an appropriate price adjustment amount and can lead to drawn out negotiations. A more effective remedy for missing the GCOD is to charge the developer daily delay damages, which SDG&E has done.
- Capped transmission upgrade costs: Placing a cap on the amount of transmission upgrade costs (which are ultimately borne by customers) that a project can incur is an effective way to limit customer exposure to such costs. This type of cap is especially important for projects that do not yet have an executed interconnection agreement, because there is some chance that transmission upgrade cost estimates could change for these projects. The cap is set as a condition precedent to SDG&E’s obligations under the PPA. If estimated upgrade costs exceed the cap, SDG&E has the right not to move forward with the PPA.
- Price adjustment for higher than expected transmission upgrade costs: Another mechanism that SDG&E has successfully incorporated into past contracts is a mechanism whereby the seller agrees to a price reduction to offset higher than anticipated transmission upgrade costs. Under this mechanism, the contract price would be reduced on a dollars per megawatt-hour basis commensurate with the cost of transmission network upgrades above an agreed upon cap. The price adjustment mechanism would include an upper limit on transmission upgrade costs, above which SDG&E can terminate

the contract. This mechanism is similar to the cap described immediately above except, rather than giving SDG&E the right not to move forward with the PPA, it gives the developer the choice to either proceed at a reduced price equal to the amount of transmission costs above the cap, or not go forward with the PPA. If the developer chooses the lower price, that lower price acts as a funding mechanism for the additional upgrades, thereby adhering to the projected total customer costs.

- Price adjustment for failure to achieve full capacity deliverability status: If a project is not deemed fully deliverable by CAISO at the time of COD, then the PPA price is reduced either through a negotiated amount, or the application of energy-only TOD factors in place of FCDS factors (for those contracts that include TOD factors) until such time as the project is deemed fully deliverable.

12. ECONOMIC CURTAILMENT FREQUENCY, COSTS, & FORECASTING

The sections below discuss observations, analysis, activities, and how the RPS Plan contents address these items.

A. Market & Operational Observations

The issue of curtailment is a result of the operational characteristics of the facilities within the renewable market.⁶⁰ These resources are as-available (that is, they generate only when the wind is blowing or the when sunlight strikes the panel, and they are negatively affected by atmospheric which interfere with this energy production, such as cloud cover) and intermittent, which results in generation profiles that do not necessarily follow load. SDG&E's net load profile now shows a pronounced shift toward an evening peak as increased solar generation has begun to offset load during SDG&E's historical peak load hours (mid-day). The shift of SDG&E's net peak into the evening hours becomes more pronounced as more renewable generation (particularly solar) is brought online, as it has over the past several years and will continue to do so as RPS penetration increases.⁶¹ This difference leads to integration issues, specifically overgeneration, which in turn leads to an increase in economic curtailment orders and negative pricing. The CAISO, the Participating Transmission Owner or distribution

⁶⁰ Both those procured pursuant to the RPS program, as well as customer-side facilities that are incremental to the RPS program under existing rules, specifically net energy metered installations.

⁶¹ See the CAISO "duck chart" at:

https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf.

operator, or the Buyer (SDG&E) can instruct a generator to curtail (take its power off the grid) in order to manage excess generation, minimize the effect of negative pricing, and maintain grid reliability. When negative pricing occurs, and generators are not economically curtailed, SDG&E must pay the CAISO to take this power if it is the Scheduling Coordinator for the project – it is important to address and work to mitigate this issue through the valuation and contracting processes. It should also be noted that each year brings with it more information and additional opportunity for refinement of the procurement process.

With respect to the valuation component, the Commission adopted an interim renewable integration cost adder in D.14-11-042,⁶² which has been incorporated into SDG&E’s LCBF calculation attached hereto as Appendix 8. The final adder will be incorporated into the LCBF calculation with the objective of enhancing its effectiveness in identifying projects with the lowest cost in consideration of the cost of integration, and ideally reducing the incidence of curtailment and/or negative pricing. SDG&E looks forward to participating in this process and in the revision of the LCBF calculation as a whole.

Regarding the contracting component, SDG&E continues to address this process as it gains more and more experience with the issue of curtailment. SDG&E has made contract modifications related to curtailment, which are discussed in more detail below under Subsections C and D. These revisions are an important step in addressing the issue of curtailment, the cost of which has increased significantly over the past several years.⁶³

B. Analysis, Initiatives, & Strategy

SDG&E forecasts market price profiles by calculating the net load for its service territory. Net load is defined as total customer load minus utility scale solar and wind generation per hour. By definition, when combined solar and wind generation exceeds load in a given hour,

⁶² D.14-11-042, p. 63.

⁶³ The Federal Energy Regulatory Commission (“FERC”) issued Order No. 764 (“FERC 764”) on June 22, 2012, in an effort to “adopt reforms that would remove barriers to the integration of variable energy resources and provide for related just and reasonable rates” (see CAISO Docket No. ER13-2452-000 Tariff Revisions to Comply with Order No. 764, p. 2). In response to FERC 764, the CAISO updated its open access transmission tariff, which was conditionally approved by the FERC on December 19, 2013, and implemented on May 1, 2014. As part of this tariff update, the floor on negative bids was decreased from -\$30 to -\$150, which may be modified in future years. As a result, the magnitude of potential negative prices has increased. SDG&E’s customers are exposed to negative CAISO prices plus the hourly price of the contract. The likelihood of incurring these charges is greatly increased with respect to renewable facilities which, as mentioned above, typically do not follow load.

this represents a negative pricing condition. SDG&E uses hourly solar and wind profiles that represent the average of the last 3 years of generation for each resource. These hourly resource generation profiles are forecasted to continue until each individual contract ends (which may extend beyond the next ten years). The forecast is modified for any expectation of contract renewal or added solar or wind generation in the future.

SDG&E has been tracking its curtailment actions and results since Q3 2014. Based on the data available to date, its curtailment activities have resulted in significant cost savings for SDG&E customers. SDG&E will continue to track this data and report on it as appropriate.

C. Activities

SDG&E has managed its exposure to negative market prices by having the flexibility to reduce generation when needed. SDG&E's flexibility is the result of negotiating the ability to economically curtail its contracts for renewable generation and using economic bids for its entire dispatchable generation portfolio.

SDG&E has managed its existing contracts, as well as strengthened the language regarding economic curtailment in its pro forma PPA to be used in future contracting. Since the CAISO implemented its tariff revisions on May 1, 2014, SDG&E has acted to minimize customer exposure by economically curtailing facilities with which it has this contractual right. These instances have generally followed the same sequence of events: (a) as facility Scheduling Coordinator, SDG&E economically bids energy from a facility into the market; (b) a negative pricing event occurs; (c) the CAISO instructs the facility that was economically bid by SDG&E to dispatch down (curtail); and (d) the facility responds to the extent possible. These actions protected customers by reducing the negative pricing payments made to the CAISO, but SDG&E's ability to curtail its current portfolio is limited by several factors: (a) a few of SDG&E's existing RPS contracts do not contain economic curtailment rights (however, as mentioned below, SDG&E has renegotiated many of its contracts to minimize adverse impacts on customers and continues to negotiate economic curtailment rights to the few remaining contracts); (b) some have operating restrictions which impact their ability to respond immediately to an economic curtailment order; and (c) (where the contract contains economic curtailment rights) SDG&E's ability to economically curtail is limited in cases to 5% of a facility's annual deliveries. SDG&E continues to work with the counterparties to reduce the number of cases where these limitations apply.

The 2014 RPS Plan Decision, D.14-11-042, approved SDG&E’s RPS PPA modifications which allow for uncapped economic curtailment rights, and require that the generator install the software necessary to receive, respond, and implement a dispatch notice/curtailment order,⁶⁴ and provided for the incorporation of several provisions allowing payment to the generator for the economically curtailed generation (*i.e.*, what could have been generated but for the economic curtailment). These changes will bolster grid management efforts and forecasting and provide customer benefits. First, requiring facilities to be equipped to respond to a curtailment order will assist the CAISO in complying with the North American Electric Reliability Corporation (“NERC”) reliability standards. Second, this increased ability to manage excess generation could help reduce the incidence of negative pricing events overall, which provides a general benefit to all customers in the State. Third, uncapped economic curtailment will allow SDG&E to better manage the incidence of negative pricing payments made to the CAISO, which is beneficial to SDG&E’s customers.

Negative prices effect not just renewable generating resources, but all generating resources. SDG&E mitigates the impact of negative prices to its ratepayers by economically bidding its dispatchable resources to the CAISO. To the extent SDG&E submits cost-based bids reflecting variable costs, it allows the CAISO to reduce generation from SDG&E’s resources when they are not needed or uneconomic. Thus, when feasible, SDG&E’s resources will have limited generation during incidences of overgeneration.

SDG&E had a direct impact of approximately \$20 Million from 2015 to 2018 from incidences of overgeneration and associated negative market prices. This was measured by the amount SDG&E paid to the CAISO for generating during times of negative prices, for all SDG&E’s resources. The majority of the costs came between 9:00 am and 3:00 PM during the spring months.

In order to manage the overall cost impact of negative prices going forward, SDG&E will continue renegotiation of dispatch down, scheduling and curtailment provisions of existing contracts. To the extent feasible, SDG&E plans to address all contracts that require updates due

⁶⁴ Required software: the automated dispatch system (“ADS”), and the application programming interface (“API”). See D.14-11-042, p. 38.

to CAISO's implementation of FERC Order 764. SDG&E's PPAs generally contain language⁶⁵ that contemplates the need for the buyer and seller to update the PPA when there are major market changes (such as CAISO's implementation of FERC Order 764).

D. 2019 RPS Plan

SDG&E's 2019 RPS Plan contains a comprehensive overview of SDG&E's procurement strategy, including ways to address the economic curtailment observations and activities discussed in this section. As explained above, on the evaluation side of procurement, work to revise the LCBF and incorporate a final integration adder is underway at the Commission, along with consideration of the CRVM. Until this adder is finalized, SDG&E will utilize the interim integration adder adopted in D.14-11-042. With respect to the contract side of procurement, SDG&E incorporated provisions into its PPA in the 2014 version of its RPS Plan related to curtailment and is working on the renegotiation of dispatch down and scheduling and curtailment provisions in its remaining existing contracts that have not already been amended for economic curtailment. SDG&E also made additional modifications to its RPS PPAs (attached hereto as Appendices 5 and 6) to ensure clarity with respect to FERC 764 changes in its 2016 RPS Plan, and as explained above under Section 4, has made contract adjustments intended to remove the incentive to overbuild (additional and unplanned generation can contribute to negative pricing incidences and lead to economic curtailment).

Initiatives undertaken outside of the RPS proceeding also have the potential to assist in the management of intermittent generation and the resulting curtailment – specifically, the addition of flexible capacity and energy storage resources to the grid. On May 21, 2015, the Commission approved SDG&E's 20-year term contract with the Carlsbad Energy Center in D.15-05-051, finding that “[t]he Carlsbad PPTA would provide additional benefits including reliability benefits by being able to meet SDG&E's LCR need by 2018, renewable resources integration benefits due to its flexible dispatchability, and locational benefits by virtue of being highly compatible with the existing transmission system and on previously disturbed land.”⁶⁶

⁶⁵ See RAM PPA Section 3.3.a: “In the event that the PIRP or the CAISO Tariff and/or any protocols relating thereto are changed, amended, modified replaced or terminated, Seller and Buyer agree to comply with such revisions and, to the extent practical, to implement such revisions in a manner that maintains the relative economic positions of the Parties as of the date of this Agreement.”

⁶⁶ D.15-05-051, p. 34.

The Carlsbad Energy Center achieved commercial operation on December 12, 2018, and the benefits will be experienced going forward. The Commission’s decisions on storage (D.13-01-040, D.14-10-045 and D.16-01-032) list a myriad of grid management issues that can be addressed via storage, for example, transmission and distribution reliability.⁶⁷ Storage also has the ability to respond to periods of overgeneration by adding storage system charging load during overgeneration periods, potentially mitigating the frequency of negative pricing. SDG&E is well on its way to meeting the energy storage procurement requirements included in D.13-01-040 including the procurement of at least 165 MW⁶⁸ of energy storage through a series of biannual solicitations. To date, SDG&E has completed the 2014, 2016 and 2018 energy storage procurement cycles and may hold another solicitation in 2020 if necessary. Additionally, D.14-03-004 required that SDG&E procure a minimum of 25 MW⁶⁹ of energy storage. SDG&E made a showing that this requirement has been fulfilled in A.17-04-017, filed on April 29, 2017.⁷⁰

SDG&E has 39.5 MW of battery energy storage on-line – Escondido (30 MW), El Cajon (7.5 MW), and Miguel (2 MW). These facilities participate in the CAISO market. SDG&E anticipates increasing battery storage project participation in the CAISO market in the next couple of years. As mentioned, energy storage resources could potentially mitigate the effects of surplus energy, as they have the capability to absorb excess energy during times of high renewable generation and discharge it at times when generation is more valuable. However, the total volume of energy storage available in the CAISO is not enough to have a significant impact on the utilization of renewable generation. As energy storage capacity increases, the ability of this resource to absorb excess energy may increase, which may decrease the need for economic curtailments.

13. COST QUANTIFICATION

The tables attached hereto in Appendix 2 provide an annual summary of both actual and forecasted RPS procurement costs and generation, by technology type, as of April 2019.

⁶⁷ D.13-10-040, p. 15.

⁶⁸ D.13-10-040, p. 15.

⁶⁹ D.14-03-004, p. 2.

⁷⁰ Approved by the Commission in D.18-05-024.

14. SAFETY CONSIDERATIONS

SDG&E is committed to providing safe, reliable and environmentally sound electric service for its customers. As discussed in Appendix 3, SDG&E's RPS Plan contemplates procurement of RPS-eligible generation through both PPAs and UOG. SDG&E's emphasis on safety is reflected in: (i) the terms and conditions contained in the pro forma PPAs used in its various procurement programs; and (ii) the safety procedures that all contractors working on UOG facilities are required by SDG&E to follow.

15. COORDINATION WITH IRP PROCEEDING

Coordination with the IRP proceeding is the subject of comments due July 19, 2019. SDG&E will update this section as necessary following resolution of the proposal provided in the ACR.

16. IMPERIAL VALLEY

SDG&E did not hold a 2018 RPS RFO, however, the RPS portfolio currently contains 12 contracts in the Imperial Valley/Imperial Irrigation District territory, that when completed will provide an estimated 3,100 GWh per year. As of April 2019, eleven of these projects have reached commercial operation, and the generation from these projects is anticipated to be approximately 3,000 GWh per year. Additionally, projects located within IV and either directly connected or dynamically transferred via pseudo-tie into SDG&E's service territory by the CAISO are eligible to participate in SDG&E's GTSR program.⁷¹ SDG&E proposed that projects from the IV be allowed to submit bids in AL 2717-E, which addresses initial procurement for the GT component via RAM.⁷² AL-2717-E was approved without modification and became effective on June 11, 2015. SDG&E currently has one GT project in commercial operation and one GT project in development in the Imperial Valley, with total estimated generation of 116 GWh per year. SDG&E made this same recommendation for the Enhanced Community Renewables (ECR or EcoShare) component, and the GTSR Phase IV decision allows ECR facilities that contract with SDG&E to site in the Imperial Valley.⁷³

⁷¹ D.15-01-051, p. 35.

⁷² SDG&E AL 2717-E, p. 5.

⁷³ D.16-05-006, p. 17.

17. RENEWABLE AUCTION MECHANISM

A. Procurement Need

As outlined above under Section 4, SDG&E anticipates meeting its CP3 need with projects it already has under contract. Consequently, SDG&E may use the RAM solicitation documentation on an as-needed basis to procure for its GTSR program,⁷⁴ as authorized by D.15-01-051⁷⁵ and D.16-05-006.⁷⁶

B. Documents & Updated Parameters

SDG&E's most recently approved RAM documents can be found in SDG&E AL 3206-E, effective April 28, 2018.⁷⁷

C. Approval Process

D.14-11-042 allows the IOUs to propose an approval method for contracts resulting from the RAM process. At this time, SDG&E proposes no change to the current Tier 2 AL process, but may propose alternate methods in subsequent versions of its RPS Plan.

18. GREEN TARIFF SHARED RENEWABLES PROGRAM

A. Program History and Status

SB 43, which became effective on January 1, 2014, requires participating utilities to file an application for a GTSR program allowing customers to buy some or all of their energy from local renewable projects via a GT or ECR program.⁷⁸ Prior to the effective date of this law, SDG&E filed an application requesting approval of its GTSR program in January of 2012 (A.12-01-008). SDG&E subsequently modified this application to comport with the GTSR program requirements of SB 43. The ultimate GTSR program was implemented through a series of Commission Decisions⁷⁹ as well as implementation ALs⁸⁰ submitted by the IOUs. SDG&E has

⁷⁴ SDG&E will use the capacity procured via the RAM mechanism to satisfy its LCR requirement if the resources contracted with are eligible.

⁷⁵ D.15-01-051, OP 5, p. 180.

⁷⁶ D.16-05-006, OP 1, p. 41.

⁷⁷ <https://www.sdge.com/rates-and-regulations>.

⁷⁸ These programs are branded as EcoChoice (GT) and EcoShare (ECR), and were formerly known as "connected.....to the sun".

⁷⁹ See D.15-01-051, D.16-05-006 and D.17-07-007.

⁸⁰ See SDG&E ALs 2708-E, 2743-E, 2744-E, and 2745-E.

launched GTSR solicitations for GT and ECR projects in July 2015, September 2016, March 2017, November 2017, June 2018, and November 2018.

B. Progress Towards Target and Reservations

SDG&E has a target of 59 MW total capacity between its GT and ECR programs, and within this target are two reservations of 10 MW each for residential customers and Environmental Justice (“EJ”) projects.⁸¹ The Commission approved SDG&E’s AL 3074-E, via disposition letter, effective June 5, 2017, approving a 20 MW project for SDG&E’s GT program leaving 39 MW of available capacity in SDG&E’s GTSR program. SDG&E filed AL 3214-E in May 2018, requesting approval of another 20 MW project for SDG&E’s GT program and a 2.4 MW project for SDG&E’s ECR program. This AL was approved by the Commission, effective as of June 17, 2018.

Subsequent procurement for the GT program through RAM, as described above under Section 18, will be based on assessment of “incremental customer enrollments and the amount of dedicated Green Tariff procurement... [already] under contract.”⁸² SDG&E will continue to hold two ECR solicitations a year through 2018.⁸³ SDG&E also submitted AL 3168-E to the Commission in December 2017, seeking to extend its GT and ECR programs through 2023 and to propose changes to the ECR program, such as solicitation timing and community interest requirements. A draft resolution has not yet been issued.

C. Reporting

D.15-01-051 allows an IOU to supply initial GT program demand from an interim pool of existing RPS resources under contract with that IOU.⁸⁴ The decision also requires reporting regarding this pool, specifically that the IOU’s RPS Plan include “all information related to the transfer of megawatts from the existing RPS program to GTSR. This information includes the impact on residual net short and the need to bridge for any shortfall, accounting of RECs, list of contracts with price, and other relevant details.”⁸⁵ SDG&E received Commission approval of its interim project pool Alternative B (list below),⁸⁶ and enrollment in SDG&E’s GT program began

⁸¹ D.15-01-051, p. 5.

⁸² AL 3218, p. 8.

⁸³ D.16-05-006, p. 10.

⁸⁴ D.15-01-051, p. 39.

⁸⁵ D.15-01-051, p. 41.

⁸⁶ SDG&E AL 2745-E, pp. 3-4.

in Q4 2016. SDG&E’s reporting on the interim project pool Alternative B as of April 2019 shows that 8 RECs in 2016, 4,437 RECs in 2017, and 86,446 RECs in 2018⁸⁷ were transferred between the interim project pool Alternative B and the GTSR program. The price of contracts within interim project pool Alternative B is \$92.56/MWh.⁸⁸ Per SB 43,⁸⁹ the generation used to serve the customers enrolled in SDG&E’s GT program as well as the bundled retail load served via SDG&E’s GT program have not been included in SDG&E’s RNS table, attached hereto as Appendix 1.

SDG&E GTSR Interim Pool Contracts				
Facility Name	Technology	MW	Location	GTSR Pool %
Desert Green Solar Farm	Solar PV	6.3	Borrego Springs, CA	8%
Sol Orchard 20 - Ramona 1	Solar PV	2.0	San Diego County, CA	2%
Sol Orchard 22 - Valley Center 1	Solar PV	2.5	San Diego County, CA	3%
Sol Orchard 21 - Ramona 2	Solar PV	5.0	San Diego County, CA	5%
Sol Orchard 23 - Valley Center 2	Solar PV	5.0	San Diego County, CA	5%
Cascade Solar	Solar PV	18.4	Sun Fair, CA	20%
Calipatria, LLC	Solar PV	20.0	Calipatria, CA	18%
TallBear Seville	Solar PV	20.0	El Centro, CA	22%
Maricopa West	Solar PV	20.0	Maricopa, CA	16%

19. OTHER RPS PLANNING CONSIDERATIONS AND ISSUES

SDG&E has no additional considerations and issues to discuss at this time, but reserves the right to add to this section in subsequent versions of its RPS Plan.

⁸⁷ A total of 102,880 RECs were retired for the GTSR Program (EcoChoice) for 2018. 86,446 RECs were retired from the interim pool and 16,434 RECs were retired from the GTSR project.

⁸⁸ Energy Resource Recovery Account (“ERRA”) Prepared Direct Testimony of Cynthia Fang on Behalf of SDG&E, April 14, 2017, p. CF 16.

⁸⁹ Section 2833(t).



APPENDIX 1

2019 QUANTITATIVE INFORMATION

SDG&E Renewable Net Short for RPS Procurement – April 2019:

The tables below provide the data behind SDG&E’s RPS Risk Adjusted Net Short Calculation as of April 2019. They include the outputs required by the *Administrative Law Judge’s Ruling on Renewable Net Short*, dated May 21, 2014, and have been updated to reflect the banking rules adopted under D.17-06-026 as SDG&E has elected to use these rules beginning in CP3. A discussion of this analysis is provided in Section 4.

Variable	Calculation	Item	Prior Deficit	2011 - 2013	2014 - 2016
		Forecast Year		CP1	CP2
Annual RPS Requirement					
A		Bundled Retail Sales Forecast (LTPP) (GWh)		49,040	48,388
B		RPS Procurement Quantity Requirement (%)		20.2%	23.3%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78	9,886	11,277
D		Voluntary Margin of Over-procurement		0	0
E	C + D	Net RPS Procurement Need (GWh)		9,886	11,277
RPS-Eligible Procurement					
Fa		Risk-Adjusted RECs from Online Generation (GWh)		11,287	19,300
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾		0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)		0	0
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾		0%	0%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)		0	0
Fd		RECs Pending CPUC Approval (GWh)		0	0
Fe		Executed REC Sales (GWh)		697	1,540
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)		10,590	17,760
F0		Category 0 RECs (GWh)		6,568	7,837
F1		Category 1 RECs (GWh)		3,780	9,922
F2		Category 2 RECs (GWh)		0	0
F3		Category 3 RECs (GWh)		242	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)		7,452	17,760
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)		70%	100%
Gross RPS Position (Physical Net Short)					
Ga	F-E	Annual Gross RPS Position (GWh)		703	6,483
Gb	F/A	Annual Gross RPS Position (%)		21.6%	36.7%
Application of Bank					
Ha	L _{a,t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)		(2)	7,031
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)		569	6,478
Hc		Non-bankable RECs above the PQR (GWh)		136	5
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)		567	13,509
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)		(0)	0
Ib		Planned Sales of RECs above the PQR (GWh)		0	0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)		567	13,509
J0		Category 0 RECs ⁽⁴⁾ (GWh)		360	7,317
J1		Category 1 RECs ⁽⁴⁾ (GWh)		207	6,191
J2		Category 2 RECs ⁽⁴⁾ (GWh)		0	0
Expiring Contracts					
K		RECs from Expiring RPS Contracts (GWh)		2,043	410
Net RPS Position (Optimized Net Short)					
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾		(2)	(0)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)		20.2%	23.3%

Note: Values are shown in GWhs

- (1) Delivery failure rate is the probability weighted deviation below expected forecast generation, and is based upon but not limited to probability assessments of project failure, project capacity reduction, operational failure after project success, project curtailment due to transmission constraints, etc
- (2) Pre-Approved Generic Generation includes mandated programs
- (3) Excludes executed REC sales
- (4) The "Net Balance of RECs above PQR" has been allocated between PCC0 and PCC1 categories based on the historical procurement of the total RECs by each category in "F0" and "F1 " For CP1, the RECs over PQR applied for compliance versus the RECs applied that meet the PQR are not broken out as all RECs to be applied for compliance are submitted together and RECs above and for PQR are not differentiated from one another
- (5) The formula was changed so that it includes the effect of the non-bankable RECs

Variable	Calculation	Item	Prior Deficit	2017 - 2020	2021 - 2024	2025 - 2027
		Forecast Year		CP3	CP4	CP5
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)				42,221
B		RPS Procurement Quantity Requirement (%)		29.9%	39.9%	49.3%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78			20,823
D		Voluntary Margin of Over-procurement				0
E	C + D	Net RPS Procurement Need (GWh)				20,823
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)				17,092
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾				0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)				939
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾				31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)		0	304	455
Fd		RECs Pending CPUC Approval (GWh)		0	0	0
Fe		Executed REC Sales (GWh)		1,706	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)		25,418	27,068	18,486
F0		Category 0 RECs (GWh)				3,872
F1		Category 1 RECs (GWh)				14,613
F2		Category 2 RECs (GWh)				0
F3		Category 3 RECs (GWh)				0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)				18,486
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)				100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)				(2,337)
Gb	F/A	Annual Gross RPS Position (%)				43.8%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)				55,921
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)				0
Hc		Non-bankable RECs above the PQR (GWh)				0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)				55,921
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)				2,337
Ib		Planned Sales of RECs above the PQR (GWh)				0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)				53,584
J0		Category 0 RECs ⁽⁴⁾ (GWh)				19,180
J1		Category 1 RECs ⁽⁴⁾ (GWh)				34,404
J2		Category 2 RECs ⁽⁴⁾ (GWh)				0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)		292	532	154
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾				0
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)				49.3%

Variable	Calculation	Item	Prior Deficit	2028 - 2030	2031 - 2033	2034 - 2036
		Forecast Year		CP6	CP7	CP8
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)		41,364	41,296	41,301
B		RPS Procurement Quantity Requirement (%)		57.3%	60.0%	60.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78	23,715	24,777	24,781
D		Voluntary Margin of Over-procurement		0	0	0
E	C + D	Net RPS Procurement Need (GWh)		23,715	24,777	24,781
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)		16,911	15,508	8,172
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾		0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)		937	935	933
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾		31%	31%	31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)		455	455	455
Fd		RECs Pending CPUC Approval (GWh)		0	0	0
Fe		Executed REC Sales (GWh)		0	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)		18,303	16,899	9,561
F0		Category 0 RECs (GWh)		3,724	3,125	220
F1		Category 1 RECs (GWh)		14,579	13,774	9,341
F2		Category 2 RECs (GWh)		0	0	0
F3		Category 3 RECs (GWh)		0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)		18,303	16,899	9,561
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)		100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)		(5,412)	(7,879)	(15,220)
Gb	F/A	Annual Gross RPS Position (%)		44.2%	40.9%	23.1%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)		45,754	27,355	(3,815)
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)		0	0	0
Hc		Non-bankable RECs above the PQR (GWh)		0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)		45,754	27,355	(3,815)
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)		5,412	7,879	(3,815)
Ib		Planned Sales of RECs above the PQR (GWh)		0	0	0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)		40,342	19,476	0
J0		Category 0 RECs ⁽⁴⁾ (GWh)		13,425	6,136	0
J1		Category 1 RECs ⁽⁴⁾ (GWh)		26,917	13,340	0
J2		Category 2 RECs ⁽⁴⁾ (GWh)		0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)		48	1,602	553
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾		0	0	(19,034)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)		57.3%	60.0%	13.9%

Variable	Calculation	Item	Prior Deficit	2037 - 2039
		Forecast Year		CP9
Annual RPS Requirement				
A		Bundled Retail Sales Forecast (LTPP) (GWh)		41,360
B		RPS Procurement Quantity Requirement (%)		60.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78	24,816
D		Voluntary Margin of Over-procurement		0
E	C + D	Net RPS Procurement Need (GWh)		24,816
RPS-Eligible Procurement				
Fa		Risk-Adjusted RECs from Online Generation (GWh)		5,077
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾		0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)		931
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾		31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)		455
Fd		RECs Pending CPUC Approval (GWh)		0
Fe		Executed REC Sales (GWh)		0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)		6,464
F0		Category 0 RECs (GWh)		9
F1		Category 1 RECs (GWh)		6,455
F2		Category 2 RECs (GWh)		0
F3		Category 3 RECs (GWh)		0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)		6,464
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)		100%
Gross RPS Position (Physical Net Short)				
Ga	F-E	Annual Gross RPS Position (GWh)		(18,352)
Gb	F/A	Annual Gross RPS Position (%)		15.6%
Application of Bank				
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)		(51,818)
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)		0
Hc		Non-bankable RECs above the PQR (GWh)		0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)		(51,818)
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)		(51,818)
Ib		Planned Sales of RECs above the PQR (GWh)		0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)		0
J0		Category 0 RECs ⁽⁴⁾ (GWh)		0
J1		Category 1 RECs ⁽⁴⁾ (GWh)		0
J2		Category 2 RECs ⁽⁴⁾ (GWh)		0
Expiring Contracts				
K		RECs from Expiring RPS Contracts (GWh)		1,688
Net RPS Position (Optimized Net Short)				
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾		(70,170)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)		-109.7%

Variable	Calculation	Item	Prior Deficit	2011 Actuals	2012 Actuals	2013 Actuals	2014 Actuals
		Forecast Year					
Annual RPS Requirement							
A		Bundled Retail Sales Forecast (LTPP) (GWh)		16,249	16,627	16,164	16,468
B		RPS Procurement Quantity Requirement (%)		20.0%	20.0%	20.0%	21.7%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78	3,328	3,325	3,233	3,574
D		Voluntary Margin of Over-procurement					
E	C + D	Net RPS Procurement Need (GWh)		3,328	3,325	3,233	3,574
RPS-Eligible Procurement							
Fa		Risk-Adjusted RECs from Online Generation (GWh)		3,380	3,376	4,531	5,936
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾		0%	0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)		0	0	0	0
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾		0%	0%	0%	0%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)		0	0	0	0
Fd		RECs Pending CPUC Approval (GWh)		0	0	0	0
Fe		Executed REC Sales (GWh)		0	0	697	666
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)		3,380	3,376	3,834	5,270
F0		Category 0 RECs (GWh)		2,784	1,969	1,815	2,805
F1		Category 1 RECs (GWh)		596	1,166	2,019	2,466
F2		Category 2 RECs (GWh)		0	0	0	0
F3		Category 3 RECs (GWh)		0	242	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)		2,816	2,048	2,588	5,270
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)		83%	61%	68%	100%
Gross RPS Position (Physical Net Short)							
Ga	F-E	Annual Gross RPS Position (GWh)		52	50	601	1,697
Gb	F/A	Annual Gross RPS Position (%)		21%	20%	24%	32%
Application of Bank							
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)		0	(0)	(2)	567
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)		0	0	569	1,695
Hc		Non-bankable RECs above the PQR (GWh)		52	52	32	2
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)		0	(0)	567	2,262
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)		0	(0)	0	0
Ib		Planned Sales of RECs above the PQR (GWh)					
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)		0	0	567	2,262
J0		Category 0 RECs ⁽⁴⁾ (GWh)		0	0	360	1,357
J1		Category 1 RECs ⁽⁴⁾ (GWh)		0	0	207	905
J2		Category 2 RECs ⁽⁴⁾ (GWh)		0	0	0	0
Expiring Contracts							
K		RECs from Expiring RPS Contracts (GWh)		966	721	356	115
Net RPS Position (Optimized Net Short)							
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾		(0)	(2)	0	(0)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)		20%	20%	20%	22%

Variable	Calculation	Item	2015 Actuals	2016 Actuals	2017 Actuals	2018 Forecast
		Forecast Year				1
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)	16,267	15,653	15,619	15,127
B		RPS Procurement Quantity Requirement (%)	23.3%	25.0%	27.0%	29.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	3,790	3,913	4,217	4,387
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)	3,790	3,913	4,217	4,387
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)	6,445	6,918	6,929	6,607
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾	0%	0%	0%	-1%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)	0	0	0	0
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	0%	0%	0%	0%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	0	0	0	0
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	714	160	0	130
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	5,732	6,758	6,929	6,477
F0		Category 0 RECs (GWh)	2,567	2,465	2,368	2,264
F1		Category 1 RECs (GWh)	3,164	4,292	4,561	4,213
F2		Category 2 RECs (GWh)	0	0	0	0
F3		Category 3 RECs (GWh)	0	0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)	5,732	6,758	6,770	6,295
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	98%	97%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	1,942	2,844	2,712	2,090
Gb	F/A	Annual Gross RPS Position (%)	35%	43%	44%	43%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)	2,262	4,202	7,045	9,757
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	1,940	2,843	2,712	2,090
Hc		Non-bankable RECs above the PQR (GWh)	2	1	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	4,202	7,045	9,757	11,848
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)	0	0	0	0
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	4,202	7,045	9,757	11,848
J0		Category 0 RECs ⁽⁴⁾ (GWh)	2,350	3,610	4,671	5,433
J1		Category 1 RECs ⁽⁴⁾ (GWh)	1,852	3,435	5,086	6,415
J2		Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	295	0	22	87
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	(0)	0	0
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	23%	25%	27%	29%

Variable	Calculation	Item	2019 Forecast	2020 Forecast	2021 Forecast	2022 Forecast
		Forecast Year	2	3	4	5
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)				
B		RPS Procurement Quantity Requirement (%)	31.0%	33.0%	35.8%	38.5%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)				
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)				
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)				
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾				
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)				
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾				
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	0	0	0	0
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	885	691	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	5,970	6,042	6,938	6,772
F0		Category 0 RECs (GWh)				
F1		Category 1 RECs (GWh)				
F2		Category 2 RECs (GWh)				
F3		Category 3 RECs (GWh)				
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)				
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)				
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)				
Gb	F/A	Annual Gross RPS Position (%)				
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)				
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)				
Hc		Non-bankable RECs above the PQR (GWh)				
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)				
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)				
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)				
J0		Category 0 RECs ⁽⁴⁾ (GWh)				
J1		Category 1 RECs ⁽⁴⁾ (GWh)				
J2		Category 2 RECs ⁽⁴⁾ (GWh)				
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	184	0	0	62
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾				
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)				

Variable	Calculation	Item	2023 Forecast	2024 Forecast	2025 Forecast	2026 Forecast
		Forecast Year	6	7	8	9
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)	14,122	14,178	14,173	14,094
B		RPS Procurement Quantity Requirement (%)	41.3%	44.0%	46.7%	49.3%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	5,825	6,238	6,614	6,953
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)	5,825	6,238	6,614	6,953
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)	6,380	6,047	5,813	5,641
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾	0%	0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)	314	313	313	313
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	31%	31%	31%	31%
Fc		Pre-Approved Generic RECs ^{(2)(GWh)}	152	152	152	152
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	0	0	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	6,845	6,513	6,278	6,106
F0		Category 0 RECs (GWh)	1,901	1,594	1,390	1,241
F1		Category 1 RECs (GWh)	4,944	4,919	4,888	4,865
F2		Category 2 RECs (GWh)	0	0	0	0
F3		Category 3 RECs (GWh)	0	0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)	6,845	6,513	6,278	6,106
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	1,020	274	(336)	(847)
Gb	F/A	Annual Gross RPS Position (%)	48%	46%	44%	43%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)	17,853	18,873	19,147	18,811
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	1,020	274	0	0
Hc		Non-bankable RECs above the PQR (GWh)	0	0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	18,873	19,147	19,147	18,811
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (	0	0	336	847
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	18,873	19,147	18,811	17,964
J0		Category 0 RECs ⁽⁴⁾ (GWh)	7,382	7,263	6,921	6,415
J1		Category 1 RECs ⁽⁴⁾ (GWh)	11,490	11,884	11,890	11,549
J2		Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	261	208	150	4
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh)⁽⁵⁾	0	0	0	0
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	41%	44%	47%	49%

Variable	Calculation	Item	2027 Forecast	2028 Forecast	2029 Forecast	2030 Forecast
		Forecast Year	10	11	12	13
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)	13,953	13,788	13,788	13,788
B		RPS Procurement Quantity Requirement (%)	52.0%	54.7%	57.3%	60.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	7,256	7,537	7,905	8,273
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)	7,256	7,537	7,905	8,273
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)	5,637	5,637	5,638	5,636
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾	0%	0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)	313	313	312	312
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	31%	31%	31%	31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	152	152	152	152
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	0	0	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	6,102	6,102	6,102	6,100
F0		Category 0 RECs (GWh)	1,241	1,241	1,241	1,241
F1		Category 1 RECs (GWh)	4,860	4,860	4,860	4,859
F2		Category 2 RECs (GWh)	0	0	0	0
F3		Category 3 RECs (GWh)	0	0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)	6,102	6,102	6,102	6,100
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	(1,154)	(1,436)	(1,803)	(2,173)
Gb	F/A	Annual Gross RPS Position (%)	44%	44%	44%	44%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)	17,964	16,810	15,374	13,571
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	0	0	0	0
Hc		Non-bankable RECs above the PQR (GWh)	0	0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	17,964	16,810	15,374	13,571
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (	1,154	1,436	1,803	2,173
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	16,810	15,374	13,571	11,397
J0		Category 0 RECs ⁽⁴⁾ (GWh)	5,844	5,216	4,503	3,706
J1		Category 1 RECs ⁽⁴⁾ (GWh)	10,966	10,158	9,067	7,691
J2		Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	0	0	0	48
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	0	0	0
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	52%	55%	57%	60%

Variable	Calculation	Item	2031 Forecast	2032 Forecast	2033 Forecast	2034 Forecast
		Forecast Year	14	15	16	17
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)	13,765	13,765	13,766	13,766
B		RPS Procurement Quantity Requirement (%)	60.0%	60.0%	60.0%	60.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	8,259	8,259	8,260	8,260
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)	8,259	8,259	8,260	8,260
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)	5,560	5,429	4,519	3,192
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾	0%	0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)	312	312	312	311
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	31%	31%	31%	31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	152	152	152	152
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	0	0	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	6,024	5,893	4,982	3,655
F0		Category 0 RECs (GWh)	1,230	1,104	791	215
F1		Category 1 RECs (GWh)	4,793	4,789	4,191	3,441
F2		Category 2 RECs (GWh)	0	0	0	0
F3		Category 3 RECs (GWh)	0	0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)	6,024	5,893	4,982	3,655
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	(2,235)	(2,366)	(3,277)	(4,604)
Gb	F/A	Annual Gross RPS Position (%)	44%	43%	36%	27%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)	11,397	9,162	6,796	3,519
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	0	0	0	0
Hc		Non-bankable RECs above the PQR (GWh)	0	0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	11,397	9,162	6,796	3,519
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)	2,235	2,366	3,277	3,519
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	9,162	6,796	3,519	0
J0		Category 0 RECs ⁽⁴⁾ (GWh)	2,925	2,129	1,082	0
J1		Category 1 RECs ⁽⁴⁾ (GWh)	6,237	4,667	2,437	0
J2		Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	10	468	1,124	293
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh)⁽⁵⁾	0	0	0	(1,086)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	60%	60%	60%	52%

Variable	Calculation	Item	2035 Forecast	2036 Forecast	2037 Forecast	2038 Forecast
		Forecast Year	18	19	20	21
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)	13,767	13,768	13,768	13,770
B		RPS Procurement Quantity Requirement (%)	60.0%	60.0%	60.0%	60.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	8,260	8,261	8,261	8,262
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)	8,260	8,261	8,261	8,262
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)	2,636	2,344	2,333	2,015
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾	0%	0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)	311	311	311	310
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	31%	31%	31%	31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	152	152	152	152
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	0	0	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	3,099	2,807	2,796	2,477
F0		Category 0 RECs (GWh)	3	3	3	3
F1		Category 1 RECs (GWh)	3,096	2,804	2,793	2,475
F2		Category 2 RECs (GWh)	0	0	0	0
F3		Category 3 RECs (GWh)	0	0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)	3,099	2,807	2,796	2,477
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	(5,161)	(5,454)	(5,465)	(5,785)
Gb	F/A	Annual Gross RPS Position (%)	23%	20%	20.3%	18.0%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)	(1,086)	(6,247)	(11,701)	(17,166)
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	0	0	0	0
Hc		Non-bankable RECs above the PQR (GWh)	0	0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	(1,086)	(6,247)	(11,701)	(17,166)
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)	(1,086)	(6,247)	(11,701)	(17,166)
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	0	0	0	0
J0		Category 0 RECs ⁽⁴⁾ (GWh)	0	0	0	0
J1		Category 1 RECs ⁽⁴⁾ (GWh)	0	0	0	0
J2		Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	249	10	5	1,295
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	(6,247)	(11,701)	(17,166)	(22,951)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	15%	-25%	-64.7%	-106.7%

Probability-Weighted Deliveries, Contracts Presently Developing - April 2019:

	Name	CPJ Probability	Technology	Location	Status of New Trans. Facilities ¹	Date Signed	Term (yrs)	Start	Stop	Capacity (MW)	2019
1	Lakeside Biogas LLC		Biogas	Lakeside	None	2/15/19	20	2/15/21	2/14/41	3	
2	Energia Sierra Juarez US 2 LLC		Wind	Mexico	Completed	11/16/17	20	4/1/21	3/31/41	105	
3	Wister Solar		Solar PV	Imperial Valley	None	4/19/18	20	7/28/21	7/27/41	20	
4	Cameron (SB43)		Solar PV	Campo	IID indicates the current Project Phase for this project is <i>Development</i> ²	5/17/18	20	3/1/20	2/29/40	2	

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
1										
2										
3										
4										

	2033	2033	2033	2033	2033	2033	2033	2037	2038
1									
3									
3									
4									

¹ This column was added pursuant to the Assigned Commissioner's April 19, 2019 Ruling within R.18-07-003. See Section 5.2, subpart 10.

² IID's First Quarter 2019 Energy Department Project and Programs Status Report dated May 7, 2019 (https://imperialid.granicus.com/MetaViewer.php?view_id=9&clip_id=563&meta_id=42953)

Probability-Weighted Deliveries, Contracts Presently Delivering - April 2019:

Index	Name	CP3 Probability	Technology	Location	Date Signed	Term (yrs)	Start	Stop	Capacity (MW)
1	San Diego Gas & Electric (Ramona Solar Energy)	100%	UOG Solar	SD County	6/20/12	25	10/1/17	9/30/42	4
2	97W18ME LLC (Midway Solar Farm III)	100%	Solar PV	Calipatria	12/11/15	20	9/6/18	9/5/38	20
3	Otay Landfill Gas LLC (Otay Landfill I)	100%	Biogas	Chula Vista	5/1/09	10	5/1/09	4/30/19	2
4	Otay Landfill Gas LLC (Otay Landfill II)	100%	Biogas	Chula Vista	2/22/11	20	7/1/11	6/30/31	2
5	Sycamore Energy 1 LLC	100%	Biogas	Santee	11/20/09	20	5/16/11	5/15/31	2
6	MM Prima Deshecha Energy LLC	100%	Biogas	San Juan Capistrano	9/6/05	15	10/1/07	9/30/22	6
7	San Marcos Energy LLC	100%	Biogas	San Marcos	11/20/09	20	5/18/11	5/17/31	2
8	Otay Landfill Gas LLC (Otay Landfill V)	100%	Biogas	San Diego	12/27/11	20	6/21/13	6/20/33	2
9	Otay Landfill Gas LLC (Otay Landfill VI)	100%	Biogas	San Diego	12/27/11	20	6/21/13	6/20/33	2
10	MM San Diego LLC (Miramar RAM)	100%	Biogas	San Diego	11/9/12	10	5/20/13	5/19/23	5
11	Sycamore Energy 2 LLC	100%	Biogas	Santee	3/7/14	10	3/30/14	3/29/24	2
12	HL Power Company LP	100%	Biomass	Wendel	11/14/16	5	2/1/17	1/31/22	24
13	Olivenhain Municipal Water District	100%	Small Hydro	Encinitas	7/23/13	20	10/1/13	9/30/33	0
14	City of Oceanside (San Francisco Peak Hydro)	100%	Small Hydro	Oceanside	8/29/85	Evergreen	12/15/85	Evergreen	0
15	City of Escondido (Bear Valley Hydro)	100%	Small Hydro	Escondido	5/18/90	Evergreen	4/13/94	Evergreen	2
16	Centinela Solar Energy LLC	100%	Solar PV	Calexico	5/10/10	20	8/1/14	7/31/34	125
17	Centinela Solar Energy 2 LLC	100%	Solar PV	Calexico	7/29/10	20	8/15/14	8/14/34	45
18	CSolar IV South LLC	100%	Solar PV	Calexico	11/10/10	25	11/1/13	10/31/38	130
19	CSolar IV West LLC	100%	Solar PV	Imperial Valley	3/8/11	25	7/4/16	7/3/41	150
20	Solar Borrego I LLC	100%	Solar PV	Borrego Springs	1/25/11	25	2/12/13	2/11/38	26
21	Desert Green Solar Farm LLC	100%	Solar PV	Borrego Springs	3/31/11	25	11/26/14	11/25/39	6
22	Campo Verde Solar LLC	100%	Solar PV	Imperial Valley	11/10/06	20	10/25/13	10/24/33	139
23	Sol Orchard 20 LLC (Ramona 1)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	2
24	Sol Orchard 21 LLC (Ramona 2)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	5
25	Sol Orchard 22 LLC (Valley Center 1)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	3
26	Sol Orchard 23 LLC (Valley Center 2)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	5
27	Arlington Valley Solar Energy II LLC	100%	Solar PV	Hassayampa	6/3/11	25	11/5/13	11/4/38	127
28	Catalina Solar LLC	100%	Solar PV	Kern County	6/3/11	25	11/27/13	11/26/38	109
29	SG2 Imperial Valley LLC	100%	Solar PV	Imperial Valley	6/24/11	25	11/25/14	11/24/39	150
30	Imperial Valley Solar 1 LLC (Mt. Signal, Silver Ridge)	100%	Solar PV	Imperial Valley	2/10/12	25	10/10/13	10/9/38	200

Index	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
1	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871
2	46,660	46,162	45,930	45,698	45,466	45,234	45,002	44,770	44,538	44,306
3	8,341	0	0	0	0	0	0	0	0	0
4	7,725	7,725	7,725	7,725	7,725	7,725	7,725	7,725	7,725	7,725
5	7,522	7,522	7,522	7,522	7,522	7,522	7,522	7,522	7,522	7,522
6	63,974	63,974	63,974	47,849	0	0	0	0	0	0
7	10,259	10,259	10,259	10,259	10,259	10,259	10,259	10,259	10,259	10,259
8	9,486	9,486	9,486	9,486	9,486	9,486	9,486	9,486	9,486	9,486
9	8,981	8,981	8,981	8,981	8,981	8,981	8,981	8,981	8,981	8,981
10	23,469	23,469	23,469	23,469	8,938	0	0	0	0	0
11	15,077	15,077	15,077	15,077	15,077	3,666	0	0	0	0
12	163,149	163,149	163,149	13,856	0	0	0	0	0	0
13	34,219	34,219	34,219	34,219	34,219	34,219	34,219	34,219	34,219	34,219
14	361	361	361	361	361	361	361	361	361	361
15	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479
16	364,694	364,694	364,694	364,694	364,694	364,694	364,694	364,694	364,694	364,694
17	131,836	131,836	131,836	131,836	131,836	131,836	131,836	131,836	131,836	131,836
18	302,042	302,042	302,042	302,042	302,042	302,042	302,042	302,042	302,042	302,042
19	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496
20	67,930	67,930	67,930	67,930	67,930	67,930	67,930	67,930	67,930	67,930
21	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034
22	348,869	348,869	348,869	348,869	348,869	348,869	348,869	348,869	348,869	348,869
23	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364
24	10,016	10,016	10,016	10,016	10,016	10,016	10,016	10,016	10,016	10,016
25	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,373
26	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,265
27	359,908	359,908	359,908	359,908	359,908	359,908	359,908	359,908	359,908	359,908
28	265,654	265,654	265,654	265,654	265,654	265,654	265,654	265,654	265,654	265,654
29	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406
30	531,257	531,257	531,257	531,257	531,257	531,257	531,257	531,257	531,257	531,257

Index	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
1	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871
2	44,074	43,842	54,512	54,222	53,932	53,642	53,352	53,062	52,772	51,067
3	0	0	0	0	0	0	0	0	0	0
4	7,725	7,725	3,831	0	0	0	0	0	0	0
5	7,522	7,522	2,782	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	10,259	10,259	3,851	0	0	0	0	0	0	0
8	9,486	9,486	9,486	9,486	4,444	0	0	0	0	0
9	8,981	8,981	8,981	8,981	4,207	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0
13	34,219	34,219	34,219	34,219	25,594	0	0	0	0	0
14	361	361	361	361	361	361	361	361	361	361
15	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479
16	364,694	364,694	364,694	364,694	364,694	211,822	0	0	0	0
17	131,836	131,836	131,836	131,836	131,836	81,630	0	0	0	0
18	302,042	302,042	302,042	302,042	302,042	302,042	302,042	302,042	302,042	251,564
19	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496
20	67,930	67,930	67,930	67,930	67,930	67,930	67,930	67,930	67,930	7,817
21	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034
22	348,869	348,869	348,869	348,869	283,874	0	0	0	0	0
23	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,352
24	10,016	10,016	10,016	10,016	10,016	10,016	10,016	10,016	10,016	9,989
25	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,358
26	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,237
27	359,908	359,908	359,908	359,908	359,908	359,908	359,908	359,908	359,908	303,703
28	265,654	265,654	265,654	265,654	265,654	265,654	265,654	265,654	265,654	240,180
29	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406
30	531,257	531,257	531,257	531,257	531,257	531,257	531,257	531,257	531,257	410,451

Index	Row	Name	CP3 Probability	Technology	Location	Date Signed	Term (yrs)	Start	Stop	Capacity (MW)
31	83	Cascade Solar LLC	100%	Solar PV	Sun Fair	11/7/12	20	12/24/13	12/23/33	18
32	84	70SM1 8me LLC (Calipatria)	100%	Solar PV	Calipatria	12/13/12	20	2/11/16	2/10/36	20
33	85	Talbear Seville LLC	100%	Solar PV	El Centro	12/13/12	20	12/30/15	12/29/35	20
34	86	Maricopa West Solar PV LLC	100%	Solar PV	Maricopa	4/16/13	15	12/18/15	12/17/30	20
35	87	NLP Granger A82 LLC	100%	Solar PV	Valley Center	4/3/14	20	9/17/16	9/16/36	3
36	88	NLP Valley Center Solar LLC	100%	Solar PV	Valley Center	7/20/15	20	12/7/17	12/6/37	2
37	89	San Diego Gas & Electric (Del Sur Elementary School)	100%	UOG Solar	Various in SD County	4/13/07	15	9/5/08	9/4/23	0
38	90	San Diego Gas & Electric (Fairfield Grossmont Trolley)	100%	UOG Solar	Various in SD County	1/7/07	10	4/27/10	4/26/20	0
39	91	San Diego Gas & Electric (Hunter Industries)	100%	UOG Solar	Various in SD County	5/22/07	20	12/4/07	12/3/27	0
40	92	San Diego Gas & Electric (Innovative Cold Storage Enterprises)	100%	UOG Solar	Various in SD County	5/4/07	10	4/20/09	4/19/19	1
41	93	San Diego Gas & Electric (Ladera Ranch I)	100%	UOG Solar	Various in SD County	10/31/06	25	7/24/07	7/23/32	0
42	94	San Diego Gas & Electric (Pacific Station)	100%	UOG Solar	Various in SD County	1/21/11	10	5/16/12	5/15/22	0
43	95	San Diego Gas & Electric (Sanford-Burnham Medical Research Institute D)	100%	UOG Solar	Various in SD County	4/21/10	10	1/28/11	1/27/21	0
44	96	San Diego Gas & Electric (SDCCD - Skills Center)	100%	UOG Solar	Various in SD County	2/6/08	10	7/8/09	7/7/19	0
45	97	San Diego Gas & Electric (Towers at Bressi Ranch)	100%	UOG Solar	Various in SD County	7/10/07	25	2/28/08	2/27/33	0
46	98	San Diego Gas & Electric (Wilco Investments)	100%	UOG Solar	Various in SD County	6/12/08	10	5/27/10	5/26/20	0
47	99	San Diego Gas & Electric (X-nth)	100%	UOG Solar	Various in SD County	2/4/04	10	7/1/09	6/30/19	0
48	100	EDF Renewable Energy Inc (Oasis Wind)	100%	Wind	Mojave	10/30/02	15	12/25/04	12/24/19	60
49	104	Kumeyaay Wind LLC	100%	Wind	Boulevard	5/31/04	20	3/21/06	12/31/25	50
50	105	Naturener Glacier Wind Energy 1 LLC	100%	Wind	Ethridge	5/16/08	15	12/29/08	12/28/23	107
51	106	Naturener Glacier Wind Energy 2 LLC	100%	Wind	Ethridge	5/23/08	15	10/16/09	10/15/24	104
52	107	Naturener Rim Rock Wind Energy LLC	100%	Wind	Kevin	5/5/09	20	10/15/13	10/14/33	189
53	108	Pacific Wind Lessee LLC	100%	Wind	Tehachapi	10/12/05	20	8/16/12	8/15/32	140
54	109	Coram Energy LLC	100%	Wind	Tehachapi	7/12/10	15	3/1/11	2/28/26	8
55	110	Ocotillo Express LLC	100%	Wind	Imperial Valley	2/1/11	21	12/27/12	7/29/33	265
56	111	Energia Sierra Juarez US LLC	100%	Wind	Mexico	4/6/11	20	6/5/15	6/4/35	155
57	113	Manzana Wind LLC	100%	Wind	Tehachapi	2/14/12	20	12/31/12	12/30/32	100
58	116	Oak Creek Wind Power LLC	100%	Wind	Mojave	4/16/13	10	1/26/14	1/25/24	4
59	117	San Gorgonio Westwinds II LLC	100%	Wind	Palm Springs	4/16/13	10	1/20/15	1/19/25	11

Index	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
31	54,611	54,611	54,611	54,611	54,611	54,611	54,611	54,611	54,611	54,611	54,611
32	46,132	46,132	46,132	46,132	46,132	46,132	46,132	46,132	46,132	46,132	46,132
33	55,174	55,174	55,174	55,174	55,174	55,174	55,174	55,174	55,174	55,174	55,174
34	49,763	49,763	49,763	49,763	49,763	49,763	49,763	49,763	49,763	49,763	49,763
35	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455
36	5,772	5,772	5,772	5,772	5,772	5,772	5,772	5,772	5,772	5,772	5,772
37	68	68	68	68	46	0	0	0	0	0	0
38	105	34	0	0	0	0	0	0	0	0	0
39	177	177	177	177	177	177	177	177	163	0	0
40	568	0	0	0	0	0	0	0	0	0	0
41	86	86	86	86	86	86	86	86	86	86	86
42	182	182	182	67	0	0	0	0	0	0	0
43	374	374	28	0	0	0	0	0	0	0	0
44	94	0	0	0	0	0	0	0	0	0	0
45	141	141	141	141	141	141	141	141	141	141	141
46	678	272	0	0	0	0	0	0	0	0	0
47	48	0	0	0	0	0	0	0	0	0	0
48	174,530	0	0	0	0	0	0	0	0	0	0
49	148,300	148,300	148,300	148,300	148,300	148,300	148,300	0	0	0	0
50	254,570	254,570	254,570	254,570	252,477	0	0	0	0	0	0
51	258,909	258,909	258,909	258,909	258,909	204,439	0	0	0	0	0
52	538,799	538,799	538,799	538,799	538,799	538,799	538,799	538,799	538,799	538,799	538,799
53	316,884	316,884	316,884	316,884	316,884	316,884	316,884	316,884	316,884	316,884	316,884
54	26,365	26,365	26,365	26,365	26,365	26,365	26,365	4,262	0	0	0
55	571,206	571,206	571,206	571,206	571,206	571,206	571,206	571,206	571,206	571,206	571,206
56	457,140	457,140	457,140	457,140	457,140	457,140	457,140	457,140	457,140	457,140	457,140
57	271,416	271,416	271,416	271,416	271,416	271,416	271,416	271,416	271,416	271,416	271,416
58	5,641	5,641	5,641	5,641	5,641	385	0	0	0	0	0
59	27,718	27,718	27,718	27,718	27,718	27,718	1,443	0	0	0	0

Index	2030	2031	2032	2033	2034	2035	2036	2037	2038
31	54,611	54,611	54,611	53,414	0	0	0	0	0
32	46,132	46,132	46,132	46,132	46,132	46,132	5,168	0	0
33	55,174	55,174	55,174	55,174	55,174	54,872	0	0	0
34	47,854	0	0	0	0	0	0	0	0
35	7,455	7,455	7,455	7,455	7,455	7,455	5,296	0	0
36	5,772	5,772	5,772	5,772	5,772	5,772	5,772	5,377	0
37	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
41	86	86	48	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0
45	141	141	141	22	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0
52	538,799	538,799	538,799	423,658	0	0	0	0	0
53	316,884	316,884	197,403	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0
55	571,206	571,206	571,206	328,639	0	0	0	0	0
56	457,140	457,140	457,140	457,140	457,140	194,128	0	0	0
57	271,416	271,416	270,674	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0
59	0	0	0	0	0	0	0	0	0



APPENDIX 2

2019 COST QUANTIFICATION TABLE

Cost Quantification Table 1 (Actual Procurement Net Costs, \$)⁽¹⁾		Actual RPS-Eligible Procurement Net Costs				
1	Executed CPUC-Approved RPS-Eligible Contracts	2003	2004	2005	2006	2007
2	Biogas	\$9,699,583	\$11,805,288	\$12,614,978	\$11,557,951	\$10,586,260
3	Biomass	\$18,888,387	\$18,693,045	\$17,205,462	\$16,965,465	\$12,237,997
4	Geothermal	\$0	\$0	\$0	\$0	\$0
5	Small Hydro	\$357,805	\$345,247	\$467,007	\$947,554	\$1,359,923
6	Solar PV	\$0	\$0	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$22,750	\$5,980,963	\$14,097,259	\$19,779,696	\$22,968,510
9	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0	\$0	\$0
12	Total CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 11]	\$28,968,525	\$36,824,543	\$44,384,706	\$49,250,666	\$47,152,690
13	Bundled Retail Sales (kWh)	15,043,865,000	15,811,591,000	16,001,516,000	16,846,888,000	17,056,023,000
14	Incremental Rate Impact [Row 12 divided by row 13]	0.19 ¢/kWh	0.23 ¢/kWh	0.28 ¢/kWh	0.29 ¢/kWh	0.28 ¢/kWh

(1) Because the technology type of RECs sold in the past is known, this table shows costs net of revenues for all RPS-eligible procurement.

Cost Quantification Table 1 (Actual Procurement Net Costs, \$)⁽¹⁾		Actual RPS-Eligible Procurement Net Costs				
1	Executed CPUC-Approved RPS-Eligible Contracts	2008	2009	2010	2011	2012
2	Biogas	\$12,895,604	\$12,750,213	\$13,219,041	\$13,657,174	\$14,588,818
3	Biomass	\$23,121,233	\$23,221,640	\$25,207,547	\$25,591,354	\$29,270,390
4	Geothermal	\$0	\$0	\$20,906,408	\$67,532,423	\$87,210,604
5	Small Hydro	\$1,676,416	\$1,269,662	\$1,143,186	\$866,991	\$1,056,364
6	Solar PV	\$0	\$0	\$0	\$0	\$22,549
7	Solar Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$23,254,999	\$60,900,350	\$54,927,101	\$67,962,777	\$62,704,117
9	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$605,531	\$1,093,718	\$1,722,490	\$2,212,066
11	Unbundled RECs	\$0	\$0	\$0	\$0	\$0
12	Total CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 11]	\$60,948,252	\$98,747,396	\$116,497,002	\$177,333,210	\$197,064,908
13	Bundled Retail Sales (kWh)	17,409,884,000	16,993,872,000	16,282,682,258	16,249,031,381	16,626,720,539
14	Incremental Rate Impact [Row 12 divided by row 13]	0.35 ¢/kWh	0.58 ¢/kWh	0.72 ¢/kWh	1.09 ¢/kWh	1.19 ¢/kWh

Cost Quantification Table 1 (Actual Procurement Net Costs, \$)⁽¹⁾		Actual RPS-Eligible Procurement Net Costs		
1	Executed CPUC-Approved RPS-Eligible Contracts	2013	2014	2015
2	Biogas	\$11,382,804	\$6,680,945	\$12,063,399
3	Biomass	\$28,519,756	\$8,344,339	-\$4,750,522
4	Geothermal	\$38,286,888	\$5,761,869	\$0
5	Small Hydro	\$1,137,595	\$1,279,527	\$306,568
6	Solar PV	\$86,221,692	\$304,437,880	\$362,976,622
7	Solar Thermal	\$0	\$0	\$0
8	Wind	\$147,375,881	\$182,029,742	\$185,615,615
9	UOG Small Hydro	\$0	\$0	\$0
10	UOG Solar	\$2,260,192	\$2,258,800	\$1,839,149
11	Unbundled RECs	\$0	\$0	\$0
12	Total CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 11]	\$315,184,808	\$510,793,102	\$558,050,830
13	Bundled Retail Sales (kWh)	16,164,015,264	16,467,854,428	16,266,948,555
14	Incremental Rate Impact [Row 12 divided by row 13]	1.95 ¢/kWh	3.10 ¢/kWh	3.43 ¢/kWh

Cost Quantification Table 1 (Actual Procurement Net Costs, \$)⁽¹⁾		Actual RPS-Eligible Procurement Net Costs		
1	Executed CPUC-Approved RPS-Eligible Contracts	2016	2017	2018
2	Biogas	\$14,829,981		
3	Biomass	\$0		
4	Geothermal	\$0		
5	Small Hydro	\$595,497		
6	Solar PV	\$405,034,433		
7	Solar Thermal	\$0		
8	Wind	\$231,902,873		
9	UOG Small Hydro	\$0		
10	UOG Solar	\$1,358,752		
11	Unbundled RECs	\$0		
12	Total CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 11]	\$653,721,536	\$668,485,633	\$631,899,423
13	Bundled Retail Sales (kWh)	15,653,127,947	15,618,775,138	15,127,152,235
14	Incremental Rate Impact [Row 12 divided by row 13]	4.18 ¢/kWh	4.28 ¢/kWh	4.18 ¢/kWh

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$) ⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues		
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2019	2020	2021
2	Biogas	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0
8	Wind	\$0	\$3,535,966	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0
12	REC Sales	-\$2,053,336	-\$2,340,000	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 12]	-\$2,053,336	\$1,195,966	\$14,261,270
14	Bundled Retail Sales (kWh)			
15	Incremental Rate Impact [Row 13 divided by row 14]			
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues		
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2019	2020	2021
17	Biogas			
18	Biomass			
19	Geothermal			
20	Small Hydro			
21	Solar PV			
22	Solar Thermal			
23	Wind			
24	UOG Small Hydro			
25	UOG Solar			
26	Unbundled RECs			
27	REC Sales			
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 17 through 27]	\$672,567,945	\$666,366,862	\$677,180,876
29	Bundled Retail Sales (kWh)			
30	Incremental Rate Impact [Row 28 divided by row 29]			
31	Total Incremental Rate Impact [Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]			

(2) Because the technology type of RECs to be sold in the future is unknown, this table shows forecasted revenues from RPS-eligible REC sales as a single line item.

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$) ⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues				
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2022	2023	2024	2025	2026
2	Biogas	\$0	\$0	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0	\$0	\$0
12	REC Sales	\$0	\$0	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 12]	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
14	Bundled Retail Sales (kWh)		14,122,082,764	14,178,061,579	14,173,206,764	14,094,431,251
15	Incremental Rate Impact [Row 13 divided by row 14]		0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues				
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2022	2023	2024	2025	2026
17	Biogas		\$8,620,465	\$6,823,743	\$6,499,241	\$6,499,241
18	Biomass		\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal		\$0	\$0	\$0	\$0
20	Small Hydro		\$5,411,261	\$5,411,261	\$5,411,261	\$5,411,261
21	Solar PV		\$419,049,649	\$420,788,643	\$422,550,607	\$424,335,874
22	Solar Thermal		\$0	\$0	\$0	\$0
23	Wind		\$219,266,266	\$212,180,187	\$204,310,279	\$193,784,481
24	UOG Small Hydro		\$0	\$0	\$0	\$0
25	UOG Solar		\$2,707,397	\$2,691,433	\$2,697,432	\$2,703,493
26	Unbundled RECs		\$0	\$0	\$0	\$0
27	REC Sales		\$0	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 17 through 27]	\$659,634,262	\$674,437,825	\$667,278,054	\$660,851,607	\$652,117,137
29	Bundled Retail Sales (kWh)		14,122,082,764	14,178,061,579	14,173,206,764	14,094,431,251
30	Incremental Rate Impact [Row 28 divided by row 29]		4.78 ¢/kWh	4.71 ¢/kWh	4.66 ¢/kWh	4.63 ¢/kWh
31	Total Incremental Rate Impact [Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]		4.88 ¢/kWh	4.81 ¢/kWh	4.76 ¢/kWh	4.73 ¢/kWh

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues				
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2027	2028	2029	2030	2031
2	Biogas	\$0	\$0	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0	\$0	\$0
12	REC Sales	\$0	\$0	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 12]	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
14	Bundled Retail Sales (kWh)	13,953,309,623	13,787,595,109	13,788,043,695	13,788,491,199	13,764,704,387
15	Incremental Rate Impact [Row 13 divided by row 14]	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues				
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2027	2028	2029	2030	2031
17	Biogas	\$6,499,241	\$6,499,241	\$6,499,241	\$6,499,241	\$4,795,674
18	Biomass	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal	\$0	\$0	\$0	\$0	\$0
20	Small Hydro	\$5,411,261	\$5,411,261	\$5,411,261	\$5,411,261	\$5,411,261
21	Solar PV	\$426,144,782	\$427,977,676	\$429,834,906	\$431,593,243	\$429,817,160
22	Solar Thermal	\$0	\$0	\$0	\$0	\$0
23	Wind	\$193,324,488	\$193,324,488	\$193,324,488	\$193,324,488	\$193,324,488
24	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0
25	UOG Solar	\$2,704,267	\$2,648,944	\$2,658,097	\$2,667,314	\$2,676,597
26	Unbundled RECs	\$0	\$0	\$0	\$0	\$0
27	REC Sales	\$0	\$0	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 17 through 27]	\$653,466,826	\$655,244,397	\$657,110,779	\$658,878,334	\$655,407,967
29	Bundled Retail Sales (kWh)	13,953,309,623	13,787,595,109	13,788,043,695	13,788,491,199	13,764,704,387
30	Incremental Rate Impact [Row 28 divided by row 29]	4.68 ¢/kWh	4.75 ¢/kWh	4.77 ¢/kWh	4.78 ¢/kWh	4.76 ¢/kWh
31	Total Incremental Rate Impact [Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]	4.79 ¢/kWh	4.86 ¢/kWh	4.87 ¢/kWh	4.88 ¢/kWh	4.87 ¢/kWh

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues			
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2032	2033	2034	2035
2	Biogas	\$0	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0	\$0
12	REC Sales	\$0	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 12]	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
14	Bundled Retail Sales (kWh)	13,765,274,395	13,765,843,002	13,766,410,217	13,766,976,045
15	Incremental Rate Impact [Row 13 divided by row 14]	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues			
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2032	2033	2034	2035
17	Biogas	\$3,628,822	\$2,529,621	\$1,560,738	\$1,560,738
18	Biomass	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal	\$0	\$0	\$0	\$0
20	Small Hydro	\$5,411,261	\$4,086,992	\$157,368	\$157,368
21	Solar PV	\$431,752,474	\$424,622,661	\$352,798,967	\$313,774,698
22	Solar Thermal	\$0	\$0	\$0	\$0
23	Wind	\$179,466,426	\$100,705,700	\$47,876,326	\$20,331,043
24	UOG Small Hydro	\$0	\$0	\$0	\$0
25	UOG Solar	\$2,658,605	\$2,625,680	\$2,639,125	\$2,652,387
26	Unbundled RECs	\$0	\$0	\$0	\$0
27	REC Sales	\$0	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 17 through 27]	\$642,300,374	\$553,953,441	\$424,415,311	\$357,859,021
29	Bundled Retail Sales (kWh)	13,765,274,395	13,765,843,002	13,766,410,217	13,766,976,045
30	Incremental Rate Impact [Row 28 divided by row 29]	4.67 ¢/kWh	4.02 ¢/kWh	3.08 ¢/kWh	2.60 ¢/kWh
31	Total Incremental Rate Impact [Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]	4.77 ¢/kWh	4.13 ¢/kWh	3.19 ¢/kWh	2.70 ¢/kWh

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues		
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2036	2037	2038
2	Biogas	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0
12	REC Sales	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 12]	\$14,261,270	\$14,261,270	\$14,261,270
14	Bundled Retail Sales (kWh)	13,767,540,495	13,768,103,572	13,770,080,463
15	Incremental Rate Impact [Row 13 divided by row 14]	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues		
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FTI/PV Contracts)	2036	2037	2038
17	Biogas	\$1,560,738	\$1,560,738	\$1,560,738
18	Biomass	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal	\$0	\$0	\$0
20	Small Hydro	\$157,368	\$157,368	\$157,368
21	Solar PV	\$306,647,152	\$307,019,558	\$267,048,260
22	Solar Thermal	\$0	\$0	\$0
23	Wind	\$0	\$0	\$0
24	UOG Small Hydro	\$0	\$0	\$0
25	UOG Solar	\$2,665,715	\$2,679,111	\$2,692,574
26	Unbundled RECs	\$0	\$0	\$0
27	REC Sales	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 17 through 27]	\$330,413,761	\$330,799,562	\$290,841,728
29	Bundled Retail Sales (kWh)	13,767,540,495	13,768,103,572	13,770,080,463
30	Incremental Rate Impact [Row 28 divided by row 29]	2.40 ¢/kWh	2.40 ¢/kWh	2.11 ¢/kWh
31	Total Incremental Rate Impact [Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]	2.50 ¢/kWh	2.51 ¢/kWh	2.22 ¢/kWh

Cost Quantification Table 3 (Actual Net Generation, MWh) ⁽³⁾		Actual RPS-Eligible Net Generation				
1	Executed CPUC-Approved RPS-Eligible Contracts	2003	2004	2005	2006	2007
2	Biogas	200,123	212,475	218,223	201,138	171,650
3	Biomass	341,718	337,466	298,945	284,031	217,967
4	Geothermal	0	0	0	0	0
5	Small Hydro	7,465	13,134	11,700	11,584	21,302
6	Solar PV	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0
8	Wind	550	114,778	296,434	402,768	469,859
9	UOG Small Hydro	0	0	0	0	0
10	UOG Solar	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0
12	Total CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 2 through 11]	549,856	677,852	825,302	899,520	880,777

(3) Because the technology type of RECs sold in the past is known, this table shows generation net of REC sales for all RPS-eligible procurement.

Cost Quantification Table 3 (Actual Net Generation, MWh) ⁽³⁾		Actual RPS-Eligible Net Generation				
1	Executed CPUC-Approved RPS-Eligible Contracts	2008	2009	2010	2011	2012
2	Biogas	208,236	205,021	210,067	215,821	224,763
3	Biomass	318,941	341,361	339,899	353,605	477,323
4	Geothermal	0	0	183,000	782,976	1,090,136
5	Small Hydro	30,883	24,439	22,367	16,866	20,560
6	Solar PV	0	0	0	0	200
7	Solar Thermal	0	0	0	0	0
8	Wind	489,368	1,212,703	1,182,541	2,008,572	1,559,684
9	UOG Small Hydro	0	0	0	0	0
10	UOG Solar	0	809	1,577	2,364	3,064
11	Unbundled RECs	0	0	0	0	0
12	Total CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 2 through 11]	1,047,428	1,784,333	1,939,451	3,380,204	3,375,730

Cost Quantification Table 3 (Actual Net Generation, MWh) ⁽³⁾		Actual RPS-Eligible Net Generation					
1	Executed CPUC-Approved RPS-Eligible Contracts	2013	2014	2015	2016	2017	2018
2	Biogas	141,509	60,196	121,501	174,561	167,951	141,578
3	Biomass	266,027	5,998	186,899	0	159,636	182,246
4	Geothermal	349,835	0	0	0	0	0
5	Small Hydro	21,240	21,122	4,562	10,649	3,562	1,294
6	Solar PV	613,652	2,537,210	2,896,476	3,352,095	3,354,324	2,912,842
7	Solar Thermal	0	0	0	0	0	0
8	Wind	2,438,308	2,642,521	2,519,440	3,218,080	3,235,729	3,229,164
9	UOG Small Hydro	0	0	0	0	0	0
10	UOG Solar	3,161	3,308	2,857	2,188	8,135	10,055
11	Unbundled RECs	0	0	0	0	0	0
12	Total CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 2 through 11]	3,833,732	5,270,355	5,731,735	6,757,573	6,929,337	6,477,179

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh) ⁽⁴⁾		Forecasted RPS-Eligible Generation and Sales		
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2019	2020	2021
2	Biogas	0	0	0
3	Biomass	0	0	0
4	Geothermal	0	0	0
5	Small Hydro	0	0	0
6	Solar PV	0	0	0
7	Solar Thermal	0	0	0
8	Wind	0	63,734	257,052
9	UOG Small Hydro	0	0	0
10	UOG Solar	0	0	0
11	Unbundled RECs	0	0	0
12	RECs Sales	(133,334)	(150,000)	0
13	Total Executed But Not CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 2 through 12]	(133,334)	(86,266)	257,052
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS-Eligible Generation and Sales		
14	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2019	2020	2021
15	Biogas	154,835	146,494	158,714
16	Biomass	163,149	163,149	163,149
17	Geothermal	0	0	0
18	Small Hydro	37,059	37,059	37,059
19	Solar PV	3,432,050	3,432,050	3,432,050
20	Solar Thermal	0	0	0
21	Wind	3,052,914	2,876,947	2,876,947
22	UOG Small Hydro	0	0	0
23	UOG Solar	14,391	13,204	12,552
24	Unbundled RECs	0	0	0
25	RECs Sales	(751,501)	(540,750)	0
26	Total Executed CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 15 through 25]	6,102,896	6,128,153	6,680,471
27	Total Executed RPS-Eligible Net Generation [Row 13 + 26]	5,969,563	6,041,887	6,937,524

(4) Because the technology type of RECs to be sold in the future is unknown, this table shows forecasted RPS-eligible REC sales as a single line item.

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh) ⁽⁴⁾		Forecasted RPS-Eligible Generation and Sales				
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2022	2023	2024	2025	2026
2	Biogas	0	0	0	0	0
3	Biomass	0	0	0	0	0
4	Geothermal	0	0	0	0	0
5	Small Hydro	0	0	0	0	0
6	Solar PV	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0
8	Wind	257,052	257,052	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0	0	0
10	UOG Solar	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0
12	RECs Sales	0	0	0	0	0
13	Total Executed But Not CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 2 through 12]	257,052	257,052	257,052	257,052	257,052
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS-Eligible Generation and Sales				
14	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2022	2023	2024	2025	2026
15	Biogas	142,589	80,209	59,860	56,193	56,193
16	Biomass	13,856	151,760	151,760	151,760	151,760
17	Geothermal	0	0	0	0	0
18	Small Hydro	37,059	37,059	37,059	37,059	37,059
19	Solar PV	3,432,050	3,432,050	3,432,050	3,432,050	3,432,050
20	Solar Thermal	0	0	0	0	0
21	Wind	2,876,947	2,874,855	2,562,652	2,331,552	2,159,707
22	UOG Small Hydro	0	0	0	0	0
23	UOG Solar	12,410	12,321	12,275	12,275	12,275
24	Unbundled RECs	0	0	0	0	0
25	RECs Sales	0	0	0	0	0
26	Total Executed CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 15 through 25]	6,514,912	6,588,254	6,255,656	6,020,890	5,849,044
27	Total Executed RPS-Eligible Net Generation [Row 13 + 26]	6,771,965	6,845,306	6,512,709	6,277,942	6,106,097

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh) ⁽⁴⁾		Forecasted RPS-Eligible Generation and Sales				
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2027	2028	2029	2030	2031
2	Biogas	0	0	0	0	0
3	Biomass	0	0	0	0	0
4	Geothermal	0	0	0	0	0
5	Small Hydro	0	0	0	0	0
6	Solar PV	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0
8	Wind	257,052	257,052	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0	0	0
10	UOG Solar	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0
12	RECs Sales	0	0	0	0	0
13	Total Executed But Not CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 2 through 12]	257,052	257,052	257,052	257,052	257,052
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS-Eligible Generation and Sales				
14	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2027	2028	2029	2030	2031
15	Biogas	56,193	56,193	56,193	56,193	41,151
16	Biomass	151,760	151,760	151,760	151,760	151,760
17	Geothermal	0	0	0	0	0
18	Small Hydro	37,059	37,059	37,059	37,059	37,059
19	Solar PV	3,432,050	3,432,050	3,432,050	3,430,142	3,368,957
20	Solar Thermal	0	0	0	0	0
21	Wind	2,155,445	2,155,445	2,155,445	2,155,445	2,155,445
22	UOG Small Hydro	0	0	0	0	0
23	UOG Solar	12,261	12,098	12,098	12,098	12,098
24	Unbundled RECs	0	0	0	0	0
25	RECs Sales	0	0	0	0	0
26	Total Executed CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 15 through 25]	5,844,769	5,844,606	5,844,606	5,842,697	5,766,469
27	Total Executed RPS-Eligible Net Generation [Row 13 + 26]	6,101,821	6,101,658	6,101,658	6,099,749	6,023,522

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)⁽⁴⁾		Forecasted RPS-Eligible Generation and Sales		
1	Executed But Not CPUC- Approved RPS-Eligible Contracts	2032	2033	2034
2	Biogas	0	0	0
3	Biomass	0	0	0
4	Geothermal	0	0	0
5	Small Hydro	0	0	0
6	Solar PV	0	0	0
7	Solar Thermal	0	0	0
8	Wind	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0
10	UOG Solar	0	0	0
11	Unbundled RECs	0	0	0
12	RECs Sales	0	0	0
13	Total Executed But Not CPUC- Approved RPS-Eligible Net Generation [Sum of Rows 2 through 12]	257,052	257,052	257,052
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS-Eligible Generation and Sales		
14	Executed CPUC-Approved RPS- Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2032	2033	2034
15	Biogas	30,687	20,872	12,220
16	Biomass	151,760	151,760	151,760
17	Geothermal	0	0	0
18	Small Hydro	37,059	28,434	2,840
19	Solar PV	3,369,023	3,302,898	2,762,599
20	Solar Thermal	0	0	0
21	Wind	2,035,222	1,209,437	457,140
22	UOG Small Hydro	0	0	0
23	UOG Solar	12,060	11,894	11,871
24	Unbundled RECs	0	0	0
25	RECs Sales	0	0	0
26	Total Executed CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 15 through 25]	5,635,812	4,725,295	3,398,431
27	Total Executed RPS-Eligible Net Generation [Row 13 + 26]	5,892,864	4,982,347	3,655,483

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)⁽⁴⁾		Forecasted RPS-Eligible Generation and Sales			
1	Executed But Not CPUC- Approved RPS-Eligible Contracts	2035	2036	2036	2038
2	Biogas	0	0	0	0
3	Biomass	0	0	0	0
4	Geothermal	0	0	0	0
5	Small Hydro	0	0	0	0
6	Solar PV	0	0	0	0
7	Solar Thermal	0	0	0	0
8	Wind	257,052	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0	0
10	UOG Solar	0	0	0	0
11	Unbundled RECs	0	0	0	0
12	RECs Sales	0	0	0	0
13	Total Executed But Not CPUC- Approved RPS-Eligible Net Generation [Sum of Rows 2 through 12]	257,052	257,052	257,052	257,052
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS-Eligible Generation and Sales			
14	Executed CPUC-Approved RPS- Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2035	2036	2036	2038
15	Biogas	12,220	12,220	12,220	12,220
16	Biomass	151,760	151,760	151,760	151,760
17	Geothermal	0	0	0	0
18	Small Hydro	2,840	2,840	2,840	2,840
19	Solar PV	2,468,910	2,370,980	2,370,980	2,041,715
20	Solar Thermal	0	0	0	0
21	Wind	194,128	0	0	0
22	UOG Small Hydro	0	0	0	0
23	UOG Solar	11,871	11,871	11,871	11,871
24	Unbundled RECs	0	0	0	0
25	RECs Sales	0	0	0	0
26	Total Executed CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 15 through 25]	2,841,729	2,549,671	2,549,671	2,220,407
27	Total Executed RPS-Eligible Net Generation [Row 13 + 26]	3,098,782	2,806,724	2,806,724	2,477,459



APPENDIX 3

2019 SAFETY CONSIDERATIONS

A. RPS Power Purchase Agreements

SDG&E's procurement programs and the safety-related contractual provisions included in the contract for each program are described below. For those contracts that are appendices to this Plan, the relevant sections are referenced, for all other contracts, language from the relevant sections is provided. Although the precise wording varies slightly among PPAs related to different programs, each PPA follows the same logic by first defining prudent business practices as those which, given the information available at the time the decision was made, could reasonably be expected to accomplish the desired result consistent with good business practices, reliability and safety. This definition is then referenced throughout the contract. By executing any of the following referenced PPAs, a counterparty agrees to incorporate safety considerations into its decision-making process and operate accordingly.

i. PPA Provisions - Utility Scale RFOs (Long-Term and Short-Term¹ Contracts) and GT RAM²

- Section 1.1: Good Industry Practice
- Section 3.1(f)(ii): Annual Capacity Testing
- Section 3.5(a): General Operation
- Section 3.5(b): CAISO and WECC Standards
- Section 3.5(c): Reliability Standards.
- Section 3.6(a)(i): Testing and Calibration.
- Section 3.7(a): Planned Outages
- Exhibit F, Form of Quarterly Progress Report, Section 9.0: Safety and Health Reports

ii. PPA Provisions – CRE and WATER FiT Programs³

- Section 5.4: The Generating Facility shall be operated with all of Producer's Protective Functions in service and in accordance with Prudent Electrical

¹ SDG&E's Short-Term PPA is for projects that have already been constructed because it is not likely that a new project would be interested in a term of 5 years or less, as such it does not contain a Milestone Schedule, a Commercial Operations Certificate, or a Form of Quarterly Progress Report.

² D.14-11-042 requires that SDG&E file a short-term RPS PPA and RAM PPA, and D.16-05-006 requires that SDG&E utilize a RAM Rider for its ECR program. The Short-Term RPS PPA is Appendix 6 within this Plan and SDG&E's most recently approved RAM documents can be found in SDG&E AL 3206-E, effective April 28, 2018 at <http://regarchive.sdge.com/tm2/pdf/3206-E.pdf>. All of these documents are based on SDG&E's Long-Term RPS PPA, attached hereto as Appendix 5, as such the safety provisions and associated references are the same.

³ SDG&E's CRE FiT and WATER FiT programs terminated July 24, 2013.

Practices whenever the Generating Facility is operated in parallel with SDG&E's Distribution System. Any deviation from these requirements may occur only when the Parties have agreed to such deviations in writing.

- Appendix F, Item 32: "Operate," "Operating" or "Operation" means to provide (or the provision of) all the operation, engineering, purchasing, repair, supervision, training, inspection, testing, protection, use, management, improvement, replacement, refurbishment, retirement, and maintenance activities associated with operating the Generating Facility in accordance with Prudent Electrical Practices.
- Appendix F, Item 41: "Prudent Electrical Practices" means those practices, methods and acts that would be implemented and followed by prudent operators of electric energy generating facilities in the Western United States, similar to the Generating Facility, during the relevant time period, which practices, methods and acts, in the exercise of prudent and responsible professional judgment in the light of the facts known at the time the decision was made, could reasonably have been expected to accomplish the desired result consistent with good business practices, reliability and safety.
 - Prudent Electrical Practices shall include, at a minimum, those professionally responsible practices, methods and acts described in the preceding sentence that comply with manufacturers' warranties, restrictions in this Agreement, and the requirements of Governmental Authorities, WECC standards, the ISO and applicable laws.
 - Prudent Electrical Practices shall also include taking reasonable steps to ensure that:
 - Equipment, materials, resources, and supplies, including spare parts inventories, are available to meet the Generating Facility's needs;
 - Sufficient operating personnel are available at all times and are adequately experienced and trained and licensed as necessary to operate the Generating Facility properly and efficiently, and are capable of responding to reasonably foreseeable emergency

conditions at the Generating Facility and emergencies whether caused by events on or off the Site;

- Preventive, routine, and non-routine maintenance and repairs are performed on a basis that ensures reliable, long term and safe operation of the Generating Facility, and are performed by knowledgeable, trained, and experienced personnel utilizing proper equipment and tools;
- Appropriate monitoring and testing are performed to ensure equipment is functioning as designed;
- Equipment is not operated in a reckless manner, in violation of manufacturer's guidelines or in a manner unsafe to workers, the general public, or SDG&E's electric system or contrary to environmental laws, permits or regulations or without regard to defined limitations such as, flood conditions, safety inspection requirements, operating voltage, current, volt ampere reactive (VAR) loading, frequency, rotational speed, polarity, synchronization, and control system limits; and
- Equipment and components designed and manufactured to meet or exceed the standard of durability that is generally used for electric energy generating facilities operating in the Western United States and will function properly over the full range of ambient temperature and weather conditions reasonably expected to occur at the Site and under both normal and emergency conditions.

iii. PPA Provisions – Re-MAT FiT Program, and BioRAM⁴

- Section 6.4: Standard of Care. Seller shall: (a) maintain and operate the Facility and Interconnection Facilities, except facilities installed by Buyer, in conformance with all Laws and in accordance with Prudent Electrical Practices; (b) obtain any governmental authorizations and permits required for

⁴ SDG&E's Re-MAT FiT Program ended June 30, 2016. Note that SDG&E's BioRAM contract is also based on SDG&E's ReMAT PPA.

the construction and operation thereof; and (c) generate, schedule and perform transmission services in compliance with all applicable operating policies, criteria, rules, guidelines and tariffs and Prudent Electrical Practices. Seller shall reimburse Buyer for any and all losses, damages, claims, penalties, or liability Buyer incurs as a result of Seller's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of the Facility throughout the Term of this Agreement.

- Section 6.5.2: Access Rights. Buyer, its authorized agents, employees and inspectors may, on reasonable advance notice under the circumstances, visit the Project during normal business hours for purposes reasonably connected with this Agreement or the exercise of any and all rights secured to Buyer by Law, its tariff schedules, and rules on file with the CPUC. Buyer, its authorized agents, employees and inspectors must (a) at all times adhere to all safety and security procedures as may be required by Seller; and (b) not interfere with the operation of the Project. Buyer shall make reasonable efforts to coordinate its emergency activities with the Safety and Security Departments, if any, of the Project operator. Seller shall keep Buyer advised of current procedures for contacting the Project operator's Safety and Security Departments.
- Appendix A: "Demonstrated Contract Capacity" means the Facility's total rated electric alternating current energy generating capacity which will equal the [lesser of (a) the sum of the Inverter Block Unit Capacity of all Inverter Block Units in the Facility and (b) the continuous output power rating at the expected operating power factor of the step-up transformer that connects the Facility to the Transmission/Distribution Owner's system[for solar photovoltaic technology]] [the total of the manufacturer's nameplate ratings of all installed Wind Turbines, consistent with Prudent Electrical Practices and accepted industry standards, as indicated on the nameplates physically attached to the individual Wind Turbine generators[for wind technology]] [sum of the Metered Amounts for the Demonstration Hour[all other technologies]], as determined in accordance with Appendix M.

- Appendix A: “Inverter Block Unit Capacity” means, with respect to each Inverter Block Unit, the total rated electric alternating current energy generating capacity of such Inverter Block Unit, determined as the lesser of:
 - (a) The manufacturer’s output rating of the Current Inverter included in such Inverter Block Unit, consistent with Prudent Electrical Practices and accepted industry standards, as indicated on the nameplate physically attached to such Current Inverter;
 - (b) The sum of the manufacturer’s nameplate ratings of all Photovoltaic Modules included in such Inverter Block Unit, consistent with Prudent Electrical Practices and accepted industry standards, as indicated on the nameplates physically attached to such individual Photovoltaic Modules;
- Appendix A: “Prudent Electrical Practices” means those practices, methods and acts that would be implemented and followed by prudent operators of electric energy generating facilities in the Western United States, similar to the Facility, during the relevant time period, which practices, methods and acts, in the exercise of prudent and responsible professional judgment in the light of the facts known at the time the decision was made, could reasonably have been expected to accomplish the desired result consistent with good business practices, reliability and safety. Prudent Electrical Practices shall include, at a minimum, those professionally responsible practices, methods and acts described in the preceding sentence that comply with manufacturers’ warranties, restrictions in this Agreement, and the requirements of Governmental Authorities, WECC standards, the CAISO and Laws. Prudent Electrical Practices also includes taking reasonable steps to ensure that:
 - (a) Equipment, materials, resources, and supplies, including spare parts inventories, are available to meet the Facility’s needs;
 - (b) Sufficient operating personnel are available at all times and are adequately experienced and trained and licensed as necessary to operate the Facility properly and efficiently, and are capable of responding to reasonably foreseeable emergency conditions at the Facility and Emergencies whether caused by events on or off the Site;

- (c) Preventive, routine, and non-routine maintenance and repairs are performed on a basis that ensures reliable, long term and safe operation of the Facility, and are performed by knowledgeable, trained, and experienced personnel utilizing proper equipment and tools;
- (d) Appropriate monitoring and testing are performed to ensure equipment is functioning as designed;
- (e) Equipment is not operated in a reckless manner, in violation of manufacturer's guidelines or in a manner unsafe to workers, the general public, or the Transmission/Distribution Owner's electric system or contrary to environmental laws, permits or regulations or without regard to defined limitations such as, flood conditions, safety inspection requirements, operating voltage, current, volt ampere reactive (VAR) loading, frequency, rotational speed, polarity, synchronization, and control system limits; and
- (f) Equipment and components are designed and manufactured to meet or exceed the standard of durability that is generally used for electric energy generating facilities operating in the Western United States and will function properly over the full range of ambient temperature and weather conditions reasonably expected to occur at the Site and under both normal and emergency conditions.

iv. PPA Provisions – BioMAT FiT Program⁵

- Section 5.4: Standard of Care. Seller shall: (a) maintain and operate the Facility and Interconnection Facilities, except facilities installed by Buyer, in conformance with all Laws and in accordance with Prudent Electrical Practices; (b) obtain any governmental authorizations and permits required for the construction and operation thereof; and (c) generate, schedule and perform transmission services in compliance with all applicable operating policies, criteria, rules, guidelines and tariffs and Prudent Electrical Practices. Seller shall reimburse Buyer for any and all losses, damages, claims, penalties, or

⁵ SDG&E's BioMAT FiT Program began February 1, 2016.

liability Buyer incurs as a result of Seller's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of the Facility throughout the Term of this Agreement.

- Section 5.5.2: Access Rights. Buyer, its authorized agents, employees and inspectors may, on reasonable advance notice under the circumstances, visit the Project during normal business hours for purposes reasonably connected with this Agreement or the exercise of any and all rights secured to Buyer by Law, its tariff schedules, and rules on file with the CPUC. Buyer, its authorized agents, employees and inspectors must (a) at all times adhere to all safety and security procedures as may be required by Seller; and (b) not interfere with the operation of the Project. Buyer shall make reasonable efforts to coordinate its emergency activities with the Safety and Security Departments, if any, of the Project operator. Seller shall keep Buyer advised of current procedures for contacting the Project operator's Safety and Security Departments.
- Section 5.17: Safety Plan. Seller shall provide to Buyer, prior to commencement of any construction activities on the Site, a report from an independent engineer (acceptable to both Buyer and Seller) certifying that Seller has a written plan for the safe construction and operation of the Facility in accordance with Prudent Electrical Practices.
- Appendix A: "Demonstrated Contract Capacity" means the Facility's total rated electric alternating current energy generating capacity which will equal the sum of the metered amounts for the Demonstration Hour, as determined in accordance with Appendix J.
- Appendix A: "Prudent Electrical Practices" means those practices, methods and acts that would be implemented and followed by prudent operators of electric energy generating facilities in the Western United States, similar to the Facility, during the relevant time period, which practices, methods and acts, in the exercise of prudent and responsible professional judgment in the light of the facts known at the time the decision was made, could reasonably have been expected to accomplish the desired result consistent with good

business practices, reliability and safety. Prudent Electrical Practices shall include, at a minimum, those professionally responsible practices, methods and acts described in the preceding sentence that comply with manufacturers' warranties, restrictions in this Agreement, and the requirements of Governmental Authorities, WECC standards, the CAISO and Laws. Prudent Electrical Practices also includes taking reasonable steps to ensure that:

- (a) Equipment, materials, resources, and supplies, including spare parts inventories, are available to meet the Facility's needs;
- (b) Sufficient operating personnel are available at all times and are adequately experienced and trained and licensed as necessary to operate the Facility properly and efficiently, and are capable of responding to reasonably foreseeable emergency conditions at the Facility and Emergencies whether caused by events on or off the Site;
- (c) Preventive, routine, and non-routine maintenance and repairs are performed on a basis that ensures reliable, long term and safe operation of the Facility, and are performed by knowledgeable, trained, and experienced personnel utilizing proper equipment and tools;
- (d) Appropriate monitoring and testing are performed to ensure equipment is functioning as designed;
- (e) Equipment is not operated in a reckless manner, in violation of manufacturer's guidelines or in a manner unsafe to workers, the general public, or the Transmission/Distribution Owner's electric system or contrary to environmental laws, permits or regulations or without regard to defined limitations such as, flood conditions, safety inspection requirements, operating voltage, current, volt ampere reactive (VAR) loading, frequency, rotational speed, polarity, synchronization, and control system limits; and
- (f) Equipment and components are designed and manufactured to meet or exceed the standard of durability that is generally used for electric energy generating facilities operating in the Western United

States and will function properly over the full range of ambient temperature and weather conditions reasonably expected to occur at the Site and under both normal and emergency conditions.

B. Renewable Utility-Owned Generation Projects

SDG&E requires all contractors working on the construction of new UOG facilities to observe the following safety-related procedures:

i. Safety Requirements

- The Contractor must comply with all applicable federal, state, regional, municipal, and local laws, ordinances, rules, codes, regulations, and executive orders, including all laws, ordinances, rules, codes, regulations, and executive orders applicable to health and safety, SDG&E's Class 1 Contractor Safety Manual, and all contract terms as set forth in the contract entered into with the Company, and must ensure that all employees and subcontractors working on Contractor's behalf meet or exceed these same requirements. If there is a conflict between SDG&E's Class 1 Contractor Safety Manual, the contract entered into with the Company, or applicable H&S Laws, the more specific standard applies.
- The Contractor must enroll in and maintain compliance with SDG&E's Contractor safety program.
- The Contractor must establish, implement, and maintain a complete site-specific safety program. The Contractor must submit electronic and written copies of this program to SDG&E for review.
- The safety program must include a full-time, on-site Safety Manager at the start of the project and sufficient, qualified support staff for the duration of on-site work. This safety program must follow the applicable laws, ordinances, regulations, and standards for such programs and must include: code of safe practices, fire protection plan, spill prevention plan, worker environmental awareness training, emergency situations response plan and procedures, and hazardous material control and training. The plan must be coordinated with SDG&E's and local authorities as required.

- The safety program must include sections addressing site environmental protection and a personal protective equipment.
- Safety and Health Orientation:
 - Each new employee (including subcontractors and vendors) must receive a thorough safety and health orientation from the Contractor that gives the employee the basic information about the Contractor's safety program, Federal or State OSHA (the most stringent in any case), and other applicable safety rules and regulations. The Contractor must provide additional safety instructions during the scope of the normal daily activities for the performance of hazardous or unfamiliar tasks.
- Supervisor's Safety Orientation
 - The Contractor must familiarize all supervisory personnel with the Contractor's safety and health responsibilities by conducting a safety and health orientation with each supervisor. Supervisors must be trained in CPR and First Aid.
- Weekly Toolbox and Daily Safety Meetings
 - The Contractor must conduct weekly toolbox meetings, open to SDG&E's representatives, to provide all on-site employees with up-to-date safety and health information. Daily task safety analysis for each planned activity must be performed to help the employees prepare for the hazards associated with each assigned task.
- General Safety Requirements:
 - Barricades: The Contractor must erect and maintain all barricades used to protect personnel from hazardous work operations as required by Federal or State OSHA, whichever is applicable.
 - Safety Signs: The Contractor must post any signs or posters that may be needed to advise employees of unsafe areas or conditions as required by Federal or State OSHA, whichever is applicable.
 - Scaffolds: The Contractor must erect all scaffolds in conformance with applicable Federal or State OSHA standards and maintain a method of

communication that daily scaffolding erection inspection has been performed and that the scaffolding is ready for use.

- Floor and Roof Openings: The Contractor must barricade or cover all floor and roof openings to protect employees from falls as required by Federal or State OSHA.
- Lock Out and Tag Out: The Contractor must provide an approved procedure for lock out and tag out, including all lock tags, of all applicable equipment.
- The Contractor must identify in writing a qualified safety representative to administer the Contractor's safety program. All vendor-supplied service organizations must each be required to implement a safety program appropriate for the Work being performed and in compliance with the Contractor's safety program. The Contractor is responsible for all subcontractor compliance with the its safety program.
- Loss Prevention Requirements:
 - Implementation of an approved safety program
 - Provision of a safe workplace for all employees
 - Implementation of a fire prevention program in accordance with NFPA 241: Standard for Safeguarding Construction, Alteration, and Demolition Operations
 - Prevention of equipment operation unless the equipment is safe to operate, all protective equipment is in place, and the operators are properly trained and licensed or certified for the particular equipment being operated
 - Identified hazards are addressed/mitigated
 - Implementation of regular safety meetings and training
 - Adherence to all applicable Federal or State OSHA, DOT, and other applicable safety requirements
- Occupational Health

- The Contractor must take all reasonable steps and precautions to protect the health of their employees and other site personnel. The Contractor must conduct occupational health monitoring and sampling as required by Federal or State OSHA, whichever is applicable, to determine the levels of exposure of its employees to hazardous or toxic substances or environmental conditions. Copies of employee sampling results must be provided to SDG&E upon request.
- Fire Protection and Prevention
 - The Contractor must provide fire extinguishers that are adequate for potential fire hazards present during construction, and must provide instruction regarding the proper use of such equipment to all employees. Only carbon dioxide (CO₂) fire extinguishers may be used within proximity of the inverters, transformers, switchgear, and communications enclosures to avoid damage to this equipment.
 - The Contractor must ensure the material it proposes to use at the site conforms to appropriate standards for flame-resistance or fireproof characteristics or is adequately protected from fire danger. Specific materials in this category include coatings, plastic-covering materials, construction lumber, scaffold plans, paper, boxes, and crating materials. Flammables, such as fuels and solvents, must be stored in appropriate containers. Fire blankets must be used to protect personnel and permanent project equipment/installations when necessary.
- Crane Safety and Material Handling
 - The Contractor must comply with all rules, regulations, and standards associated with crane safety and material handling. No equipment or machinery intended for material or personnel handling is allowed on site without having written proof of a current inspection, insurance, and crane operator certification. All equipment inspection reports must be renewed prior to expiration. All crane equipment must have an inspection checklist signed off by the operator at the beginning of each shift to ensure that any crane used is in safe operating condition.

Equipment must have functioning horns of sufficient volume to provide warnings when required. When applicable, crane lift plan(s) will be submitted in advance for SDG&E's review.

ii. Safety Inspections and Reporting

- Inspections
 - The Contractor must conduct weekly safety inspections of all work areas and operations in accordance with the Contractor's safety program. The Contractor must cooperate with any general safety inspections conducted by SDG&E.
 - The Contractor must maintain an inspection program for review of safety compliance for the Contractor's equipment, including power tools, electrical cords, rigging equipment, safety equipment, etc.
- Accident and Incident Reporting
 - The Contractor must immediately notify SDG&E's Project Manager of all project-related incidents, as required by SDG&E's Class 1 Contractor Safety Manual.
 - The Contractor must analyze any accident or incident (including "near misses") and provide an independent report of the cause and results of the accident or incident to SDG&E, as required by SDG&E's Class 1 Contractor Safety Manual. The Contractor safety program must identify and implement all necessary corrective action to prevent future occurrence of a similar incident.
 - Contractor must immediately notify Owner of any governmental agency (OSHA, Fire Dept., Health Dept., etc.) complaint and inspection of the project.
- Recordkeeping
 - The Contractor must maintain all records required by federal and state agencies that pertain to work-related injuries or illness.
- Security
 - The Contractor is responsible for providing site security as necessary during construction.



APPENDIX 4

IMPORTANT CHANGES FROM FINAL 2018 PLAN TO DRAFT 2019 PLAN

IMPORTANT CHANGES FROM FINAL 2018 RPS PROCUREMENT PLAN TO DRAFT 2019 RPS PROCUREMENT PLAN

REFERENCE	AREA OF CHANGE	SUMMARY OF CHANGE/JUSTIFICATION
2019 Draft Plan	Multiple sections throughout RPS Plan.	Sections were reorganized and renumbered pursuant to Assigned Commissioner's Ruling (ACR).
2019 Draft Plan: Section 2	Executive Summary	Updated RPS percentages due to the passage of time.
2019 Draft Plan: Section 2	Executive Summary	Added discussion on TOD factor stakeholder process consistent with the 2018 RPS Decision accepting RPS Plans (D.19-02-007).
2019 Draft Plan: Section 3	Summary of Recent Legislative and or Regulatory Changes	Added reference to SB 350, SB 100 and SB 901 in compliance with Assigned Commissioner's Ruling.
2019 Draft Plan: Section 4	Assessment of RPS Portfolio Supplies and Demand – Impact on Departing Load	Added reference to Senate Bill 237 which increases the Direct Access cap and impacts load departure.
2019 Draft Plan: Section 4	Assessment of RPS Portfolio Supplies and Demand: Alignment with Load Curves	Added discussion on load curve evaluation consistent with ACR.
2019 Draft Plan: Section 4	Assessment of RPS Portfolio Supplies and Demand: Impact of Energy Storage	Added reference to public utilities code section 2837 and included link to SDG&E's Energy Storage Plan Advice Letter.
2019 Draft Plan: Section 4	Assessment of RPS Portfolio Supplies and Demand: Evolving RA Requirements	Updated to reflect current status of RA proceeding and milestones.
2019 Draft Plan: Section 4	Assessment of RPS Portfolio Supplies and Demand: Conformance with IRP	Added language on how SDG&E's RPS Plan conforms with SDG&E's IRP.
2019 Draft Plan: Section 5	Project Development Status	Updated number of contracts in pre-construction/construction phase and in commercial operation due to the passage of time.
2019 Draft Plan: Section 6	Transmission and Permitting	Updated language due to the passage of time.
2019 Draft Plan: Section 7	Risk Assessment: Project Risk	Added language on how SDG&E assesses project risk pursuant to Assigned Commissioner's Ruling.
2019 Draft Plan: Section 10	Solicitation Protocols for Renewable Sales: Lessons Learned	Added language on lessons learned from SDG&E's sales solicitation.
2019 Draft Plan: Section 10	Bid Selection Protocols	Removed reference to RAM solicitation documents as these appendices have been removed due to redundancy. RAM solicitation documents were approved through the advice letter process. See AL3206-E.
2019 Draft Plan: Section 10	LCBF Criteria: State Policies	Added language on bid evaluation as it related to state policies pursuant to ACR.
2019 Draft Plan: Section 12	Economic Curtailment Frequency, Costs and Forecasting	Added language on forecasting market profiles and negative pricing and its impact to customers pursuant to ACR.
2019 Draft Plan: Section 15	Coordination with IRP Proceeding	Added section pursuant to ACR.
2019 Draft Plan: Section 17	Renewable Auction Mechanism	Removed reference to RAM solicitation documents as these appendices have been removed due to redundancy. RAM solicitation documents are approved through the advice letter process. See AL3206-E.
2019 Draft Plan: Section 18	Green Tariff Shared Renewables Program	Updated values due to the passage of time.

2019 Draft Plan: Section 19	Other RPS Planning Considerations and Issues	Removed reference to TOU periods as this information is not relevant to the RPS program. SDG&E's TOU Periods can be found at: https://www.sdge.com/regulatory-filing/2227/time-use-tou .
2019 Draft Plan: Appendix 1 ¹	Quantitative Information	Updated values due to the passage of time. Added column for transmission updates pursuant to ACR.
2019 Draft Plan: Appendix 2	Cost Quantification	Updated values due to the passage of time.
2019 Draft Plan: Appendix 3	Safety Considerations	Removed reference to RAM contracts and instead referenced AL where contracts can be found.
2019 Draft Plan: Appendix 8	LCBF	Removed reference to SDG&E's hourly pricing (TODs).
2019 Draft Plan: Appendix 9	RPS Sales RFP	Updated to align with current process. Updated percentages associated with the RPS program and SDG&E's customer and transmission network information.
2019 Draft Plan: Appendix 9.C	RPS Sales Offer Form	Updated tables to reflect upcoming years.
2019 Draft Plan: Appendix 9.D	Framework for Assessing Potential RPS Sales	Updated dates and appendix references.

¹ Appendix 1 was previously Project Development Status Update, however it has been removed as the information is available through the monthly RPS Database submittals.



APPENDIX 5

2019 RPS LONG-TERM MODEL POWER PURCHASE AGREEMENT (“PPA”)

[Form of PPA for As-Available, Baseload, Peaking or Dispatchable Product]

[Standard contract terms and conditions that “may not be modified” per CPUC D.04-06-014 and subsequent decisions are shown in red shaded text and standard contract terms and conditions that may be modified per CPUC D.04-06-014 and subsequent decisions are shown in green shaded text.]

POWER PURCHASE AGREEMENT

Between

SAN DIEGO GAS & ELECTRIC COMPANY
(as “Buyer”)

and

(as “Seller”)

POWER PURCHASE AGREEMENT

TABLE OF CONTENTS

COVER SHEET.....1

GENERAL TERMS AND CONDITIONS3

ARTICLE ONE: GENERAL DEFINITIONS.....3

 1.1 General.....3

 1.2 Interpretation.....22

ARTICLE TWO: EFFECTIVENESS OF AGREEMENT; CONDITIONS PRECEDENT22

 2.1 Effectiveness of Agreement Prior to CP Satisfaction Date.22

 2.2 Obligations of the Parties.....23

 2.3 Conditions Precedent.23

 2.4 Failure to Meet All Conditions Precedent.24

 2.5 Effectiveness of Agreement on and after CP Satisfaction Date.25

ARTICLE THREE: OBLIGATIONS AND DELIVERIES25

 3.1 Transaction.....25

 3.2 Transmission.29

 3.3 Scheduling.....30

 3.4 Dispatch Notices.35

 3.5 Standards of Care.....37

 3.6 Metering.....37

 3.7 Outage Notification.....39

 3.8 Operations Logs and Access Rights.39

 3.9 New Generation Facility.40

 3.10 Operating Procedures.....42

ARTICLE FOUR: COMPENSATION; MONTHLY PAYMENTS42

 4.1 *[For Dispatchable Product Only: Capacity Payment.....42*

 4.2 Energy Payment.....44

 4.3 Imbalance Energy.47

 4.4 Additional Compensation.47

 4.5 Energy Sales Prior to Commercial Operation Date.47

ARTICLE FIVE: EVENTS OF DEFAULT; FORCE MAJEURE.....48

 5.1 **Events of Default.....48**

 5.2 **Remedies; Declaration of Early Termination Date.....50**

 5.3 Termination Payment.....51

 5.4 **Notice of Payment of Termination Payment.....51**

 5.5 **Disputes With Respect to Termination Payment.....51**

 5.6 Rights And Remedies Are Cumulative.....52

 5.7 Mitigation.....52

5.8	Force Majeure.....	52
ARTICLE SIX: PAYMENT.....		52
6.1	Billing and Payment.....	52
6.2	Disputes and Adjustments of Invoices.....	53
6.3	Netting of Payments.....	53
ARTICLE SEVEN: LIMITATIONS.....		53
7.1	Limitation of Remedies, Liability and Damages.....	53
ARTICLE EIGHT: CREDIT AND COLLATERAL REQUIREMENTS.....		54
8.1	Buyer Financial Information.....	54
8.2	Seller Financial Information.....	54
8.3	Grant of Security Interest/Remedies.....	55
8.4	Performance Assurance.....	55
8.5	Interest on Cash.....	57
8.6	Costs of Letter of Credit.....	57
ARTICLE NINE: GOVERNMENTAL CHARGES.....		57
9.1	Cooperation.....	57
9.2	Governmental Charges.....	57
ARTICLE TEN: REPRESENTATIONS AND WARRANTIES; COVENANTS.....		57
10.1	General Representations and Warranties.....	57
10.2	Seller Representations and Warranties.....	58
10.3	Covenants.....	59
ARTICLE ELEVEN: TITLE, RISK OF LOSS, INDEMNITIES.....		60
11.1	Title and Risk of Loss.....	60
11.2	Indemnities.....	60
ARTICLE TWELVE: DISPUTE RESOLUTION.....		60
12.1	Intent of the Parties.....	60
12.2	Management Negotiations.....	61
12.3	Arbitration.....	61
ARTICLE THIRTEEN: MISCELLANEOUS.....		62
13.1	Confidentiality.....	62
13.2	Assignment.....	63
13.3	Audit.....	63
13.4	Sarbanes-Oxley and SEC Requirements.....	64
13.5	Entire Agreement.....	65
13.6	Recording.....	65
13.7	Forward Contract.....	65
13.8	Governing Law.....	65
13.9	Attorneys' Fees.....	66
13.10	General.....	66
13.11	Severability.....	66

13.12	Counterparts.....	66
13.13	Notices.	66
13.14	Mobile Sierra.	67
EXHIBIT A PROJECT DESCRIPTION INCLUDING DESCRIPTION OF SITE		A-1
EXHIBIT B MILESTONE SCHEDULE		B-1
EXHIBIT C FORM OF LETTER OF CREDIT		C-1
EXHIBIT D FORM OF GUARANTY.....		D-1
EXHIBIT E COMMERCIAL OPERATION CERTIFICATE.....		E-1
EXHIBIT F FORM OF QUARTERLY PROGRESS REPORT		F-1
EXHIBIT G OUTAGE NOTIFICATION FORM.....		G-1
EXHIBIT H PROJECT OPERATING RESTRICTIONS		H-1

COVER SHEET

This Power Purchase Agreement is made as of the following date: [_____]. This Power Purchase Agreement and all exhibits, schedules, appendices, and any written supplements hereto, any designated collateral, credit support or margin agreement or similar arrangement between the Parties as well as all written and signed amendments and modifications thereto shall be a part of, and shall be referred to as, the "Agreement." The Parties to this Agreement (hereinafter individually a "Party" and collectively the "Parties") are the following:

Name: _____ ("Seller")

All Notices:

Street: _____
City: _____ Zip: _____
Attn: Contract Administration
Phone: _____
Facsimile: _____
Duns: _____
Federal Tax ID Number: _____

Invoices:

Attn: _____
Phone: _____
Facsimile: _____

Scheduling:

Attn: _____
Phone: _____
Facsimile: _____

Payments:

Attn: _____
Phone: _____
Facsimile: _____

Wire Transfer:

BNK: _____
ABA: _____
ACCT: _____
Confirmation: _____
FAX: _____

Credit and Collections:

Attn: _____

Name: San Diego Gas & Electric Company
("Buyer")

All Notices:

Street: 8315 Century Park Court
City: San Diego, CA Zip: 92123
Attn: Electric & Fuel Procurement - Contract
Administration
Phone: (858) 636-5536
Facsimile: (858) 650-6190
Duns: 006911457
Federal Tax ID Number: 95-1184800

Invoices:

San Diego Gas & Electric Company
8315 Century Park Ct.
San Diego, California 92123-1593
Attn: Electric & Fuel Procurement – Invoicing and
Reporting
Phone: (858) 650-6187
Facsimile: (858) 650-6190

Scheduling:

San Diego Gas & Electric Company
8315 Century Park Ct.
San Diego, California 92123-1593
Attn: Transaction Scheduling Manager
Phone: (858) 650-6160
Facsimile: (858) 650-6191

Payments:

San Diego Gas & Electric Company
PO Box 25110
Santa Ana, CA 92799-5110
Attn: Mail Payments
Phone: (619) 696-4521
Facsimile: (619) 696-4899

Wire Transfer:

BNK: Union Bank of California
for: San Diego Gas & Electric Company
ABA: Routing # 122000496
ACCT: #4430000352
Confirmation: SDG&E, Major Markets
FAX: (213) 244-8316

Credit and Collections:

San Diego Gas & Electric Company, Major
Markets
555 W. Fifth Street, ML 18A3
Los Angeles, CA 90013-1011

Phone: _____
Facsimile: _____

With additional Notices of an Event of Default or
Potential Event of Default to:

Attn: _____
Phone: _____
Facsimile: _____

Attn.: Major Markets, Credit and Collections
Manager
Fax No.: (213) 244-8316
Phone: (213) 244-4343

With additional Notices of an Event of Default or
Potential Event of Default to:

San Diego Gas & Electric Company
8330 Century Park Ct.
San Diego, California 92123

Attn: General Counsel
Phone: (858) 650-6141
Facsimile: (858) 650-6106

GENERAL TERMS AND CONDITIONS

ARTICLE ONE: GENERAL DEFINITIONS

1.1 General. The following terms shall have the following meaning for purposes of this Agreement.

“[AAA][JAMS]” means [the American Arbitration Association] [JAMS, Inc.].

“Affiliate” means, with respect to any person, any other person (other than an individual) that, directly or indirectly, through one or more intermediaries, controls, or is controlled by, or is under common control with, such person. For this purpose, “control” means the direct or indirect ownership of fifty percent (50%) or more of the outstanding capital stock or other equity interests having ordinary voting power.

“Agreement” has the meaning set forth in the preamble to the Cover Sheet.

“Arbitration” has the meaning set forth in Section 12.3.

[For As-Available Product only: “As-Available” means a Product for which, subject to the terms of this Agreement, Seller is excused from selling and delivering the Product to Buyer, and Seller shall not be liable to Buyer for any damages determined pursuant to Section 3.1(h) of the Agreement, in the event that Seller fails to deliver the Product to Buyer for any of the following reasons:

- (a) if the Project is unavailable as a result of a Forced Outage and such Forced Outage is not the result of Seller’s negligence or willful misconduct;
- (b) Force Majeure;
- (c) by the Buyer’s failure to perform;
- (d) by a Planned Outage of the Project;
- (e) a reduction in output as ordered under Dispatch Down Periods; or
- (f) [the unavailability of landfill gas which was not anticipated as of the Execution Date, which is not within the reasonable control of, or the result of negligence of, Seller or the party supplying such landfill gas to the Project, and which by the exercise of reasonable due diligence, Seller is unable to overcome or avoid or causes to be avoided.] OR [insufficient wind power for the Project to generate energy as determined by the best wind speed and direction standards utilized by other wind producers or purchasers in the vicinity of the Project or if wind speeds exceed the Project’s technical specifications.] OR [the unavailability of water or the unavailability of sufficient pressure required for operation of the hydroelectric turbine-generator as reasonably determined by Seller within its operating procedures, neither of which was anticipated as of the

Execution Date, which is not within the reasonable control of, or the result of negligence of, Seller or the party supplying such water to the Project, and which by the exercise of due diligence, such Seller or the party supplying the water is unable to overcome or avoid or causes to be avoided.] OR [insufficient solar power for the Project to generate energy as determined by the best solar standards utilized by other solar producers or purchasers in the vicinity of the Project.]

[For Dispatchable Product only: “Availability Adjustment Factor” has the meaning set forth in Section 4.1(b).]

“Availability Incentive Payments” shall mean Availability Incentive Payments as defined in FERC filing ER09-1064 or such other similar term as modified and approved by FERC thereafter to be incorporated in the CAISO Tariff or otherwise applicable to CAISO.

[For Dispatchable Product only: “Availability Notice” has the meaning set forth in Section 3.3([f/g]).]

“Availability Standards” shall mean Availability Standards as defined in FERC filing ER09-1064 or such other similar term as modified and approved by FERC thereafter to be incorporated in the CAISO Tariff or otherwise applicable to CAISO.

“Bankrupt” means with respect to any entity, such entity that (a) files a petition or otherwise commences, authorizes or acquiesces in the commencement of a proceeding or cause of action under any bankruptcy, insolvency, reorganization or similar Law, (b) has any such petition filed or commenced against it which remains unstayed or undismissed for a period of sixty (60) days, (c) makes an assignment or any general arrangement for the benefit of creditors, (d) otherwise becomes bankrupt or insolvent (however evidenced), (e) has a liquidator, administrator, receiver, trustee, conservator or similar official appointed with respect to it or any substantial portion of its property or assets, or (f) is generally unable to pay its debts as they fall due.

[For Baseload Product only: “Baseload” means a Unit Firm Product for which the delivery levels are uniform twenty-four (24) hours per day, seven (7) days per week.]

“Bundled Green Energy” means Energy, Green Attributes, and any other Product, the quantity of which is measured based on the amount of Delivered Energy, in each case, that are produced by or associated with the Project. The quantity of Bundled Green Energy shall be equal to the lesser of the quantity of (i) **[When Seller is SC for the Project or when Buyer is SC but Project is not in the VER Forecasting Program:** Contract Energy] **[When SDG&E is SC for the Project and Project is in the VER Forecasting Program:** Delivered Energy] (ii) Green Attributes that are delivered to Buyer, and (iii) any other Product that is delivered to Buyer, the quantity of which is measured based on the amount of Delivered Energy. For example, if the quantity of Renewable Energy Credits that are delivered to Buyer is less than the quantity of the **[When Seller is SC for the Project or when Buyer is SC but Project is not in the VER Forecasting Program:** Contract Energy] **[When SDG&E is SC for the Project and Project is in the VER Forecasting Program:** Delivered Energy], then the quantity of Bundled Green Energy shall be equal to the quantity of Renewable Energy Credits that are delivered to Buyer.

“Business Day” means any day except a Saturday, Sunday, or a Federal Reserve Bank holiday and shall be between the hours of 8:00 a.m. and 5:00 p.m. local time for the relevant Party’s principal place of business where the relevant Party, in each instance unless otherwise specified, shall be the Party from whom the Notice, payment or delivery is being sent and by whom the Notice or payment or delivery is to be received.

“Buyer” has the meaning set forth on the Cover Sheet.

“CAISO” means the California Independent System Operator Corporation or any successor entity performing similar functions.

[When SDG&E is the SC for the Project: “CAISO Charges Invoice” has the meaning set forth in Section 3.3([a/b])(iv).]

“CAISO Grid” means the system of transmission lines and associated facilities of the Participating Transmission Owners that have been placed under the CAISO’s operational control.

“CAISO Tariff” means the CAISO Operating Agreement and Tariff, including the rules, protocols, procedures and standards attached thereto, as the same may be amended or modified from time-to-time and approved by FERC.

“California Renewables Portfolio Standard” means the Renewables Portfolio Standard of California under California Senate Bills 1078 and 107, as codified in California Public Utilities Code Sections 387, 390.1, and Article 16 (commencing with Section 399.11) of Chapter 2.3 of Part 1 of Division 1, as such provisions are amended or supplemented from time to time.

“Capacity Attributes” means any current or future defined characteristic, certificate, tag, credit, or ancillary service attribute, whether general in nature or specific as to the location or any other attribute of the Project intended to value any aspect of the capacity of the Project to produce Energy or ancillary services, including but not limited to any accounting construct so that the Contract Capacity of the Project may be counted toward a Resource Adequacy obligation or similar measure in respect to the capacity of the Project to generate Energy by the CPUC, the CAISO, the FERC, or any other entity vested with the authority under federal or state Law, to require Buyer to procure, or to procure at Buyer’s expense, Resource Adequacy or other similar products.

[For Dispatchable Product only: “Capacity Price” has the meaning set forth in Section 4.1(a).]

[For Baseload, Peaking, or Dispatchable Product only: “Capacity Test” shall be the complete capacity testing procedure for the Project that is reasonably acceptable to Buyer that Seller shall develop no later than thirty (30) days prior to the initial capacity testing of the Project prior to the Commercial Operation Date. The capacity testing procedure shall describe in detail the testing standard(s) to be used for the technology of the Project, the conditions under which testing shall take place, the average summer ambient conditions to which the results will be corrected, and the testing procedures. The same capacity testing procedure shall be applied to all subsequent Capacity Tests.]

“CEC” means the California Energy Commission or its successor agency.

“CEC Certification and Verification” means that the CEC has certified (or, with respect to periods before the Project has been constructed, that the CEC has pre-certified) that the Project is an ERR for purposes of the California Renewables Portfolio Standard and that all Energy produced by the Project qualifies as generation from an ERR for purposes of the Agreement.

“Claims” has the meaning set forth in Section 11.2(a).

“Commercial Operation” means that (a) the Project is operating and able to produce and deliver the Product to Buyer pursuant to the terms of this Agreement; (b) Seller shall have satisfied the requirements set forth in the Commercial Operation Certificate in the form attached as Exhibit E; (c) Seller shall have delivered a true, correct, and complete Commercial Operation Certificate from Seller, the Renewable Generation Equipment Supplier, the EPC Contractor, and a Licensed Professional Engineer; (d) Seller shall have delivered to Buyer the Delivery Term Security required under Article 8; (e) Seller has received all local, state and federal Governmental Approvals and other approvals as may be required by Law for the construction, operation and maintenance of the Project, including approvals, if any, required under the California Environmental Quality Act for the Project and related interconnection facilities; ***[For Baseload, Peaking, Dispatchable Product only:*** and (f) Seller shall have successfully completed the initial Capacity Test and delivered to Buyer a true, correct, and complete report documenting the results of Seller’s initial Capacity Test as required under Section 3.1(f)].

“Commercial Operation Date” means the date on which Seller achieves Commercial Operation for the Project.

“Conditions Precedent” has the meaning set forth in Section 2.3.

“Construction Period Security” shall mean the Performance Assurance that Seller is required to maintain during the period and as otherwise specified in Section 8.4(a)[(ii)/(iii)] to secure performance of its obligations hereunder.

“Contract Capacity” has the meaning set forth in Section 3.1(f).

[When Seller is SC for the Project or when Buyer is SC but Project is not in the VER Forecasting Program: “Contract Energy” means the lower of Delivered Energy or Scheduled Energy for any given period in each case net of all Electrical Losses.]

“Contract Quantity” has the meaning set forth in Section 3.1(e).

“Contract Year” means a period of twelve (12) consecutive months (except in the case of the first Contract Year which may be longer) with the first Contract Year commencing on the Commercial Operation Date and each subsequent Contract Year commencing on the anniversary of the first day of the month following the Commercial Operation Date.

“Costs” means, with respect to the Non-Defaulting Party, brokerage fees, commissions and other similar third party transaction costs and expenses reasonably incurred by such Party either in terminating any arrangement pursuant to which it has hedged its obligations or entering into

new arrangements which replace a Terminated Transaction; and all reasonable attorneys' fees and expenses incurred by the Non-Defaulting Party in connection with such Terminated Transaction.

“Cover Sheet” means the document that precedes Article 1: General Definitions to this Agreement.

“CP Satisfaction Date” shall mean the date on which all of the Conditions Precedent have been satisfied (or waived in writing by the Party described in Section 2.4).

“CPUC” or “Commission or successor entity” means the California Public Utilities Commission, or successor entity.

“CPUC Approval” means a final and non-appealable order of the CPUC, without conditions or modifications unacceptable to the Parties, or either of them, which contains the following terms:

(a) approves this Agreement in its entirety, including payments to be made by the Buyer, subject to CPUC review of the Buyer's administration of the Agreement; and

(b) finds that any procurement pursuant to this Agreement is procurement from an eligible renewable energy resource for purposes of determining Buyer's compliance with any obligation that it may have to procure eligible renewable energy resources pursuant to the California Renewables Portfolio Standard (Public Utilities Code Section 399.11 *et seq.*), Decision 03-06-071, or other applicable Law.

CPUC Approval will be deemed to have occurred on the date that a CPUC decision containing such findings becomes final and non-appealable. *[For Agreements for the purchase and sale of TRECS only, use STC REC-3 instead of the foregoing]*

[For Agreements with Delivery Terms greater than two years: “CPUC Approval Date” shall mean the date on which the Conditions Precedent set forth in Section 2.3(a) have been satisfied (or waived in writing by the beneficiary Party described in Section 2.4).]

[For Agreements with Delivery Terms greater than two years: “CPUC Approval Security” shall mean the Performance Assurance that Seller is required to maintain during the period and as otherwise specified in Section 8.4(a)(i) to secure performance of its obligations hereunder.]

“Credit Rating” means, with respect to any entity, the rating then assigned to such entity's unsecured, senior long-term debt obligations (not supported by third party credit enhancements) by S&P or Moody's.

“Daily Delay Damages” means an amount equal to (a) the Construction Period Security amount required hereunder, divided by (b) the number of days in the Project Cure Period.

“Day-Ahead Forecast” has the meaning set forth in Section 3.3([d/e]).

[For As-Available and Baseload Products only: “Deemed Bundled Green Energy” means the amount of Bundled Green Energy that Seller could reasonably have delivered to Buyer but was prevented from delivering to Buyer by reason of Economic Dispatch Down. The quantity of Deemed Bundled Green Energy shall be equal to **[For As-Available Products:** (a) the Deemed Delivery Forecast of Energy corresponding to the applicable Economic Dispatch Down periods, whether or not Seller is participating in the VER Forecasting Program during such events, less the amount of Energy scheduled under Economic Dispatch Down as specified in the Dispatch Notice during such periods, and less any amount of Energy that was not delivered associated with any concurrent Planned Outage, Forced Outage, Force Majeure, System Dispatch Down, and/or CAISO fault but only to the extent the Deemed Delivery Forecast does not already reflect the foregoing *provided that*, if the applicable amount calculated pursuant to this clause (a) is negative, the Deemed Bundled Green Energy shall be zero (0), or (b) if there is no such Deemed Delivery Forecast available during the applicable Economic Dispatch Down periods or if the Bundled Green Energy amount has historically not been determined based on clause (i) of the definition of Bundled Green Energy, the amount of Bundled Green Energy that Seller could reasonably have delivered to Buyer but was prevented from delivering to Buyer as a result of Economic Dispatch Down as determined by Buyer in a commercially reasonable manner, which amount shall not include any amount of Energy that was not delivered associated with any concurrent Planned Outage, Forced Outage, Force Majeure, System Dispatch Down, and/or CAISO fault.] **[For Baseload Products:** the amount of Bundled Green Energy that Seller could reasonably have delivered to Buyer but was prevented from delivering to Buyer during the applicable Economic Dispatch Down periods, as determined by Buyer in a commercially reasonable manner, which amount shall not include any amount of Energy that was not delivered associated with any concurrent Planned Outage, Forced Outage, Force Majeure, System Dispatch Down, and/or CAISO fault.]]

[For As-Available only: “Deemed Delivery Forecast” means the forecast of the Energy to be produced by the Project prepared by the CAISO or its agent in accordance with the VER Forecasting Program and communicated to the Scheduling Coordinator, which forecast is the last such forecast prepared by the CAISO that does not reflect curtailed production as a result of Economic Dispatch Down periods. As of the Execution Date, such Deemed Delivery Forecast is the CAISO forecast generated through its Resource Specific VER Forecast Usage Report].

[Dispatchable Product only: “Default Availability Factor” means, for any period, the amount determined according to the following formula:

$$\text{Default Availability Factor} = (\text{PH} - (\text{EDH} - \text{EEDH})) / \text{PH}$$

Where:

PH is the number of period hours;

EDH is the number of equivalent derate hours calculated as the sum, for each derate, of the product of the number of hours of full or partial derate hours times the size of the reduction from the initial Contract Capacity (as of the Commercial Operation Date) divided by the initial Contract Capacity. For the purposes of this calculation, a derate includes all

outages for any reason, including without limitation, Forced Outages, Force Majeure events, Dispatch Down Periods, Planned Outages, Buyer's failure to perform, and other times when any portion of the Contract Capacity is not available and when the Delivered Energy of the Project is less than the amount of Energy dispatched by Buyer; and

EEDH is the number of equivalent excused derate hours solely due to either Force Majeure events, Dispatch Down Periods or Buyer's failure to perform (and for no other reason), calculated as the sum, for each excused derate, of the product of the number of hours of full or partial derate hours times the size of the reduction from the initial Contract Capacity, divided by the initial Contract Capacity.]

"Defaulting Party" means the Party that is subject to an Event of Default.

"Default Rate" means for any date, the lesser of (a) the per annum rate of interest equal to the prime lending rate as may from time to time be published in *The Wall Street Journal* under "Money Rates" on such day (or if not published on such day on the most recent preceding day on which published), plus two percent (2%) and (b) the maximum rate permitted by applicable Law.

"Delivered Energy" means all Energy produced from the Project and delivered to Buyer at the Delivery Point as measured in MWh at the CAISO revenue meter of the Project based on a power factor of precisely one (1) and net of all Electrical Losses.

"Delivery Point" means the point at which Buyer receives Seller's Product, as set forth in Section 3.1(d).

"Delivery Term" has the meaning set forth in Section 3.1(c).

"Delivery Term Security" shall mean the Performance Assurance that Seller is required to maintain during the period and as otherwise specified in Section 8.4(a)[(iii)/(iv)] to secure performance of its obligations hereunder.

"Development Period Security" shall mean the Performance Assurance that Seller is required to maintain during the period and as otherwise specified in Section 8.4(a)[(i)/(ii)] to secure performance of its obligations hereunder.

"Disclosing Party" has the meaning set forth in Section 13.1(a).

"Disclosure Order" has the meaning set forth in Section 13.1(a).

"Dispatch Down Period" means the period of curtailment of delivery of Product from the Project resulting from System Dispatch Down [***For all Products other than Dispatchable Product:*** or Economic Dispatch Down].

"Dispatch Notice" means the operating instruction, and any subsequent updates given either by Buyer to Seller or by the CAISO to Seller, directing Seller to operate the Project at a specified megawatt output for the period of time set forth in such order.

[For Dispatchable Product only: “Dispatchable” means a Unit Firm Product for which Seller makes available capacity for Buyer to Schedule and dispatch up or down at Buyer’s option in accordance with Section 3.3([g/h]).]

“Distribution Upgrades” has the meaning set forth in the CAISO Tariff.

“DUNS” means the Data Universal Numbering System, which is a unique nine character identification number provided by Dun and Bradstreet.

“Early Termination Date” has the meaning set forth in Section 5.2.

[For all Products other than Dispatchable Product: “Economic Dispatch Down” means curtailment of delivery of Product from the Project that is the result of economic curtailment where Buyer (as the Scheduling Coordinator) or a third party Scheduling Coordinator (in accordance with Buyer’s directions) either submits a self-schedule with a binding Product quantity or an economic bid in the applicable CAISO market or fails to submit any such schedule or bid, in either case, that when implemented by the CAISO results in an otherwise available Product quantity not being scheduled or awarded in such CAISO market and such curtailment is not concurrently the result of a Planned Outage, Forced Outage, Force Majeure, System Dispatch Down, and/or CAISO fault.

“Electrical Losses” means all electrical losses associated with the transmission of Product to the Delivery Point, including if applicable, but not limited to, any transmission or transformation losses between the CAISO revenue meter and the Delivery Point.

“Electrical Interconnection Upgrades” means the facilities to which Seller shall be able to interconnect and deliver Energy from the Project to and at the Delivery Point and Buyer shall be able to transmit Energy from the Delivery Point and the facilities that protect the Participating Transmission Owner’s, Transmission Provider’s, distribution operator’s, or other affected system owner’s, as applicable, electric system (or other systems to which such electric systems are connected, including the CAISO Grid) and the Participating Transmission Owner’s, Transmission Provider’s, distribution operator’s, or other affected system owner’s, as applicable, customers from faults occurring at the Project, including, but not limited to, all network, distribution, connection, transformation, switching, metering, communications, control, and safety equipment, as such equipment may be required pursuant to Good Industry Practices or in accordance with the Participating Transmission Owner’s, Transmission Provider’s, distribution operator’s, or other affected system owner’s, as applicable, facility connection requirements. Such Electrical Interconnection Upgrades include all Network Upgrades, Distribution Upgrades, Interconnection Facilities, and other network upgrades, distribution upgrades, or interconnection facilities on any other affected system owner’s electrical system that are determined to be necessary by the CAISO, Participating Transmission Owner, other affected system owner, as applicable, to physically and electrically interconnect the Project to the Participating Transmission Owner’s electric system so as to allow Seller to deliver Energy from the Project to the Delivery Point and Buyer to be able to transmit Energy from the Delivery Point.

“Eligible Renewable Energy Resource” or “ERR” has the meaning set forth in California Public Utilities Code Section 399.11, *et seq.*, as amended or supplemented from time to time.

“Energy” means electric energy measured in MWh and net of Station Service (unless otherwise specified).

“Energy Price” has the meaning set forth in Section 4.[1/2](a).

“EPC Contract” means the Seller’s engineering, procurement and construction contract with the EPC Contractor.

“EPC Contractor” means an engineering, procurement, and construction contractor, selected by Seller, with substantial experience in the engineering, procurement, and construction of power plants of the same type of facility as Seller’s.

“Equitable Defenses” means any bankruptcy, insolvency, reorganization or other Laws affecting creditors’ rights generally and, with regard to equitable remedies, the discretion of the court before which proceedings may be pending to obtain same.

[For Dispatchable Product only: “Equivalent Availability Factor” or “EAF” has the meaning set forth in Section 4.1(b).]

“Event of Default” has the meaning set forth in Section 5.1.

“Execution Date” means the date hereof as set forth in the preamble of the Cover Sheet.

“Executive(s)” has the meaning set forth in Section 12.2(a).

“FERC” means the Federal Energy Regulatory Commission or any successor government agency.

“Force Majeure” means any event or circumstance which wholly or partly prevents or delays the performance of any material obligation arising under this Agreement but only to the extent (1) such event is not within the reasonable control, directly or indirectly, of the Party seeking to have its performance obligation(s) excused thereby, (2) the Party seeking to have its performance obligation(s) excused thereby has taken all reasonable precautions and measures in order to prevent or avoid such event or mitigate the effect of such event on such Party’s ability to perform its obligations under this Agreement and which by the exercise of due diligence such Party could not reasonably have been expected to avoid and which by the exercise of due diligence it has been unable to overcome, and (3) such event is not the direct or indirect result of the fault or negligence of the Party seeking to have its performance obligations excused thereby.

(a) Subject to the foregoing, events that could qualify as Force Majeure include, but are not limited to the following:

(i) acts of God, flooding, lightning, landslide, earthquake, fire, drought, explosion, epidemic, quarantine, storm, hurricane, tornado, volcano, other natural disaster or unusual or extreme adverse weather-related events;

(ii) war (declared or undeclared), riot or similar civil disturbance, acts of the public enemy (including acts of terrorism), sabotage, blockade, insurrection, revolution, expropriation or confiscation; or

(iii) except as set forth in subpart (b)(vii) below, strikes, work stoppage or other labor disputes (in which case the affected Party shall have no obligation to settle the strike or labor dispute on terms it deems unreasonable).

(b) Force Majeure shall not be based on:

(i) Buyer's inability economically to use or resell the Product purchased hereunder;

(ii) Seller's ability to sell the Product at a price greater than the price set forth in this Agreement;

(iii) Seller's inability to obtain Governmental Approvals or other approvals of any type for the construction, operation, or maintenance of the Project;

(iv) a lack of wind, sun or other fuel source of an inherently intermittent nature;

(v) Seller's inability to obtain sufficient labor, equipment, materials, or other resources to build or operate the Project, except to the extent Seller's inability to obtain sufficient labor, equipment, materials, or other resources is caused by an event of Force Majeure of the specific type described in any of subsections (a)(i) through (a)(iii) above;

(vi) Seller's failure to obtain financing or other funds, including funds authorized by a state or the federal government or agencies thereof to supplement the payments made by Buyer pursuant to this Agreement;

(vii) a strike, work stoppage or labor dispute limited only to any one or more of Seller, Seller's Affiliates, the EPC Contractor or subcontractors thereof or any other third party employed by Seller to work on the Project; or

(viii) any equipment failure except if such equipment failure is caused solely by an event of Force Majeure of the specific type described in any of subsections (a)(i) through (a)(iii) above.

"Force Majeure Extension Period" has the meaning set forth in Section 3.9(c)(ii).

"Forced Outage" means any unplanned reduction or suspension of production of Product from the Project or unavailability of the Project in whole or in part that is not a Planned Outage or a willful withholding of Product when the Project is otherwise capable of delivering Product under Good Industry Practices.

"GAAP" has the meaning set forth in Section 13.4.

“Gains” means with respect to any Party, an amount equal to the present value of the economic benefit to it, if any (exclusive of Costs), resulting from the termination of this Agreement for the remaining Delivery Term, determined in a commercially reasonable manner, subject to Section 5.2 hereof. Factors used in determining economic benefit may include, without limitation, reference to information either available to it internally or supplied by one or more third parties, including, without limitation, quotations (either firm or indicative) of relevant rates, prices, yields, yield curves, volatilities, spreads or other relevant market data in the relevant markets market referent prices for renewable power set by the CPUC, comparable transactions, forward price curves based on economic analysis of the relevant markets, settlement prices for comparable transactions at liquid trading hubs (e.g., NYMEX), all of which should be calculated for the remaining term of this Agreement and include the value, if any, of Capacity Attributes, and Green Attributes.

“Good Industry Practice” means those practices, methods and acts that would be implemented and followed by prudent operators of electric transmission facilities (with respect to Buyer) or prudent operators of electric generation facilities similar to the Project (with respect to Seller) in the Western United States during the relevant time period, which practices, methods and acts, in the exercise of prudent and responsible professional judgment in the light of the facts known at the time the decision was made, could reasonably have been expected to accomplish the desired result consistent with good business practices, reliability and safety, and shall include, at a minimum, those professionally responsible practices, methods and acts described in the preceding sentence that comply with manufacturers’ warranties, restrictions in this Agreement, and the requirements of Governmental Authorities, WECC standards, the CAISO and applicable Law. Good Industry Practice is not intended to be the optimum practice, method or act to the exclusion of all others, but rather is intended to be any of the practices, methods and/or actions generally accepted in the region.

“Governmental Approval” means all authorizations, consents, approvals, waivers, exceptions, variances, filings, permits, orders, licenses, exemptions and declarations of or with any governmental entity and, with respect to the Seller, shall include those siting and operating permits and licenses, and any of the foregoing under any applicable environmental Law, that are required for the construction, use, and operation of the Project.

“Governmental Authority” means any federal, state, local or municipal government, governmental department, commission, board, bureau, agency, or instrumentality, or any judicial, regulatory or administrative body, having jurisdiction as to the matter in question.

“Governmental Charges” has the meaning set forth in Section 9.2.

“Green Attributes” means, subject to the limitations in the final sentence of this definition, any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Project, and its avoided emission of pollutants. Green Attributes include but are not limited to Renewable Energy Credits, as well as: (1) any avoided emission of pollutants to the air, soil or water such as sulfur oxides (SOx), nitrogen oxides (NOx), carbon monoxide (CO) and other pollutants; (2) any avoided emissions of carbon dioxide (CO2), methane (CH4), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations

Intergovernmental Panel on Climate Change, or otherwise by Law, to contribute to the actual or potential threat of altering the Earth's climate by trapping heat in the atmosphere;¹ and (3) the reporting rights to these avoided emissions, such as Green Tag Reporting Rights. Green Tag Reporting Rights are the right of a Green Tag Purchaser to report the ownership of accumulated Green Tags in compliance with federal or state Law, if applicable, and to a federal or state agency or any other party at the Green Tag Purchaser's discretion, and include without limitation those Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local Law, regulation or bill, and international or foreign emissions trading program. Green Tags are accumulated on a MWh basis and one Green Tag represents the Green Attributes associated with one (1) MWh of Energy. Green Attributes do not include (i) any energy, capacity, reliability or other power attributes from the Project, (ii) production tax credits associated with the construction or operation of the Project and other financial incentives in the form of credits, reductions, or allowances associated with the Project that are applicable to a state or federal income taxation obligation, (iii) fuel-related subsidies or "tipping fees" that may be paid to Seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits, or (iv) emission reduction credits encumbered or used by the Project for compliance with local, state, or federal operating and/or air quality permits. If the Project is a biomass facility and Seller receives any tradable Green Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Green Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project and for all electric generation using biomethane as fuel, Seller shall transfer to Buyer sufficient Green Attributes of biomethane production and capture to ensure that there are zero net emissions associated with the production of electricity from the Project using the biomethane.

"Guaranteed Commercial Operation Date" or "GCOD" means [insert date], as may be extended pursuant to Section 3.9(c)(ii).

"Guaranteed Energy Production" has the meaning set forth in Section 3.1(e).

"Guarantor" means, with respect to Seller, any person that (a) does not already have any material credit exposure to Buyer under any other agreements, guarantees, or other arrangements at the time its Guaranty is issued, (b) is an Affiliate of Seller, or other third party reasonably acceptable to Buyer, (c) has a Credit Rating of [____] or better from S&P or a Credit Rating of [____] or better from Moody's, (d) has a tangible net worth of at least [_____], (e) is incorporated or organized in a jurisdiction of the United States and is in good standing in such jurisdiction, and (f) executes and delivers a Guaranty for the benefit of Buyer substantially in the form attached hereto as Exhibit D. ***[SDG&E will consider accepting a Guaranty based on the Project, the amount of Performance Assurance, and the identity of the Seller and Guarantor]***

¹ Avoided emissions may or may not have any value for GHG compliance purposes. Although avoided emissions are included in the list of Green Attributes, this inclusion does not create any right to use those avoided emissions to comply with any GHG regulatory program.

“Guaranty” means a guaranty from a Guarantor provided for the benefit of Buyer substantially in the form attached hereto as Exhibit D. *[SDG&E will consider accepting a Guaranty based on the Project, the amount of Performance Assurance, and the identity of the Seller and Guarantor]*

“Imbalance Energy” means the amount of Energy, in any given settlement interval, by which the amount of Delivered Energy deviates from the amount of Scheduled Energy.

“Initial Negotiation End Date” has the meaning set forth in Section 12.2(a).

“Interconnection Facilities” has the meaning set forth in the CAISO Tariff.

“Interest Amount” means, with respect to an Interest Period, the amount of interest derived from the product of (a) the sum of (i) the principal amount of Performance Assurance in the form of cash held by Buyer during that Interest Period, and (ii) the sum of all accrued and unpaid Interest Amounts accumulated prior to such Interest Period; multiplied by (b) the Interest Rate in effect on the first day of the Interest Period; multiplied by (c) the number of days in that Interest Period; divided by (d) 360.

“Interest Payment Date” means the date on which cash held as Performance Assurance is returned pursuant to the terms of this Agreement.

“Interest Period” means the monthly period beginning on the first day of each month and ending on the last day of each month or the shorter period during which Performance Assurance in the form of cash is held by Buyer.

“Interest Rate” means for any date the rate per annum equal to the Commercial Paper (non-financial, 3 months) rate as published the prior month in the Federal Reserve Statistical Release, H.15. Should publication of the interest rate on Commercial Paper (non-financial, 3 months) be discontinued, then the interest rate on commercial paper, which most closely approximates the discontinued rate, published the prior month in the Federal Reserve Statistical Release, H.15, or its successor publication.

“[Large/Small] Generator Interconnection Agreement” has the meaning set forth in the CAISO Tariff.

“Law” means any statute, law, treaty, rule, regulation, ordinance, code, Governmental Approval, enactment, injunction, order, writ, decision, authorization, judgment, decree or other legal or regulatory determination or restriction by a court or Governmental Authority of competent jurisdiction, including any of the foregoing that are enacted, amended, or issued after the Execution Date, and which become effective prior to the end of the Delivery Term; or any binding interpretation of the foregoing by a Governmental Authority.

“Letter(s) of Credit” means one or more irrevocable, standby letters of credit issued by a U.S. commercial bank or a foreign bank with a U.S. branch with such bank having a Credit Rating of at least [A-] with an outlook designation of “stable” from S&P or [A3] with an outlook designation of “stable” from Moody’s, in substantially the form as contained in Exhibit C to this Agreement.

“Licensed Professional Engineer” means a person acceptable to Buyer in its reasonable judgment who (a) is licensed to practice engineering in California, (b) has training and experience in the power industry specific to the technology of the Project, (c) has no economic relationship, association, or nexus with Seller or Buyer, other than to meet the obligations of Seller pursuant to this Agreement, (d) is not a representative of a consultant, engineer, contractor, designer or other individual involved in the development of the Project or of a manufacturer or supplier of any equipment installed at the Project, and (e) is licensed in an appropriate engineering discipline for the required certification being made.

“Locational Marginal Price” has the meaning set forth in the CAISO Tariff.

“Losses” means with respect to any Party, an amount equal to the present value of the economic loss to it, if any (exclusive of Costs), resulting from a Terminated Transaction for the remaining term of this Agreement, determined in a commercially reasonable manner. Factors used in determining the loss of economic benefit may include, without limitation, reference to information either available to it internally or supplied by one or more third parties including without limitation, quotations (either firm or indicative) of relevant rates, prices, yields, yield curves, volatilities, spreads or other relevant market data in the relevant markets, market referent prices for renewable power set by the CPUC, comparable transactions, forward price curves based on economic analysis of the relevant markets, settlement prices for comparable transactions at liquid trading hubs (e.g. NYMEX), all of which should be calculated for the remaining term of this Agreement and include the value, if any, of Capacity Attributes, and Green Attributes.

“Manager” has the meaning set forth in Section 12.2(a).

“Milestones” has the meaning set forth in Section 3.9(b)(i).

[For Dispatchable Product only: “Monthly Capacity Payment” has the meaning set forth in Section 4.1(b).]

“Monthly Energy Payment” has the meaning set forth in Section 4.[1/2]([b/c]).

[For Dispatchable Product only: “Monthly Shaping Factor” has the meaning set forth in Section 4.1(b).]

“Moody’s” means Moody’s Investor Services, Inc., or its successor.

“MWh” means megawatt-hour.

“Negative Imbalance Energy” has the meaning set forth in Section 4.[2/3].

“NERC” means the North American Electric Reliability Corporation or a successor organization that is responsible for establishing reliability criteria and protocols.

“NERC Holiday” means any of the following holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. Three of these days, Memorial Day, Labor Day, and Thanksgiving Day, occur on the same day each year. Memorial Day is the last Monday in May; Labor Day is the first Monday in September; and Thanksgiving

Day is the fourth (4th) Thursday in November. New Year’s Day, Independence Day, and Christmas Day occur on the same date each year, but in the event any of these holidays occur on a Sunday, the “NERC Holiday” is celebrated on the Monday immediately following that Sunday; and if any of these holidays occur on a Saturday, the “NERC Holiday” remains on that Saturday.

“Network Upgrades” has the meaning set forth in the CAISO Tariff.

“Non-Availability Charges” shall mean Non-Availability Charges as defined in FERC filing ER09-1064 or such other similar term as modified and approved by FERC thereafter to be incorporated in the CAISO Tariff or otherwise applicable to CAISO.

“Non-Defaulting Party” has the meaning set forth in Section 5.2.

“Notice” shall, unless otherwise specified in the Agreement, mean written communications by a Party to be delivered by hand delivery, United States mail, overnight courier service, facsimile or electronic messaging (e-mail).

“Notice to Proceed” or “NTP” means the notice provided by Seller to the EPC Contractor following execution of the EPC Contract between Seller and such EPC Contractor and satisfaction of all conditions precedent to performance of such contract, by which Seller authorizes such EPC Contractor to commence and complete full performance of the work under the EPC Contract without any delay or waiting periods.

“Outage Notification Form” means the completed document from Seller notifying Buyer of an outage of the Project substantially in the form attached hereto as Exhibit G. Buyer reserves the right to reasonably revise or change the form upon Notice to Seller.

[For intermittent As-Available Product: “Participating Intermittent Resource” shall have the meaning set forth in the CAISO Tariff.]

“Participating Transmission Owner” or “Participating TO” means an entity that (a) owns, operates and maintains transmission lines and associated facilities and/or has entitlements to use certain transmission lines and associated facilities that are interconnected to the Delivery Point and (b) has transferred to the CAISO operational control of such facilities and/or entitlements to be made part of the CAISO Grid. As of the Execution Date, the Participating Transmission Owner is ***[San Diego Gas & Electric Company]***.

“Party” or “Parties” means the Buyer or Seller individually, or to both collectively.

[For Peaking Product only: “Peaking” means a Unit-Firm Product for which Energy must be delivered during hours ending 1200-1900 (11:00 am to 7:00 pm) on Monday-Friday, excluding NERC Holidays, for the months July through October and during hours ending 1400-2100 (1:00 pm to 9:00 pm) on Monday-Friday, excluding NERC Holidays, for the months November and December.] [Note: Buyer will consider other firm products such as 6x16: “6x16 Block” means a Unit-Firm Product for which Energy must be delivered during hours ending 0700-2200 (6:00 am to 10:00 pm) on Monday-Saturday throughout the Delivery Term.]

“Performance Assurance” means collateral provided by Seller to Buyer to secure Seller’s obligations hereunder and includes *[For Agreements with Delivery Terms greater than two years: CPUC Approval Security,] Development Period Security, Construction Period Security, and Delivery Term Security.*

[For As-Available, Baseload, Peaking Product: “Performance Measurement Period” has the meaning set forth in Section 3.1(e).]

“Planned Outage” means any planned reduction or suspension of the electrical output from the Project or unavailability of the Project in whole or in part as a result of the inspection, maintenance, or repair of equipment that is scheduled in accordance with Section 3.7(a).

“PNode” has the meaning set forth in the CAISO Tariff.

“Positive Imbalance Energy” has the meaning set forth in Section 4.[2/3].

“Product” has the meaning set forth in Section 3.1(a).

[For Projects receiving PTCs: “Production Tax Credit” or “PTC” means the tax credit for electricity produced from certain renewable generation resources described in Section 45 of the Internal Revenue Code of 1986, as it may be amended from time to time.]

“Project” means all of the *[insert technology]* electric generating units, the Site at which the generating facility is located, the utility interconnection facilities up to the point of change in ownership to the applicable utility’s facilities, and the other assets, tangible and intangible, that compose the generation facility as more particularly described on Exhibit A.

“Project Cure Period” has the meaning set forth in Section 3.9(c)(i).

“Quarterly Progress Report” means the report similar in form and content attached hereto as Exhibit F, as may be modified from time to time to meet applicable CPUC requirements.

“Recording” has the meaning set forth in Section 13.6.

“Reductions” has the meaning set forth in Section 3.2(c).

“Referral Date” has the meaning set forth in Section 12.2(a).

“Remedial Action Plan” has the meaning provided in Section 3.9(b)(ii).

“Renewable Energy Credit” has the meaning set forth in California Public Utilities Code Section 399.12(h) and CPUC Decision 08-08-028, as each may be amended from time to time or as further defined or supplemented by Law.

“Renewable Generation Equipment Supplier” means the supplier of the [electric generating [wind] [gas] [steam] turbine(s)] [solar electric generating equipment] for the Project, selected by Seller.

“Replacement Price” means the price (in dollars per megawatt hour) at which Buyer, acting in a commercially reasonable manner, purchases for delivery at the Delivery Point (or any other reasonably equivalent delivery point for Buyer) a replacement for any Product (including its associated Green Attributes) that was not Scheduled and delivered by Seller, plus (a) costs (calculated in dollars per megawatt hour) reasonably incurred by Buyer in purchasing such replacement Product and (b) additional transmission charges (calculated in dollars per megawatt hour), if any, reasonably incurred by Buyer for such replacement Product, or absent a purchase, the market price at the Delivery Point (or any other reasonably equivalent delivery point for Buyer) for such replacement Product for the hours impacted by such failure to Schedule or deliver such Product as determined by Buyer in a commercially reasonable manner. The Replacement Price also shall include all CAISO and other charges and penalties calculated in dollars per megawatt hour with respect to the deviation from the Scheduled supply resulting from Seller’s failure to Schedule or deliver; provided, however, in no event shall such price include any ratcheted demand or similar charges, nor shall Buyer be required to utilize or change its utilization of its owned or controlled assets or market positions to minimize Seller’s liability. For the purposes of this definition, Buyer shall be considered to have purchased replacement Product to the extent Buyer shall have entered into one or more arrangements in a commercially reasonable manner whereby Buyer repurchases its obligation to sell and deliver the Product to another party. If for any reason a Replacement Price is unavailable when Seller fails to deliver or Schedule Product, then the Replacement Price for the hours when a Replacement Price is unavailable shall be the last available Replacement Price together with any charges and penalties allocated to Buyer during such time.

“Resource Adequacy” means the procurement obligation of load serving entities, including Buyer, as such obligations are described in CPUC Decisions 04-01-050, 04-10-035, 05-10-042, 06-04-040, 06-06-064, 06-07-031, 07-06-029, 08-06-031, 09-06-028, 10-06-036, 11-06-022, 12-06-025, 13-06-024, and subsequent CPUC decisions addressing Resource Adequacy issues, as those obligations may be altered from time to time in the CPUC Resource Adequacy Rulemakings (R.) 04-04-003 and (R.) 05-12-013 or by any successor proceeding, and all other Resource Adequacy obligations established by any other entity, including the CAISO.

“Sales Price” means the price (in dollars per megawatt hour) at which Seller, acting in a commercially reasonable manner, resells any Product not Scheduled and received by Buyer, deducting from such proceeds any (a) costs (calculated in dollars per megawatt hour) reasonably incurred by Seller in reselling such Product including all costs charged by CAISO to Schedule and deliver the Product into the CAISO System, and (b) additional transmission charges (calculated in dollars per megawatt hour), if any, reasonably incurred by Seller in Scheduling and delivering such Product to the third party purchasers, or absent a sale despite commercially reasonable efforts to resell the Product, zero. The Sales Price shall also be reduced by all CAISO and other costs, charges and penalties with respect to the deviation from the Scheduled supply, in each case, resulting from Buyer’s failure to take Product and calculated in dollars per megawatt hour; provided, however, in no event shall such price include any ratcheted demand or similar charges, nor shall Seller be required to utilize or change its utilization of its owned or controlled assets, including contractual assets, or market positions to minimize Buyer’s liability. The Sales Price may be less than zero.

“S&P” means the Standard & Poor’s Rating Group (a division of McGraw-Hill, Inc.) or its successor.

“Schedule” means the actions of Seller, Buyer and/or their designated representatives, or Scheduling Coordinators, including each Party’s Transmission Providers, if applicable, of notifying, requesting and confirming to each other and the CAISO the quantity and type of Product to be delivered on any given day or days at a specified Delivery Point.

“Scheduling Coordinator” or “SC” means an entity certified by the CAISO as qualifying as a Scheduling Coordinator pursuant to the CAISO Tariff, for the purposes of undertaking the functions specified in “Responsibilities of a Scheduling Coordinator,” of the CAISO Tariff, as amended from time-to-time.

“Scheduled Energy” means the Energy that clears under the applicable CAISO market based on the final Schedule developed in accordance with this Agreement, the operating procedures developed by the Parties pursuant to Section 3.10, and the applicable CAISO Tariff, protocols and Scheduling practices.

“SEC” means the U.S. Securities and Exchange Commission.

“Seller” shall have the meaning set forth on the Cover Sheet.

“Settlement Amount” means, with respect to the Non-Defaulting Party, the Losses or Gains, and Costs, expressed in U.S. Dollars, which such Party incurs as a result of the liquidation of a Terminated Transaction pursuant to Sections 5.2 and 5.3.

“Site” shall mean the location of the Project as described in Exhibit A.

“Station Service” means the electric energy produced by the Project that is used within the Project to power the lights, motors, control systems and other auxiliary electrical loads that are necessary for operation of the Project.

“System Dispatch Down” means curtailment of delivery of Product from the Project resulting from (a) curtailment ordered by the CAISO (whether directly or through the Scheduling Coordinator or the Participating Transmission Owner), for any reason, including, but not limited to, an Exceptional Dispatch (as defined in the CAISO Tariff), any system emergency as defined in the CAISO Tariff (“System Emergency”), any warning of an anticipated System Emergency, or any warning of an imminent condition or situation which could jeopardize the CAISO’s or Participating Transmission Owner’s electric system integrity or the integrity of other systems to which the CAISO or Participating Transmission Owner is connected, any warning, forecast, or anticipated overgeneration conditions, including a request from CAISO to manage over-generation conditions; (b) curtailment ordered by the Participating Transmission Owner or distribution operator (if interconnected to distribution or sub-transmission system) for reasons including, but not limited to, (i) any situation that affects normal function of the electric system including, but not limited to, any abnormal condition that requires action to prevent circumstances such as equipment damage, loss of load, or abnormal voltage conditions, (ii) any warning, forecast or anticipation of conditions or situations that jeopardize the Participating Transmission Owner’s electric system integrity or the integrity of other systems to which the Participating Transmission Owner is connected; (c) curtailment ordered by the Participating Transmission Owner or distribution operator (if interconnected to distribution or sub-transmission system) as a result of scheduled or unscheduled maintenance or construction on the Participating Transmission Owner’s

transmission facilities or distribution operator’s facilities (if interconnected to distribution or sub-transmission system) that prevents the delivery or receipt of Delivered Energy to or at the Delivery Point, (d) curtailment in accordance with Seller’s obligations under its interconnection agreement with the Participating Transmission Owner or distribution operator, ***[If the Project is located outside of the CAISO:*** or (e) curtailment ordered by the Transmission Provider provided, that Seller has contracted for firm transmission with such Transmission Provider for the Product to be delivered to the Delivery Point and such curtailment is due to “force majeure” or “uncontrollable force” or a similar term as defined under the Transmission Provider’s tariff]; ***[For Dispatchable Product only:*** or ([e/f]) curtailment ordered by Buyer pursuant to a Dispatch Notice.] ***[For all Products other than Dispatchable:*** provided, however, that System Dispatch Down shall not include Economic Dispatch Down].

“Terminated Transaction” means the termination of this Agreement in accordance with Section 5.2 of this Agreement.

“Termination Payment” has the meaning set forth in Section 5.2.

“Transmission Provider” means any entity or entities transmitting or transporting the Product on behalf of Seller or Buyer to or from the Delivery Point.

[For Baseload, Peaking, or Dispatchable Product only: “Unit Firm” means, with respect to a Product, that the Product is intended to be supplied from the Project, and subject to the terms of this Agreement, Seller is excused from selling and delivering the Product to Buyer, and Seller shall not be liable to Buyer for any damages determined pursuant to Section 3.1(h) of the Agreement, in the event that Seller fails to deliver the Product to Buyer for any of the following reason:

- (a) if the Project is unavailable as a result of a Forced Outage and such Forced Outage is not the result of Seller’s negligence or willful misconduct;
- (b) Force Majeure;
- (c) by the Buyer’s failure to perform;
- (d) by a Planned Outage of the Project; or
- (e) a reduction in output as ordered under Dispatch Down Periods.

The following products shall be considered “Unit Firm” products: Peaking, Baseload, and Dispatchable.]

[For an intermittent As-Available Product only: “VER Forecasting Program” means the rules, protocols, procedures and standards for Participating Intermittent Resources under the CAISO’s Eligible Intermittent Resource Protocol, as may be amended from time to time, as set forth in the CAISO Tariff.]

“WECC” means the Western Electricity Coordinating Council or successor agency.

“WREGIS” means the Western Renewable Energy Generating Information System or any successor renewable energy tracking program.

1.2 Interpretation. The following rules of interpretation shall apply:

(a) The term “month” shall mean a calendar month unless otherwise indicated, and a “day” shall be a 24-hour period beginning at 12:00:01 a.m. Pacific Prevailing Time and ending at 12:00:00 midnight Pacific Prevailing Time; provided that a “day” may be 23 or 25 hours on those days on which daylight savings time begins and ends.

(b) Unless otherwise specified herein, all references herein to any agreement or other document of any description shall be construed to give effect to amendments, supplements, modifications or any superseding agreement or document as then exist at the applicable time to which such construction applies.

(c) Capitalized terms used in this Agreement, including the appendices hereto, shall have the meaning set forth in Article 1, unless otherwise specified.

(d) Unless otherwise specified herein, references in the singular shall include references in the plural and vice versa, pronouns having masculine or feminine gender will be deemed to include the other, and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, trusts, associations, organizations or other entities (whether or not having a separate legal personality). Other grammatical forms of defined words or phrases have corresponding meanings.

(e) The term “including” when used in this Agreement shall be by way of example only and shall not be considered in any way to be in limitation.

(f) References to a particular article, section, subsection, paragraph, subparagraph, appendix or attachment shall, unless specified otherwise, be a reference to that article, section, subsection, paragraph, subparagraph, appendix or attachment in or to this Agreement.

(g) Any reference in this Agreement to any natural person, Governmental Authority, corporation, partnership or other legal entity includes its permitted successors and assigns or to any natural person, Governmental Authority, corporation, partnership or other legal entity succeeding to its functions.

(h) All references to dollars are to U.S. dollars.

ARTICLE TWO: EFFECTIVENESS OF AGREEMENT; CONDITIONS PRECEDENT

2.1 Effectiveness of Agreement Prior to CP Satisfaction Date. Commencing on the Execution Date until the CP Satisfaction Date, this Agreement shall be in full force and effect, enforceable and binding only to the extent required to give full effect to, and enforce, the rights and obligations of the Parties under this Article 2, including, as it relates to Article 2, the rights and obligations under Articles 1, 5, 7, 8, 9, 10, 11, 12, and 13.

2.2 Obligations of the Parties. The Parties shall cooperate with each other to cause the Conditions Precedent to be satisfied as soon as reasonably practical.

(a) Seller's Obligations. Prior to the CP Satisfaction Date, Seller shall (i) use commercially reasonable efforts to pursue satisfaction of the Conditions Precedent set forth in Sections [____], (ii) diligently pursue development of the Project in accordance with Section 3.9, (iii) comply with Section 3.9(b) in achieving the applicable Milestones that have due dates occurring prior to the CP Satisfaction Date, reporting completion of such Milestones, and delivering Remedial Action Plans in respect of missed Milestones as more fully described therein, (iv) deliver the Quarterly Progress Report in accordance with Section 3.9(a), and (v) otherwise comply with its obligations, covenants, representations, and warranties under Articles 7-13. ***[For Agreements with Delivery Terms greater than two years:*** Upon an Event of Default of Seller prior to the CPUC Approval Date, Buyer may terminate this Agreement in which case Seller shall owe Buyer liquidated damages in the amount of the CPUC Approval Security.] Upon an Event of Default of Seller ***[For Agreements with Delivery Terms greater than two years:*** on or after the CPUC Approval Date but] prior to the CP Satisfaction Date, Buyer may terminate this Agreement in which case Seller shall owe Buyer liquidated damages in the amount of the Development Period Security. Buyer may retain such Performance Assurances to pay such liquidated damages. Each Party agrees and acknowledges that (a) the actual damages that Buyer would incur due to an Event of Default of Seller prior to the CP Satisfaction Date would be difficult or impossible to predict with certainty, (b) the liquidated damages set forth in this section are a reasonable and appropriate approximation of such damages, and (c) the liquidated damages set forth in this section are the exclusive remedy for an Event of Default of Seller prior to the CP Satisfaction Date.

(b) Buyer's Obligations. Prior to the CP Satisfaction Date, Buyer shall (i) use commercially reasonable efforts to pursue satisfaction of the Conditions Precedent set forth in Sections 2.3(a), and (ii) otherwise comply with its obligations, covenants, representations, and warranties under Articles 7-13. ***[For Agreements with Delivery Terms greater than two years:*** Upon an Event of Default of Buyer prior to the CPUC Approval Date, Seller may terminate this Agreement in which case Buyer shall owe Seller liquidated damages in the amount of the CPUC Approval Security.] Upon an Event of Default of Buyer ***[For Agreements with Delivery Terms greater than two years:*** on or after the CPUC Approval Date but] prior to the CP Satisfaction Date, Seller may terminate this Agreement in which case Buyer shall owe Seller liquidated damages in the amount of the Development Period Security. Each Party agrees and acknowledges that (a) the actual damages that Seller would incur due to an Event of Default of Buyer prior to the CP Satisfaction Date would be difficult or impossible to predict with certainty, (b) the liquidated damages set forth in this section are a reasonable and appropriate approximation of such damages, and (c) the liquidated damages set forth in this section are the exclusive remedy for an Event of Default of Buyer prior to the CP Satisfaction Date.

2.3 Conditions Precedent. Subject to Section 2.1, the effectiveness of the remainder of this Agreement is conditioned upon the satisfaction (or waiver by the Party described in Section 2.4) of all of the following conditions precedent ("Conditions Precedent") by the deadline dates set forth below for each Condition Precedent without extension for Force Majeure or any other reason:

(a) CPUC Approval. No later than [_____], Buyer shall have obtained CPUC Approval. Prior to this deadline, should the CPUC issue an order approving this Agreement but with conditions or modifications that materially alter the commercial aspects of this Agreement, the Parties agree to use good faith efforts to renegotiate this Agreement and file the amended agreement with the CPUC seeking CPUC Approval therefor. If, no later than the earlier of (i) sixty (60) days after such order or (ii) the deadline date above, no agreement is reached, either Party may terminate this Agreement upon delivery of Notice to the other Party.

(b) Electrical Interconnection. No later than [_____], Seller shall have entered into a [Large/Small] Generator Interconnection Agreement providing for the construction of the Electrical Interconnection Upgrades necessary to maintain the “[Full Capacity] [Energy Only] Deliverability Status” (as defined in the CAISO Tariff) of the Project and setting forth:

(i) an estimated in-service interconnection date for the “Participating TO’s Interconnection Facilities,” the “Network Upgrades,” and the “Distribution Upgrades” (as each term is defined in the CAISO Tariff) of no later than [_____] months after Seller provides the Participating Transmission Owner with the appropriate security and written authorization to proceed under its [Large/Small] Generator Interconnection Agreement for the Project,

(ii) a refundable cost for “Network Upgrades” (as defined in the CAISO Tariff) that Seller would be obligated to pay and would be entitled to reimbursement from the CAISO, a Participating Transmission Owner, or any other affected transmission provider as provided thereunder not exceeding \$[_____], and [*Note: Seller may propose additional provisions whereby Seller can satisfy this Condition Precedent by buying down the Network Upgrade costs that exceed the foregoing cost cap in a manner that is mutually acceptable to the Parties.*]

(iii) a nonrefundable cost that Seller would be obligated to pay thereunder not exceeding \$[_____] (or such greater amount as Seller may approve, in its sole discretion).

(c) [*Others, Major Governmental Approvals, Financing, etc.*]

2.4 Failure to Meet All Conditions Precedent.

(a) Beneficiary Party.

(i) Both of the Parties are the beneficiaries of the Conditions Precedent set forth in Sections 2.3(a), 2.3(b)(i)-(ii) [*Others*], and in order for a waiver of non-satisfaction of such Conditions Precedent to be effective, both of the Parties must waive (in their sole discretion) non-satisfaction by the deadline date therefor.

(ii) Buyer shall be the sole beneficiary of the Conditions Precedent set forth in Sections [*List*], and in order for a waiver of non-satisfaction of such Conditions Precedent to be effective, Buyer alone must waive (in its sole discretion) non-satisfaction by the deadline date therefor.

(iii) Seller shall be the sole beneficiary of the Conditions Precedent set forth in Sections 2.3(b)(iii) *[Others]*, and in order for a waiver of non-satisfaction of such Conditions Precedent to be effective, Seller alone must waive (in its sole discretion) non-satisfaction by the deadline date therefor.

(b) Termination. If any of the Conditions Precedent is not satisfied or waived in writing by the beneficiary Parties thereto on or before the date that is fifteen (15) days after the applicable deadline date therefor, then this Agreement shall automatically terminate with no further obligation to either Party (other than as set forth in Sections 2.4(b)(i)-(ii) below and any other payment obligations which are accrued and payable at the time of termination).

(i) Upon a termination of this Agreement for any reason under Section 2.4 other than as described in Section 2.4(b)(ii) below, Seller shall forfeit to Buyer an amount equal to the Performance Assurance then required to be delivered to Buyer hereunder. Buyer may retain such Performance Assurance to pay such amount.

(ii) Upon a termination of this Agreement under this Section 2.4 as a result of the failure of the Conditions Precedent set forth in Sections 2.3(a) to be satisfied (or waived by both Parties) or as a result of the failure of the Conditions Precedent set forth in Sections 2.3(b)(i)-(ii) to be satisfied or waived by Buyer, Buyer shall return to Seller the Performance Assurances then held by Buyer.

2.5 Effectiveness of Agreement on and after CP Satisfaction Date. This Agreement shall be in full force and effect, enforceable and binding in all respects as of the CP Satisfaction Date until the conclusion of the Delivery Term or earlier termination pursuant to the terms of this Agreement; provided however, that this Agreement shall remain in effect until (i) the Parties have fulfilled all obligations under this Agreement, including payment in full of amounts due for the Product delivered prior to the end of the Delivery Term, the Settlement Amount, indemnification payments or other damages (whether directly or indirectly such as through set-off or netting) and (ii) the undrawn portion of the *[For Agreements with Delivery Terms greater than two years: CPUC Approval Security,] Development Period Security, Construction Period Security, or Delivery Term Security, as applicable, is released and/or returned as applicable (if any is due)*. All indemnity rights shall survive the termination or expiration of this Agreement for the longer of twelve (12) months or the expiration of the statute of limitations period of the claim underlying the indemnity obligation.

ARTICLE THREE: OBLIGATIONS AND DELIVERIES

3.1 Transaction

(a) Product. The “Product” to be delivered and sold by Seller and received and purchased by Buyer under this Agreement is *[Seller to select: As-Available, Baseload, Peaking, or Dispatchable]* Energy, Capacity Attributes, Green Attributes, and other ancillary products, services or attributes similar to the foregoing which are or can be produced by or associated with the Project (net of Station Service) in accordance with the terms hereof.

(b) Transaction. Unless specifically excused by the terms of this Agreement during the Delivery Term, Seller shall sell and deliver, or cause to be delivered, and Buyer shall

purchase and receive, or cause to be received, the Product at the Delivery Point, and Buyer shall pay Seller for the Product in accordance with the terms hereof. **In no event shall Seller have the right to procure any element of the Product from sources other than the Project for sale or delivery to Buyer under this Agreement [If the Project is located outside of the CAISO: except with respect to Imbalance Energy from the Transmission Provider].**

(c) **Delivery Term.** The Parties agree that **the period of Product delivery is [_____] Contract Years.** As used herein, “Delivery Term” shall mean the period of Contract Years specified above beginning on the Commercial Operation Date and continuing until the end of the last Contract Year unless terminated earlier as provided by the terms of this Agreement.

(d) **Delivery Point.** The Delivery Point shall be [the point of interconnection of the Project to the CAISO Grid] **[Seller may specify another delivery point; for a Project located outside the CAISO Grid, the Delivery Point should be a CAISO Scheduling Point as defined by the CAISO]** and for financial settlement purposes under the applicable CAISO market, the PNode corresponding to such point.

(e) **[For Baseload, Peaking, As-Available Product: Contract Quantity and Guaranteed Energy Production.** The quantity of Bundled Green Energy that Seller expects to be able to deliver to Buyer during each Contract Year is [_____] MWh (“Contract Quantity”). Throughout the Delivery Term, Seller shall be required to deliver to Buyer no less than the Guaranteed Energy Production (as defined below) in any [twelve (12)] [twenty-four (24)] consecutive calendar month period during the Delivery Term (“Performance Measurement Period”). “Guaranteed Energy Production” means an amount of Bundled Green Energy, as measured in MWh, equal to [two times] [_____] % of the Contract Quantity. Notwithstanding the excuses to performance set forth in the definition of the Product type (as such Product type is specified in Section 3.1(a)), Seller shall be excused from achieving the Guaranteed Energy Production during any Performance Measurement Period only to the extent of any Force Majeure events, Buyer’s failure to perform, or Dispatch Down Periods. For purposes of determining whether Seller has achieved the Guaranteed Energy Production, Seller shall be deemed to have delivered to Buyer an amount of Bundled Green Energy that it could reasonably have delivered to Buyer but was prevented from delivering to Buyer by reason of any Force Majeure events, Buyer’s failure to perform, or Dispatch Down Periods.] **[For Dispatchable Product: Contact Quantity.** The quantity of Bundled Green Energy that Seller expects to be able to deliver to Buyer during each Contract Year is [_____] MWh (“Contract Quantity”).]

(f) **Contract Capacity.** The “Contract Capacity” is the full generation capacity of the Project net of all Station Service which shall be **[For As-Available Product: no less than [_____] MW and no greater than [_____] MW] [For Baseload, Peaking, or Dispatchable Product only: an amount determined periodically pursuant to a Capacity Test as set forth below].** Throughout the Delivery Term, Seller shall sell and Schedule all Product associated with the Contract Capacity of the Project solely to Buyer, except in the case of an Event of Default of Buyer or an unexcused failure by Buyer to Schedule, receive, and pay for Product under Section 3.1(h)(ii) **[If the Project is located outside of the CAISO: or the sale of Imbalance Energy to the Transmission Provider]. [For Dispatchable Product: Throughout the Delivery Term, Seller shall make the Contract Capacity available solely to Buyer at all times, except in the case of an Event of Default of Buyer or an unexcused failure by Buyer to Schedule, receive, and pay for Product**

under Section 3.1(h)(ii) *[If the Project is located outside of the CAISO: or the sale of Imbalance Energy to the Transmission Provider].*]

(i) ***[For Baseload, Peaking, Dispatchable Product: Initial Capacity Testing***. Upon no less than fourteen (14) days prior Notice to Buyer, Seller shall schedule and complete a Capacity Test prior to the Commercial Operation Date for the Project. Such initial Capacity Test shall establish the Contract Capacity for the Project for the first Contract Year.]

(ii) ***[For Baseload, Peaking, Dispatchable Product: Annual Capacity Testing***. Thereafter, at least once per Contract Year within the first quarter of each Contract Year, upon no less than 14 days prior Notice to Buyer, Seller shall schedule and complete a Capacity Test. In addition, Buyer shall have the right to require a retest of the Capacity Test at any time upon five (5) days prior written Notice to Seller if Buyer reasonably believes that the actual Contract Capacity has varied materially from the results of the most recent tests. Seller shall have the right to run a retest of the Capacity Test at any time upon two (2) days prior written Notice to Buyer (or any shorter period reasonably acceptable to Buyer consistent with Good Industry Practices).]

(iii) ***[For Baseload, Peaking, Dispatchable Product: Witness at Capacity Tests***. Buyer shall have the right to send one or more representative(s) to witness all Capacity Tests.]

(iv) ***[For Baseload, Peaking, Dispatchable Product: Capacity Test Reporting***. No later than fourteen (14) days following any Capacity Test, Seller shall submit a testing report detailing results and findings of the test. The report shall include meter readings and plant log sheets verifying the operating conditions and output of the Project. The Contract Capacity determined pursuant to a Capacity Test shall become the new Contract Capacity at the beginning of the day following the completion of the test for all purposes under this Agreement.]

(v) ***[For Baseload, Peaking, Dispatchable Product: Capacity Test Costs and Payments***. Buyer shall pay the [Monthly Energy Payment] in respect of the Product produced during the initial Capacity Test prior to the Commercial Operation Date and each annually scheduled Capacity Test thereafter. In addition, Buyer shall pay the [Monthly Energy Payment] in respect of the Product produced during any other Buyer requested test unless the results of such test demonstrate that the actual Contract Capacity has varied by more than two percent (2%) from the results of the most recent tests, in which case Buyer shall pay the lesser of the [Monthly Energy Payment] in respect of the Product produced during such test and the applicable CAISO real-time hourly average energy price. In addition, Buyer shall pay the lesser of the [Monthly Energy Payment] in respect of the Product produced during any Seller requested test and the applicable CAISO real-time hourly average energy price]. Buyer is responsible for all costs, expenses and fees payable or reimbursable to its representative(s) witnessing Capacity Testing. All other costs of any Capacity Tests shall be borne by Seller.]

(g) ***Project***. All Product provided by Seller pursuant to this Agreement shall be supplied from the Project only *[If the Project is located outside of the CAISO: except with respect to Imbalance Energy from the Transmission Provider]*. Other than maintenance in accordance with Good Industry Practices, Seller shall not make any alteration or modification to the Project

which results in a change to the Contract Capacity of the Project or any other material changes to the Project without Buyer's prior written consent. The Project is further described in Exhibit A.

(h) Performance Excuses.

(i) Seller Excuses. The performance of Seller to Schedule, deliver, and sell the Product shall be excused only for the reasons set forth in the definition of *[Seller to select: "As-Available" or "Unit Firm"]*. If Seller fails to Schedule, deliver, or sell all or part of the Product for a period or a series of periods that is cumulatively longer than thirty (30) days, and such failure is not excused as described above, then such failure shall be an Event of Default. If Seller fails to Schedule, deliver, or sell all or part of the Product for any period prior to an Early Termination Date, and such failure is not excused as described above, then Seller shall pay Buyer, on the date payment would otherwise be due in respect of the month in which the failure occurred an amount for such Product deficiency equal to the positive difference, if any, obtained by subtracting (A) the product of the Energy Price times the Product deficiency, from (B) the product of the Replacement Price times the Product deficiency. The invoice for such amount shall include a written statement explaining in reasonable detail the calculation of such amount.

(ii) Buyer Excuses. The performance of Buyer to Schedule, receive, and pay for the Product shall be excused only (A) during periods of Force Majeure, (B) by Seller's failure to perform or (C) during Dispatch Down Periods *[For all Products other than Dispatchable Product: (except that Buyer shall not be excused from paying for the Product as required under Section 3.4 during periods of Economic Dispatch Down)]*. If Buyer fails to Schedule, receive, or purchase all or part of the Product for a period or a series of periods that is cumulatively longer than thirty (30) days and such failure is not excused as described above, then such failure shall be an Event of Default. If Buyer fails to Schedule, receive, or purchase all or part of the Product for any period prior to an Early Termination Date and such failure is not excused as described above, then Buyer shall pay Seller, on the date payment would otherwise be due in respect of the month in which the failure occurred an amount for such Product deficiency equal to the positive difference, if any, obtained by subtracting (Y) the product of the Sales Price times the Product deficiency from (Z) the product of the Energy Price times the Product deficiency. The invoice for such amount shall include a written statement explaining in reasonable detail the calculation of such amount.

(i) Green Attributes. Seller hereby provides and conveys all Green Attributes associated with all electricity generation from the Project to Buyer as part of the Product being delivered. Seller represents and warrants that Seller holds the rights to all Green Attributes from the Project, and Seller agrees to convey and hereby conveys all such Green Attributes to Buyer as included in the delivery of the Product from the Project. *For all electric generation using biomethane as fuel, neither Buyer nor Seller may make a marketing, regulatory, or retail claim that asserts that a procurement contract to which that entity was a party resulted, or will result, in greenhouse gas reductions related to the destruction of methane if the capture and destruction is required by Law. If the capture and destruction of the biomethane is not required by Law, neither Buyer nor Seller may make a marketing, regulatory, or retail claim that asserts that a procurement contract to which that entity was a party resulted, or will result, in greenhouse gas reductions related to the destruction of methane, unless the environmental attributes associated with the capture and destruction of the biomethane*

pursuant to that contract are transferred to Buyer and retired on behalf of the retail customers consuming the electricity associated with the use of that biomethane, or unless Seller's procurement contract with the source of biomethane prohibits the source of biomethane from separately marketing the environmental attributes associated with the capture and destruction of the biomethane sold pursuant to that contract, and such attributes have been retired.

(j) Resource Adequacy. During the Delivery Term, Seller grants, pledges, assigns and otherwise commits to Buyer all of the Project's Contract Capacity, including Capacity Attributes, from the Project for Buyer to use in meeting its Resource Adequacy or successor program requirements, as the CPUC, CAISO or other regional entity may prescribe. Seller understands that the CPUC is currently in the process of developing requirements for Resource Adequacy and these requirements and the implementation thereof have not been finalized. Seller agrees that it shall take all commercially reasonable actions and execute any and all documents or instruments reasonably necessary to enable Buyer to use all of the Contract Capacity, including Capacity Attributes, to be committed by Seller to Buyer pursuant to this Agreement for the Resource Adequacy requirements of Buyer. Seller agrees that the Project is subject to the terms of the Availability Standards.

(k) WREGIS. Prior to the initial delivery of Energy to Buyer, Seller shall register the Project in WREGIS, execute a CAISO Qualified Reporting Entity Service Agreement to allow CAISO, on the Seller's behalf, to upload generation information directly into WREGIS, and take all other actions necessary to ensure that the Green Attributes produced from the Project in an amount equal to the amount of Delivered Energy are issued and tracked for purposes of satisfying the requirements of the California Renewable Portfolio Standard and transferred to Buyer, including payment of all fees required to register the facility in WREGIS, issue WREGIS certificates, and transfer such certificates to Buyer. Within seventy-five (75) days after the initial delivery of energy to Buyer, Seller shall provide to Buyer written approval from WREGIS for Seller's generation to be reported to WREGIS. Seller warrants that all necessary steps to allow the Renewable Energy Credits transferred to Buyer to be tracked in WREGIS will be taken prior to the first delivery under the Agreement.

(l) Prevailing Wage. To the extent applicable, Seller shall comply with the prevailing wage requirements of California Public Utilities Code Section 399.13, subdivision (h).

3.2 Transmission.

(a) Seller's Transmission Service Obligations. During the Delivery Term, Seller shall arrange and be responsible for transmission service for delivery of the Product to and at the Delivery Point and bear all risks and costs associated with such transmission service, including, but not limited to, all Transmission Provider costs and charges, electric transmission losses, and any transmission outages or curtailment, except as provided otherwise in this Agreement in respect of Dispatch Down Periods. *[For Projects located outside of CAISO: Seller shall obtain and maintain during the Delivery Term firm transmission service to deliver the Product from the Site to the Delivery Point from all intermediary Transmission Providers between the Site and the Delivery Point. At Buyer's request, Seller shall provide to Buyer a copy of all firm transmission service agreements and any amendments thereto.]* Seller shall fulfill all contractual,

metering and applicable interconnection requirements, including those set forth in Participating Transmission Owner's applicable tariffs, the CAISO Tariff and implementing CAISO standards and requirements, including, but not limited to, executing applicable interconnection agreements, Participating Generator Agreement and Meter Service Agreement so as to be able to deliver Energy to the CAISO Grid. Seller shall arrange for any interconnection agreement with the CAISO and such interconnection agreement is separate and not a part of this Agreement.

(b) Buyer's Transmission Service Obligations. During the Delivery Term, Buyer shall arrange and be responsible for transmission service for delivery of the Product from the Delivery Point and bear all risks and costs associated with such transmission service, including, but not limited to, all Transmission Provider costs and charges, electric transmission losses, and any transmission outages or curtailment, except as provided otherwise in this Agreement in respect of Dispatch Down Periods.

(c) Congestion Charges. Seller shall be responsible for all costs of congestion for transmission of the Product up to and at the Delivery Point. Buyer shall be responsible for all costs of congestion for transmission of the Product from the Delivery Point. To the extent that Seller is reimbursed for or receives any refunds, credits, or benefits from the CAISO for congestion charges or losses in respect of transmission of the Product from the Delivery Point, whether due to differences between the locational marginal pricing at the Delivery Point and Buyer's load aggregation point or any other point downstream of the Delivery Point, congestion revenue rights associated with any transmission path downstream of the Delivery Point, or any other hedging instruments associated with the transmission of the Product from the Delivery Point (collectively, any such refunds, credits or benefits are referred to as "Reductions"), then, at Buyer's option, either (i) Seller shall transfer any such Reductions and their related rights to Buyer; or (ii) Buyer shall reduce payments due to Seller under this Agreement in amounts equal to the Reductions and Seller shall retain the Reductions.

3.3 Scheduling.

(a) *[For As-Available intermittent Product only: VER Forecasting Program Requirements.* Seller shall cause the Project to become a Participating Intermittent Resource including executing all necessary documents to become a Participating Intermittent Resource. Seller shall be responsible for all CAISO forecasting fees and related charges associated with the Project becoming a Participating Intermittent Resource and participating in the VER Forecasting Program. Seller and Buyer shall comply with the VER Forecasting Program, and all additional protocols issued by the CAISO relating to Participating Intermittent Resources, including the VER Forecasting Program, for the Delivery Term. Seller shall provide Buyer with a copy of the notice from the CAISO certifying the Project as a Participating Intermittent Resource prior to the Commercial Operation Date. In the event that the VER Forecasting Program or the CAISO Tariff and/or any protocols relating thereto are changed, amended, modified replaced or terminated, Seller and Buyer agree to comply with such revisions and, to the extent practical, to implement such revisions in a manner that maintains the relative economic positions of the Parties as of the date of this Agreement.]

(b) Scheduling Coordinator.

[When Seller is SC for the Project, include the following two paragraphs:

(i) Seller as Scheduling Coordinator for the Project. During the Delivery Term, Seller shall be its own Scheduling Coordinator or designate a qualified third party to provide Scheduling Coordinator services with its Transmission Provider to Schedule and deliver the Product to the Delivery Point and Buyer shall be its own Scheduling Coordinator or designate a qualified third party to provide Scheduling Coordinator services with its Transmission Provider to Schedule and receive the Product at the Delivery Point. Throughout the Delivery Term, Buyer and Seller shall submit inter-SC trades for scheduling all Product from the Project at the Delivery Point (including Energy, Integrated Forward Market Load Uplift Obligations in respect of self-scheduled Energy, and other Product from time to time contemplated under the CAISO Tariff to be subject to inter-SC trades), based on a final Schedule developed in compliance with this Agreement. During the Delivery Term, each Party or each Party's SC shall conduct all Scheduling in accordance with the operating procedures developed by the Parties pursuant to Section 3.10 and in full compliance with the applicable CAISO Tariff, protocols and Scheduling practices for Product on a day-ahead, hour-ahead, or real time basis, as determined by Buyer. ***[For As-Available intermittent Product only:*** Whenever the VER Forecasting Program is available, Seller shall submit Schedules and any updates to such Schedules to the CAISO based on the most current forecast of Delivered Energy consistent with the VER Forecasting Program.] In all cases, ***[For all Products other than Dispatchable:*** consistent with its Economic Dispatch Down curtailment rights,] Buyer may direct the Scheduling Coordinator to submit, and Seller shall cause the Scheduling Coordinator to submit in accordance with such Buyer's directions, a self-schedule or an economic bid in the applicable CAISO market in order to Schedule the Product with the CAISO. It is the intent of the Parties that neither Party be subject to a double payment or a double charge for Product from the Project through this Agreement and CAISO settlement process and that the more detailed Scheduling and operating procedures developed pursuant to Section 3.10 complement the CAISO settlement process to produce a final economic result between them that is consistent with the fundamental transaction of this Agreement.

(ii) CAISO Costs and Revenues. Seller shall be responsible for CAISO costs (including penalties and other charges) and shall be entitled to all CAISO revenues (including credits and other payments) as the Scheduling Coordinator for the Project, in each case, associated with Imbalance Energy, including all CAISO charges or penalties incurred as a consequence of the Project not being available, the Seller not notifying the CAISO and Buyer of outages in a timely manner (in accordance with the CAISO Tariff and as set forth in Section 3.7), any other failure by Seller to abide by the CAISO Tariff, and any other deviations between Delivered Energy and Scheduled Energy that are attributable to Seller, the Project, or any event, circumstance, act, or incident occurring prior to or at the Delivery Point, including without limitation uninstructed deviation penalties. The Parties agree that any Availability Incentive Payments are for the benefit of the Seller and for Seller's account and that any Non-Availability Charges or other CAISO charges associated with the Project not providing sufficient Resource Adequacy capacity are the responsibility of the Seller and for Seller's account. In addition, if during the Delivery Term, the CAISO implements or has implemented any sanction or penalty related to scheduling, outage reporting, or generator operation, the cost of the sanctions or penalties shall be the Seller's responsibility. Buyer shall be entitled to all credits, payments, or revenues from the CAISO in respect of the Contract Energy, from the Project including revenues associated with CAISO dispatches, inter-SC trade credits, and bid cost recovery.

[When SDG&E is SC for the Project, include the following seven paragraphs:

(iii) Buyer as Scheduling Coordinator for the Project. [During the Delivery Term] [Upon initial synchronization of the Project to the CAISO Grid], Buyer shall be the Scheduling Coordinator or designate a qualified third party to provide Scheduling Coordinator services with the CAISO for the Project for both the delivery and the receipt of the Product at the Delivery Point. At least thirty (30) days prior to the [Commercial Operation Date of the Project] [initial synchronization of the Project to the CAISO Grid], Seller shall take all actions and execute and deliver to Buyer and the CAISO all documents necessary to authorize or designate Buyer as Seller's Scheduling Coordinator for the Project effective as of [the beginning of the Delivery Term] [initial synchronization of the Project to the CAISO Grid]. [During the Delivery Term] [On and after initial synchronization of the Project to the CAISO Grid], Seller shall not authorize or designate any other party to act as Seller's Scheduling Coordinator, nor shall Seller perform for its own benefit the duties of Scheduling Coordinator, and Seller shall not revoke Buyer's authorization to act as Seller's Scheduling Coordinator unless agreed to by Buyer. Buyer (as Seller's SC) shall submit Schedules to the CAISO based on the final Schedule developed in accordance with this Agreement, the operating procedures developed by the Parties pursuant to Section 3.10, and the applicable CAISO Tariff, protocols and Scheduling practices for Product on a day-ahead, hour-ahead, or real time basis, as determined by Buyer. ***[For As-Available intermittent Product only:*** Buyer (as Seller's SC) shall submit Schedules and any updates to such Schedules to the CAISO based on the most current forecast of Delivered Energy consistent with the VER Forecasting Program whenever the VER Forecasting Program is available, and consistent with Buyers' best estimate based on the information reasonably available to Buyer including Buyer's forecast whenever the VER Forecasting Program is not available.] In all cases, ***[For all Products other than Dispatchable:*** consistent with its Economic Dispatch Down curtailment rights,] Buyer (as the Scheduling Coordinator) may, or may direct the third party Scheduling Coordinator to, submit a self-schedule or an economic bid in the applicable CAISO market in order to Schedule the Product with the CAISO.

(iv) Notices. Buyer (as Seller's SC) shall provide Seller with access to a web based system through which Seller shall submit to Buyer and the CAISO all notices and updates required under the CAISO Tariff regarding the Project's status, including, but not limited to, all outage requests, forced outages, forced outage reports, clearance requests, or must offer waiver forms. In accordance with Section 3.7 and this Section 3.2, Seller will cooperate with Buyer to provide such notices and updates. If the web based system is not available, Seller shall promptly submit such information to Buyer and the CAISO (in order of preference) telephonically, by electronic mail, or facsimile transmission to the personnel designated to receive such information.

(v) CAISO Costs and Revenues. Except as otherwise set forth below, ***[For all Products other than Dispatchable Product:*** in Section 3.4(c)(ii),] and elsewhere in this Agreement, Buyer (as Seller's SC) shall be responsible for CAISO costs (including penalties, ***[For As-Available Product VER Forecasting Program Participants only:*** Negative Imbalance Energy costs or revenues,) and other charges) and shall be entitled to all CAISO revenues (including credits, ***[For As-Available Product VER Forecasting Program Participants only:*** Positive Imbalance Energy revenues or costs,) and other payments) as the Scheduling Coordinator for the Project, including revenues associated with CAISO dispatches, bid cost recovery, inter-SC trade

credits, or other credits in respect of the Product Scheduled or delivered from the Project; provided, however that during periods when the Project is under curtailment for both System Dispatch Down and Economic Dispatch Down during the same CAISO settlement interval, Imbalance Energy costs and revenues shall be allocated in accordance with Section 3.4(c)(ii). ***[For As-Available Product VER Forecasting Program Participants only:*** Seller shall be responsible for all CAISO charges or penalties net of credits and payments (including without limitation all Imbalance Energy costs), in each case, resulting from the Seller not notifying the CAISO and Buyer (as Seller's SC) of outages or other unavailability of Project capacity in a timely manner (in accordance with the CAISO Tariff and as set forth in Section 3.7) or any other failure by Seller to abide by the CAISO Tariff.] ***[For all Products other than As-Available Product VER Forecasting Program Participants:*** Seller shall be responsible for all CAISO charges or penalties net of credits and payments, in each case, resulting from the Project not being available, the Seller not notifying the CAISO and Buyer (as Seller's SC) of outages in a timely manner (in accordance with the CAISO Tariff and as set forth in Section 3.7), any other failure by Seller to abide by the CAISO Tariff, and deviations between Delivered Energy and Scheduled Energy that are attributable to Seller, the Project, or any event, circumstance, act, or incident occurring prior to or at the Delivery Point, including without limitation uninstructed deviation penalties.] The Parties agree that any Availability Incentive Payments are for the benefit of the Seller and for Seller's account and that any Non-Availability Charges or other CAISO charges associated with the Project not providing sufficient Resource Adequacy capacity are the responsibility of the Seller and for Seller's account. In addition, if during the Delivery Term, the CAISO implements or has implemented any sanction or penalty related to scheduling, outage reporting, or generator operation, and any such sanctions or penalties are imposed upon the Project or to Buyer as Scheduling Coordinator due to the actions or inactions of Seller, the cost of the sanctions or penalties shall be the Seller's responsibility.

(vi) CAISO Settlements. Buyer (as Seller's SC) shall be responsible for all settlement functions with the CAISO related to the Project. Buyer shall render a separate invoice to Seller for any CAISO charges or penalties ("CAISO Charges Invoice") for which Seller is responsible under this Agreement. CAISO Charges Invoices shall be rendered after settlement information becomes available from the CAISO that identifies any CAISO charges. Notwithstanding the foregoing, Seller acknowledges that the CAISO will issue additional invoices reflecting CAISO adjustments to such CAISO charges. Seller shall pay the amount of CAISO Charges Invoices within ten Business Days of Seller's receipt of the CAISO Charges Invoice. If Seller fails to pay such CAISO Charges Invoice within that period, Buyer may net or offset any amounts owing to it for these CAISO Charges Invoices against any future amounts it may owe to Seller under this Agreement. The obligations under this section with respect to payment of CAISO Charges Invoices shall survive the expiration or termination of this Agreement.

(vii) Dispute Costs. Buyer (as Seller's SC) may be required to dispute CAISO settlements in respect of the Project. Seller agrees to pay Buyer's costs and expenses (including reasonable attorneys' fees, including reasonably allocated costs of in-house counsel of the Buyer) associated with its involvement with such CAISO disputes. In no event shall Buyer (or its third party designee, as Scheduling Coordinator) be liable to Seller for the actions, inactions, errors, or omissions of the CAISO or its agents in the performance of their scheduling functions and/or market operations.

(viii) Terminating Buyer's Designation as Scheduling Coordinator. At least thirty (30) days prior to expiration of this Agreement or as soon as reasonably practicable upon an earlier termination of this Agreement, the Parties will take all actions necessary to terminate the designation of Buyer as Scheduling Coordinator for the Project as of 11:59 p.m. on such expiration date.

(ix) Master File and Resource Data Template. Seller shall provide the data to the CAISO (and to Buyer) that is required for the CAISO's Master File and Resource Data Template (or successor data systems) for this Project consistent with this Agreement. Neither Party shall change such data without the other Party's prior written consent.]

(c) Annual Delivery Schedules. No later than forty-five (45) days before (A) the first day of the first Contract Year of the Delivery Term and (B) the beginning of each calendar year for every subsequent Contract Year during the Delivery Term, Seller shall provide a non-binding forecast of each month's average-day expected Delivered Energy, by hour, for the following calendar year.

(d) Monthly Delivery Schedules. Ten (10) Business Days before the beginning of each month during the Delivery Term, Seller shall provide a non-binding forecast of each day's average expected Delivered Energy, by hour, for the following month ("Monthly Delivery Forecast").

(e) Daily Delivery Schedules. By 5:30 AM Pacific Prevailing Time on the Business Day immediately preceding the date of delivery, Seller shall [*When Seller is SC for the Project:* cause its Scheduling Coordinator to] provide Buyer with a [*For As-Available intermittent Product only:* non-binding forecast of the Project's available capacity (or if the VER Forecasting Program is not available for any reason, the expected Delivered Energy)] [*For all Products other than As-Available intermittent:* binding forecast of the expected Delivered Energy] for each hour of the immediately succeeding day ("Day-Ahead Forecast") [*For all Products other than As-Available intermittent:* [*When Seller is SC for the Project:* concurrent with delivery to the CAISO] [*When SDGE is SC for the Project:* and Buyer shall submit a Schedule to the CAISO consistent with such Day-Ahead Forecast], it being understood that, [*For all Products other than Dispatchable:* consistent with its Economic Dispatch Down curtailment rights,] Buyer (as the Scheduling Coordinator) may, or may direct the third party Scheduling Coordinator to, submit a self-schedule or an economic bid in the applicable CAISO market in order to Schedule the Product with the CAISO]. A Day-Ahead Forecast provided in a day prior to any non-Business Day(s) shall include Schedules for the immediate day, each succeeding non-Business Day and the next Business Day. Each Day-Ahead Forecast shall clearly identify, for each hour, Seller's best estimate of [*For As-Available intermittent Product only:* the Project's available capacity (or if the VER Forecasting Program is not available for any reason, the expected Delivered Energy)] [*For all Products other than As-Available intermittent:* the expected Delivered Energy]. Seller may not change such Schedule past the deadlines provided in this section except in the event of a Forced Outage or Schedule change imposed by Buyer or the CAISO, in which case Seller shall promptly provide Buyer with a copy of any and all updates to such Schedule indicating changes from the then-current Schedule. These notices and changes to the Schedules shall be sent to Buyer's on-duty Scheduling Coordinator. If Seller fails to provide Buyer with a Day-Ahead Forecast as required herein, then for such unscheduled delivery period only Buyer shall rely on the

delivery Schedule provided in the Monthly Delivery Forecast or Buyer's best estimate based on information reasonably available to Buyer and Seller shall be liable for Scheduling and delivery based on such Monthly Delivery Forecast or Buyer's best estimate.

(f) Real Time Delivery Schedules. Notwithstanding anything to the contrary herein, in the event Seller makes a change to its Schedule on the actual date of delivery for any reason including Forced Outages (other than a scheduling change imposed by Buyer or CAISO) which results in a change to its deliveries (whether in part or in whole), Seller shall notify Buyer immediately by calling Buyer's on-duty Scheduling Coordinator. Seller shall notify Buyer and the CAISO of Forced Outages in accordance with Section 3.7. Seller shall keep Buyer informed of any developments that will affect either the duration of the outage or the availability of the Project during or after the end of the outage.

(g) *[For Dispatchable Product Only: Availability Notices*. During the Delivery Term, no later than two (2) Business Days before each Schedule day for the day-ahead market in accordance with WECC scheduling practices, Seller shall provide Buyer with an hourly Schedule of the capacity that the Project is expected to have available for each hour of such Schedule day (the "Availability Notice"). Seller will notify Buyer immediately if the available capacity of the Project may change after Buyer's receipt of an Availability Notice. Seller shall accommodate Buyer's reasonable requests for changes in the time of delivery of Availability Notices. Seller shall provide Availability Notices using the form developed by the Parties under Section 3.10 by (in order of preference) electronic mail, facsimile transmission or, telephonically to Buyer personnel designated to receive such communications.]

(h) *[For Dispatchable Product Only: Dispatch Notices*. Buyer or the CAISO will have the right to dispatch the Project, seven days per week and 24 hours per day (including holidays), by providing Dispatch Notices and updated Dispatch Notices to Seller electronically, subject to the requirements and limitations set forth in this Agreement, including the system requirements under Section 3.4(b) and the Project operating restrictions set forth in Exhibit H. Each Dispatch Notice will be effective unless and until Buyer modifies such Dispatch Notice by providing Seller with an updated Dispatch Notice. In addition to any other requirements set forth or referred to in this Agreement, all Dispatch Notices and updated Dispatch Notices will be made in accordance with the timelines as specified in the CAISO Tariff.]

3.4 Dispatch Notices.

(a) General. Seller shall adjust delivery amounts as directed by the CAISO, the Participating Transmission Owner, Buyer, or a Transmission Provider during any Dispatch Down Period.

(b) System Requirements. Seller shall acquire, install, and maintain such facilities, communications links and other equipment, and implement such protocols and practices, as necessary (i) for Seller to respond and follow instructions, including an electronic signal conveying real time instructions, to operate the Project as directed by the Buyer and/or the CAISO, including to implement a System Dispatch Down or an Economic Dispatch Down in accordance with the then-current methodology used to transmit such instructions as it may change from time to time, and (ii) for Buyer and/or the CAISO to control the quantity of Product generated by the

Project in order to implement a System Dispatch Down or an Economic Dispatch Down, in each case, in accordance with the then-current methodology used to transmit such instructions as it may change from time to time. As of the Execution Date, the systems required to comply with clause (i) include at a minimum the CAISO's Automatic Dispatch System (as described in the CAISO website) and the systems required to comply with clause (ii) include at a minimum the CAISO'S Application Programming Interfaces (as described in the CAISO website). If at any time during the Delivery Term Seller's facilities, communications links or other equipment, protocols or practices are not in compliance with then-current methodologies, Seller shall take all commercially reasonable steps necessary to become compliant as soon as possible. Seller shall be liable pursuant to Section **[For all Products other than Dispatchable Product: 3.4(c)(ii)] [For Dispatchable Product: 3.3(b)(ii)/(iii)]** for failure to comply with an order directing a Dispatch Down Period, during the time that Seller's facilities, communications links or other equipment, protocols or practices are not in compliance with then-current methodologies. For the avoidance of doubt, an order directing a Dispatch Down Period via such systems and facilities shall have the same force and effect on Seller as any other form of communication. If an electronic submittal is not possible, Buyer and/or the CAISO may provide Dispatch Notices by (in order of preference) electronic mail, telephonically, or facsimile transmission to Seller's personnel designated to receive such communications, as provided by Seller in writing and Seller shall maintain communications systems necessary to permit such transmittal of Dispatch Notices. The Parties shall describe with more specificity the Economic Dispatch Down process (including the automated communication process for Dispatch Notices) in the operating procedures developed by the Parties pursuant to Section 3.10.

(c) **[For all Products other than Dispatchable Product: Economic Dispatch Down. [For Projects where SDG&E purchases Test Energy: Before or after the Commercial Operation Date,]** each of Buyer and the CAISO has the right to order Seller to curtail deliveries of Energy from the Project to the Delivery Point for Economic Dispatch Down purposes, seven days per week and 24 hours per day (including holidays), by providing Dispatch Notices and updated Dispatch Notices to Seller electronically via the communications systems described in Section 3.4(b), subject to the requirements and limitations set forth in this Agreement, including the Project operating restrictions set forth in Exhibit H. Each Dispatch Notice will be effective unless and until Buyer (or the CAISO) modifies such Dispatch Notice by providing Seller with an updated Dispatch Notice. In addition to any other requirements set forth or referred to in this Agreement, all Dispatch Notices and updated Dispatch Notices will be made in accordance with the timelines as specified in the CAISO Tariff. Seller agrees to adjust the Project's Delivered Energy as set forth in a Dispatch Notice that meets the requirements of Economic Dispatch Down.]

(i) **[Buyer Payments. [For Projects where SDG&E purchases Test Energy: On and after the Commercial Operation Date],** Buyer shall pay Seller, on the date payment would otherwise be due in respect of the month in which any such Economic Dispatch Down occurred an amount equal to the positive difference, if any, of (Y) the product of the Energy Price, times the amount of Deemed Bundled Green Energy resulting from such Economic Dispatch Down **[For Projects receiving PTCs: plus the product of the after tax value of any lost PTC benefits (in dollars per megawatt hour) that Seller has not been able to mitigate after use of reasonable efforts, times the amount of Deemed Bundled Green Energy resulting from such Economic Dispatch Down]**, minus (Z) the product of the positive value of the Sales Price, if received, times the amount of Deemed Bundled Green Energy resulting from such Economic

Dispatch Down. [*For Projects receiving PTCs*: Seller shall provide Buyer with documentation that establishes to Buyer's reasonable satisfaction (A) that Seller would have been entitled to receive PTCs for the Deemed Bundled Green Energy if it had actually been generated; and (B) the after tax value of any lost PTC benefits (in dollars per megawatt hour) due under this Section 3.4(c)(i).]]

(ii) [Failure to Comply]. If Seller fails to comply with a Dispatch Notice that is in compliance with this Agreement, then, for the deviation between the Delivered Energy and the amount set forth in the Dispatch Notice, Seller shall pay Buyer an amount equal to the sum of (A) + (B) + (C), where: (A) is the amount, if any, paid to Seller by Buyer for any Delivered Energy in excess of the amount set forth in the Dispatch Notice, and (B) is all Imbalance Energy costs or charges (excluding any revenues or credits), and (C) is any penalties or other charges resulting from Seller's failure to comply with the Dispatch Notice.]

3.5 Standards of Care.

(a) General Operation. Seller shall comply with all applicable requirements of Law, the CAISO, NERC and WECC relating to the Project (including those related to safety, construction, ownership and/or operation of the Project).

(b) CAISO and WECC Standards. Each Party shall perform all generation, scheduling and transmission services in compliance with all applicable (i) operating policies, criteria, rules, guidelines, tariffs and protocols of the CAISO, (ii) WECC scheduling practices and (iii) Good Industry Practices.

(c) Reliability Standard. Seller agrees to abide by all (i) NERC, WECC and CAISO reliability requirements, including all such reliability requirements for generator owners and generator operators, and, if applicable, CPUC General Order No.167, "Enforcement of Maintenance and Operation Standards for Electrical Generating Facilities," and (ii) all applicable requirements regarding interconnection of the Project, including the requirements of the interconnected Transmission Provider.

3.6 Metering.

(a) CAISO Revenue Meter. All output from the Project per the terms of this Agreement must be delivered through a single CAISO revenue meter and that meter must be dedicated exclusively to the Project described herein. All Product purchased under this Agreement must be measured by the Project's CAISO revenue meter to be eligible for payment under this Agreement. Seller shall bear all costs relating to all metering equipment reasonably necessary to accommodate the Project. In addition, Seller hereby agrees to provide all meter data to Buyer in a form acceptable to Buyer, and consents to Buyer obtaining from the CAISO the CAISO meter data applicable to the Project and all inspection, testing and calibration data and reports. Seller shall grant Buyer the right to retrieve the meter reads from the CAISO meter reporting website and/or directly from the CAISO meter(s) at the Project site. If the CAISO makes any adjustment to any CAISO meter data for a given time period, Seller agrees that it shall submit revised monthly invoices, pursuant to Section 6.2, covering the entire applicable time period in order to conform fully such adjustments to the meter data. Seller shall submit any such revised invoice no later than

thirty (30) days from the date on which the CAISO provides to Seller such binding adjustment to the meter data.

(i) Testing and Calibration. Seller shall perform or cause to be performed, at its expense, annual testing and calibration of the electric meters in accordance with Good Industry Practice and the CAISO Tariff. Seller shall give Buyer reasonable advance notice of any inspection, testing or calibration of the electric meters. Buyer shall have the right to have a representative or designee present at such inspection, test or calibration of the electric meters. Buyer shall have the right to require, at Buyer's expense, except as required below, a test of any of the electric meters not more often than two (2) times every twelve (12) months.

(ii) Inaccurate Meters. If any of the electric meters is deemed to be inaccurate under the Meter Service Agreement, deliveries shall be measured by reference to Seller's check-meters, if any are installed and registering accurately, or the meter readings for the period of inaccuracy shall be adjusted as far as can be reasonably ascertained by Seller from the best available data, subject to review and approval by Buyer. If the period of the inaccuracy cannot be ascertained reasonably, any such adjustment shall be for a period equal to one-half of the time elapsed since the preceding test by applying the percentage of inaccuracy so found. Seller shall promptly cause such electric meters to be corrected and, where such inaccuracy was determined pursuant to a test required by Buyer, Seller shall bear the expense of any such test.

(iii) Delivered MWh Adjustments. In the event that, due to correction for inaccurate electric meters deemed to be inaccurate under the Meter Service Agreement, the Delivered Energy is increased or decreased, the revised Delivered Energy shall be used for purposes of calculating payments. If any of such amounts for any period have already been calculated using the previous amount of Delivered Energy, they shall be recalculated using the revised amount of Delivered Energy. If the recalculation changes the amount payable for the period in question, revised payments shall be made by Buyer or Seller, as applicable, in accordance with Section 6.2.

(b) Real Time Telemetry. Seller shall install, activate and maintain metering, communication and telemetry equipment for the Project in a centralized system to which Buyer shall have real time access. Seller shall link its system to Buyer via an approved Buyer communication network, utilizing existing industry standard network protocol, as reasonably approved by Buyer. Seller shall correct any problems with such equipment as soon as practicable.

(c) ***[The following section is for As-Available Intermittent Products only]*** Meteorological Station. Seller, at its own expense, shall install and maintain such stand-alone meteorological stations at the Project as may be required under the VER Forecasting Program and the CAISO Tariff to monitor and report weather data to both the CAISO and Buyer's weather station data collection system. Each station shall be equipped with instruments and equipment that meet the specifications of the VER Forecasting Program and shall measure, collect, record, format, and communicate the data required under the VER Forecasting Program. Seller shall submit to Buyer for review and approval, which shall not be unreasonably withheld, its technical specifications for the meteorological station along with a site plan showing the location of the station within the Project. Seller shall correct any problems with such equipment as soon as practicable.

3.7 Outage Notification.

(a) Planned Outages. Seller shall schedule Planned Outages for the Project in accordance with Good Industry Practices and with the prior written consent of Buyer, which consent may not be unreasonably withheld or conditioned. The Parties acknowledge that in all circumstances, Good Industry Practices shall dictate when Planned Outages should occur. Seller shall notify Buyer of its proposed Planned Outage schedule for the Project for the following calendar year by submitting a written Planned Outage schedule no later than October 1st of each year during the Delivery Term. The Planned Outage schedule is subject to Buyer's approval, which approval may not be unreasonably withheld or conditioned. Buyer shall promptly respond with its approval or with reasonable modifications to the Planned Outage schedule and Seller shall use its best efforts in accordance with Good Industry Practices to accommodate Buyer's requested modifications. Notwithstanding the submission of the Planned Outage schedule described above, Seller shall also submit a completed Outage Notification Form to Buyer no later than fourteen (14) days prior to each Planned Outage and all appropriate outage information or requests to the CAISO in accordance with the CAISO Tariff. Seller shall contact Buyer with any requested changes to the Planned Outage schedule if Seller believes the Project must be shut down to conduct maintenance that cannot be delayed until the next scheduled Planned Outage consistent with Good Industry Practices. Seller shall not change its Planned Outage schedule without Buyer's approval, not to be unreasonably withheld or conditioned. Seller shall use its best efforts in accordance with Good Industry Practices not to schedule Planned Outages during the months of July, August, September and October. At Buyer's request, Seller shall use commercially reasonable efforts to reschedule Planned Outage so that it may deliver Product during CAISO declared or threatened emergency periods. Seller shall not substitute Energy from any other source for the output of the Project during a Planned Outage.

(b) Forced Outages. Within [*When Seller is the SC for the Project:* Within two hours of any Forced Outage,] [*When SDG&E is the SC for the Project:* Within one-half of the notification time prescribed under the CAISO Tariff for Forced Outages,] Seller shall submit a completed Outage Notification Form to the Buyer in accordance with the instructions shown on the form and shall submit outage information to the CAISO in accordance with the CAISO Tariff [*When SDG&E is the SC for the Project:* and Section 3.3(b)(ii) above]. Seller shall not substitute Energy from any other source for the output of the Project during a Forced Outage.

(c) Coordination with CAISO. Seller shall be responsible [*When SDG&E is SC for the Project:* in accordance with Section 3.3(b)(ii)] for all outage coordination communications with the CAISO. Buyer shall cooperate with Seller in arranging and coordinating all Project outages with the CAISO.

3.8 Operations Logs and Access Rights.

(a) Operations Logs. Seller shall maintain a complete and accurate log of all material operations and maintenance information on a daily basis. Such log shall include, but not be limited to, information on power production, fuel consumption, efficiency, availability, maintenance performed, outages, results of inspections, manufacturer recommended services, replacements, electrical characteristics of the generators, control settings or adjustments of

equipment and protective devices. Seller shall maintain this information for at least two (2) years and shall provide this information electronically to Buyer within one day of Buyer's request.

(b) Access Rights. Buyer, its authorized agents, employees and inspectors shall have the right of ingress to and egress from the Project during normal business hours upon reasonable advance Notice and for any purposes reasonably connected with this Agreement.

3.9 New Generation Facility.

(a) Project Development. Seller, at no cost to Buyer, shall:

(i) Design and construct the Project.

(ii) Perform all studies, pay all fees, obtain all necessary approvals and execute all necessary agreements with the CAISO and the Participating Transmission Owner for the Electrical Interconnection Upgrades to Schedule and deliver the Product from the Project [***For Projects Providing Resource Adequacy***: under "Full Capacity Deliverability Status" (as defined in the CAISO Tariff)]. Following satisfaction or waiver of the Conditions Precedent set forth in Section 2.3(b), Seller shall not request from the CAISO or the Participating Transmission Owner any changes to its plan of interconnection that are inconsistent with the plan of interconnection that was evaluated in connection with the satisfaction or waiver of the Conditions Precedent in Section 2.3(b) without Buyer's prior written consent.

(iii) Acquire all Governmental Approvals and other approvals necessary for the construction, operation, and maintenance of the Project.

(iv) Complete all environmental impact studies necessary for the construction, operation, and maintenance of the Project, including all environmental analysis required under the California Environmental Quality Act for the Project and related interconnection facilities.

(v) At Buyer's request, provide to Buyer Seller's electrical specifications and design drawings pertaining to the Project.

(vi) Within fifteen (15) days after the close of each calendar quarter following the Execution Date until the Commercial Operation Date, provide to Buyer a Quarterly Progress Report and agree to regularly scheduled meetings between representatives of Buyer and Seller to review such reports and discuss Seller's construction progress. The Quarterly Progress Report shall identify the Milestones and indicate whether Seller has met or is on target to meet such Milestones.

(vii) Provide access to Buyer, its authorized agents, employees and inspectors for purpose of inspecting the Project's construction site or on-site Seller data and information pertaining to the Project during normal business hours upon reasonable advance Notice.

(viii) At Buyer's request, provide information to Buyer relating to Seller's or Seller's contractor's use, during Project construction, of "Women-Owned Businesses" or

“Minority-Owned Businesses” or “Disabled Veteran Business Enterprises” as defined in CPUC General Order 156, and the number of new employees hired by Seller or Seller’s contractors and the number of women, minority, and disabled veterans trained or hired by Seller or Seller’s contractor’s as contemplated under Cal. Public Utilities Code §910(a)(8), as each such group of entities and individuals may be amended from time to time or further defined, supplemented, or superseded by applicable Law or replaced with similar designations or certifications. [*Include other covenants related to “women-owned business” or “minority-owned business” as may be applicable to the Seller’s RFO bid.*]

(b) Construction Milestones.

(i) The Parties agree time is of the essence in regards to this Agreement. As such, the Parties also agree certain milestones for the construction of the Project as set forth in the Milestone schedule attached hereto as Exhibit B (“Milestones”) must be achieved in a timely fashion or Buyer will suffer damages.

(ii) Within seven (7) days after completion of each Milestone, Seller shall provide Buyer with Notice along with accompanying documentation (including reasonably redacted copies of applicable agreements, Governmental Approvals, and certificates) to reasonably demonstrate the achievement of such Milestone. If Seller misses the deadline date for three (3) or more Milestones or misses the deadline date for any one Milestone by more than ninety (90) days, Seller shall submit to Buyer, within ten (10) Business Days of such missed Milestone completion date, a remedial action plan (“Remedial Action Plan”) that describes in detail a reasonable course of action and plan (including accelerating the work, for example, by using additional shifts, overtime, additional crews or resequencing of the work, as applicable) to achieve the missed Milestones and all subsequent Milestones no later than the Guaranteed Commercial Operation Date (as it may be extended under Section 3.9(c)(i)-(ii)); provided, that delivery of any Remedial Action Plan shall not relieve Seller of its obligation to meet any subsequent Milestones and the Guaranteed Commercial Operation Date.

(c) Daily Delay Damages.

(i) COD. Seller shall cause the Project to achieve the Commercial Operation Date by the Guaranteed Commercial Operation Date; provided, however, that the Commercial Operation Date shall not occur more than one hundred eighty (180) days prior to the Guaranteed Commercial Operation Date. Seller may elect to extend the Guaranteed Commercial Operation Date for no more than a total of [_____] days (the “Project Cure Period”) by providing Buyer with Notice of its election to extend the Guaranteed Commercial Operation Date by no later than 5:00 p.m. on the Business Day prior to the Guaranteed Commercial Operation Date along with Seller’s estimate of the duration of the extension and its payment of Daily Delay Damages for each day or portion of a day that the Guaranteed Commercial Operation Date is extended. Seller may further extend the Guaranteed Commercial Operation Date beyond the already extended Guaranteed Commercial Operation Date subject to the same terms applicable to the original extension; provided, however, that the total of all extensions under this clause (i) shall not exceed the Project Cure Period. The Daily Delay Damages payments are in addition to, and not a part of, the Construction Period Security. Seller will be entitled to a refund (without interest) of any estimated Daily Delay Damages payments paid by Seller that exceed the amount

required to cover the number of days or partial days by which the Commercial Operation Date occurred after the original Guaranteed Commercial Operation Date (where the original Guaranteed Commercial Operation Date excludes any extensions under this Section 3.9(c)(i) but includes any extensions under Section 3.9(c)(ii)). In addition, Seller shall submit a Remedial Action Plan within ten (10) days after each extension of the Guaranteed Commercial Operation Date if the Project has not then achieved the Commercial Operation Date. Each Party agrees and acknowledges that (a) the actual damages that Buyer would incur due to a delay in achieving the Commercial Operation Date on or before the original Guaranteed Commercial Operation Date (where the original Guaranteed Commercial Operation Date excludes any extensions under this Section 3.9(c)(i) but includes any extensions under Section 3.9(c)(ii)) would be difficult or impossible to predict with certainty, (b) the Daily Delay Damages set forth in this section are a reasonable and appropriate approximation of such damages, and (c) the Daily Delay Damages set forth in this section are the exclusive remedy for Seller’s delay in achieving the Commercial Operation Date for the length of the extensions paid for in advance by Seller up to the Project Cure Period but shall not otherwise act to limit any of Buyer’s rights or remedies arising from any other Event of Default by Seller, including, without limitation, the failure by Seller to achieve the Commercial Operation Date altogether.

(ii) Extensions. The Guaranteed Commercial Operation Date and the deadline dates for Milestone numbers [_____] as set forth in Exhibit B shall be extended on a day for day basis for up to ninety (90) calendar days in the aggregate (“Force Majeure Extension Period”) without imposition of any Daily Delay Damages to the extent Seller is actually and demonstrably delayed in its critical path to achieving the Commercial Operation Date by the Guaranteed Commercial Operation Date as a result of Force Majeure; provided, however, any such delay in excess of this period shall be subject to Daily Delay Damages pursuant to Section 3.9(c)(i).

3.10 Operating Procedures. No later than forty-five (45) days before the Commercial Operation Date, and from time to time as reasonably determined necessary by the Parties, the Parties shall meet to address how each Party will perform its respective obligations under this Agreement, including, but not limited to: (1) the method of day-to-day communications; (2) key personnel lists for each Party; (3) procedures for Forced Outage and Planned Outage reporting; (4) procedures for delivery forecasting; (5) procedures for record keeping; (6) Scheduling procedures; and (7) invoicing and payment procedures; provided, that the failure to agree on these operating procedures will not relieve the Parties of their respective obligations under this Agreement, and any failure to agree shall be resolved in accordance with the dispute resolution procedures in Article 12.

ARTICLE FOUR: COMPENSATION; MONTHLY PAYMENTS

4.1 *[For Dispatchable Product Only: Capacity Payment.*

(a) Capacity Price.

Contract Year	Capacity Price (\$/KW)
1	

(b) **Monthly Capacity Payment.** For each month, Buyer shall pay Seller for the Product the amount calculated as follows (“Monthly Capacity Payment”):

$$MCP = CC \times CP \times SF \times AAF$$

Where:

MCP is the Monthly Capacity Payment expressed in Dollars for such month of the Delivery Term.

CC is the Contract Capacity, expressed in kW, rounded to the nearest 100 kW.

CP is the Capacity Price expressed in Dollars per kW-year, for the applicable month.

SF is the Monthly Shaping Factor for the applicable month, as set forth in the following table:

Month	Monthly Shaping Factor (%)
January	6.7
February	5.0
March	5.0
April	5.8
May	6.3
June	8.3
July	15.8
August	17.5
September	11.7
October	5.8
November	5.8
December	6.3

AAF is the Availability Adjustment Factor for each month, expressed as a three-place decimal and determined as follows:

- (a) If the Equivalent Availability Factor (“EAF”) for the month is less than or equal to 0.980, then the AAF equals EAF / 0.98.

- (b) If the EAF for the month is greater than 0.980 but less than 0.990, then the AAF equals 1.0.
- (c) If the EAF for the month is greater than or equal to 0.990, then the AAF equals EAF / 0.99.

EAF is the Equivalent Availability Factor for each month determined as follows:

$$EAF = (PH - (EDH - EEDH)) / PH$$

Where:

PH is the number of period hours;

EDH is the number of equivalent derate hours calculated as the sum, for each derate, of the product of the number of hours of full or partial derate hours times the size of the reduction from the Contract Capacity divided by the Contract Capacity for the month. For the purposes of this calculation, a derate includes all outages for any reason, including without limitation, Forced Outages, Force Majeure events, Dispatch Down Periods, Planned Outages, Buyer’s failure to perform, and other times when any portion of the Contract Capacity is not available and when the Delivered Energy of the Project is less than the amount of Energy dispatched by Buyer; and

EEDH is the number of equivalent excused derate hours solely due to either Dispatch Down Periods or Buyer’s failure to perform (and for no other reason), calculated as the sum, for each excused derate, of the product of the number of hours of full or partial derate hours times the size of the reduction from the Contract Capacity, divided by the Contract Capacity for the month.

4.2 Energy Payment.

(a) Energy Price. The price for the Bundled Green Energy and Deemed Bundled Green Energy that is delivered to Buyer in each Contract Year shall be as follows (“Energy Price”):

Contract Year	Energy Price (\$/MWh)

provided, however, that:

(i) if Seller delivers Bundled Green Energy in the aggregate for any CAISO settlement interval (not to exceed one hour) in excess of the product of the Contract Capacity times the length of such settlement interval, expressed in hours, then the Energy Price for such excess Bundled Green Energy in such settlement interval shall be reduced to zero dollars (\$0), and if the real time Locational Marginal Price for the Delivery Point during such settlement interval is less than zero dollars (\$0), Seller shall pay to Buyer an amount equal to the absolute value of such negative Locational Marginal Price times such excess Bundled Green Energy;

(ii) if Seller delivers Bundled Green Energy plus Deemed Delivered Energy in the aggregate for any Contract Year during the Delivery Term in excess of one hundred fifteen percent (115%) of the annual Contract Quantity, then the Energy Price for such excess Bundled Green Energy and Deemed Bundled Green Energy, if any, for each settlement interval for the remainder of that Contract Year shall be reduced to zero dollars (\$0) and Seller shall be entitled to the CAISO revenues (including positive Locational Marginal Prices, credits and other payments) in respect of such excess amounts and Seller shall be responsible for the CAISO costs (including negative Locational Marginal Prices, penalties, sanctions and other charges) in respect of such excess amounts.

(iii) ***Reserved***

(b) ***Reserved***

(c) **Monthly Energy Payment.** For each month, Buyer shall pay Seller for the Product an amount equal to the sum for each hour in the month of the product of the Energy Price times the sum of Bundled Green Energy plus Deemed Bundled Green Energy in each hour (“Monthly Energy Payment”).

$$\text{Monthly Energy Payment} = \sum \text{Energy Price} \times (\text{Bundled Green Energy} + \text{Deemed Bundled Green Energy})$$

For any period where the quantity of Bundled Green Energy is less than the quantity of Delivered Energy and the quantity of Bundled Green Energy cannot practicably be determined for each settlement interval during such period (for example, where WREGIS does not specify in which settlement intervals Renewable Energy Credits were delivered or not delivered), then the quantity of Bundled Green Energy for any settlement interval during the entire period shall be equal to the product of the quantity of Delivered Energy for a settlement interval multiplied by the quotient of the aggregate quantity of Green Attributes that are delivered to Buyer during such entire period

divided by the aggregate quantity of Delivered Energy that is delivered to Buyer during such entire period.

4.3 Imbalance Energy. Seller shall use commercially reasonable efforts to deliver Energy in accordance with the Scheduled Energy. Buyer and Seller recognize that from time to time the amount of Delivered Energy will deviate from the amount of Scheduled Energy. When Delivered Energy minus Scheduled Energy is a positive amount, it shall be considered “Positive Imbalance Energy;” when Delivered Energy minus Scheduled Energy is a negative amount, the absolute (i.e., positive) value of that amount shall be considered the “Negative Imbalance Energy.” ***[When Seller is SC for the Project or when Buyer is SC but Project is not in the VER Forecasting Program:*** Seller shall be responsible for settlement of Imbalance Energy with the CAISO and all fees, liabilities, assessments, or similar charges assessed by the CAISO in connection with Imbalance Energy.] Buyer and Seller shall cooperate to minimize charges and imbalances associated with Imbalance Energy to the extent possible. Seller shall promptly notify Buyer as soon as possible of any material imbalance that is occurring or has occurred. ***[When SDG&E is SC for the Project and Project is in the VER Forecasting Program:*** Buyer shall receive all Green Attributes for the Positive Imbalance Energy in all settlement intervals.]

[When Seller is SC for the Project or when Buyer is SC but Project is not in the VER Forecasting Program, include the following two paragraphs:

(a) Positive Imbalance Energy (Over Deliveries). In the event that Delivered Energy for any CAISO settlement interval is equal to or greater than Scheduled Energy for such CAISO settlement interval, Buyer shall have no payment obligation in respect of the Positive Imbalance Energy. Buyer shall receive all Green Attributes for the Positive Imbalance Energy in such CAISO settlement interval regardless as to whether it was sold into the CAISO. Seller shall be entitled to all payments or credits from the CAISO to Seller’s SC and Seller shall make all payments to the CAISO in respect of the Positive Imbalance Energy.

(b) Negative Imbalance Energy (Under Deliveries). In the event that Delivered Energy for any CAISO settlement interval is less than Scheduled Energy for such CAISO settlement interval, Buyer shall have no payment obligation in respect of the Negative Imbalance Energy. Seller shall make all payments to the CAISO and Seller shall be entitled to all payments or credits from the CAISO to Seller’s SC in respect of the Negative Imbalance Energy required under the CAISO Tariff.]

4.4 Additional Compensation. To the extent not otherwise provided for in this Agreement, in the event that Seller is compensated by a third party for any Product produced by the Project, including, but not limited to, compensation for Resource Adequacy or Green Attributes, Seller shall remit all such compensation directly to Buyer; provided that for avoidance of doubt, nothing herein precludes Seller from retaining credits related to transmission upgrades funded by Seller.

4.5 Energy Sales Prior to Commercial Operation Date. For each month prior to the Commercial Operation Date, as compensation for the Product delivered to Buyer, (i) Buyer shall pay Seller for the Product an amount equal to the product of [SDG&E to insert REC value amount in \$/MWh] times the total Bundled Green Energy delivered to Buyer in such month, and (ii) Seller

shall be entitled to all CAISO revenues (including credits, Imbalance Energy revenues, and other payments), including revenues associated with CAISO dispatches, bid cost recovery, inter-SC trade credits, or other credits in respect of the Product Scheduled or delivered from the Project, and Seller shall be responsible for all CAISO costs (including penalties, Imbalance Energy costs, and other charges) including all CAISO charges or penalties, in each case, resulting from the Project not being available, the Seller not notifying the CAISO of outages in a timely manner, and any other failure by Seller to abide by the CAISO Tariff, including without limitation uninstructed deviation penalties. *[When Buyer is SC for the Project, include the following:* Each month, Buyer (as the SC for the Project) shall deliver an invoice to Seller including a statement of all such CAISO revenues and charges within thirty (30) days after the CAISO final settlement data is available to Buyer for such deliveries.]

ARTICLE FIVE: EVENTS OF DEFAULT; FORCE MAJEURE

5.1 Events of Default. An "Event of Default" shall mean,

(a) with respect to a Party that is subject to the Event of Default the occurrence of any of the following:

(i) the failure by such Party to make, when due, any payment required pursuant to this Agreement and such failure is not remedied within five (5) Business Days after Notice thereof;

(ii) any representation or warranty made by such Party herein is false or misleading in any material respect when made or when deemed made or repeated, and such default is not remedied within thirty (30) days after Notice thereof;

(iii) the failure by such Party to perform any material covenant or obligation set forth in this Agreement (except to the extent constituting a separate Event of Default, and except for such Party's unexcused failure to perform its obligations to Schedule, deliver, or receive (as applicable), or sell or purchase (as applicable) the Product for a period or a series of periods that is cumulatively no longer than thirty (30) days, the exclusive remedy for which is provided in Section 3.1(h)) and such failure is not remedied within thirty (30) days after Notice thereof;

(iv) the failure by such Party to perform its obligations to Schedule, deliver or receive (as applicable), or sell or purchase (as applicable) the Product for a period or a series of periods that is cumulatively longer than thirty (30) days and such failure is not excused as described in Section 3.1(h);

(v) such Party becomes Bankrupt;

(vi) such Party assigns this Agreement or any of its rights hereunder other than in compliance with Section 13.2; or

(vii) such Party consolidates or amalgamates with, or merges with or into, or transfers all or substantially all of its assets to, another entity and, at the time of such consolidation, amalgamation, merger or transfer, the resulting, surviving or transferee entity fails

to assume all the obligations of such Party under this Agreement to which it or its predecessor was a party by operation of Law or pursuant to an agreement reasonably satisfactory to the other Party.

(b) with respect to Seller as the Defaulting Party, the occurrence of any of the following:

(i) if at any time, Seller delivers or attempts to deliver to the Delivery Point for sale under this Agreement Energy that was not generated by the Project *[If the Project is located outside of the CAISO: other than Imbalance Energy from the Transmission Provider]*;

(ii) the failure by Seller to achieve the Commercial Operation Date no later than the Guaranteed Commercial Operation Date;

(iii) *[For Baseload, Peaking, Dispatchable Product: the Contract Capacity at the Commercial Operation Date or at any other time pursuant to a Capacity Test is less than [] MW and such default is not remedied within thirty (30) days after Notice thereof;*

(iv) *[For Baseload, Peaking, As-Available Product: the failure by Seller to achieve the Guaranteed Energy Production requirement during any Performance Measurement Period as set forth in Section 3.1(e) of this Agreement] [For Dispatchable Product: the Default Availability Factor of the Project is less than [] percent for any rolling twelve (12) consecutive calendar month period];*

(v) the failure by Seller to deliver a Remedial Action Plan that reasonably demonstrates in detail how Seller will achieve the Commercial Operation Date no later than the Guaranteed Commercial Operation Date, if such failure is not remedied within ten (10) days after Notice;

(vi) failure by Seller to satisfy the collateral requirements pursuant to Sections 8.3 or 8.4 of this Agreement;

(vii) with respect to any Guaranty provided for the benefit of Buyer, the failure by Seller to provide for the benefit of Buyer either (1) cash, (2) a replacement Guaranty from a different Guarantor meeting the criteria set forth in the definition of Guarantor, or (3) a replacement Letter of Credit from an issuer meeting the criteria set forth in the definition of Letter of Credit, in each case, in the amount required hereunder within five (5) Business Days after Seller receives Notice of the occurrence of any of the following events:

(A) if any representation or warranty made by the Guarantor in connection with this Agreement is false or misleading in any material respect when made or when deemed made or repeated, and such default is not remedied within thirty (30) days after Notice thereof;

(B) the failure of the Guarantor to make any payment required or to perform any other material covenant or obligation in any Guaranty;

(C) the Guarantor becomes Bankrupt;

(D) the Guarantor shall fail to meet the criteria for an acceptable Guarantor as set forth in the definition of Guarantor;

(E) the failure of the Guaranty to be in full force and effect (other than in accordance with its terms) prior to the indefeasible satisfaction of all obligations of Seller hereunder; or

(F) the Guarantor shall repudiate, disaffirm, disclaim, or reject, in whole or in part, or challenge the validity of any Guaranty; or

(viii) with respect to any outstanding Letter of Credit provided for the benefit of Buyer that is not then required under this Agreement to be canceled or returned, the failure by Seller to provide for the benefit of Buyer either (1) cash, or (2) a substitute Letter of Credit from a different issuer meeting the criteria set forth in the definition of Letter of Credit, in each case, in the amount required hereunder within five (5) Business Days after Seller receives Notice of the occurrence of any of the following events:

(A) the issuer of the outstanding Letter of Credit shall fail to maintain a Credit Rating of at least “A-” by S&P or “A3” by Moody’s;

(B) the issuer of such Letter of Credit becomes Bankrupt;

(C) the issuer of the outstanding Letter of Credit shall fail to comply with or perform its obligations under such Letter of Credit and such failure shall be continuing after the lapse of any applicable grace period permitted under such Letter of Credit;

(D) the issuer of the outstanding Letter of Credit shall fail to honor a properly documented request to draw on such Letter of Credit;

(E) the issuer of the outstanding Letter of Credit shall disaffirm, disclaim, repudiate or reject, in whole or in part, or challenge the validity of, such Letter of Credit;

(F) such Letter of Credit fails or ceases to be in full force and effect at any time; or

(G) Seller shall fail to renew or cause the renewal of each outstanding Letter of Credit on a timely basis as provided in the relevant Letter of Credit and as provided in accordance with this Agreement, and in no event less than sixty (60) days prior to the expiration of the outstanding Letter of Credit.

5.2 Remedies: Declaration of Early Termination Date. If an Event of Default with respect to a Defaulting Party shall have occurred and be continuing, the other Party (“Non-Defaulting Party”) shall have the right (a) to send Notice, designating a day, no earlier than the day such Notice is deemed to be received and no later than twenty (20) days after such Notice is deemed to be received, as an early termination date of this Agreement (“Early Termination Date”)

that terminates this Agreement and ends the Delivery Term effective as of the Early Termination Date, **to accelerate all amounts owing between the Parties**, and to collect liquidated damages calculated in accordance with Section 5.3 below (“Termination Payment”); **(b) to withhold any payments due to the Defaulting Party under this Agreement;** **(c) to suspend performance;** and (d) to exercise any other right or remedy available at law or in equity, including specific performance or injunctive relief, except to the extent such remedies are expressly limited under this Agreement.

5.3 Termination Payment. The Termination Payment for a Terminated Transaction shall be the aggregate of all Settlement Amounts plus any or all other amounts due to the Non-Defaulting Party netted into a single amount. Except in the case of a termination of this Agreement by the Non-Defaulting Party solely as a result of an Event of Default by the Defaulting Party under Section 5.1(a)(iv) [Bankruptcy], **if the Non-Defaulting Party’s aggregate Gains exceed its aggregate Losses and Costs, if any, resulting from the termination of this Agreement, the Termination Payment shall be zero. The Non-Defaulting Party shall calculate, in a commercially reasonable manner, a Settlement Amount for the Terminated Transaction as of the Early Termination Date. Third parties supplying information for purposes of the calculation of Gains or Losses may include, without limitation, dealers in the relevant markets, end-users of the relevant product, information vendors and other sources of market information. The Settlement Amount shall not include consequential, incidental, punitive, exemplary, indirect or business interruption damages;** provided, however, that any lost Capacity Attributes and Green Attributes shall be deemed direct damages covered by this Agreement. Without prejudice to the Non-Defaulting Party’s duty to mitigate, **the Non-Defaulting Party shall not have to enter into replacement transactions to establish a Settlement Amount.** Each Party agrees and acknowledges that (a) the actual damages that the Non-Defaulting Party would incur in connection with a Terminated Transaction would be difficult or impossible to predict with certainty, (b) the Termination Payment described in this section is a reasonable and appropriate approximation of such damages, and (c) the Termination Payment described in this section is the exclusive remedy of the Non-Defaulting Party in connection with a Terminated Transaction but shall not otherwise act to limit any of the Non-Defaulting Party’s rights or remedies if the Non-Defaulting Party does not elect a Terminated Transaction as its remedy for an Event of Default by the Defaulting Party.

5.4 Notice of Payment of Termination Payment. As soon as practicable after a Terminated Transaction, **Notice shall be given by the Non-Defaulting Party to the Defaulting Party of the amount of the Termination Payment and whether the Termination Payment is due to the Non-Defaulting Party. The Notice shall include a written statement explaining in reasonable detail the calculation of such amount and the sources for such calculation. The Termination Payment shall be made to the Non-Defaulting Party, as applicable, within ten (10) Business Days after such Notice is effective.**

5.5 Disputes With Respect to Termination Payment. If the Defaulting Party disputes the Non-Defaulting Party’s calculation of the Termination Payment, in whole or in part, the Defaulting Party shall, within five (5) Business Days of receipt of the Non-Defaulting Party’s calculation of the Termination Payment, **provide to the Non-Defaulting Party a detailed written explanation of the basis for such dispute.** Disputes regarding the Termination Payment shall be determined in accordance with Article 12.

5.6 Rights And Remedies Are Cumulative. Except where liquidated damages are provided as the exclusive remedy, the rights and remedies of a Party pursuant to this Article 5 shall be cumulative and in addition to the rights of the Parties otherwise provided in this Agreement.

5.7 Mitigation. Any Non-Defaulting Party shall be obligated to mitigate its Costs, losses and damages resulting from any Event of Default of the other Party under this Agreement.

5.8 Force Majeure. To the extent either Party is prevented by Force Majeure from carrying out, in whole or part, its obligations under this Agreement and such Party gives Notice and details of the Force Majeure to the other Party as detailed below, then, the Party impacted by Force Majeure shall be excused from the performance of its obligations to the extent impacted. Within forty-eight (48) hours of commencement of an event of Force Majeure, the non-performing Party shall provide the other Party with oral notice of the event of Force Majeure, and within two (2) weeks of the commencement of an event of Force Majeure the non-performing Party shall provide the other Party with Notice in the form of a letter describing in detail the particulars of the occurrence giving rise to the Force Majeure claim. Seller shall not substitute Product from any other source for the output of the Project during an outage resulting from Force Majeure. The suspension of performance due to a claim of Force Majeure must be of no greater scope and of no longer duration than is required by the Force Majeure. Buyer shall not be required to make any payments for any Product that Seller fails to Schedule, deliver or provide as a result of Force Majeure during the term of a Force Majeure. This Agreement may be terminated by the non-claiming Party with no further obligation to the Force-Majeure-claiming Party if a Force Majeure event prevents the performance of a material portion of the obligations of the Force-Majeure-claiming Party hereunder and such Force Majeure event is not resolved within eight (8) months after the commencement of such Force Majeure event. In addition to the foregoing, prior to the Commercial Operation Date, this Agreement may be terminated by Buyer with no further obligation to Seller if one or more Force Majeure events prevents Seller from achieving the Commercial Operation Date by the end of the Force Majeure Extension Period; provided, however, that Buyer shall not have the right under this section to terminate this Agreement until the Guaranteed Commercial Operation Date if Seller is paying delay liquidated damages to Buyer as required under Section 3.9(c)(i) during the Project Cure Period (it being acknowledged, that Seller may elect to pay Daily Delay Damages during periods of Force Majeure up to the expiration of any remaining unclaimed portion of the Project Cure Period in lieu of claiming Force Majeure relief hereunder).

ARTICLE SIX: PAYMENT

6.1 Billing and Payment. On or about the tenth (10th) day of each month beginning with the second month of the first Contract Year and every month thereafter, and continuing through and including the first month following the end of the Delivery Term, Seller shall provide to Buyer (a) records of metered data, including CAISO metering and transaction data sufficient to document and verify the generation of Product by the Project for any CAISO settlement time interval during the preceding months, (b) access to any records, including invoices or settlement data from CAISO, necessary to verify the invoice; and (c) an invoice, in a format reasonably specified by Buyer, covering the services provided in the preceding month determined in accordance with Article 4 (which may include preceding months), with all component charges and unit prices identified and all calculations used to arrive at invoiced amounts described in

reasonable detail. Buyer shall pay the undisputed amount of such invoices on or before thirty (30) days after receipt of the invoice. If either the invoice date or payment date is not a Business Day, then such invoice or payment shall be provided on the next following Business Day. Each Party will make payments by electronic funds transfer, or by other mutually agreeable method(s), to the account designated by the other Party. Any undisputed amounts not paid by the due date will be deemed delinquent and will accrue interest at the Default Rate, such interest to be calculated from and including the due date to but excluding the date the delinquent amount is paid in full. Invoices may be sent by facsimile or e-mail.

6.2 Disputes and Adjustments of Invoices. A Party may, in good faith, dispute the correctness of any invoice or any adjustment to an invoice, rendered under this Agreement or adjust any invoice for any arithmetic or computational error within twelve (12) months of the date the invoice, or adjustment to an invoice, was rendered. In the event an invoice or portion thereof, or any other claim or adjustment arising hereunder, is disputed, payment of the undisputed portion of the invoice shall be required to be made when due. Any invoice dispute or invoice adjustment shall be in writing and shall state the basis for the dispute or adjustment. Payment of the disputed amount shall not be required until the dispute is resolved. Upon resolution of the dispute, any required payment shall be made within two (2) Business Days of such resolution along with interest accrued at the Default Rate from and including the original due date to but excluding the date paid. Inadvertent overpayments shall be returned upon request or deducted by the Party receiving such overpayment from subsequent payments, with interest accrued at the Interest Rate from and including the date of such overpayment to but excluding the date repaid or deducted by the Party receiving such overpayment. Any dispute with respect to an invoice is waived if the other Party is not notified in accordance with this Section 6.2 within twelve (12) months after the invoice is rendered or subsequently adjusted, except to the extent any misinformation was from a third party not Affiliated with any Party and such third party corrects its information after the twelve-month period. If an invoice is not rendered within twelve (12) months after the close of the month during which performance occurred, the right to payment for such performance is waived.

6.3 Netting of Payments. The Parties hereby agree that they shall discharge mutual debts and payment obligations due and owing to each other on the same date through netting, in which case all amounts owed by each Party to the other Party for the purchase and sale of Product during the monthly billing period under this Agreement, including any related damages calculated pursuant to Section 3.1(h), interest, and payments or credits, shall be netted so that only the excess amount remaining due shall be paid by the Party who owes it.

ARTICLE SEVEN: LIMITATIONS

7.1 Limitation of Remedies, Liability and Damages. EXCEPT AS SET FORTH HEREIN, THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY AND ALL IMPLIED WARRANTIES ARE DISCLAIMED. THE PARTIES CONFIRM THAT THE EXPRESS REMEDIES AND MEASURES OF DAMAGES PROVIDED IN THIS AGREEMENT SATISFY THE ESSENTIAL PURPOSES HEREOF. FOR BREACH OF ANY PROVISION FOR WHICH AN EXPRESS REMEDY OR MEASURE OF DAMAGES IS PROVIDED, SUCH EXPRESS REMEDY OR MEASURE OF DAMAGES SHALL BE THE SOLE AND EXCLUSIVE

REMEDY, THE OBLIGOR'S LIABILITY SHALL BE LIMITED AS SET FORTH IN SUCH PROVISION AND ALL OTHER REMEDIES OR DAMAGES AT LAW OR IN EQUITY ARE WAIVED, UNLESS THE PROVISION IN QUESTION PROVIDES THAT THE EXPRESS REMEDIES ARE IN ADDITION TO OTHER REMEDIES THAT MAY BE AVAILABLE. EXCEPT FOR A PARTY'S INDEMNITY OBLIGATION IN RESPECT OF THIRD PARTY CLAIMS OR AS OTHERWISE EXPRESSLY HEREIN PROVIDED, NEITHER PARTY SHALL BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES, LOST PROFITS OR OTHER BUSINESS INTERRUPTION DAMAGES, BY STATUTE, IN TORT OR CONTRACT, UNDER ANY INDEMNITY PROVISION OR OTHERWISE. UNLESS EXPRESSLY HEREIN PROVIDED, AND SUBJECT TO THE PROVISIONS OF SECTION 11.2 (INDEMNITIES), IT IS THE INTENT OF THE PARTIES THAT THE LIMITATIONS HEREIN IMPOSED ON REMEDIES AND THE MEASURE OF DAMAGES BE WITHOUT REGARD TO THE CAUSE OR CAUSES RELATED THERETO, INCLUDING THE NEGLIGENCE OF ANY PARTY, WHETHER SUCH NEGLIGENCE BE SOLE, JOINT OR CONCURRENT, OR ACTIVE OR PASSIVE. TO THE EXTENT ANY DAMAGES REQUIRED TO BE PAID HEREUNDER ARE LIQUIDATED, THE PARTIES ACKNOWLEDGE THAT THE DAMAGES ARE DIFFICULT OR IMPOSSIBLE TO DETERMINE, OR OTHERWISE OBTAINING AN ADEQUATE REMEDY IS INCONVENIENT AND THE DAMAGES CALCULATED HEREUNDER CONSTITUTE A REASONABLE APPROXIMATION OF THE HARM OR LOSS.

ARTICLE EIGHT: CREDIT AND COLLATERAL REQUIREMENTS

8.1 Buyer Financial Information. If requested by Seller, Buyer shall deliver (i) within one hundred twenty (120) days following the end of each fiscal year, a copy of Buyer's annual report containing audited consolidated financial statements for such fiscal year and (ii) within sixty (60) days after the end of each of its first three fiscal quarters of each fiscal year, a copy of Buyer's quarterly report containing unaudited consolidated financial statements for such fiscal quarter. In all cases the statements shall be for the most recent accounting period and prepared in accordance with generally accepted accounting principles; provided, however, that should any such statements not be available on a timely basis due to a delay in preparation or certification, such delay shall not be an Event of Default so long as Buyer diligently pursues the preparation, certification and delivery of the statements. Buyer shall be deemed to have satisfied such delivery requirement if the applicable report is publicly available.

8.2 Seller Financial Information. Seller shall provide the following financial information:

(a) If requested by Buyer, Seller shall deliver (i) within one hundred twenty (120) days following the end of each fiscal year, a copy of Seller's annual report containing audited consolidated financial statements for such fiscal year and (ii) within sixty (60) days after the end of each of its first three fiscal quarters of each fiscal year, a copy of Seller's quarterly report containing unaudited consolidated financial statements for such fiscal quarter. In all cases the statements shall be for the most recent accounting period and prepared in accordance with generally accepted accounting principles; provided, however, that should any such statements not be available on a timely basis due to a delay in preparation or certification, such delay shall not be

an Event of Default so long as Seller diligently pursues the preparation, certification and delivery of the statements.

(b) *[If a Guaranty may be provided:* If a Guaranty is provided and if requested by Buyer, Seller shall deliver (i) within one hundred twenty (120) days following the end of each fiscal year, a copy of Guarantor's annual report containing audited consolidated financial statements for such fiscal year and (ii) within sixty (60) days after the end of each of its first three fiscal quarters of each fiscal year, a copy of Guarantor's quarterly report containing unaudited consolidated financial statements for such fiscal quarter certified by an officer of Guarantor. In all cases the statements shall be for the most recent accounting period and prepared in accordance with generally accepted accounting principles; provided, however, that should any such statements not be available on a timely basis due to a delay in preparation or certification, such delay shall not be an Event of Default so long as Guarantor diligently pursues the preparation, certification and delivery of the statements. Seller shall be deemed to have satisfied such delivery requirement if the applicable report is publicly available.]

8.3 Grant of Security Interest/Remedies. To secure its obligations under this Agreement and to the extent Seller delivers Performance Assurance hereunder, Seller hereby grants to Buyer a present and continuing first priority security interest in, and lien on (and right of setoff against), and assignment of, all cash collateral and cash equivalent collateral and any and all proceeds resulting therefrom or the liquidation thereof, whether now or hereafter held by, on behalf of, or for the benefit of, Buyer, and each Party agrees to take such action as the other Party reasonably requires in order to perfect the Buyer's first-priority security interest in, and lien on (and right of setoff against), such collateral and any and all proceeds resulting therefrom or from the liquidation thereof. Upon or any time after the occurrence and during the continuation of an Event of Default by Seller or an Early Termination Date as a result thereof, Buyer may do any one or more of the following: (i) exercise any of the rights and remedies of a secured party with respect to all Performance Assurance, including any such rights and remedies under Law then in effect; (ii) exercise its rights of setoff against such collateral and any and all proceeds resulting therefrom or from the liquidation thereof; (iii) draw on any outstanding Letter of Credit issued for its benefit; and (iv) liquidate all or any portion of any Performance Assurance then held by or for the benefit of Buyer free from any claim or right of any nature whatsoever of Seller, including any equity or right of purchase or redemption by Seller. Buyer shall apply the proceeds of the collateral realized upon the exercise of any such rights or remedies to reduce the Seller's obligations under the Agreement (Seller remaining liable for any amounts owing to Buyer after such application), subject to Buyer's obligation to return any surplus proceeds remaining after such obligations are satisfied in full.

8.4 Performance Assurance.

(a) *[For Agreements with Delivery Terms greater than two years: CPUC Approval Security,] Development Period Security, Construction Period Security, Delivery Term Security.* To secure its obligations under this Agreement Seller agrees to deliver to Buyer and maintain in full force and effect for the period set forth below, the following Performance Assurance:

(i) ***[For Agreements with Delivery Terms greater than two years:*** CPUC Approval Security, in the amount of [_____] in the form of cash or a Letter of Credit [or a Guaranty] from the Execution Date of this Agreement until the return date specified in Section 8.4(b)(i) below;]

(ii) Development Period Security in the amount of [_____] in the form of cash or a Letter of Credit [or a Guaranty] from ***[For Agreements with Delivery Terms greater than two years:*** the CPUC Approval Date] ***[For all other Agreements:*** the Execution Date of this Agreement] until the return date specified in Section 8.4(b)[(i)/(ii)] below;

(iii) Construction Period Security in the amount of [_____] in the form of cash or a Letter of Credit [or a Guaranty] from the CP Satisfaction Date until the return date specified in Section 8.4(b)[(ii)/(iii)] below; and

(iv) Delivery Term Security in the amount of [_____] in the form of cash or a Letter of Credit [or a Guaranty] from the commencement of the Delivery Term until the return date specified in Section 8.4(b)[(iii)/(iv)] below.

Except as set forth in Section 2.2 as it pertains to ***[For Agreements with Delivery Terms greater than two years:*** the CPUC Approval Security and] the Development Period Security, **any such** Performance Assurance **shall not be deemed a limitation of damages.**

(b) Return of Performance Assurance.

(i) ***[For Agreements with Delivery Terms greater than two years:*** Buyer shall promptly return to Seller the unused portion of the CPUC Approval Security after the earlier of (A) the date on which Seller has delivered the Development Period Security or the Construction Period Security, as applicable, and (B) termination of the Agreement under Section 2.4(b)(ii).

(ii) Buyer shall promptly return to Seller the unused portion of the Development Period Security after the earlier of (A) the date on which Seller has delivered the Construction Period Security, and (B) termination of the Agreement under Section 2.4(b)(ii).

(iii) Buyer shall promptly return to Seller the unused portion of the Construction Period Security after the earlier of (A) the date on which Seller has delivered the Delivery Term Security, and (B) the date that all payment obligations of the Seller arising under this Agreement, including compensation for penalties, Termination Payment, indemnification payments or other damages are paid in full (whether directly or indirectly such as through set-off or netting) after an Early Termination Date.

(iv) Buyer shall promptly return to Seller the unused portion of the Delivery Term Security after the following have occurred: (A) the Delivery Term has expired or terminated early; and (B) all payment obligations of the Seller arising under this Agreement, including compensation for penalties, Termination Payment, indemnification payments or other damages are paid in full (whether directly or indirectly such as through set-off or netting).

8.5 Interest on Cash. If Seller provides Performance Assurance in the form of cash, Buyer shall pay interest on such cash held as [*For Agreements with Delivery Terms greater than two years:* CPUC Approval Security,] Development Period Security, Construction Period Security, or Delivery Term Security, as applicable, at the Interest Rate. On or before each Interest Payment Date, Buyer shall transfer the sum of all accrued and unpaid Interest Amounts due to Seller for such security in the form of cash by wire transfer to the bank account specified under “Wire Transfer” in the Cover Sheet.

8.6 Costs of Letter of Credit. If Seller provides Performance Assurance in the form of a Letter of Credit, in all cases, the reasonable costs and expenses of (including but not limited to the reasonable costs, expenses, and attorneys’ fees, including reasonably allocated costs of in-house counsel of the Buyer) establishing, renewing, substituting, canceling, increasing and reducing the amount of (as the case may be) one or more Letters of Credit shall be borne by the Seller.

ARTICLE NINE: GOVERNMENTAL CHARGES

9.1 Cooperation. Each Party shall use reasonable efforts to implement the provisions of and to administer this Agreement in accordance with the intent of the Parties to minimize all taxes, so long as neither Party is materially adversely affected by such efforts.

9.2 Governmental Charges. Seller shall pay or cause to be paid all taxes imposed by any governmental authority (“Governmental Charges”) on or with respect to the Product or the transaction under this Agreement arising prior to and at the Delivery Point, including, but not limited to, ad valorem taxes and other taxes attributable to the Project, land, land rights or interests in land for the Project. Buyer shall pay or cause to be paid all Governmental Charges on or with respect to the Product or the transaction under this Agreement from the Delivery Point. In the event Seller is required by Law or regulation to remit or pay Governmental Charges which are Buyer’s responsibility hereunder, Buyer shall promptly reimburse Seller for such Governmental Charges. If Buyer is required by Law or regulation to remit or pay Governmental Charges which are Seller’s responsibility hereunder, Buyer may deduct such amounts from payments to Seller with respect to payments under the Agreement; if Buyer elects not to deduct such amounts from Seller’s payments, Seller shall promptly reimburse Buyer for such amounts upon request. Nothing shall obligate or cause a Party to pay or be liable to pay any Governmental Charges for which it is exempt under the Law.

ARTICLE TEN: REPRESENTATIONS AND WARRANTIES; COVENANTS

10.1 General Representations and Warranties. On the Execution Date and the CP Satisfaction Date, each Party represents and warrants to the other Party that:

(a) it is duly organized, validly existing and in good standing under the Laws of the jurisdiction of its formation;

(b) it has all Governmental Approvals necessary for it to perform its obligations under this Agreement, except for as of the Execution Date (i) CPUC Approval in the case of Buyer, and (ii) all Governmental Approvals necessary to construct, operate and maintain the Project and related interconnection facilities in the case of Seller;

(c) the execution, delivery and performance of this Agreement is within its powers, have been duly authorized by all necessary action and do not violate any of the terms and conditions in its governing documents, any contracts to which it is a party or any applicable Law;

(d) this Agreement and each other document executed and delivered in accordance with this Agreement constitutes a legally valid and binding obligation enforceable against it in accordance with its terms, subject to any Equitable Defenses;

(e) it is not Bankrupt and there are no proceedings pending or being contemplated by it or, to its knowledge, threatened against it which would result in it being or becoming Bankrupt;

(f) except as may be set forth in its reports filed with the SEC, there is not pending or, to its knowledge, threatened against it or any of its Affiliates any legal proceedings that could materially adversely affect its ability to perform its obligations under this Agreement;

(g) no Event of Default with respect to it has occurred and is continuing and no such event or circumstance would occur as a result of its entering into or performing its obligations under this Agreement;

(h) it is acting for its own account, has made its own independent decision to enter into this Agreement and as to whether this Agreement is appropriate or proper for it based upon its own judgment, is not relying upon the advice or recommendations of the other Party in so doing, and is capable of assessing the merits of and understanding, and understands and accepts, the terms, conditions and risks of this Agreement; and

(i) it has entered into this Agreement in connection with the conduct of its business and it has the capacity or the ability to make or take delivery of the Product as provided in this Agreement.

10.2 Seller Representations and Warranties.

(a) Seller, and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement that: (i) the Project qualifies and is certified by the CEC as an Eligible Renewable Energy Resource (“ERR”) as such term is defined in Public Utilities Code Section 399.12 or Section 399.16; and (ii) the Project’s output delivered to Buyer qualifies under the requirements of the California Renewables Portfolio Standard. To the extent a change in Law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in Law.

(b) Seller and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement the Renewable Energy Credits transferred to Buyer conform to the definition and attributes required for compliance with the California Renewables Portfolio Standard, as set forth in CPUC Decision 08-08-028, and as may be modified by subsequent decision of the CPUC or by subsequent legislation. To the extent a change in Law occurs after execution of this Agreement that causes this representation and warranty to be

materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in Law.

(c) *[Include other appropriate representations, warranties, and covenants to satisfy the California RPS content category requirements.]*

10.3 Covenants.

(a) General Covenants. Each Party covenants that throughout the Delivery Term:

(i) it shall continue to be duly organized, validly existing and in good standing under the Laws of the jurisdiction of its formation;

(ii) it shall maintain (or obtain from time to time as required, including through renewal, as applicable) all Governmental Approvals necessary for it to legally perform its obligations under this Agreement;

(iii) it shall perform its obligations under this Agreement in a manner that does not violate any of the terms and conditions in its governing documents, any contracts to which it is a party or any applicable Law; and

(iv) it shall not dispute its status as a “forward contract merchant” within the meaning of the United States Bankruptcy Code.

(b) Seller Covenants.

(i) Seller covenants throughout the Delivery Term that it, or its permitted successors or assigns, shall maintain ownership of a fee, easement, long-term leasehold interest, or other similar asset ownership interest in the Project.

(ii) Seller covenants throughout the Delivery Term that it shall maintain market based rate authority from FERC to sell Product to Buyer under the terms of this Agreement.

(iii) If at any time during the Delivery Term, Seller’s representations and warranties set forth in Section 10.2 become materially false or misleading, Seller covenants that it shall provide prompt Notice to Buyer describing such default along with a description of its efforts to cure such default.

(iv) *[Include other appropriate representations, warranties, and covenants to satisfy the California RPS content category requirements.]*

(v) *[Include other appropriate covenants regarding the use of contractors that may be diverse business enterprises.]*

ARTICLE ELEVEN: TITLE, RISK OF LOSS, INDEMNITIES

11.1 Title and Risk of Loss. Title to and risk of loss related to the Product shall transfer from Seller to Buyer at the Delivery Point. Seller warrants that it will deliver to Buyer the Product free and clear of all liens, security interests, claims and encumbrances or any interest therein or thereto by any person arising prior to or at the Delivery Point.

11.2 Indemnities.

(a) Indemnity by Seller. Seller shall release, indemnify, defend, and hold harmless Buyer, its Affiliates, and its and their directors, officers, employees, agents, and representatives against and from any and all actions, suits, losses, costs, damages, injuries, liabilities, claims, demands, penalties and interest, including reasonable costs and attorneys' fees ("Claims") resulting from, or arising out of or in any way connected with (i) any event, circumstance, act, or incident relating to the Product delivered under this Agreement up to and at the Delivery Point, (ii) Seller's development, permitting, construction, ownership, operation and/or maintenance of the Project, (iii) the failure by Seller or the failure of the Project to comply with applicable Law, including without limitation the CAISO Tariff, (iv) any Governmental Charges for which Seller is responsible hereunder, or (v) any liens, security interests, encumbrances, or other adverse claims against the Product delivered hereunder made by, under, or through Seller, in all cases including, without limitation, any Claim for or on account of injury, bodily or otherwise, to or death of persons, or for damage to or destruction of property belonging to Buyer, Seller, or others, excepting only such Claim to the extent caused by the willful misconduct or gross negligence of Buyer, its Affiliates, and its and their directors, officers, employees, agents, and representatives.

(b) Indemnity by Buyer. Buyer shall release, indemnify, defend, and hold harmless Seller, its Affiliates, and its and their directors, officers, employees, agents, and representatives against and from any and all Claims resulting from, or arising out of or in any way connected with (i) any event, circumstance, act, or incident relating to the Product received by Buyer under this Agreement after the Delivery Point, (ii) the failure by Buyer to comply with applicable Law, including without limitation the CAISO Tariff, or (iii) any Governmental Charges for which Buyer is responsible hereunder, in all cases including, without limitation, any Claim for or on account of injury, bodily or otherwise, to or death of persons, or for damage to or destruction of property belonging to Buyer, Seller, or others, excepting only such Claim to the extent caused by the willful misconduct or gross negligence of Seller, its Affiliates, and its and their directors, officers, employees, agents, and representatives.

ARTICLE TWELVE: DISPUTE RESOLUTION

12.1 Intent of the Parties. Except as provided in the next sentence, the sole procedure to resolve any claim arising out of or relating to this Agreement or any related agreement is the dispute resolution procedure set forth in this Article 12. Either Party may seek a preliminary injunction or other provisional judicial remedy if such action is necessary to prevent irreparable harm or preserve the status quo, in which case both Parties nonetheless will continue to pursue resolution of the dispute by means of the dispute resolution procedure set forth in this Article 12.

12.2 Management Negotiations.

(a) The Parties will attempt in good faith to resolve any controversy or claim arising out of or relating to this Agreement or any related agreements by prompt negotiations between each Party's authorized representative designated in writing as a representative of the Party (each a "Manager"). Either Manager may, by Notice to the other Party, request a meeting to initiate negotiations to be held within ten (10) Business Days of the other Party's receipt of such request, at a mutually agreed time and place (either in person or telephonically). If the matter is not resolved within fifteen (15) Business Days of their first meeting ("Initial Negotiation End Date"), the Managers shall refer the matter to the designated senior officers of their respective companies that have authority to settle the dispute ("Executive(s)"). Within five (5) Business Days of the Initial Negotiation End Date ("Referral Date"), each Party shall provide one another Notice confirming the referral and identifying the name and title of the Executive who will represent the Party.

(b) Within five (5) Business Days of the Referral Date, the Executives shall establish a mutually acceptable location and date, which date shall not be greater than thirty (30) days from the Referral Date, to meet. After the initial meeting date, the Executives shall meet, as often as they reasonably deem necessary, to exchange relevant information and to attempt to resolve the dispute.

(c) All communication and writing exchanged between the Parties in connection with these negotiations shall be confidential and shall not be used or referred to in any subsequent binding adjudicatory process between the Parties.

(d) If the matter is not resolved within forty-five (45) days of the Referral Date, or if the Party receiving the Notice to meet, pursuant to Section 12.2(a) above, refuses or does not meet within the ten (10) Business Day period specified in Section 12.2(a) above, either Party may initiate arbitration of the controversy or claim by providing Notice of a demand for binding arbitration at any time thereafter.

12.3 Arbitration. Any dispute that cannot be resolved by management negotiations as set forth in Section 12.2 above shall be resolved through binding arbitration by a retired judge or justice from the [AAA][JAMS] panel conducted in San Diego, California, administered by and in accordance with [AAA's Commercial Arbitration Rules] [JAMS [Comprehensive][Streamlined] Arbitration Rules and Procedures] ("Arbitration").

(a) Any arbitrator shall have no affiliation with, financial or other interest in, or prior employment with either Party and shall be knowledgeable in the field of the dispute. The Parties shall cooperate with one another in selecting the arbitrator within sixty (60) days after Notice of the demand for arbitration. If, notwithstanding their good faith efforts, the Parties are unable to agree upon a mutually-acceptable arbitrator, the arbitrator shall be appointed as provided for in [AAA's Commercial Arbitration Rules] [JAMS [Comprehensive][Streamlined] Arbitration Rules and Procedures].

(b) At the request of a Party, the arbitrator shall have the discretion to order depositions of witnesses to the extent the arbitrator deems such discovery relevant and appropriate.

Depositions shall be limited to a maximum of three (3) per Party and shall be held within thirty (30) days of the making of a request. Additional depositions may be scheduled only with the permission of the arbitrator, and for good cause shown. Each deposition shall be limited to a maximum of six (6) hours duration unless otherwise permitted by the arbitrator for good cause shown. All objections are reserved for the Arbitration hearing except for objections based on privilege and proprietary and confidential information. The arbitrator shall also have discretion to order the Parties to exchange relevant documents. The arbitrator shall also have discretion to order the Parties to answer interrogatories, upon good cause shown.

(c) The arbitrator shall have no authority to award punitive or exemplary damages or any other damages other than direct and actual damages and the other remedies contemplated by this Agreement.

(d) The arbitrator shall prepare in writing and provide to the Parties an award including factual findings and the reasons on which their decision is based.

(e) The arbitrator's award shall be made within nine (9) months of the filing of the notice of intention to arbitrate (demand) and the arbitrator shall agree to comply with this schedule before accepting appointment. However, this time limit may be extended by agreement of the Parties or by the arbitrator, if necessary.

(f) Judgment on the award may be entered in any court having jurisdiction.

(g) The prevailing Party in this dispute resolution process is entitled to recover its costs. Until such award is made, however, the Parties shall share equally in paying the costs of the Arbitration.

(h) The arbitrator shall have the authority to grant dispositive motions prior to the commencement of or following the completion of discovery if the arbitrator concludes that there is no material issue of fact pending before the arbitrator.

(i) The existence, content, and results of any Arbitration hereunder is confidential information that is subject to the provisions of Section 13.1.

ARTICLE THIRTEEN: MISCELLANEOUS

13.1 Confidentiality.

(a) **General.** Neither Party shall disclose the non-public terms or conditions of this Agreement or any transaction hereunder to a third party, other than (i) the Party's Affiliates and its and their officers, directors, employees, lenders, counsel, accountants or advisors who have a need to know such information and have agreed to keep such terms confidential, (ii) for disclosure to the Buyer's Procurement Review Group, as defined in CPUC Decision (D) 02-08-071, subject to a confidentiality agreement, (iii) to the CPUC under seal for purposes of review, (iv) disclosure of terms specified in and pursuant to Section 13.1(b) of this Agreement; (v) in order to comply with any applicable Law, regulation, or any exchange, control area or CAISO rule, or order issued by a court or entity with competent jurisdiction over the disclosing Party ("Disclosing Party"), other than to those entities set forth in subsection (vi); or (vi) in order to comply with any

applicable regulation, rule, or order of the CPUC, CEC, or the Federal Energy Regulatory Commission. In connection with requests made pursuant to clause (v) of this Section 13.1(a) (“Disclosure Order”) each Party shall, to the extent practicable, use reasonable efforts to prevent or limit such disclosure. After using such reasonable efforts, the Disclosing Party shall not be: (i) prohibited from complying with a Disclosure Order or (ii) liable to the other Party for monetary or other damages incurred in connection with the disclosure of the confidential information. Except as provided in the preceding sentence, the Parties shall be entitled to all remedies available at law or in equity to enforce, or seek relief in connection with, this confidentiality obligation.

(b) RPS Confidentiality. Notwithstanding Section 13.1(a) of this Agreement, at any time on or after the date on which the Buyer makes its filing seeking CPUC Approval for this Agreement, either Party shall be permitted to disclose the following terms with respect to this Agreement: Party names, resource type, Delivery Term, Project location, Contract Capacity, anticipated Commercial Operation Date, Contract Quantity, and Delivery Point.

(c) Publicity. Except as otherwise agreed to in this Section 13.1 above, no announcement, publicity, advertising, press release, promotional or marketing materials regarding the arrangement contemplated under this Agreement, including the existence hereof, shall be made by either Party without the prior written approval of the other Party which approval shall not be unreasonably withheld or delayed.

13.2 Assignment. Neither Party shall assign this Agreement or its rights hereunder without the prior written consent of the other Party, which consent shall not be unreasonably withheld. For purposes hereof, the transfer of more than fifty percent (50%) of the equity ownership or voting interest of Seller (or any parent entity holding directly or indirectly at least fifty percent (50%) of the equity ownership or voting interest of Seller if such interest constitutes more than twenty percent (20%) of the fair market value of the assets of such parent entity) to a person that is not an Affiliate of Seller shall also constitute an assignment of this Agreement requiring Buyer’s prior written consent. Notwithstanding the foregoing, either Party may, without the consent of the other Party (and without relieving itself from liability hereunder), transfer, sell, pledge, encumber, or assign this Agreement or the accounts, revenues or proceeds hereof to its financing providers. In connection with any financing or refinancing of the Project by Seller, Buyer shall in good faith negotiate and agree upon a consent to collateral assignment of this Agreement in a form that is commercially reasonable and customary in the industry.

13.3 Audit. Each Party has the right, at its sole expense and during normal working hours, to examine the records of the other Party to the extent reasonably necessary to verify the accuracy of any statement, charge or computation made pursuant to this Agreement including amounts of Delivered Energy or Scheduled Energy. If any such examination reveals any inaccuracy in any statement, the necessary adjustments in such statement and the payments thereof will be made promptly and shall bear interest calculated at the Default Rate from the date the overpayment or underpayment was made until paid; provided, however, that no adjustment for any statement or payment will be made unless objection to the accuracy thereof was made prior to the lapse of twelve (12) months from the rendition thereof, and thereafter any objection shall be deemed waived except to the extent any misinformation was from a third party not Affiliated with any Party and such third party corrects its information after such twelve-month period. In addition, Buyer shall have the right, at its sole expense and during normal working hours, to examine the

records of Seller to the extent reasonably necessary to verify Seller's compliance with its representations and warranties set forth in Section 10.2.

13.4 Sarbanes-Oxley and SEC Requirements. The Parties acknowledge that accounting principles generally accepted in the United States of America ("GAAP") and SEC rules require Buyer and its independent auditor to evaluate whether Buyer must consolidate Seller's financial information (but not financial information of Seller's constituent members unless deemed to be included in the entity under GAAP). Buyer may require access to information concerning Seller's organizational structure, including its debt/capital structure, as well as to personnel of Seller to determine if consolidated financial reporting is required. If Buyer and its independent auditor determine at any time that the Buyer must consolidate the Seller's financial statements to comply with GAAP and/or SEC rules regarding consolidated financial reporting, then:

(a) Buyer shall require from Seller and Seller agrees to provide to Buyer the following during the Term of this Agreement:

(i) Unaudited financial statements of the Seller prepared in accordance with GAAP as of the end of the quarterly period. The financial statements should include quarter to date and year to date information and are to be provided within fifteen (15) calendar days of the end of the applicable reporting period (or the Business Day thereafter);

(ii) Unaudited financial schedules of the Seller, as deemed necessary for Buyer to prepare its consolidated financial statements and related footnotes to the financial statements in accordance with GAAP as of the end of the quarterly period. The financial schedules should include quarter to date and year to date information underlying the financial statements and footnotes to the financial statements and are to be provided within fifteen (15) calendar days of the end of the applicable reporting period (or the Business Day thereafter);

(iii) Access to Seller's accounting and other records, and accounting and management personnel as reasonably determined by both Buyer and Seller so that (A) Buyer's independent auditor or its internal auditors may conduct financial audits (in accordance with the standards of the Public Company Accounting Oversight Board (United States)) as well as internal control audits (in accordance with Section 404 of the Sarbanes-Oxley Act of 2002) and (B) Buyer can be provided analytical information, as needed, to enable Buyer to meet its SEC filing requirements, including but not limited to those under Item 2 on Form 10-Q, and Item 7 on Form 10-K, "Management's Discussion and Analysis of Financial Condition and Results of Operations;"

(iv) Upon the request of Buyer, such certifications by a duly authorized representative(s) of Seller as may be reasonably requested by Buyer (which certifications shall presumptively be reasonable if the certifications are substantially identical to those required by Buyer or its parent of business units of Buyer or its parent); and

(v) As reasonably requested by Buyer, such information or schedules, similar to the items noted in clauses (i)-(iv) above, to enable Buyer to prepare consolidated financial statements and schedules as may be required for Buyer to obtain financing or to prepare other reports as required by regulatory bodies, such as the SEC, for periods other than as of the end of the monthly, quarterly or year to date periods then ended.

(b) If Buyer (i) in its sole discretion determines that the financial statements of the Seller would be considered material to the Buyer or its parent company's financial statements, financial condition, or internal controls over financial reporting, and (ii) reasonably determines Seller's internal controls over financial reporting are not operating effectively or have resulted in a control deficiency, Buyer shall provide Notice to Seller. Upon receipt of such Notice, Seller will have thirty (30) days to remediate any deficiency in Seller's internal controls over financial reporting identified by the Buyer, which Buyer and Buyer's independent auditor deem to be necessary to ensure Seller's internal controls over financial reporting are adequate, during or as a result of the audits permitted under Section 13.4(a)(iii) or any other provision of this Agreement.

(c) As soon as possible, but in no event later than two (2) Business Days following any occurrence that would affect Seller in any material way, Seller shall provide to Buyer a Notice describing such occurrence in sufficient detail to permit the Buyer to file a report on SEC Form 8-K. Such occurrences include all reportable events on the then current Form 8-K that applies to Buyer and its parent company at such time, including but not limited to a material acquisition or disposition of assets, a material direct financial obligation or off-balance sheet financing arrangement, material litigation, and the execution or termination of a material contract.

(d) Any information provided to Buyer shall be treated as confidential except that it may be disclosed in connection with the preparation, review, certification and publication of Buyer's financial statements.

(e) Seller shall notify Buyer at any time during the term of this Agreement of any services provided or proposed to be provided to Seller by Buyer's independent auditor. Seller, and any of Seller's Affiliates, are prohibited from engaging Buyer's independent auditor for any services or in any consulting agreement without the express written consent of partner in charge of Buyer's independent audit.

13.5 Entire Agreement. This Agreement, together with the Cover Sheet and each and every appendix, attachment, amendment, schedule and any written supplements hereto, if any, between the Parties constitutes the entire agreement between the Parties.

13.6 Recording. Unless a Party expressly objects to a Recording (defined below) at the beginning of a telephone conversation, each Party consents to the creation of a tape or electronic recording ("Recording") of all telephone conversations between the Parties to this Agreement, and that any such Recordings will be retained in confidence, secured from improper access, and may be submitted in evidence in any proceeding or action relating to this Agreement. Each Party waives any further notice of such monitoring or recording, and agrees to notify its officers and employees of such monitoring or recording and to obtain any necessary consent of such officers and employees.

13.7 Forward Contract. The Parties acknowledge and agree that this Agreement constitutes a "forward contract" within the meaning of the United States Bankruptcy Code.

13.8 Governing Law. THIS AGREEMENT AND THE RIGHTS AND DUTIES OF THE PARTIES HEREUNDER SHALL BE GOVERNED BY AND CONSTRUED, ENFORCED AND PERFORMED IN ACCORDANCE WITH THE LAWS OF THE STATE OF

CALIFORNIA, WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW. TO THE EXTENT ENFORCEABLE AT SUCH TIME, EACH PARTY WAIVES ITS RESPECTIVE RIGHT TO ANY JURY TRIAL WITH RESPECT TO ANY LITIGATION ARISING UNDER OR IN CONNECTION WITH THIS AGREEMENT.

13.9 Attorneys' Fees. In any proceeding brought to enforce this Agreement or because of the breach by any Party of any covenant or condition herein contained, the prevailing Party shall be entitled to reasonable attorneys' fees (including reasonably allocated fees of in-house counsel) in addition to court costs and any and all other costs recoverable in said action.

13.10 General. This Agreement shall be considered for all purposes as prepared through the joint efforts of the Parties and shall not be construed against one Party or the other as a result of the preparation, substitution, submission or other event of negotiation, drafting or execution hereof. **Except to the extent provided for herein, no amendment or modification to this Agreement shall be enforceable unless reduced to writing and executed by both Parties.** This Agreement shall not impart any rights enforceable by any third party (other than a permitted successor or assignee bound to this Agreement). Waiver by a Party of any default by the other Party shall not be construed as a waiver of any other default. The headings used herein are for convenience and reference purposes only. This Agreement shall be binding on each Party's successors and permitted assigns.

13.11 Severability. If any provision in this Agreement is determined to be invalid, void or unenforceable by any court having jurisdiction, such determination shall not invalidate, void, or make unenforceable any other provision, agreement or covenant of this Agreement and the Parties shall use their best efforts to modify this Agreement to give effect to the original intention of the Parties.

13.12 Counterparts. This Agreement may be executed in one or more counterparts each of which shall be deemed an original and all of which shall be deemed one and the same Agreement. Delivery of an executed counterpart of this Agreement by fax will be deemed as effective as delivery of an originally executed counterpart. Any Party delivering an executed counterpart of this Agreement by facsimile will also deliver an originally executed counterpart, but the failure of any Party to deliver an originally executed counterpart of this Agreement will not affect the validity or effectiveness of this Agreement.

13.13 Notices. Whenever this Agreement requires or permits delivery of a "Notice" (or requires a Party to "notify"), the Party with such right or obligation shall provide a written communication delivered personally, by a nationally recognized overnight courier, mailed by registered or certified mail (return receipt requested), or by facsimile or e-mail (if facsimile numbers or e-mail addresses are identified on the Cover Sheet or by subsequent Notice) to the receiving Party at the addresses identified on the Cover Sheet (or at such other addresses as such receiving Party shall identify by like Notice to the other Party); provided, however, that notices of Outages or other Scheduling or dispatch information or requests, shall be provided in accordance with the terms set forth in the relevant section of this Agreement. Invoices may be sent by facsimile or e-mail (if facsimile numbers or e-mail addresses are identified on the Cover Sheet or by subsequent Notice). A Notice delivered in accordance herewith shall be deemed received (i) on the date of delivery, if hand delivered, (ii) two Business Days after the date of sending, if sent by

a nationally recognized overnight courier, or at such earlier time as is confirmed by the receiving Party, (iii) three Business Days after the date of mailing, if mailed by registered or certified mail, return receipt requested, or at such earlier time as is confirmed by the receiving Party, and (iv) on the Business Day on which such Notice was transmitted by facsimile transmission or e-mail (where permitted); provided, however, that a Notice delivered in accordance with this Section but received on any day other than a Business Day or after 5:00 p.m. in the place of receipt will be deemed received on the next Business Day. Each Party shall provide Notice to the other Party of the persons authorized to nominate and/or agree to a Schedule or Dispatch Order for the delivery or acceptance of the Product or make other Notices on behalf of such Party and specify the scope of their individual authority and responsibilities, and may change its designation of such persons from time to time in its sole discretion by providing Notice.

13.14 Mobile Sierra. Notwithstanding any provision of this Agreement, neither Party shall seek, nor shall they support any third party in seeking, to prospectively or retroactively revise the rates, terms or conditions of service of this Agreement through application or complaint to FERC pursuant to the provisions of Section 205, 206 or 306 of the Federal Power Act, or any other provisions of the Federal Power Act, absent prior written agreement of the Parties. Further, absent the prior agreement in writing by both Parties, the standard of review for changes to the rates, terms or conditions of service of this Agreement proposed by a Party, a non-Party or the FERC acting *sua sponte* shall be the “public interest” application of the “just and reasonable” standard of review set forth in *United Gas Pipe Line Co. v. Mobile Gas Service Corp.*, 350 US 332 (1956) and *Federal Power Commission v. Sierra Pacific Power Co.*, 350 US 348 (1956) and clarified by *Morgan Stanley Capital Group Inc. v. Pub. Util. Dist. No. 1 of Snohomish County*, 128 S. Ct. 2733 (2008).

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed as of the date first above written.

[_____]

a [_____]

SAN DIEGO GAS & ELECTRIC
COMPANY
a California corporation

By: _____

Name: _____

Title: _____

By: _____

Name: _____

Title: _____

Exhibit A

PROJECT DESCRIPTION INCLUDING DESCRIPTION OF SITE

PROJECT DESCRIPTION

Project name _____

Project Site name: _____

Project physical address: _____

Total number of electric generating units at the Project (committed and not committed to Buyer) _____

Technology Type: _____

Substation:

The term “Site” as defined in the Agreement means the following parcel description upon which the Project is located:

Latitude and Longitude of Project:_____.

The nameplate capacity of the Project is _____.

The electric generating units utilized as generation assets as part of the Project are described below:

[INSERT MAP]

Exhibit B

MILESTONE SCHEDULE

	<i>Date</i>	<i>Project Name</i>
1.		Obtains control of all lands and rights-of-way comprising the Site.
2.		Files a CEC Pre-Certification and Verification application.
3.		Receives a completed [Phase I Interconnection Study Report] [interconnection feasibility study] and CAISO Deliverability Assessment Study Report. [<i>Omit if addressed by a Condition Precedent</i>]
4.		Receives a completed [Phase II Interconnection Study Report] [interconnection system impact study] and CAISO Deliverability Assessment Study report [<i>Omit if addressed by a Condition Precedent</i>]
5.		Files CEQA/NEPA application with appropriate agency(ies).
6.		Executes interconnection agreement and/or transmission agreement and receives FERC approval.
7.		Receives CEQA/NEPA approval/permit
8.		Executes a supply contract.
9.		Executes an Engineering, Procurement and Construction (“EPC”) contract.
10.		Delivers full NTP under EPC contract and begins construction of the Project.
11.		Executes Meter Service Agreement and Participating Generator Agreement.
12.		Delivers Energy to the Transmission Provider to which the Project is physically interconnected.
13.		Receives all Governmental Approvals necessary to achieve COD.
14.		Receives CEC Certification and Verification.

Exhibit C

FORM OF LETTER OF CREDIT

[DATE]

To: San Diego Gas & Electric Company
555 W. Fifth Street
Mail Code: ML 18A3
Los Angeles, CA 90013

Re: Our Irrevocable Standby Letter of Credit No. _____
In the Amount of US _____

Ladies and Gentlemen:

We hereby open our irrevocable standby Letter of Credit Number _____ in favor of [name of Beneficiary] (“Beneficiary”), by order and for account of [name of Applicant] (“Applicant”), [address of Applicant], available at sight upon demand at our counters, at [location] for an amount of US\$ _____ [amount spelled out and xx/100 U.S. Dollars] against presentation one of the following documents:

1- Statement signed by a person purported to be an authorized representative of Beneficiary stating that: “[name of Applicant] (“Applicant”) is in default under the Power Purchase Agreement between Beneficiary and Applicant dated _____ or under any transaction contemplated thereby (whether by failure to perform or pay any obligation thereunder or by occurrence of a “default”, “event of default” or similar term as defined in such agreement, any other agreement between Beneficiary and Applicant, or otherwise). The amount due to Beneficiary is U.S. \$_____.”

or

2- Statement signed by a person purported to be an authorized representative of Beneficiary stating that: “[name of Applicant] (“Applicant”) has forfeited all or part of its [*For Agreements with Delivery Terms greater than two years:* CPUC Approval Security or] Development Period Security as set forth and defined in the Power Purchase Agreement between Beneficiary and Applicant dated _____. The amount due to Beneficiary, whether or not a default has occurred, is U.S. \$_____.”

or

3- Statement signed by a person purported to be an authorized representative of Beneficiary stating that: “as of the close of business on [insert date, which is less than 60 days prior to the expiration date of the Letter of Credit] you have provided written

notice to us indicating your election not to permit extension of this Letter of Credit beyond its current expiry date. The amount due to Beneficiary, whether or not a default has occurred, is U.S. \$_____.”

Special Conditions:

- All costs and banking charges pertaining to this Letter of Credit are for the account of Applicant.
- Partial and multiple drawings are permitted.
- Fax of Document 1 or 2 or 3 above is acceptable. Notwithstanding anything to the contrary herein, any drawing hereunder may be requested by transmitting the requisite documents as described above to us by facsimile at _____ or such other number as specified from time to time by us. The facsimile transmittal shall be deemed delivered when received. It is understood that drawings made by facsimile transmittal are deemed to be the operative instrument without the need of originally signed documents.

This Letter of Credit expires on _____ at our counters.

We hereby engage with Beneficiary that upon presentation of a document as specified under and in compliance with the terms of this Letter of Credit, this Letter of Credit will be duly honored in the amount stated in Document 1, 2, or 3 above. If a document is so presented by 1:00 pm on any New York banking day, we will honor the same in full in immediately available New York funds on that day and, if so presented after 1:00 pm on a New York banking day, we will honor the same in full in immediately available New York funds by noon on the following New York banking day.

It is a condition of this Letter of Credit that it shall be deemed automatically extended without an amendment for a one year period beginning on the present expiry date hereof and upon each anniversary of such date, unless at least ninety (90) days prior to any such expiry date we have sent you written notice by regular and registered mail or courier service that we elect not to permit this Letter of Credit to be so extended beyond, and will expire on its then current expiry date. No presentation made under this Letter of Credit after such expiry date will be honored.

We agree that if this Letter of Credit would otherwise expire during, or within 30 days after, an interruption of our business caused by an act of god, riot, civil commotion, insurrection, act of terrorism, war or any other cause beyond our control or by any strike or lockout, then this Letter of Credit shall expire on the 30th day following the day on which we resume our business after the cause of such interruption has been removed or eliminated and any drawing on this Letter of Credit which could properly have been made but for such interruption shall be permitted during such extended period.

This Letter of Credit is subject to the Uniform Customs and Practice for Documentary Credits (2007 Revision) International Chamber of Commerce, Publication No. 600 (“UCP”), except to the extent that the terms hereof are inconsistent with the provisions of the UCP, including but not limited to Articles 14(b) and 36 of the UCP, in which case the terms of this Letter of Credit shall

govern. Matters not covered by the UCP shall be governed and construed in accordance with the laws of the State of California.

[Name of Bank]

Authorized Signature(s)

Exhibit D

FORM OF GUARANTY

GUARANTY

In consideration of San Diego Gas & Electric Company (“Company”) entering into a power purchase agreement with [NAME OF COUNTERPARTY] (hereinafter referred to as “Applicant”), [NAME OF GUARANTOR], a [TYPE OF LEGAL ENTITY i.e. California corporation], (hereinafter referred to as “Guarantor”) agrees with Company as follows:

1. The term “Obligations” shall mean all obligations, liabilities and indebtedness of any kind whatsoever arising in connection with _____ or arising in connection with or under any security agreement or other agreement between the Company and Applicant. The amount of Obligations existing from time to time shall be calculated after giving effect to all contractual netting arrangements between Applicant and the Company.

2. Guarantor unconditionally and irrevocably guarantees to Company the full, prompt and faithful payment and performance when due of each and all of the Obligations.

3. This is a continuing guaranty relating to the Obligations. Guarantor acknowledges that there is a continuing consideration to Guarantor for this Guaranty and therefore Guarantor waives and relinquishes the right to revoke or terminate this Guaranty as provided in California Civil Code Section 2815.

4. Any of the Obligations may be amended, modified, waived, or increased (whether or not beyond any dollar limitation hereunder), further agreements may be entered into between Company and Applicant, Company may provide additional goods or services or credit to Applicant or increase or decrease the dollar value of such goods, services or credit, and further obligations (including, without limitation, the provision or pledging of security to Company for any obligation), indebtedness and liabilities may be entered into or incurred from time to time by Applicant and without further authorization from or notice to Guarantor and no such action shall terminate, release, impair, reduce, discharge, diminish or in any way affect any of the obligations of Guarantor hereunder or any security furnished by Guarantor or give Guarantor any recourse or defense against Company. Company need not inquire into the power of Applicant or the authority of its officers, directors, partners or agents acting or purporting to act in its behalf.

5. With respect to all Obligations, this is a guaranty of payment and performance and not of collection, and Guarantor waives and agrees not to assert or take advantage of:

(a) any right to require Company to proceed against Applicant or any other person or to resort to, proceed against or exhaust any security held by it at any time or to pursue any other remedy in its power before proceeding against any Guarantor;

(b) demand, presentment, protest and notice of any kind including, without limiting the generality of the foregoing, notice of nonperformance, protest, dishonor and acceptance of this Guaranty, notice under Section 9611 of the California Commercial Code, and

notice of the existence, creation or incurring of any new or additional indebtedness or obligation or of any action or non-action on the part of Applicant, Company, a guarantor under this or any other instrument, or creditor of Applicant or any other person whomsoever, in connection with any of the Obligations or any collateral for any of the Obligations or in connection with any of the Obligations; and

(c) any suretyship defenses and suretyship rights of every nature otherwise available under California law and the laws of any other state or jurisdiction, including, without limitation, all defenses and rights arising under Sections 2787 through 2855 of the California Civil Code (the “Suretyship Provisions”) and any successor provisions to those Sections. Without limiting the generality of the foregoing, Guarantor acknowledges his, her or its understanding that the Suretyship Provisions provide various partial or complete defenses to the recovery by Company from Guarantor and/or grant Guarantor rights the enforcement of which could reduce or eliminate entirely Guarantor’s liability hereunder to Company. Among the defenses and rights contained in the Suretyship Provisions are the following: (1) Section 2809 of the Civil Code, which provides, in part, that the obligation of a surety must not be either larger in amount or in other respects more burdensome than that of the principal; (2) Section 2810 of the Civil Code, which provides, in part, that a surety is not liable if for any reason other than the mere personal disability of the principal there is no liability upon the part of the principal at the time of execution of the contract, or the liability of the principal thereafter ceases; (3) Section 2819 of the Civil Code, which provides, in part, that a surety is exonerated if the creditor alters the original obligation of the principal without the consent of the surety; (4) Section 2845 of the Civil Code, which provides, in part, that a surety is exonerated to the extent that the creditor fails to proceed against the principal, or to pursue any other remedy in the creditor’s power which the surety cannot pursue and which would lighten the surety’s burden; (5) Section 2846 of the Civil Code, which provides that a surety may compel his principal to perform the obligation when due; (6) Section 2847 of the Civil Code, which provides, in part, that if a surety satisfies the principal obligation, or any part thereof, the principal is obligated to reimburse the surety for the amounts paid by the surety; (7) Section 2848 of the Civil Code, which provides, in part, that a surety, upon satisfaction of the obligation of the principal is entitled to enforce remedies which the creditor then has against the principal; (8) Section 2849 of the Civil Code, which provides, in part, that a surety is entitled to the benefit of security held by the creditor for the performance of the principal obligation held by the creditor; (9) Section 2850 of the Civil Code, which provides, in part, that whenever the property of a surety is hypothecated with property of the principal, the surety is entitled to have the property of the principal first applied to the discharge of the obligation; and (10) Section 2822 of the Civil Code, which provides, in part, for a right to have the principal designate the portion of any obligation to be satisfied by the surety in the event that the principal provides partial satisfaction of such obligation.

6. All existing and future indebtedness of Applicant to Guarantor (“Intercompany Obligations”) is subordinated to all Obligations hereby guaranteed. All of Guarantor’s right, title and interest in and to the Intercompany Obligations and rights to receive any payments of the Intercompany Obligations are hereby granted and assigned to Company as continuing security for the Obligations hereby guaranteed, and, in the event of any default in the payment of any of the Obligations when due and until the Obligations guaranteed hereby have been paid in full (a) at the Company’s request, Applicant shall forthwith pay to the Company all or any part of such Intercompany Obligations and any capital which Guarantor is entitled to withdraw until all of the

Obligations guaranteed hereby have been paid in full, and (b) Guarantor shall pay to Company immediately any payments of such Intercompany Obligations received by Guarantor.

7. Guarantor agrees to pay all attorneys' fees (including without limitation, reasonably allocated fees of in-house counsel) and all other costs and expenses which may be incurred by Company in the enforcement of this Guaranty against Guarantor.

8. This Guaranty is not assignable by Guarantor without Company's consent. This Guaranty shall inure to the benefit of Company and its successors and assigns, including the assignees of any Obligations, and bind the heirs, executors, administrators, successors and permitted (if any) assigns of Guarantor. This Guaranty is assignable by Company with respect to all or any portion of the Obligations, and when so assigned Guarantor shall be liable to the assignees under this Guaranty without in any manner affecting the liability of Guarantor hereunder with respect to any Obligations retained by Company.

9. This Guaranty shall be governed by and construed in accordance with the laws of the State of California, without reference to its choice of law provisions. Guarantor hereby irrevocably and unconditionally agrees that any legal action or proceeding against Guarantor or any of Guarantor's property with respect to this Guaranty may be brought in the courts of the State of California in the County of San Diego or the courts of the United States in the County of San Diego, as Company may elect, and by executing and delivering this Guaranty Guarantor hereby submits to and accepts with regard to any such action or proceeding for himself, herself or itself and in respect of his, her or its property, generally, irrevocably and unconditionally, the jurisdiction of the above mentioned courts. Guarantor hereby irrevocably appoints the Secretary of State of the State of California as his, her or its agent for service of process in any suit or proceeding if the Guarantor is located outside the State of California at the time of service or cannot reasonably be located by Company. The foregoing, however, shall not limit the right of Company as it may elect to bring any legal action or proceeding or to obtain execution of judgment in any other appropriate jurisdiction including but not limited to any other jurisdiction in which Guarantor or his, her or its property is located.

10. Except as provided in any other written agreement now or at any time hereafter in force between Company and Guarantor, this Guaranty shall constitute the entire agreement of Guarantor with Company with respect to the subject matter hereof and no representation, understanding, promise or condition concerning the subject matter hereof shall be binding upon Company unless expressed herein.

11. All notices, demands, requests and other communications required or permitted hereunder shall be in writing and shall be given personally, by certified or registered mail, postage prepaid, return receipt requested, or by reliable overnight courier to the address of the Company set forth below (or to such new address as Company may designate hereafter in a notice to Guarantor) in the case of a communication to the Company and to the address appearing next to Guarantor's signature on this Guaranty (or to such new address as Guarantor may designate hereafter in a notice to Company) in the case of a communication to Guarantor. Any notice served personally shall be deemed delivered upon receipt, and any notice served by certified or registered mail or by reliable overnight courier shall be deemed delivered on the date of receipt as shown on

the addressee's registry or certification of receipt or on the date receipt is refused as shown on the records or manifest of the U.S. Postal Service or such courier.

San Diego Gas & Electric Company
555 W. Fifth Street
Attn: Major Markets 18A3, Credit Manager
Los Angeles, CA 90013
Fax No.: (213) 244-8316

12. Until all of the Obligations guaranteed hereby have been satisfied in full, Guarantor shall have no right of subrogation or reimbursement from the Applicant which Guarantor may have as a result of any payment by Guarantor under this Guaranty, and waives any right to enforce any remedy which Company now has or may hereafter have against the Applicant as a result of such payment by Guarantor under this Guaranty and waives any right under section 2849 of the California Civil Code and any other benefit of or right to participate in any security now or hereafter held by Company.

13. All amounts payable by Guarantor hereunder shall be paid without set-off or counterclaim and without any deduction or withholding whatsoever unless and to the extent that Guarantor shall be prohibited by law from doing so, in which case Guarantor shall pay to Company such additional amount as shall be necessary to ensure that Company receives the full amount it would have received if no such deduction or withholding had been made.

14. If any portion of this Guaranty is held to be unenforceable by a court of competent jurisdiction, the remainder of this Guaranty shall remain in full force and effect.

IN WITNESS WHEREOF, the undersigned Guarantor has executed this Guaranty on [MONTH AND DAY], [YEAR].

GUARANTOR:
[NAME OF GUARANTOR]

Signature

Title

Printed Name of Person Signing for
Guarantor

Guarantor's Address

City, State, Zip

Guarantor's Phone No.

Exhibit E

COMMERCIAL OPERATION CERTIFICATE

The undersigned, _____ (“EPC Contractor”), _____ (“Renewable Generation Equipment Supplier”), _____ (“Licensed Professional Engineer”) and [_____] (“Owner”) make the following certifications to San Diego Gas & Electric Company (“SDG&E”), dated as of _____. All capitalized terms not otherwise defined herein shall have the meaning given to them in the Power Purchase Agreement dated _____ between Owner and SDG&E (the “Agreement”).

Renewable Generation Equipment Supplier hereby certifies that:

1. The [_____] comprising the Project have been erected and installed at the project site and have been commissioned as required under the Supply and Installation Agreement (“[_____] Supply Agreement”) dated as of _____, by and between Renewable Generation Equipment Supplier and Owner and each such [_____] has passed the performance testing required to be performed pursuant to the [_____] Supply Agreement.
2. The Warranty Period under the Warranty Agreement (“Warranty Agreement”) dated as of _____, by and between Renewable Generation Equipment Supplier and Owner has commenced.

EPC Contractor hereby certifies that:

All requirements necessary to achieve [Commercial Operation/Substantial Completion] as set forth in the agreement between the EPC Contractor and Owner dated _____ (“EPC Contract”) have been completed and the Project has successfully passed all performance tests at a level that demonstrates satisfaction of at least the [minimum performance guarantees].

Owner hereby certifies that:

1. Except for punch list items that would not materially affect the performance, reliability or safe operation of the Project, the Project has been completed in accordance with all applicable specifications and is ready for continuous commercial operation in compliance with all applicable laws and governmental approvals. The Project has successfully passed all performance tests at a level that demonstrates satisfaction of at least the [insert minimum performance guarantees], and complete test reports have been submitted to Buyer.
2. The Operation and Maintenance Agreement (O&M Agreement), by and between Owner and _____ dated as of _____ has commenced.

3. Owner has a valid leasehold or real property interest in the Project Site for a term of at least [___] years from the Commercial Operation date.
4. The interconnection facilities have been completed in accordance with applicable specifications, tariffs, laws and governmental approvals to enable power generated by the Project to be received at the Delivery Point.
5. Owner has obtained all governmental approvals necessary for the continuous commercial operation of the Project and the Project is in compliance with all such governmental approvals and all other applicable laws.
6. The Contract Capacity of the Project is [___] MWac and [___] MWdc at [_____] conditions.

Licensed Professional Engineer certifies that:

1. We have read the Agreement, the [_____] Supply Contract, and the EPC Contract and we understand the requirements for Commercial Operation under the Agreement, the specifications and performance testing requirements under the [_____] Supply Contract, and the requirements for [Commercial Operation/Substantial Completion] under the EPC Contract.
2. We have reviewed the material and data made available to us by the Owner, the Renewable Generation Equipment Supplier, and the EPC Contractor for the Project.
3. To the extent practical, we have reviewed the engineering, procurement, construction and performance testing for the Project and in the course of this review we have not discovered any material errors or omissions in the work performed to date.
4. We have reviewed the certificates of Owner, Renewable Generation Equipment Supplier, and EPC Contractor above, and find the representations provided to be correct in all material respects.
5. We have reviewed all Governmental Approvals and permits identified by the Owner as being required for the construction and operation of the Project and are of the opinion that the Project as completed is in compliance in all material respects with the environmental and technical requirements contained therein.
6. Based on our review of the aforementioned information and of information provided to us by others which we have not independently verified, we are of the opinion that, as of, Commercial Operation has occurred as defined in the Agreement.

Executed this ____ day of ____, 200_

**RENEWABLE GENERATION EQUIPMENT
SUPPLIER**

*[Name of Renewable Generation Equipment
Supplier]*

a _____ corporation

By: _____

Name:

Title:

EPC CONTRACTOR

[Name of EPC Contractor]

a _____ corporation

By: _____

Name:

Title:

OWNER

[Name of Owner]

a _____ limited liability company

By: _____

Name:

Title:

LICENSED PROFESSIONAL ENGINEER:

[Name of Licensed Professional Engineer]

a _____

By: _____

Name:

Title:

ACCEPTED BY SAN DIEGO GAS & ELECTRIC COMPANY

By: _____

Name: _____

Title: _____

Date: _____

Exhibit F

FORM OF QUARTERLY PROGRESS REPORT

**Quarterly Progress Report
of**

[_____]

(“Seller”)

**provided to
San Diego Gas & Electric Company**

[Date]

Table of Contents

[Insert Table of Contents]

1.0 Instructions.

All capitalized terms used in this report shall have the meanings set forth below and any capitalized terms used in this report which are not defined below shall have the meanings ascribed thereto in the Power Purchase Agreement by and between _____ (“Seller”) and San Diego Gas & Electric Company dated _____, ____ (the “Agreement”).

Seller shall review the status of each significant element of the Project schedule and Seller shall identify such matters referenced in clauses (i)-(v) below as known to Seller and which in Seller’s reasonable judgment are expected to adversely affect the Project or the Project schedule, and with respect to any such matters, shall state the actions which Seller intends to take to ensure that Conditions Precedent and the Milestones will be attained by their required dates. Such matters may include, but shall not be limited to:

(i) Any material matter or issue arising in connection with a Governmental Approval, or compliance therewith, with respect to which there is an actual or threatened dispute over the interpretation of a law or regulation, actual or threatened opposition to the granting of a necessary Governmental Approval, any organized public opposition, any action or expenditure required for compliance or obtaining approval that Seller is unwilling to take or make, or in each case which could reasonably be expected to materially threaten or prevent financing of the Project, attaining any Condition or Milestone, or obtaining any contemplated agreements with other parties which are necessary for attaining any Condition or Milestone or which otherwise reasonably could be expected to materially threaten Seller’s ability to attain any Condition or Milestone;

(ii) Any development or event in the financial markets or the independent power industry, any change in taxation or accounting standards or practices or in Seller’s business or prospects which reasonably could be expected to materially threaten financing of the Project, attainment of any Condition or Milestone or materially threaten any contemplated agreements with other parties which are necessary for attaining any Condition or Milestone or could otherwise reasonably be expected to materially threaten Seller’s ability to attain any Condition or Milestone;

(iii) A change in, or discovery by Seller of, any legal or regulatory requirement which would reasonably be expected to materially threaten Seller’s ability to attain any Condition or Milestone;

(iv) Any material change in the Seller’s schedule for initiating or completing any material aspect of Project;

(v) The status of any matter or issue identified as outstanding in any prior Quarterly Report and any material change in the Seller’s proposed actions to remedy or overcome such matter or issue.

Seller shall complete, certify, and deliver this form Quarter Quarterly Progress Report to [_____], together with all attachments and exhibits, with [3] copies of the Report delivered to [_____] and [_____].

2.0 Executive Summary.

2.1 Major activities to be performed for each aspect of the Project during the current calendar quarter.

Please provide a brief summary of the Major² activities to be performed for each of the following aspects of the Project during the current calendar quarter:

- 2.1.1 Design
- 2.1.2 Engineering
- 2.1.3 Major Equipment procurement
- 2.1.4 Construction
- 2.1.5 Milestone report
- 2.1.6 Permitting (See Section 3.0)

2.2 Major activities scheduled to be performed in the previous calendar quarter but not completed as scheduled.

Please provide a brief summary of the Major activities which were scheduled to be performed in the previous calendar quarter and their status, including those activities that were not completed as scheduled:

- 2.2.1 Design
- 2.2.2 Engineering
- 2.2.3 Major Equipment procurement
- 2.2.4 Construction
- 2.2.5 Milestone report
- 2.2.6 Permitting

² For Purposes of this Report, “Major” shall mean any activity, event, or occurrence which may have a material adverse impact on the construction of the Facility or completion of the Project on a timely basis if such activity, event, or occurrence occurs or if such activity, event, or occurrence fails to occur as anticipated or scheduled, which material adverse impact includes, but is not limited to, Seller’s inability to achieve a Milestone Date.

3.0 Permitting.

The following describes each of the major Governmental Approvals required for the construction of the Project and the status of each:

3.1 State and/or federal Governmental Approvals.

Please describe each of the Major state and/or federal Governmental Approval (including the Permit to Construct issued by the San Diego County Air Pollution Control District) to be obtained by Seller (or EPC Contractor) and the status of each.

DESCRIPTION	STATUS

3.2 Local and/or county Governmental Approvals.

Please describe each of the Major local and/or county Governmental Approvals to be obtained by Seller and the status of each.

DESCRIPTION	STATUS

3.3 Permitting activities which occurred during the previous calendar quarter.

Please list all permitting activities which occurred during the previous calendar quarter.

3.4 Permitting activities occurring during the current calendar quarter.

Please list all permitting activities which are expected to occur during the current calendar quarter.

3.5 Permitting Notices received from EPC Contractor.

Please attach to this Quarterly Progress Report copies of any notices related to permitting activities received from EPC Contractor during the previous calendar quarter.

4.0 Design Activities.

4.1 Table of design schedule to be followed by Seller and its subcontractors.

The following table lists the design schedule to be followed by Seller and its subcontractors.

ACTIVITY	CONTRACTOR/ SUBCONTRACTOR	SCHEDULED COMPLETION DATE	ACTUAL COMPLETION DATE

4.2 Design activities to be performed during the current calendar quarter.

Please explain in detail the design activities which are expected to be performed during the current calendar quarter.

4.3 Table of design activities completed during the previous calendar quarter.

Please explain in detail the design activities which were completed during the previous calendar quarter.

5.0 Engineering Activities.

5.1 Table of engineering schedule to be followed by Seller and its subcontractors.

The following table lists the engineering schedule to be followed by Seller and its subcontractors:

ACTIVITY	CONTRACTOR/ SUBCONTRACTOR	SCHEDULED COMPLETION DATE	ACTUAL COMPLETION DATE

5.2 Engineering activities to be performed during the current calendar quarter.

Please explain in detail the engineering activities which are expected to be performed during the current calendar quarter.

5.3 Engineering activities completed during the previous calendar month.

Please explain in detail the engineering activities which were completed during the previous calendar quarter.

5.4 Three-month look-ahead engineering schedule.

Please provide a three-month look ahead engineering schedule.

6.0 Major Equipment Procurement.

6.1 Table of major equipment to be procured by Seller and its subcontractors.

The following table lists major equipment to be procured by Seller and its subcontractors:

EQUIPMENT DESCRIPTION	MANUFACTURER	MODEL	CONTRACTED DELIVERY DATE	ACTUAL DELIVERY DATE	PROJECTED INSTALLATION DATE	ACTUAL INSTALLATION DATE

6.2 Major Equipment procurement activities to be performed during the current calendar quarter.

Please explain in detail the major equipment procurement activities which are expected to be performed during the current calendar quarter.

6.3 Major Equipment procurement activities completed during the previous calendar quarter.

Please explain in detail the major equipment procurement activities which were completed during the previous calendar quarter.

7.0 Construction Activities.

7.1 Table of construction activities to be performed by Seller and its subcontractors.

The following tables lists construction activities to be performed by Seller and its subcontractors:

ACTIVITY	CONTRACTOR/ SUBCONTRACTOR	SCHEDULED COMPLETION DATE	ACTUAL COMPLETION DATE
Civil Progress			
Structural Progress			
[Steam] Generator Progress			
Piping Progress			
IC and Electrical Progress			
Subcontractor Progress			

7.2 Construction activities to be performed during the current calendar quarter.

Please explain in detail the construction activities which are expected to be performed during the current calendar quarter.

7.3 Construction activities completed during the previous calendar quarter.

Please explain in detail the construction activities which are expected to be performed during the previous calendar quarter.

7.4 EPC Contractor Monthly Progress Report.

Please attach a copy of the Monthly Progress Reports received during the previous calendar quarter from the EPC Contractor pursuant to the EPC Contract, certified by the EPC Contractor as being true and correct as of the date issued.

7.5 Three-month look-ahead construction schedule.

Please provide a three-month look ahead construction schedule.

8.0 Milestones.

8.1 Milestone schedule.

Please state the status and progress of each Milestone and identify any completed Milestone(s) for the previous calendar quarter.

8.2 Remedial Action Plan (applicable if Seller fails to achieve Milestone by the Milestone Date).

Please explain in detail each of the following aspects of Seller's remedial action plan:

8.2.1 Missed Milestone

8.2.2 Plans to achieve missed Milestone

8.2.3 Plans to achieve subsequent Milestone

8.2.4 Delays in engineering schedule

Please explain in detail any delays beyond the scheduled Milestone Dates stated in Section 5.1, any impact from the delays on the engineering schedule, and Seller's plans to remedy such impact.

8.2.5 Delays in Major Equipment procurement

Please explain in detail any delays beyond the contracted delivery date and/or the projected installation date stated in Section 6.1, any impact from the delays on Major Equipment procurement schedule, and Seller's plans to remedy such impact.

8.2.6 Delays in construction schedule

Please explain in detail any delays beyond the scheduled completion dates stated in Section 7.1, any impact from the delays on the construction schedule, and Seller's plans to remedy such impact.

9.0 Safety and Health Reports

9.1 Please list all accidents from the previous calendar quarter:

9.2 Any work stoppage from the previous calendar quarter:

9.3 Work stoppage impact on construction of the Project:

I, _____, on behalf of and as an authorized representative of, do hereby certify that any and all information contained in the attached Seller's Quarterly Progress Report is true and accurate, and reflects, to the best of my knowledge, the current status of the construction of the Project as of the date specified below.

By: _____

Name: _____

Title: _____

Date: _____

RPS Project Development Status Report

Project Name
Date

Date of Latest Construction Progress Report from Counterparty:

Project Owner/Counterparty:

Technology:

Capacity (MW):

Annual Energy (GWh/year):

On-Line Date:

Term/Duration (years):

Construction Start Date:

Point of Delivery:

Location:

Status At-A-Glance

The below to be filled in w/ either: Completed, Acceptable, Unknown, or Concern. See Section B for a description of milestones. When the answer is "Concern" the milestone should be flagged with a notation number where additional detail is provided in Section A.

Milestones	Status	Initial Completion Date	Projected Completion Date
Fuel/Resource Supply:			
Financing:			
Corporate Financing			
Project Financing			
Site Control (100%):			
Permitting:			
Engineering:			
Major Equipment Procurement:			
Construction:			
Startup Testing and Commissioning:			
Transmission:			

Transmission - Detail (see Section C)

Dependent Transmission Upgrade(s):

Scheduled Completion:

Point of Interconnection:

Early Interconnection:

Gen-Tie Length:

Gen-Tie Voltage:

ISO Queue Position:

Feasibility Study (FS):

System Impact Study (SIS):

Facilities Study (FAS):

Remedial Action Plan:

Additional Comments:

Date of Preparation:

Exhibit G

OUTAGE NOTIFICATION FORM

OUTAGE NOTIFICATION FORM

This form may be used to comply with CAISO's outage notification requirements for both planned and forced outages. Report outages as soon as possible by submitting form via email to TSched@SempraUtilities.com or via fax at (858) 650-6191.

Request Type: New Scheduled Maintenance Outage ▼

Generator Name: _____
Location Code: _____
Address: _____

Contact Name: _____
Phone Number: _____
Email: _____
Alternate Name: _____
Alternate Number: _____
Email: _____

Previous Notification (if applicable)

Date Sent: mm/dd/yyyy
Time Sent: hh:mm

(For times, use 24hr format)

Today's Date: mm/dd/yyyy
Current Time: hh:mm

Outage Start Date: mm/dd/yyyy
Outage Start Time: hh:mm

Outage End Date: mm/dd/yyyy
Outage End Time: hh:mm

Outage Duration: _____
MW Available During Outage: _____
MW Unavailable During Outage: _____
RMR Unit? Yes/No

System (Select One)

Boiler
Codes 0010-1999

Generator
Codes 4500-4899

Regulatory, Safety, Environmental
Codes 9504-9720

Balance of Plant
Codes 3110-3999

Pollution Control Equipment
Codes 8000-8835

Others
Codes 9900-9999

Steam Turbine
Codes 4000-4499

External
Codes 9000-9040

Cause Code Ranges / Affected Component

(Select One) ▼

Cause Code / Component Problem

(Select One) ▼

Comments

Exhibit H

PROJECT OPERATING RESTRICTIONS

Operational characteristics of the Project must be equal to or greater than the resource flexibility reflected in the resource Master File, as such term is defined in the CAISO Tariff. Buyer may request that CAISO modify the Master File for the Project to reflect the findings of a CAISO audit of the Project and to ensure that the information provided by Seller is true and accurate. Seller agrees to coordinate with Buyer and any third party Scheduling Coordinator to ensure all information provided to the CAISO regarding the operational and technical constraints in the Master File for the Project are accurate and are actually based on physical characteristics of the resource. The Parties agree to make reasonable modifications to this Exhibit H to modify existing operating restrictions or add additional operating restrictions that may be necessary to address changes in the CAISO Tariff or applicable Law applicable to the Products provided from this Project.

- Nameplate capacity of the Project: ____MW
- Minimum operating capacity: ____MW
- Advance notification required for a Dispatch Notice: ____
- Ramp Rate: ____MW/minute



APPENDIX 6

2019 RPS SHORT-TERM MODEL PPA

[Form of PPA for As-Available, Baseload, Peaking or Dispatchable Product for a Project that is already constructed]

[Standard contract terms and conditions that “may not be modified” per CPUC D.04-06-014 and subsequent decisions are shown in red shaded text and standard contract terms and conditions that may be modified per CPUC D.04-06-014 and subsequent decisions are shown in green shaded text.]

POWER PURCHASE AGREEMENT

Between

SAN DIEGO GAS & ELECTRIC COMPANY
(as “Buyer”)

and

(as “Seller”)

POWER PURCHASE AGREEMENT

TABLE OF CONTENTS

COVER SHEET.....1

GENERAL TERMS AND CONDITIONS3

ARTICLE ONE: GENERAL DEFINITIONS.....3

 1.1 General.....3

 1.2 Interpretation.....20

ARTICLE TWO: EFFECTIVENESS OF AGREEMENT; CONDITIONS PRECEDENT21

 2.1 Effectiveness of Agreement Prior to CP Satisfaction Date.21

 2.2 Obligations of the Parties.....21

 2.3 Conditions Precedent.21

 2.4 Failure to Meet All Conditions Precedent.22

 2.5 Effectiveness of Agreement on and after CP Satisfaction Date.23

ARTICLE THREE: OBLIGATIONS AND DELIVERIES23

 3.1 Transaction.....23

 3.2 Transmission.....27

 3.3 Scheduling.....28

 3.4 Dispatch Notices.33

 3.5 Standards of Care.....34

 3.6 Metering.....35

 3.7 Outage Notification.....36

 3.8 Operations Logs and Access Rights.37

 3.9 Operating Procedures.....38

ARTICLE FOUR: COMPENSATION; MONTHLY PAYMENTS38

 4.1 *[For Dispatchable Product Only: Capacity Payment.....38*

 4.2 Energy Payment.....40

 4.3 Imbalance Energy.41

 4.4 Additional Compensation.42

ARTICLE FIVE: EVENTS OF DEFAULT; FORCE MAJEURE.....42

 5.1 Events of Default42

 5.2 Remedies; Declaration of Early Termination Date.....45

 5.3 Termination Payment.....45

 5.4 Notice of Payment of Termination Payment.....46

 5.5 Disputes With Respect to Termination Payment.....46

 5.6 Rights And Remedies Are Cumulative.....46

 5.7 Mitigation.....46

 5.8 Force Majeure.46

ARTICLE SIX: PAYMENT.....	47
6.1 Billing and Payment.....	47
6.2 Disputes and Adjustments of Invoices.....	47
6.3 Netting of Payments.....	47
ARTICLE SEVEN: LIMITATIONS.....	48
7.1 Limitation of Remedies, Liability and Damages.....	48
ARTICLE EIGHT: CREDIT AND COLLATERAL REQUIREMENTS.....	48
8.1 Buyer Financial Information.....	48
8.2 Seller Financial Information.....	49
8.3 Grant of Security Interest/Remedies.....	49
8.4 Performance Assurance.....	50
8.5 Interest on Cash.....	51
8.6 Costs of Letter of Credit.....	51
ARTICLE NINE: GOVERNMENTAL CHARGES.....	51
9.1 Cooperation.....	51
9.2 Governmental Charges.....	51
ARTICLE TEN: REPRESENTATIONS AND WARRANTIES; COVENANTS.....	51
10.1 General Representations and Warranties.....	51
10.2 Seller Representations and Warranties.....	52
10.3 Covenants.....	53
ARTICLE ELEVEN: TITLE, RISK OF LOSS, INDEMNITIES.....	54
11.1 Title and Risk of Loss.....	54
11.2 Indemnities.....	54
ARTICLE TWELVE: DISPUTE RESOLUTION.....	54
12.1 Intent of the Parties.....	54
12.2 Management Negotiations.....	55
12.3 Arbitration.....	55
ARTICLE THIRTEEN: MISCELLANEOUS.....	56
13.1 Confidentiality.....	56
13.2 Assignment.....	57
13.3 Audit.....	57
13.4 Sarbanes-Oxley and SEC Requirements.....	58
13.5 Entire Agreement.....	59
13.6 Recording.....	59
13.7 Forward Contract.....	59
13.8 Governing Law.....	59
13.9 Attorneys' Fees.....	60
13.10 General.....	60
13.11 Severability.....	60
13.12 Counterparts.....	60

13.13 Notices.	60
13.14 Mobile Sierra.	61
EXHIBIT A PROJECT DESCRIPTION INCLUDING DESCRIPTION OF SITE	A-1
EXHIBIT B FORM OF LETTER OF CREDIT	B-1
EXHIBIT C FORM OF GUARANTY	C-1
EXHIBIT D OUTAGE NOTIFICATION FORM.....	D-1
EXHIBIT E PROJECT OPERATING RESTRICTIONS	E-1

COVER SHEET

This Power Purchase Agreement is made as of the following date: [_____]. This Power Purchase Agreement and all exhibits, schedules, appendices, and any written supplements hereto, any designated collateral, credit support or margin agreement or similar arrangement between the Parties as well as all written and signed amendments and modifications thereto shall be a part of, and shall be referred to as, the "Agreement." The Parties to this Agreement (hereinafter individually a "Party" and collectively the "Parties") are the following:

Name: _____ ("Seller")

All Notices:

Street: _____

City: _____ Zip: _____

Attn: Contract Administration _____

Phone: _____

Facsimile: _____

Duns: _____

Federal Tax ID Number: _____

Invoices:

Attn: _____

Phone: _____

Facsimile: _____

Scheduling:

Attn: _____

Phone: _____

Facsimile: _____

Payments:

Attn: _____

Phone: _____

Facsimile: _____

Wire Transfer:

BNK: _____

ABA: _____

ACCT: _____

Confirmation: _____

FAX: _____

Credit and Collections:

Attn: _____

Name: San Diego Gas & Electric Company ("Buyer")

All Notices:

Street: 8315 Century Park Court

City: San Diego, CA Zip: 92123

Attn: Electric & Fuel Procurement - Contract Administration

Phone: (858) 636-5536

Facsimile: (858) 650-6190

Duns: 006911457

Federal Tax ID Number: 95-1184800

Invoices:

San Diego Gas & Electric Company

8315 Century Park Ct.

San Diego, California 92123-1593

Attn: Electric & Fuel Procurement – Invoicing and Reporting

Phone: (858) 650-6187

Facsimile: (858) 650-6190

Scheduling:

San Diego Gas & Electric Company

8315 Century Park Ct.

San Diego, California 92123-1593

Attn: Transaction Scheduling Manager

Phone: (858) 650-6160

Facsimile: (858) 650-6191

Payments:

San Diego Gas & Electric Company

PO Box 25110

Santa Ana, CA 92799-5110

Attn: Mail Payments

Phone: (619) 696-4521

Facsimile: (619) 696-4899

Wire Transfer:

BNK: Union Bank of California

for: San Diego Gas & Electric Company

ABA: Routing # 122000496

ACCT: #4430000352

Confirmation: SDG&E, Major Markets

FAX:(213) 244-8316

Credit and Collections:

San Diego Gas & Electric Company, Major Markets

555 W. Fifth Street, ML 18A3

Los Angeles, CA 90013-1011

Phone: _____
Facsimile: _____

With additional Notices of an Event of Default or
Potential Event of Default to:

Attn: _____
Phone: _____
Facsimile: _____

Attn.: Major Markets, Credit and Collections
Manager
Fax No.: (213) 244-8316
Phone: (213) 244-4343

With additional Notices of an Event of Default or
Potential Event of Default to:

San Diego Gas & Electric Company
8330 Century Park Ct.
San Diego, California 92123

Attn: General Counsel
Phone: (858) 650-6141
Facsimile: (858) 650-6106

GENERAL TERMS AND CONDITIONS

ARTICLE ONE: GENERAL DEFINITIONS

1.1 General. The following terms shall have the following meaning for purposes of this Agreement.

“[AAA][JAMS]” means [the American Arbitration Association] [JAMS, Inc.].

“Affiliate” means, with respect to any person, any other person (other than an individual) that, directly or indirectly, through one or more intermediaries, controls, or is controlled by, or is under common control with, such person. For this purpose, “control” means the direct or indirect ownership of fifty percent (50%) or more of the outstanding capital stock or other equity interests having ordinary voting power.

“Agreement” has the meaning set forth in the preamble to the Cover Sheet.

“Arbitration” has the meaning set forth in Section 12.3.

[For As-Available Product only: “As-Available” means a Product for which, subject to the terms of this Agreement, Seller is excused from selling and delivering the Product to Buyer, and Seller shall not be liable to Buyer for any damages determined pursuant to Section 3.1(h) of the Agreement, in the event that Seller fails to deliver the Product to Buyer for any of the following reasons:

- (a) if the Project is unavailable as a result of a Forced Outage and such Forced Outage is not the result of Seller’s negligence or willful misconduct;
- (b) Force Majeure;
- (c) by the Buyer’s failure to perform;
- (d) by a Planned Outage of the Project;
- (e) a reduction in output as ordered under Dispatch Down Periods; or
- (f) [the unavailability of landfill gas which was not anticipated as of the Execution Date, which is not within the reasonable control of, or the result of negligence of, Seller or the party supplying such landfill gas to the Project, and which by the exercise of reasonable due diligence, Seller is unable to overcome or avoid or causes to be avoided.] OR [insufficient wind power for the Project to generate energy as determined by the best wind speed and direction standards utilized by other wind producers or purchasers in the vicinity of the Project or if wind speeds exceed the Project’s technical specifications.] OR [the unavailability of water or the unavailability of sufficient pressure required for operation of the hydroelectric turbine-generator as reasonably determined by Seller within its operating procedures, neither of which was anticipated as of the

Execution Date, which is not within the reasonable control of, or the result of negligence of, Seller or the party supplying such water to the Project, and which by the exercise of due diligence, such Seller or the party supplying the water is unable to overcome or avoid or causes to be avoided.] OR [insufficient solar power for the Project to generate energy as determined by the best solar standards utilized by other solar producers or purchasers in the vicinity of the Project.]

[For Dispatchable Product only: “Availability Adjustment Factor” has the meaning set forth in Section 4.1(b).]

“Availability Incentive Payments” shall mean Availability Incentive Payments as defined in FERC filing ER09-1064 or such other similar term as modified and approved by FERC thereafter to be incorporated in the CAISO Tariff or otherwise applicable to CAISO.

[For Dispatchable Product only: “Availability Notice” has the meaning set forth in Section 3.3([f/g]).]

“Availability Standards” shall mean Availability Standards as defined in FERC filing ER09-1064 or such other similar term as modified and approved by FERC thereafter to be incorporated in the CAISO Tariff or otherwise applicable to CAISO.

“Bankrupt” means with respect to any entity, such entity that (a) files a petition or otherwise commences, authorizes or acquiesces in the commencement of a proceeding or cause of action under any bankruptcy, insolvency, reorganization or similar Law, (b) has any such petition filed or commenced against it which remains unstayed or undismissed for a period of sixty (60) days, (c) makes an assignment or any general arrangement for the benefit of creditors, (d) otherwise becomes bankrupt or insolvent (however evidenced), (e) has a liquidator, administrator, receiver, trustee, conservator or similar official appointed with respect to it or any substantial portion of its property or assets, or (f) is generally unable to pay its debts as they fall due.

[For Baseload Product only: “Baseload” means a Unit Firm Product for which the delivery levels are uniform twenty-four (24) hours per day, seven (7) days per week.]

“Bundled Green Energy” means Energy, Green Attributes, and any other Product, the quantity of which is measured based on the amount of Delivered Energy, in each case, that are produced by or associated with the Project. The quantity of Bundled Green Energy shall be equal to the lesser of the quantity of (i) **[When Seller is SC for the Project or when Buyer is SC but Project is not in the VER Forecasting Program:** Contract Energy] **[When SDG&E is SC for the Project and Project is in the VER Forecasting Program:** Delivered Energy] (ii) Green Attributes that are delivered to Buyer, and (iii) any other Product that is delivered to Buyer, the quantity of which is measured based on the amount of Delivered Energy. For example, if the quantity of Renewable Energy Credits that are delivered to Buyer is less than the quantity of the **[When Seller is SC for the Project or when Buyer is SC but Project is not in the VER Forecasting Program:** Contract Energy] **[When SDG&E is SC for the Project and Project is in the VER Forecasting Program:** Delivered Energy], then the quantity of Bundled Green Energy shall be equal to the quantity of Renewable Energy Credits that are delivered to Buyer.

“Business Day” means any day except a Saturday, Sunday, or a Federal Reserve Bank holiday and shall be between the hours of 8:00 a.m. and 5:00 p.m. local time for the relevant Party’s principal place of business where the relevant Party, in each instance unless otherwise specified, shall be the Party from whom the Notice, payment or delivery is being sent and by whom the Notice or payment or delivery is to be received.

“Buyer” has the meaning set forth on the Cover Sheet.

“CAISO” means the California Independent System Operator Corporation or any successor entity performing similar functions.

[When SDG&E is the SC for the Project: “CAISO Charges Invoice” has the meaning set forth in Section 3.3([a/b])(iv).]

“CAISO Grid” means the system of transmission lines and associated facilities of the Participating Transmission Owners that have been placed under the CAISO’s operational control.

“CAISO Tariff” means the CAISO Operating Agreement and Tariff, including the rules, protocols, procedures and standards attached thereto, as the same may be amended or modified from time-to-time and approved by FERC.

“California Renewables Portfolio Standard” means the Renewables Portfolio Standard of California under California Senate Bills 1078 and 107, as codified in California Public Utilities Code Sections 387, 390.1, and Article 16 (commencing with Section 399.11) of Chapter 2.3 of Part 1 of Division 1, as such provisions are amended or supplemented from time to time.

“Capacity Attributes” means any current or future defined characteristic, certificate, tag, credit, or ancillary service attribute, whether general in nature or specific as to the location or any other attribute of the Project intended to value any aspect of the capacity of the Project to produce Energy or ancillary services, including but not limited to any accounting construct so that the Contract Capacity of the Project may be counted toward a Resource Adequacy obligation or similar measure in respect to the capacity of the Project to generate Energy by the CPUC, the CAISO, the FERC, or any other entity vested with the authority under federal or state Law, to require Buyer to procure, or to procure at Buyer’s expense, Resource Adequacy or other similar products.

[For Dispatchable Product only: “Capacity Price” has the meaning set forth in Section 4.1(a).]

[For Baseload, Peaking, or Dispatchable Product only: “Capacity Test” shall be the complete capacity testing procedure for the Project that is reasonably acceptable to Buyer that Seller shall develop no later than thirty (30) days prior to the initial capacity testing of the Project prior to the Initial Delivery Date. The capacity testing procedure shall describe in detail the testing standard(s) to be used for the technology of the Project, the conditions under which testing shall take place, the average summer ambient conditions to which the results will be corrected, and the testing procedures. The same capacity testing procedure shall be applied to all subsequent Capacity Tests.]

“CEC” means the California Energy Commission or its successor agency.

“CEC Certification and Verification” means that the CEC has certified (or, with respect to periods before the Project has been constructed, that the CEC has pre-certified) that the Project is an ERR for purposes of the California Renewables Portfolio Standard and that all Energy produced by the Project qualifies as generation from an ERR for purposes of the Agreement.

“Claims” has the meaning set forth in Section 11.2(a).

“Conditions Precedent” has the meaning set forth in Section 2.3.

“Contract Capacity” has the meaning set forth in Section 3.1(f).

[When Seller is SC for the Project or when Buyer is SC but Project is not in the VER Forecasting Program: “Contract Energy” means the lower of Delivered Energy or Scheduled Energy for any given period in each case net of all Electrical Losses.]

“Contract Quantity” has the meaning set forth in Section 3.1(e).

“Contract Year” means a period of twelve (12) consecutive months (except in the case of the first Contract Year which may be longer) with the first Contract Year commencing on the Initial Delivery Date and each subsequent Contract Year commencing on the anniversary of the first day of the month following the Initial Delivery Date.

“Costs” means, with respect to the Non-Defaulting Party, brokerage fees, commissions and other similar third party transaction costs and expenses reasonably incurred by such Party either in terminating any arrangement pursuant to which it has hedged its obligations or entering into new arrangements which replace a Terminated Transaction; and all reasonable attorneys’ fees and expenses incurred by the Non-Defaulting Party in connection with such Terminated Transaction.

“Cover Sheet” means the document that precedes Article 1: General Definitions to this Agreement.

“CP Satisfaction Date” shall mean the date on which all of the Conditions Precedent have been satisfied (or waived in writing by the Party described in Section 2.4).

“CPUC” or “Commission or successor entity” means the California Public Utilities Commission, or successor entity.

“CPUC Approval” means a final and non-appealable order of the CPUC, without conditions or modifications unacceptable to the Parties, or either of them, which contains the following terms:

(a) approves this Agreement in its entirety, including payments to be made by the Buyer, subject to CPUC review of the Buyer’s administration of the Agreement; and

(b) finds that any procurement pursuant to this Agreement is procurement from an eligible renewable energy resource for purposes of determining Buyer’s compliance with any

obligation that it may have to procure eligible renewable energy resources pursuant to the California Renewables Portfolio Standard (Public Utilities Code Section 399.11 *et seq.*), Decision 03-06-071, or other applicable Law.

CPUC Approval will be deemed to have occurred on the date that a CPUC decision containing such findings becomes final and non-appealable. *[For Agreements for the purchase and sale of TRECS only, use STC REC-3 instead of the foregoing]*

[For Agreements with Delivery Terms greater than two years: “CPUC Approval Date” shall mean the date on which the Conditions Precedent set forth in Section 2.3(a) have been satisfied (or waived in writing by the beneficiary Party described in Section 2.4).]

[For Agreements with Delivery Terms greater than two years: “CPUC Approval Security” shall mean the Performance Assurance that Seller is required to maintain during the period and as otherwise specified in Section 8.4(a)(i) to secure performance of its obligations hereunder.]

“Credit Rating” means, with respect to any entity, the rating then assigned to such entity’s unsecured, senior long-term debt obligations (not supported by third party credit enhancements) by S&P or Moody’s.

“Day-Ahead Forecast” has the meaning set forth in Section 3.3([d/e]).

[For As-Available and Baseload Products only: “Deemed Bundled Green Energy” means the amount of Bundled Green Energy that Seller could reasonably have delivered to Buyer but was prevented from delivering to Buyer by reason of Economic Dispatch Down. The quantity of Deemed Bundled Green Energy shall be equal to *[For As-Available Products:* (a) the Deemed Delivery Forecast of Energy corresponding to the applicable Economic Dispatch Down periods, whether or not Seller is participating in the VER Forecasting Program during such events, less the amount of Energy scheduled under Economic Dispatch Down as specified in the Dispatch Notice during such periods, and less any amount of Energy that was not delivered associated with any concurrent Planned Outage, Forced Outage, Force Majeure, System Dispatch Down, and/or CAISO fault but only to the extent the Deemed Delivery Forecast does not already reflect the foregoing *provided that*, if the applicable amount calculated pursuant to this clause (a) is negative, the Deemed Bundled Green Energy shall be zero (0), or (b) if there is no such Deemed Delivery Forecast available during the applicable Economic Dispatch Down periods or if the Bundled Green Energy amount has historically not been determined based on clause (i) of the definition of Bundled Green Energy, the amount of Bundled Green Energy that Seller could reasonably have delivered to Buyer but was prevented from delivering to Buyer as a result of Economic Dispatch Down as determined by Buyer in a commercially reasonable manner, which amount shall not include any amount of Energy that was not delivered associated with any concurrent Planned Outage, Forced Outage, Force Majeure, System Dispatch Down, and/or CAISO fault.] *[For Baseload Products:* the amount of Bundled Green Energy that Seller could reasonably have delivered to Buyer but was prevented from delivering to Buyer during the applicable Economic Dispatch Down periods, as determined by Buyer in a commercially reasonable manner, which amount shall not include any amount of Energy that was not delivered associated with any

concurrent Planned Outage, Forced Outage, Force Majeure, System Dispatch Down, and/or CAISO fault.]]

[For As-Available only: “Deemed Delivery Forecast” means the forecast of the Energy to be produced by the Project prepared by the CAISO or its agent in accordance with the VER Forecasting Program and communicated to the Scheduling Coordinator, which forecast is the last such forecast prepared by the CAISO that does not reflect curtailed production as a result of Economic Dispatch Down periods. As of the Execution Date, such Deemed Delivery Forecast is the CAISO forecast generated through its Resource Specific VER Forecast Usage Report].

[Dispatchable Product only: “Default Availability Factor” means, for any period, the amount determined according to the following formula:

$$\text{Default Availability Factor} = (\text{PH} - (\text{EDH} - \text{EEDH})) / \text{PH}$$

Where:

PH is the number of period hours;

EDH is the number of equivalent derate hours calculated as the sum, for each derate, of the product of the number of hours of full or partial derate hours times the size of the reduction from the initial Contract Capacity (as of the Initial Delivery Date) divided by the initial Contract Capacity. For the purposes of this calculation, a derate includes all outages for any reason, including without limitation, Forced Outages, Force Majeure events, Dispatch Down Periods, Planned Outages, Buyer’s failure to perform, and other times when any portion of the Contract Capacity is not available and when the Delivered Energy of the Project is less than the amount of Energy dispatched by Buyer; and

EEDH is the number of equivalent excused derate hours solely due to either Force Majeure events, Dispatch Down Periods or Buyer’s failure to perform (and for no other reason), calculated as the sum, for each excused derate, of the product of the number of hours of full or partial derate hours times the size of the reduction from the initial Contract Capacity, divided by the initial Contract Capacity.]

“Defaulting Party” means the Party that is subject to an Event of Default.

“Default Rate” means for any date, the lesser of (a) the per annum rate of interest equal to the prime lending rate as may from time to time be published in *The Wall Street Journal* under “Money Rates” on such day (or if not published on such day on the most recent preceding day on which published), plus two percent (2%) and (b) the maximum rate permitted by applicable Law.

“Delivered Energy” means all Energy produced from the Project and delivered to Buyer at the Delivery Point as measured in MWh at the CAISO revenue meter of the Project based on a power factor of precisely one (1) and net of all Electrical Losses.

“Delivery Point” means the point at which Buyer receives Seller’s Product, as set forth in Section 3.1(d).

“Delivery Term” has the meaning set forth in Section 3.1(c).

“Delivery Term Security” shall mean the Performance Assurance that Seller is required to maintain during the period and as otherwise specified in Section 8.4(a)[(ii)/(iii)] to secure performance of its obligations hereunder.

“Disclosing Party” has the meaning set forth in Section 13.1(a).

“Disclosure Order” has the meaning set forth in Section 13.1(a).

“Dispatch Down Period” means the period of curtailment of delivery of Product from the Project resulting from System Dispatch Down [*For all Products other than Dispatchable Product:* or Economic Dispatch Down].

“Dispatch Notice” means the operating instruction, and any subsequent updates given either by Buyer to Seller or by the CAISO to Seller, directing Seller to operate the Project at a specified megawatt output for the period of time set forth in such order.

[For Dispatchable Product only: “Dispatchable” means a Unit Firm Product for which Seller makes available capacity for Buyer to Schedule and dispatch up or down at Buyer’s option in accordance with Section 3.3([g/h]).]

“Distribution Upgrades” has the meaning set forth in the CAISO Tariff.

“DUNS” means the Data Universal Numbering System, which is a unique nine character identification number provided by Dun and Bradstreet.

“Early Termination Date” has the meaning set forth in Section 5.2.

[For all Products other than Dispatchable Product: “Economic Dispatch Down” means curtailment of delivery of Product from the Project that is the result of economic curtailment where Buyer (as the Scheduling Coordinator) or a third party Scheduling Coordinator (in accordance with Buyer’s directions) either submits a self-schedule with a binding Product quantity or an economic bid in the applicable CAISO market or fails to submit any such schedule or bid, in either case, that when implemented by the CAISO results in an otherwise available Product quantity not being scheduled or awarded in such CAISO market and such curtailment is not concurrently the result of a Planned Outage, Forced Outage, Force Majeure, System Dispatch Down, and/or CAISO fault.

“Electrical Losses” means all electrical losses associated with the transmission of Product to the Delivery Point, including if applicable, but not limited to, any transmission or transformation losses between the CAISO revenue meter and the Delivery Point.

“Eligible Renewable Energy Resource” or “ERR” has the meaning set forth in California Public Utilities Code Section 399.11, *et seq.*, as amended or supplemented from time to time.

“Energy” means electric energy measured in MWh and net of Station Service (unless otherwise specified).

“Energy Price” has the meaning set forth in Section 4.[1/2](a).

“Equitable Defenses” means any bankruptcy, insolvency, reorganization or other Laws affecting creditors’ rights generally and, with regard to equitable remedies, the discretion of the court before which proceedings may be pending to obtain same.

[For Dispatchable Product only: “Equivalent Availability Factor” or “EAF” has the meaning set forth in Section 4.1(b).]

“Event of Default” has the meaning set forth in Section 5.1.

“Execution Date” means the date hereof as set forth in the preamble of the Cover Sheet.

“Executive(s)” has the meaning set forth in Section 12.2(a).

“FERC” means the Federal Energy Regulatory Commission or any successor government agency.

“Force Majeure” means any event or circumstance which wholly or partly prevents or delays the performance of any material obligation arising under this Agreement but only to the extent (1) such event is not within the reasonable control, directly or indirectly, of the Party seeking to have its performance obligation(s) excused thereby, (2) the Party seeking to have its performance obligation(s) excused thereby has taken all reasonable precautions and measures in order to prevent or avoid such event or mitigate the effect of such event on such Party’s ability to perform its obligations under this Agreement and which by the exercise of due diligence such Party could not reasonably have been expected to avoid and which by the exercise of due diligence it has been unable to overcome, and (3) such event is not the direct or indirect result of the fault or negligence of the Party seeking to have its performance obligations excused thereby.

(a) Subject to the foregoing, events that could qualify as Force Majeure include, but are not limited to the following:

(i) acts of God, flooding, lightning, landslide, earthquake, fire, drought, explosion, epidemic, quarantine, storm, hurricane, tornado, volcano, other natural disaster or unusual or extreme adverse weather-related events;

(ii) war (declared or undeclared), riot or similar civil disturbance, acts of the public enemy (including acts of terrorism), sabotage, blockade, insurrection, revolution, expropriation or confiscation; or

(iii) except as set forth in subpart (b)(vii) below, strikes, work stoppage or other labor disputes (in which case the affected Party shall have no obligation to settle the strike or labor dispute on terms it deems unreasonable).

(b) Force Majeure shall not be based on:

- (i) Buyer's inability economically to use or resell the Product purchased hereunder;
- (ii) Seller's ability to sell the Product at a price greater than the price set forth in this Agreement;
- (iii) Seller's inability to obtain Governmental Approvals or other approvals of any type for the construction, operation, or maintenance of the Project;
- (iv) a lack of wind, sun or other fuel source of an inherently intermittent nature;
- (v) Seller's inability to obtain sufficient labor, equipment, materials, or other resources to build or operate the Project, except to the extent Seller's inability to obtain sufficient labor, equipment, materials, or other resources is caused by an event of Force Majeure of the specific type described in any of subsections (a)(i) through (a)(iii) above;
- (vi) Seller's failure to obtain financing or other funds, including funds authorized by a state or the federal government or agencies thereof to supplement the payments made by Buyer pursuant to this Agreement;
- (vii) a strike, work stoppage or labor dispute limited only to any one or more of Seller, Seller's Affiliates, the EPC Contractor or subcontractors thereof or any other third party employed by Seller to work on the Project; or
- (viii) any equipment failure except if such equipment failure is caused solely by an event of Force Majeure of the specific type described in any of subsections (a)(i) through (a)(iii) above.

"Forced Outage" means any unplanned reduction or suspension of production of Product from the Project or unavailability of the Project in whole or in part that is not a Planned Outage or a willful withholding of Product when the Project is otherwise capable of delivering Product under Good Industry Practices.

"GAAP" has the meaning set forth in Section 13.4.

"Gains" means with respect to any Party, an amount equal to the present value of the economic benefit to it, if any (exclusive of Costs), resulting from the termination of this Agreement for the remaining Delivery Term, determined in a commercially reasonable manner, subject to Section 5.2 hereof. Factors used in determining economic benefit may include, without limitation, reference to information either available to it internally or supplied by one or more third parties, including, without limitation, quotations (either firm or indicative) of relevant rates, prices, yields, yield curves, volatilities, spreads or other relevant market data in the relevant markets market referent prices for renewable power set by the CPUC, comparable transactions, forward price curves based on economic analysis of the relevant markets, settlement prices for comparable transactions at liquid trading hubs (e.g., NYMEX), all of which should be calculated for the remaining term of this Agreement and include the value, if any, of Capacity Attributes, and Green Attributes.

“Good Industry Practice” means those practices, methods and acts that would be implemented and followed by prudent operators of electric transmission facilities (with respect to Buyer) or prudent operators of electric generation facilities similar to the Project (with respect to Seller) in the Western United States during the relevant time period, which practices, methods and acts, in the exercise of prudent and responsible professional judgment in the light of the facts known at the time the decision was made, could reasonably have been expected to accomplish the desired result consistent with good business practices, reliability and safety, and shall include, at a minimum, those professionally responsible practices, methods and acts described in the preceding sentence that comply with manufacturers’ warranties, restrictions in this Agreement, and the requirements of Governmental Authorities, WECC standards, the CAISO and applicable Law. Good Industry Practice is not intended to be the optimum practice, method or act to the exclusion of all others, but rather is intended to be any of the practices, methods and/or actions generally accepted in the region.

“Governmental Approval” means all authorizations, consents, approvals, waivers, exceptions, variances, filings, permits, orders, licenses, exemptions and declarations of or with any governmental entity and, with respect to the Seller, shall include those siting and operating permits and licenses, and any of the foregoing under any applicable environmental Law, that are required for the construction, use, and operation of the Project.

“Governmental Authority” means any federal, state, local or municipal government, governmental department, commission, board, bureau, agency, or instrumentality, or any judicial, regulatory or administrative body, having jurisdiction as to the matter in question.

“Governmental Charges” has the meaning set forth in Section 9.2.

“Green Attributes” means, subject to the limitations in the final sentence of this definition, any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Project, and its avoided emission of pollutants. Green Attributes include but are not limited to Renewable Energy Credits, as well as: (1) any avoided emission of pollutants to the air, soil or water such as sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO) and other pollutants; (2) any avoided emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by Law, to contribute to the actual or potential threat of altering the Earth’s climate by trapping heat in the atmosphere;¹ and (3) the reporting rights to these avoided emissions, such as Green Tag Reporting Rights. Green Tag Reporting Rights are the right of a Green Tag Purchaser to report the ownership of accumulated Green Tags in compliance with federal or state Law, if applicable, and to a federal or state agency or any other party at the Green Tag Purchaser’s discretion, and include without limitation those Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local Law, regulation or bill, and international or foreign

¹ Avoided emissions may or may not have any value for GHG compliance purposes. Although avoided emissions are included in the list of Green Attributes, this inclusion does not create any right to use those avoided emissions to comply with any GHG regulatory program.

emissions trading program. Green Tags are accumulated on a MWh basis and one Green Tag represents the Green Attributes associated with one (1) MWh of Energy. Green Attributes do not include (i) any energy, capacity, reliability or other power attributes from the Project, (ii) production tax credits associated with the construction or operation of the Project and other financial incentives in the form of credits, reductions, or allowances associated with the Project that are applicable to a state or federal income taxation obligation, (iii) fuel-related subsidies or “tipping fees” that may be paid to Seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits, or (iv) emission reduction credits encumbered or used by the Project for compliance with local, state, or federal operating and/or air quality permits. If the Project is a biomass facility and Seller receives any tradable Green Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Green Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project and for all electric generation using biomethane as fuel, Seller shall transfer to Buyer sufficient Green Attributes of biomethane production and capture to ensure that there are zero net emissions associated with the production of electricity from the Project using the biomethane.

“Guaranteed Energy Production” has the meaning set forth in Section 3.1(e).

“Guarantor” means, with respect to Seller, any person that (a) does not already have any material credit exposure to Buyer under any other agreements, guarantees, or other arrangements at the time its Guaranty is issued, (b) is an Affiliate of Seller, or other third party reasonably acceptable to Buyer, (c) has a Credit Rating of [_____] or better from S&P or a Credit Rating of [_____] or better from Moody’s, (d) has a tangible net worth of at least [_____], (e) is incorporated or organized in a jurisdiction of the United States and is in good standing in such jurisdiction, and (f) executes and delivers a Guaranty for the benefit of Buyer substantially in the form attached hereto as Exhibit C. *[SDG&E will consider accepting a Guaranty based on the Project, the amount of Performance Assurance, and the identity of the Seller and Guarantor]*

“Guaranty” means a guaranty from a Guarantor provided for the benefit of Buyer substantially in the form attached hereto as Exhibit C. *[SDG&E will consider accepting a Guaranty based on the Project, the amount of Performance Assurance, and the identity of the Seller and Guarantor]*

“Imbalance Energy” means the amount of Energy, in any given settlement interval, by which the amount of Delivered Energy deviates from the amount of Scheduled Energy.

“Initial Delivery Date” means [_____, 20__].

“Initial Negotiation End Date” has the meaning set forth in Section 12.2(a).

“Interest Amount” means, with respect to an Interest Period, the amount of interest derived from the product of (a) the sum of (i) the principal amount of Performance Assurance in the form of cash held by Buyer during that Interest Period, and (ii) the sum of all accrued and unpaid Interest Amounts accumulated prior to such Interest Period; multiplied by (b) the Interest Rate in effect on

the first day of the Interest Period; multiplied by (c) the number of days in that Interest Period; divided by (d) 360.

“Interest Payment Date” means the date on which cash held as Performance Assurance is returned pursuant to the terms of this Agreement.

“Interest Period” means the monthly period beginning on the first day of each month and ending on the last day of each month or the shorter period during which Performance Assurance in the form of cash is held by Buyer.

“Interest Rate” means for any date the rate per annum equal to the Commercial Paper (non-financial, 3 months) rate as published the prior month in the Federal Reserve Statistical Release, H.15. Should publication of the interest rate on Commercial Paper (non-financial, 3 months) be discontinued, then the interest rate on commercial paper, which most closely approximates the discontinued rate, published the prior month in the Federal Reserve Statistical Release, H.15, or its successor publication.

“Law” means any statute, law, treaty, rule, regulation, ordinance, code, Governmental Approval, enactment, injunction, order, writ, decision, authorization, judgment, decree or other legal or regulatory determination or restriction by a court or Governmental Authority of competent jurisdiction, including any of the foregoing that are enacted, amended, or issued after the Execution Date, and which become effective prior to the end of the Delivery Term; or any binding interpretation of the foregoing by a Governmental Authority.

“Letter(s) of Credit” means one or more irrevocable, standby letters of credit issued by a U.S. commercial bank or a foreign bank with a U.S. branch with such bank having a Credit Rating of at least [A-] with an outlook designation of “stable” from S&P or [A3] with an outlook designation of “stable” from Moody’s, in substantially the form as contained in Exhibit B to this Agreement.

“Locational Marginal Price” has the meaning set forth in the CAISO Tariff.

“Losses” means with respect to any Party, an amount equal to the present value of the economic loss to it, if any (exclusive of Costs), resulting from a Terminated Transaction for the remaining term of this Agreement, determined in a commercially reasonable manner. Factors used in determining the loss of economic benefit may include, without limitation, reference to information either available to it internally or supplied by one or more third parties including without limitation, quotations (either firm or indicative) of relevant rates, prices, yields, yield curves, volatilities, spreads or other relevant market data in the relevant markets, market referent prices for renewable power set by the CPUC, comparable transactions, forward price curves based on economic analysis of the relevant markets, settlement prices for comparable transactions at liquid trading hubs (e.g. NYMEX), all of which should be calculated for the remaining term of this Agreement and include the value, if any, of Capacity Attributes, and Green Attributes.

“Manager” has the meaning set forth in Section 12.2(a).

[For Dispatchable Product only: “Monthly Capacity Payment” has the meaning set forth in Section 4.1(b).]

“Monthly Energy Payment” has the meaning set forth in Section 4.1[1/2]([b/c]).

[For Dispatchable Product only: “Monthly Shaping Factor” has the meaning set forth in Section 4.1(b).]

“Moody’s” means Moody’s Investor Services, Inc., or its successor.

“MWh” means megawatt-hour.

“Negative Imbalance Energy” has the meaning set forth in Section 4.2[3].

“NERC” means the North American Electric Reliability Corporation or a successor organization that is responsible for establishing reliability criteria and protocols.

“NERC Holiday” means any of the following holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. Three of these days, Memorial Day, Labor Day, and Thanksgiving Day, occur on the same day each year. Memorial Day is the last Monday in May; Labor Day is the first Monday in September; and Thanksgiving Day is the fourth (4th) Thursday in November. New Year’s Day, Independence Day, and Christmas Day occur on the same date each year, but in the event any of these holidays occur on a Sunday, the “NERC Holiday” is celebrated on the Monday immediately following that Sunday; and if any of these holidays occur on a Saturday, the “NERC Holiday” remains on that Saturday.

“Non-Availability Charges” shall mean Non-Availability Charges as defined in FERC filing ER09-1064 or such other similar term as modified and approved by FERC thereafter to be incorporated in the CAISO Tariff or otherwise applicable to CAISO.

“Non-Defaulting Party” has the meaning set forth in Section 5.2.

“Notice” shall, unless otherwise specified in the Agreement, mean written communications by a Party to be delivered by hand delivery, United States mail, overnight courier service, facsimile or electronic messaging (e-mail).

“Notice to Proceed” or “NTP” means the notice provided by Seller to the EPC Contractor following execution of the EPC Contract between Seller and such EPC Contractor and satisfaction of all conditions precedent to performance of such contract, by which Seller authorizes such EPC Contractor to commence and complete full performance of the work under the EPC Contract without any delay or waiting periods.

“Outage Notification Form” means the completed document from Seller notifying Buyer of an outage of the Project substantially in the form attached hereto as Exhibit D. Buyer reserves the right to reasonably revise or change the form upon Notice to Seller.

[For intermittent As-Available Product: “Participating Intermittent Resource” shall have the meaning set forth in the CAISO Tariff.]

“Participating Transmission Owner” or “Participating TO” means an entity that (a) owns, operates and maintains transmission lines and associated facilities and/or has entitlements to use

certain transmission lines and associated facilities that are interconnected to the Delivery Point and (b) has transferred to the CAISO operational control of such facilities and/or entitlements to be made part of the CAISO Grid. As of the Execution Date, the Participating Transmission Owner is *[San Diego Gas & Electric Company]*.

“Party” or “Parties” means the Buyer or Seller individually, or to both collectively.

[For Peaking Product only: “Peaking” means a Unit-Firm ***Product for which*** Energy must be delivered during hours ending 1200-1900 (11:00 am to 7:00 pm) on Monday-Friday, excluding NERC Holidays, for the months July through October and during hours ending 1400-2100 (1:00 pm to 9:00 pm) on Monday-Friday, excluding NERC Holidays, for the months November and December.] ***[Note: Buyer will consider other firm products such as 6x16: “6x16 Block” means*** a Unit-Firm Product for which Energy must be delivered during hours ending 0700-2200 (6:00 am to 10:00 pm) on Monday-Saturday throughout the Delivery Term.]

“Performance Assurance” means collateral provided by Seller to Buyer to secure Seller’s obligations hereunder and includes ***[For Agreements with Delivery Terms greater than two years: CPUC Approval Security,] Pre-Delivery Term Security, and Delivery Term Security.***

[For As-Available, Baseload, Peaking Product: “Performance Measurement Period” has the meaning set forth in Section 3.1(e).]

“Planned Outage” means any planned reduction or suspension of the electrical output from the Project or unavailability of the Project in whole or in part as a result of the inspection, maintenance, or repair of equipment that is scheduled in accordance with Section 3.7(a).

“PNode” has the meaning set forth in the CAISO Tariff.

“Positive Imbalance Energy” has the meaning set forth in Section 4.[2/3].

“Pre-Delivery Term Security” shall mean the Performance Assurance that Seller is required to maintain during the period and as otherwise specified in Section 8.4(a)[(i)/(ii)] to secure performance of its obligations hereunder.

“Product” has the meaning set forth in Section 3.1(a).

[For Projects receiving PTCs: “Production Tax Credit” or “PTC” means the tax credit for electricity produced from certain renewable generation resources described in Section 45 of the Internal Revenue Code of 1986, as it may be amended from time to time.]

“Project” means all of the *[insert technology]* electric generating units, the Site at which the generating facility is located, the utility interconnection facilities up to the point of change in ownership to the applicable utility’s facilities, and the other assets, tangible and intangible, that compose the generation facility as more particularly described on Exhibit A.

“Recording” has the meaning set forth in Section 13.6.

“Reductions” has the meaning set forth in Section 3.2(c).

“Referral Date” has the meaning set forth in Section 12.2(a).

“Renewable Energy Credit” has the meaning set forth in California Public Utilities Code Section 399.12(h) and CPUC Decision 08-08-028, as each may be amended from time to time or as further defined or supplemented by Law.

“Replacement Price” means the price (in dollars per megawatt hour) at which Buyer, acting in a commercially reasonable manner, purchases for delivery at the Delivery Point (or any other reasonably equivalent delivery point for Buyer) a replacement for any Product (including its associated Green Attributes) that was not Scheduled and delivered by Seller, plus (a) costs (calculated in dollars per megawatt hour) reasonably incurred by Buyer in purchasing such replacement Product and (b) additional transmission charges (calculated in dollars per megawatt hour), if any, reasonably incurred by Buyer for such replacement Product, or absent a purchase, the market price at the Delivery Point (or any other reasonably equivalent delivery point for Buyer) for such replacement Product for the hours impacted by such failure to Schedule or deliver such Product as determined by Buyer in a commercially reasonable manner. The Replacement Price also shall include all CAISO and other charges and penalties calculated in dollars per megawatt hour with respect to the deviation from the Scheduled supply resulting from Seller’s failure to Schedule or deliver; provided, however, in no event shall such price include any ratcheted demand or similar charges, nor shall Buyer be required to utilize or change its utilization of its owned or controlled assets or market positions to minimize Seller’s liability. For the purposes of this definition, Buyer shall be considered to have purchased replacement Product to the extent Buyer shall have entered into one or more arrangements in a commercially reasonable manner whereby Buyer repurchases its obligation to sell and deliver the Product to another party. If for any reason a Replacement Price is unavailable when Seller fails to deliver or Schedule Product, then the Replacement Price for the hours when a Replacement Price is unavailable shall be the last available Replacement Price together with any charges and penalties allocated to Buyer during such time.

“Resource Adequacy” means the procurement obligation of load serving entities, including Buyer, as such obligations are described in CPUC Decisions 04-01-050, 04-10-035, 05-10-042, 06-04-040, 06-06-064, 06-07-031, 07-06-029, 08-06-031, 09-06-028, 10-06-036, 11-06-022, 12-06-025, 13-06-024, and subsequent CPUC decisions addressing Resource Adequacy issues, as those obligations may be altered from time to time in the CPUC Resource Adequacy Rulemakings (R.) 04-04-003 and (R.) 05-12-013 or by any successor proceeding, and all other Resource Adequacy obligations established by any other entity, including the CAISO.

“Sales Price” means the price (in dollars per megawatt hour) at which Seller, acting in a commercially reasonable manner, resells any Product not Scheduled and received by Buyer, deducting from such proceeds any (a) costs (calculated in dollars per megawatt hour) reasonably incurred by Seller in reselling such Product including all costs charged by CAISO to Schedule and deliver the Product into the CAISO System, and (b) additional transmission charges (calculated in dollars per megawatt hour), if any, reasonably incurred by Seller in Scheduling and delivering such Product to the third party purchasers, or absent a sale despite commercially reasonable efforts to resell the Product, zero. The Sales Price shall also be reduced by all CAISO and other costs, charges and penalties with respect to the deviation from the Scheduled supply, in each case, resulting from Buyer’s failure to take Product and calculated in dollars per megawatt hour; provided, however, in no event shall such price include any ratcheted demand or similar charges,

nor shall Seller be required to utilize or change its utilization of its owned or controlled assets, including contractual assets, or market positions to minimize Buyer's liability. The Sales Price may be less than zero.

"S&P" means the Standard & Poor's Rating Group (a division of McGraw-Hill, Inc.) or its successor.

"Schedule" means the actions of Seller, Buyer and/or their designated representatives, or Scheduling Coordinators, including each Party's Transmission Providers, if applicable, of notifying, requesting and confirming to each other and the CAISO the quantity and type of Product to be delivered on any given day or days at a specified Delivery Point.

"Scheduling Coordinator" or "SC" means an entity certified by the CAISO as qualifying as a Scheduling Coordinator pursuant to the CAISO Tariff, for the purposes of undertaking the functions specified in "Responsibilities of a Scheduling Coordinator," of the CAISO Tariff, as amended from time-to-time.

"Scheduled Energy" means the Energy that clears under the applicable CAISO market based on the final Schedule developed in accordance with this Agreement, the operating procedures developed by the Parties pursuant to Section 3.9, and the applicable CAISO Tariff, protocols and Scheduling practices.

"SEC" means the U.S. Securities and Exchange Commission.

"Seller" shall have the meaning set forth on the Cover Sheet.

"Settlement Amount" means, with respect to the Non-Defaulting Party, the Losses or Gains, and Costs, expressed in U.S. Dollars, which such Party incurs as a result of the liquidation of a Terminated Transaction pursuant to Sections 5.2 and 5.3.

"Site" shall mean the location of the Project as described in Exhibit A.

"Station Service" means the electric energy produced by the Project that is used within the Project to power the lights, motors, control systems and other auxiliary electrical loads that are necessary for operation of the Project.

"System Dispatch Down" means curtailment of delivery of Product from the Project resulting from (a) curtailment ordered by the CAISO (whether directly or through the Scheduling Coordinator or the Participating Transmission Owner), for any reason, including, but not limited to, an Exceptional Dispatch (as defined in the CAISO Tariff), any system emergency as defined in the CAISO Tariff ("System Emergency"), any warning of an anticipated System Emergency, or any warning of an imminent condition or situation which could jeopardize the CAISO's or Participating Transmission Owner's electric system integrity or the integrity of other systems to which the CAISO or Participating Transmission Owner is connected, any warning, forecast, or anticipated overgeneration conditions, including a request from CAISO to manage over-generation conditions; (b) curtailment ordered by the Participating Transmission Owner or distribution operator (if interconnected to distribution or sub-transmission system) for reasons including, but not limited to, (i) any situation that affects normal function of the electric system including, but

not limited to, any abnormal condition that requires action to prevent circumstances such as equipment damage, loss of load, or abnormal voltage conditions, (ii) any warning, forecast or anticipation of conditions or situations that jeopardize the Participating Transmission Owner's electric system integrity or the integrity of other systems to which the Participating Transmission Owner is connected; (c) curtailment ordered by the Participating Transmission Owner or distribution operator (if interconnected to distribution or sub-transmission system) as a result of scheduled or unscheduled maintenance or construction on the Participating Transmission Owner's transmission facilities or distribution operator's facilities (if interconnected to distribution or sub-transmission system) that prevents the delivery or receipt of Delivered Energy to or at the Delivery Point, (d) curtailment in accordance with Seller's obligations under its interconnection agreement with the Participating Transmission Owner or distribution operator, **[If the Project is located outside of the CAISO:** or (e) curtailment ordered by the Transmission Provider provided, that Seller has contracted for firm transmission with such Transmission Provider for the Product to be delivered to the Delivery Point and such curtailment is due to "force majeure" or "uncontrollable force" or a similar term as defined under the Transmission Provider's tariff]; **[For Dispatchable Product only:** or ([e/f]) curtailment ordered by Buyer pursuant to a Dispatch Notice.] **[For all Products other than Dispatchable:** provided, however, that System Dispatch Down shall not include Economic Dispatch Down].

"Terminated Transaction" means the termination of this Agreement in accordance with Section 5.2 of this Agreement.

"Termination Payment" has the meaning set forth in Section 5.2.

"Transmission Provider" means any entity or entities transmitting or transporting the Product on behalf of Seller or Buyer to or from the Delivery Point.

[For Baseload, Peaking, or Dispatchable Product only: "Unit Firm" means, with respect to a Product, that the Product is intended to be supplied from the Project, and subject to the terms of this Agreement, Seller is excused from selling and delivering the Product to Buyer, and Seller shall not be liable to Buyer for any damages determined pursuant to Section 3.1(h) of the Agreement, in the event that Seller fails to deliver the Product to Buyer for any of the following reason:

- (a) if the Project is unavailable as a result of a Forced Outage and such Forced Outage is not the result of Seller's negligence or willful misconduct;
- (b) Force Majeure;
- (c) by the Buyer's failure to perform;
- (d) by a Planned Outage of the Project; or
- (e) a reduction in output as ordered under Dispatch Down Periods.

The following products shall be considered "Unit Firm" products: Peaking, Baseload, and Dispatchable.]

[For an intermittent As-Available Product only: “VER Forecasting Program” means the rules, protocols, procedures and standards for Participating Intermittent Resources under the CAISO’s Eligible Intermittent Resource Protocol, as may be amended from time to time, as set forth in the CAISO Tariff.]

“WECC” means the Western Electricity Coordinating Council or successor agency.

“WREGIS” means the Western Renewable Energy Generating Information System or any successor renewable energy tracking program.

1.2 Interpretation. The following rules of interpretation shall apply:

(a) The term “month” shall mean a calendar month unless otherwise indicated, and a “day” shall be a 24-hour period beginning at 12:00:01 a.m. Pacific Prevailing Time and ending at 12:00:00 midnight Pacific Prevailing Time; provided that a “day” may be 23 or 25 hours on those days on which daylight savings time begins and ends.

(b) Unless otherwise specified herein, all references herein to any agreement or other document of any description shall be construed to give effect to amendments, supplements, modifications or any superseding agreement or document as then exist at the applicable time to which such construction applies.

(c) Capitalized terms used in this Agreement, including the appendices hereto, shall have the meaning set forth in Article 1, unless otherwise specified.

(d) Unless otherwise specified herein, references in the singular shall include references in the plural and vice versa, pronouns having masculine or feminine gender will be deemed to include the other, and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, trusts, associations, organizations or other entities (whether or not having a separate legal personality). Other grammatical forms of defined words or phrases have corresponding meanings.

(e) The term “including” when used in this Agreement shall be by way of example only and shall not be considered in any way to be in limitation.

(f) References to a particular article, section, subsection, paragraph, subparagraph, appendix or attachment shall, unless specified otherwise, be a reference to that article, section, subsection, paragraph, subparagraph, appendix or attachment in or to this Agreement.

(g) Any reference in this Agreement to any natural person, Governmental Authority, corporation, partnership or other legal entity includes its permitted successors and assigns or to any natural person, Governmental Authority, corporation, partnership or other legal entity succeeding to its functions.

(h) All references to dollars are to U.S. dollars.

ARTICLE TWO: EFFECTIVENESS OF AGREEMENT; CONDITIONS PRECEDENT

2.1 Effectiveness of Agreement Prior to CP Satisfaction Date. Commencing on the Execution Date until the CP Satisfaction Date, this Agreement shall be in full force and effect, enforceable and binding only to the extent required to give full effect to, and enforce, the rights and obligations of the Parties under this Article 2, including, as it relates to Article 2, the rights and obligations under Articles 1, 5, 7, 8, 9, 10, 11, 12, and 13.

2.2 Obligations of the Parties. The Parties shall cooperate with each other to cause the Conditions Precedent to be satisfied as soon as reasonably practical.

(a) Seller's Obligations. Prior to the CP Satisfaction Date, Seller shall (i) use commercially reasonable efforts to pursue satisfaction of the Conditions Precedent set forth in Sections [___], and (ii) otherwise comply with its obligations, covenants, representations, and warranties under Articles 7-13. ***[For Agreements with Delivery Terms greater than two years:*** Upon an Event of Default of Seller prior to the CPUC Approval Date, Buyer may terminate this Agreement in which case Seller shall owe Buyer liquidated damages in the amount of the CPUC Approval Security.] Upon an Event of Default of Seller ***[For Agreements with Delivery Terms greater than two years:*** on or after the CPUC Approval Date but] prior to the CP Satisfaction Date, Buyer may terminate this Agreement in which case Seller shall owe Buyer liquidated damages in the amount of the Pre-Delivery Term Security. Buyer may retain such Performance Assurances to pay such liquidated damages. Each Party agrees and acknowledges that (a) the actual damages that Buyer would incur due to an Event of Default of Seller prior to the CP Satisfaction Date would be difficult or impossible to predict with certainty, (b) the liquidated damages set forth in this section are a reasonable and appropriate approximation of such damages, and (c) the liquidated damages set forth in this section are the exclusive remedy for an Event of Default of Seller prior to the CP Satisfaction Date.

(b) Buyer's Obligations. Prior to the CP Satisfaction Date, Buyer shall (i) use commercially reasonable efforts to pursue satisfaction of the Conditions Precedent set forth in Sections 2.3(a), and (ii) otherwise comply with its obligations, covenants, representations, and warranties under Articles 7-13. ***[For Agreements with Delivery Terms greater than two years:*** Upon an Event of Default of Buyer prior to the CPUC Approval Date, Seller may terminate this Agreement in which case Buyer shall owe Seller liquidated damages in the amount of the CPUC Approval Security.] Upon an Event of Default of Buyer ***[For Agreements with Delivery Terms greater than two years:*** on or after the CPUC Approval Date but] prior to the CP Satisfaction Date, Seller may terminate this Agreement in which case Buyer shall owe Seller liquidated damages in the amount of the Pre-Delivery Term Security. Each Party agrees and acknowledges that (a) the actual damages that Seller would incur due to an Event of Default of Buyer prior to the CP Satisfaction Date would be difficult or impossible to predict with certainty, (b) the liquidated damages set forth in this section are a reasonable and appropriate approximation of such damages, and (c) the liquidated damages set forth in this section are the exclusive remedy for an Event of Default of Buyer prior to the CP Satisfaction Date.

2.3 Conditions Precedent. Subject to Section 2.1, the effectiveness of the remainder of this Agreement is conditioned upon the satisfaction (or waiver by the Party described in Section 2.4) of all of the following conditions precedent ("Conditions Precedent") by the deadline dates

set forth below for each Condition Precedent without extension for Force Majeure or any other reason:

(a) CPUC Approval. No later than [_____], Buyer shall have obtained CPUC Approval. Prior to this deadline, should the CPUC issue an order approving this Agreement but with conditions or modifications that materially alter the commercial aspects of this Agreement, the Parties agree to use good faith efforts to renegotiate this Agreement and file the amended agreement with the CPUC seeking CPUC Approval therefor. If, no later than the earlier of (i) sixty (60) days after such order or (ii) the deadline date above, no agreement is reached, either Party may terminate this Agreement upon delivery of Notice to the other Party.

(b) *[Others, Major Governmental Approvals, Financing, etc.]*

2.4 Failure to Meet All Conditions Precedent.

(a) Beneficiary Party.

(i) Both of the Parties are the beneficiaries of the Conditions Precedent set forth in Sections 2.3(a), *[Others]*, and in order for a waiver of non-satisfaction of such Conditions Precedent to be effective, both of the Parties must waive (in their sole discretion) non-satisfaction by the deadline date therefor.

(ii) Buyer shall be the sole beneficiary of the Conditions Precedent set forth in Sections *[List]*, and in order for a waiver of non-satisfaction of such Conditions Precedent to be effective, Buyer alone must waive (in its sole discretion) non-satisfaction by the deadline date therefor.

(iii) Seller shall be the sole beneficiary of the Conditions Precedent set forth in Sections *[Others]*, and in order for a waiver of non-satisfaction of such Conditions Precedent to be effective, Seller alone must waive (in its sole discretion) non-satisfaction by the deadline date therefor.

(b) Termination. If any of the Conditions Precedent is not satisfied or waived in writing by the beneficiary Parties thereto on or before the date that is fifteen (15) days after the applicable deadline date therefor, then this Agreement shall automatically terminate with no further obligation to either Party (other than as set forth in Sections 2.4(b)(i)-(ii) below and any other payment obligations which are accrued and payable at the time of termination).

(i) Upon a termination of this Agreement for any reason under Section 2.4 other than as described in Section 2.4(b)(ii) below, Seller shall forfeit to Buyer an amount equal to the Performance Assurance then required to be delivered to Buyer hereunder. Buyer may retain such Performance Assurance to pay such amount.

(ii) Upon a termination of this Agreement under this Section 2.4 as a result of the failure of the Conditions Precedent set forth in Sections 2.3(a) to be satisfied (or waived by both Parties) or as a result of the failure of the Conditions Precedent set forth in Sections *[Others]* to be satisfied or waived by Buyer, Buyer shall return to Seller the Performance Assurances then held by Buyer.

2.5 Effectiveness of Agreement on and after CP Satisfaction Date. This Agreement shall be in full force and effect, enforceable and binding in all respects as of the CP Satisfaction Date until the conclusion of the Delivery Term or earlier termination pursuant to the terms of this Agreement; provided however, that this Agreement shall remain in effect until (i) the Parties have fulfilled all obligations under this Agreement, including payment in full of amounts due for the Product delivered prior to the end of the Delivery Term, the Settlement Amount, indemnification payments or other damages (whether directly or indirectly such as through set-off or netting) and (ii) the undrawn portion of the *[For Agreements with Delivery Terms greater than two years: CPUC Approval Security,] Pre-Delivery Term Security, or Delivery Term Security, as applicable, is released and/or returned as applicable (if any is due).* All indemnity rights shall survive the termination or expiration of this Agreement for the longer of twelve (12) months or the expiration of the statute of limitations period of the claim underlying the indemnity obligation.

ARTICLE THREE: OBLIGATIONS AND DELIVERIES

3.1 Transaction.

(a) Product. The “Product” to be delivered and sold by Seller and received and purchased by Buyer under this Agreement is *[Seller to select: As-Available, Baseload, Peaking, or Dispatchable] Energy, Capacity Attributes, Green Attributes, and other ancillary products, services or attributes similar to the foregoing which are or can be produced by or associated with the Project (net of Station Service) in accordance with the terms hereof.*

(b) Transaction. Unless specifically excused by the terms of this Agreement during the Delivery Term, Seller shall sell and deliver, or cause to be delivered, and Buyer shall purchase and receive, or cause to be received, the Product at the Delivery Point, and Buyer shall pay Seller for the Product in accordance with the terms hereof. **In no event shall Seller have the right to procure any element of the Product from sources other than the Project for sale or delivery to Buyer under this Agreement [If the Project is located outside of the CAISO: except with respect to Imbalance Energy from the Transmission Provider].**

(c) Delivery Term. **The Parties agree that the period of Product delivery is [____] Contract Years.** As used herein, “Delivery Term” shall mean the period of Contract Years specified above beginning on the Initial Delivery Date and continuing until the end of the last Contract Year unless terminated earlier as provided by the terms of this Agreement.

(d) Delivery Point. The Delivery Point shall be [the point of interconnection of the Project to the CAISO Grid] *[Seller may specify another delivery point; for a Project located outside the CAISO Grid, the Delivery Point should be a CAISO Scheduling Point as defined by the CAISO]* and for financial settlement purposes under the applicable CAISO market, the PNode corresponding to such point.

(e) *[For Baseload, Peaking, As-Available Product: Contract Quantity and Guaranteed Energy Production.* The quantity of Bundled Green Energy that Seller expects to be able to deliver to Buyer during each Contract Year is [____] MWh (“Contract Quantity”). Throughout the Delivery Term, Seller shall be required to deliver to Buyer no less than the Guaranteed Energy Production (as defined below) in any [twelve (12)] [twenty-four (24)]

consecutive calendar month period during the Delivery Term (“Performance Measurement Period”). “Guaranteed Energy Production” means an amount of Bundled Green Energy, as measured in MWh, equal to [two times] [_____] % of the Contract Quantity. Notwithstanding the excuses to performance set forth in the definition of the Product type (as such Product type is specified in Section 3.1(a)), Seller shall be excused from achieving the Guaranteed Energy Production during any Performance Measurement Period only to the extent of any Force Majeure events, Buyer’s failure to perform, or Dispatch Down Periods. For purposes of determining whether Seller has achieved the Guaranteed Energy Production, Seller shall be deemed to have delivered to Buyer an amount of Bundled Green Energy that it could reasonably have delivered to Buyer but was prevented from delivering to Buyer by reason of any Force Majeure events, Buyer’s failure to perform, or Dispatch Down Periods.] ***[For Dispatchable Product: Contact Quantity.*** The quantity of Bundled Green Energy that Seller expects to be able to deliver to Buyer during each Contract Year is [_____] MWh (“Contract Quantity”).]

(f) Contract Capacity. The “Contract Capacity” is the full generation capacity of the Project net of all Station Service which shall be ***[For As-Available Product: no less than [_____] MW and no greater than [_____] MW] [For Baseload, Peaking, or Dispatchable Product only: an amount determined periodically pursuant to a Capacity Test as set forth below].*** Throughout the Delivery Term, Seller shall sell and Schedule all Product associated with the Contract Capacity of the Project solely to Buyer, except in the case of an Event of Default of Buyer or an unexcused failure by Buyer to Schedule, receive, and pay for Product under Section 3.1(h)(ii) ***[If the Project is located outside of the CAISO: or the sale of Imbalance Energy to the Transmission Provider]. [For Dispatchable Product: Throughout the Delivery Term, Seller shall make the Contract Capacity available solely to Buyer at all times, except in the case of an Event of Default of Buyer or an unexcused failure by Buyer to Schedule, receive, and pay for Product under Section 3.1(h)(ii) [If the Project is located outside of the CAISO: or the sale of Imbalance Energy to the Transmission Provider].]***

(i) ***[For Baseload, Peaking, Dispatchable Product: Initial Capacity Testing.*** Upon no less than fourteen (14) days prior Notice to Buyer, Seller shall schedule and complete a Capacity Test prior to the Initial Delivery Date for the Project. Such initial Capacity Test shall establish the Contract Capacity for the Project for the first Contract Year.]

(ii) ***[For Baseload, Peaking, Dispatchable Product: Annual Capacity Testing.*** Thereafter, at least once per Contract Year within the first quarter of each Contract Year, upon no less than 14 days prior Notice to Buyer, Seller shall schedule and complete a Capacity Test. In addition, Buyer shall have the right to require a retest of the Capacity Test at any time upon five (5) days prior written Notice to Seller if Buyer reasonably believes that the actual Contract Capacity has varied materially from the results of the most recent tests. Seller shall have the right to run a retest of the Capacity Test at any time upon two (2) days prior written Notice to Buyer (or any shorter period reasonably acceptable to Buyer consistent with Good Industry Practices).]

(iii) ***[For Baseload, Peaking, Dispatchable Product: Witness at Capacity Tests.*** Buyer shall have the right to send one or more representative(s) to witness all Capacity Tests.]

(iv) ***[For Baseload, Peaking, Dispatchable Product: Capacity Test Reporting.*** No later than fourteen (14) days following any Capacity Test, Seller shall submit a testing report detailing results and findings of the test. The report shall include meter readings and plant log sheets verifying the operating conditions and output of the Project. The Contract Capacity determined pursuant to a Capacity Test shall become the new Contract Capacity at the beginning of the day following the completion of the test for all purposes under this Agreement.]

(v) ***[For Baseload, Peaking, Dispatchable Product: Capacity Test Costs and Payments.*** Buyer shall pay the [Monthly Energy Payment] in respect of the Product produced during the initial Capacity Test prior to the Initial Delivery Date and each annually scheduled Capacity Test thereafter. In addition, Buyer shall pay the [Monthly Energy Payment] in respect of the Product produced during any other Buyer requested test unless the results of such test demonstrate that the actual Contract Capacity has varied by more than two percent (2%) from the results of the most recent tests, in which case Buyer shall pay the lesser of the [Monthly Energy Payment] in respect of the Product produced during such test and the applicable CAISO real-time hourly average energy price. In addition, Buyer shall pay the lesser of the [Monthly Energy Payment] in respect of the Product produced during any Seller requested test and the applicable CAISO real-time hourly average energy price]. Buyer is responsible for all costs, expenses and fees payable or reimbursable to its representative(s) witnessing Capacity Testing. All other costs of any Capacity Tests shall be borne by Seller.]

(g) ***Project.*** All Product provided by Seller pursuant to this Agreement shall be supplied from the Project only ***[If the Project is located outside of the CAISO: except with respect to Imbalance Energy from the Transmission Provider].*** Other than maintenance in accordance with Good Industry Practices, Seller shall not make any alteration or modification to the Project which results in a change to the Contract Capacity of the Project or any other material changes to the Project without Buyer's prior written consent. The Project is further described in Exhibit A.

(h) ***Performance Excuses.***

(i) ***Seller Excuses.*** The performance of Seller to Schedule, deliver, and sell the Product shall be excused only for the reasons set forth in the definition of ***[Seller to select: "As-Available" or "Unit Firm"]***. If Seller fails to Schedule, deliver, or sell all or part of the Product, for a period or a series of periods that is cumulatively longer than thirty (30) days, and such failure is not excused as described above, then such failure shall be an Event of Default. If Seller fails to Schedule, deliver, or sell all or part of the Product for any period prior to an Early Termination Date, and such failure is not excused as described above, then Seller shall pay Buyer, on the date payment would otherwise be due in respect of the month in which the failure occurred an amount for such Product deficiency equal to the positive difference, if any, obtained by subtracting (A) the product of the Energy Price times the Product deficiency, from (B) the product of the Replacement Price times the Product deficiency. The invoice for such amount shall include a written statement explaining in reasonable detail the calculation of such amount.

(ii) ***Buyer Excuses.*** The performance of Buyer to Schedule, receive, and pay for the Product shall be excused only (A) during periods of Force Majeure, (B) by Seller's failure to perform or (C) during Dispatch Down Periods ***[For all Products other than Dispatchable Product: (except that Buyer shall not be excused from paying for the Product as***

required under Section 3.4 during periods of Economic Dispatch Down)]. If Buyer fails to Schedule, receive, or purchase all or part of the Product for a period or a series of periods that is cumulatively longer than thirty (30) days and such failure is not excused as described above, then such failure shall be an Event of Default. If Buyer fails to Schedule, receive, or purchase all or part of the Product for any period prior to an Early Termination Date and such failure is not excused as described above, then Buyer shall pay Seller, on the date payment would otherwise be due in respect of the month in which the failure occurred an amount for such Product deficiency equal to the positive difference, if any, obtained by subtracting (Y) the product of the Sales Price times the Product deficiency from (Z) the product of the Energy Price times the Product deficiency. The invoice for such amount shall include a written statement explaining in reasonable detail the calculation of such amount.

(i) Green Attributes. Seller hereby provides and conveys all Green Attributes associated with all electricity generation from the Project to Buyer as part of the Product being delivered. Seller represents and warrants that Seller holds the rights to all Green Attributes from the Project, and Seller agrees to convey and hereby conveys all such Green Attributes to Buyer as included in the delivery of the Product from the Project. For all electric generation using biomethane as fuel, neither Buyer nor Seller may make a marketing, regulatory, or retail claim that asserts that a procurement contract to which that entity was a party resulted, or will result, in greenhouse gas reductions related to the destruction of methane if the capture and destruction is required by Law. If the capture and destruction of the biomethane is not required by Law, neither Buyer nor Seller may make a marketing, regulatory, or retail claim that asserts that a procurement contract to which that entity was a party resulted, or will result, in greenhouse gas reductions related to the destruction of methane, unless the environmental attributes associated with the capture and destruction of the biomethane pursuant to that contract are transferred to Buyer and retired on behalf of the retail customers consuming the electricity associated with the use of that biomethane, or unless Seller's procurement contract with the source of biomethane prohibits the source of biomethane from separately marketing the environmental attributes associated with the capture and destruction of the biomethane sold pursuant to that contract, and such attributes have been retired.

(j) Resource Adequacy. During the Delivery Term, Seller grants, pledges, assigns and otherwise commits to Buyer all of the Project's Contract Capacity, including Capacity Attributes, from the Project for Buyer to use in meeting its Resource Adequacy or successor program requirements, as the CPUC, CAISO or other regional entity may prescribe. Seller understands that the CPUC is currently in the process of developing requirements for Resource Adequacy and these requirements and the implementation thereof have not been finalized. Seller agrees that it shall take all commercially reasonable actions and execute any and all documents or instruments reasonably necessary to enable Buyer to use all of the Contract Capacity, including Capacity Attributes, to be committed by Seller to Buyer pursuant to this Agreement for the Resource Adequacy requirements of Buyer. Seller agrees that the Project is subject to the terms of the Availability Standards.

(k) WREGIS. Prior to the initial delivery of Energy to Buyer, Seller shall register the Project in WREGIS, execute a CAISO Qualified Reporting Entity Service Agreement to allow CAISO, on the Seller's behalf, to upload generation information directly into WREGIS,

and take all other actions necessary to ensure that the Green Attributes produced from the Project in an amount equal to the amount of Delivered Energy are issued and tracked for purposes of satisfying the requirements of the California Renewable Portfolio Standard and transferred to Buyer, including payment of all fees required to register the facility in WREGIS, issue WREGIS certificates, and transfer such certificates to Buyer. Within seventy-five (75) days after the initial delivery of energy to Buyer, Seller shall provide to Buyer written approval from WREGIS for Seller's generation to be reported to WREGIS. Seller warrants that all necessary steps to allow the Renewable Energy Credits transferred to Buyer to be tracked in WREGIS will be taken prior to the first delivery under the Agreement.

(l) Prevailing Wage. To the extent applicable, Seller shall comply with the prevailing wage requirements of California Public Utilities Code Section 399.13, subdivision (h).

3.2 Transmission.

(a) Seller's Transmission Service Obligations. During the Delivery Term, Seller shall arrange and be responsible for transmission service for delivery of the Product to and at the Delivery Point and bear all risks and costs associated with such transmission service, including, but not limited to, all Transmission Provider costs and charges, electric transmission losses, and any transmission outages or curtailment, except as provided otherwise in this Agreement in respect of Dispatch Down Periods. *[For Projects located outside of CAISO: Seller shall obtain and maintain during the Delivery Term firm transmission service to deliver the Product from the Site to the Delivery Point from all intermediary Transmission Providers between the Site and the Delivery Point. At Buyer's request, Seller shall provide to Buyer a copy of all firm transmission service agreements and any amendments thereto.]* Seller shall fulfill all contractual, metering and applicable interconnection requirements, including those set forth in Participating Transmission Owner's applicable tariffs, the CAISO Tariff and implementing CAISO standards and requirements, including, but not limited to, executing applicable interconnection agreements, Participating Generator Agreement and Meter Service Agreement so as to be able to deliver Energy to the CAISO Grid. Seller shall arrange for any interconnection agreement with the CAISO and such interconnection agreement is separate and not a part of this Agreement.

(b) Buyer's Transmission Service Obligations. During the Delivery Term, Buyer shall arrange and be responsible for transmission service for delivery of the Product from the Delivery Point and bear all risks and costs associated with such transmission service, including, but not limited to, all Transmission Provider costs and charges, electric transmission losses, and any transmission outages or curtailment, except as provided otherwise in this Agreement in respect of Dispatch Down Periods.

(c) Congestion Charges. Seller shall be responsible for all costs of congestion for transmission of the Product up to and at the Delivery Point. Buyer shall be responsible for all costs of congestion for transmission of the Product from the Delivery Point. To the extent that Seller is reimbursed for or receives any refunds, credits, or benefits from the CAISO for congestion charges or losses in respect of transmission of the Product from the Delivery Point, whether due to differences between the locational marginal pricing at the Delivery Point and Buyer's load aggregation point or any other point downstream of the Delivery Point, congestion revenue rights associated with any transmission path downstream of the Delivery Point, or any other hedging

instruments associated with the transmission of the Product from the Delivery Point (collectively, any such refunds, credits or benefits are referred to as “Reductions”), then, at Buyer’s option, either (i) Seller shall transfer any such Reductions and their related rights to Buyer; or (ii) Buyer shall reduce payments due to Seller under this Agreement in amounts equal to the Reductions and Seller shall retain the Reductions.

3.3 Scheduling.

(a) ***[For As-Available intermittent Product only: VER Forecasting Program Requirements.*** Seller shall cause the Project to become a Participating Intermittent Resource including executing all necessary documents to become a Participating Intermittent Resource. Seller shall be responsible for all CAISO forecasting fees and related charges associated with the Project becoming a Participating Intermittent Resource and participating in the VER Forecasting Program. Seller and Buyer shall comply with the VER Forecasting Program, and all additional protocols issued by the CAISO relating to Participating Intermittent Resources, including the VER Forecasting Program, for the Delivery Term. Seller shall provide Buyer with a copy of the notice from the CAISO certifying the Project as a Participating Intermittent Resource prior to the Initial Delivery Date. In the event that the VER Forecasting Program or the CAISO Tariff and/or any protocols relating thereto are changed, amended, modified replaced or terminated, Seller and Buyer agree to comply with such revisions and, to the extent practical, to implement such revisions in a manner that maintains the relative economic positions of the Parties as of the date of this Agreement.]

(b) Scheduling Coordinator.

[When Seller is SC for the Project, include the following two paragraphs:

(i) **Seller as Scheduling Coordinator for the Project.** During the Delivery Term, Seller shall be its own Scheduling Coordinator or designate a qualified third party to provide Scheduling Coordinator services with its Transmission Provider to Schedule and deliver the Product to the Delivery Point and Buyer shall be its own Scheduling Coordinator or designate a qualified third party to provide Scheduling Coordinator services with its Transmission Provider to Schedule and receive the Product at the Delivery Point. Throughout the Delivery Term, Buyer and Seller shall submit inter-SC trades for scheduling all Product from the Project at the Delivery Point (including Energy, Integrated Forward Market Load Uplift Obligations in respect of self-scheduled Energy, and other Product from time to time contemplated under the CAISO Tariff to be subject to inter-SC trades), based on a final Schedule developed in compliance with this Agreement. During the Delivery Term, each Party or each Party’s SC shall conduct all Scheduling in accordance with the operating procedures developed by the Parties pursuant to Section 3.9 and in full compliance with the applicable CAISO Tariff, protocols and Scheduling practices for Product on a day-ahead, hour-ahead, or real time basis, as determined by Buyer. ***[For As-Available intermittent Product only:*** Whenever the VER Forecasting Program is available, Seller shall submit Schedules and any updates to such Schedules to the CAISO based on the most current forecast of Delivered Energy consistent with the VER Forecasting Program.] In all cases, ***[For all Products other than Dispatchable:*** consistent with its Economic Dispatch Down curtailment rights,] Buyer may direct the Scheduling Coordinator to submit, and Seller shall cause the Scheduling Coordinator to submit in accordance with such Buyer’s directions, a self-schedule or an economic bid in the applicable CAISO market in order to Schedule the Product with the CAISO.

It is the intent of the Parties that neither Party be subject to a double payment or a double charge for Product from the Project through this Agreement and CAISO settlement process and that the more detailed Scheduling and operating procedures developed pursuant to Section 3.9 complement the CAISO settlement process to produce a final economic result between them that is consistent with the fundamental transaction of this Agreement.

(ii) CAISO Costs and Revenues. Seller shall be responsible for CAISO costs (including penalties and other charges) and shall be entitled to all CAISO revenues (including credits and other payments) as the Scheduling Coordinator for the Project, in each case, associated with Imbalance Energy, including all CAISO charges or penalties incurred as a consequence of the Project not being available, the Seller not notifying the CAISO and Buyer of outages in a timely manner (in accordance with the CAISO Tariff and as set forth in Section 3.7), any other failure by Seller to abide by the CAISO Tariff, and any other deviations between Delivered Energy and Scheduled Energy that are attributable to Seller, the Project, or any event, circumstance, act, or incident occurring prior to or at the Delivery Point, including without limitation uninstructed deviation penalties. The Parties agree that any Availability Incentive Payments are for the benefit of the Seller and for Seller's account and that any Non-Availability Charges or other CAISO charges associated with the Project not providing sufficient Resource Adequacy capacity are the responsibility of the Seller and for Seller's account. In addition, if during the Delivery Term, the CAISO implements or has implemented any sanction or penalty related to scheduling, outage reporting, or generator operation, the cost of the sanctions or penalties shall be the Seller's responsibility. Buyer shall be entitled to all credits, payments, or revenues from the CAISO in respect of the Contract Energy from the Project, including revenues associated with CAISO dispatches, inter-SC trade credits, and bid cost recovery.

[When SDG&E is SC for the Project, include the following seven paragraphs:

(iii) Buyer as Scheduling Coordinator for the Project. [During the Delivery Term], Buyer shall be the Scheduling Coordinator or designate a qualified third party to provide Scheduling Coordinator services with the CAISO for the Project for both the delivery and the receipt of the Product at the Delivery Point. At least thirty (30) days prior to the [Initial Delivery Date of the Project], Seller shall take all actions and execute and deliver to Buyer and the CAISO all documents necessary to authorize or designate Buyer as Seller's Scheduling Coordinator for the Project effective as of [the beginning of the Delivery Term]. [During the Delivery Term], Seller shall not authorize or designate any other party to act as Seller's Scheduling Coordinator, nor shall Seller perform for its own benefit the duties of Scheduling Coordinator, and Seller shall not revoke Buyer's authorization to act as Seller's Scheduling Coordinator unless agreed to by Buyer. Buyer (as Seller's SC) shall submit Schedules to the CAISO based on the final Schedule developed in accordance with this Agreement, the operating procedures developed by the Parties pursuant to Section 3.9, and the applicable CAISO Tariff, protocols and Scheduling practices for Product on a day-ahead, hour-ahead, or real time basis, as determined by Buyer. ***[For As-Available intermittent Product only:*** Buyer (as Seller's SC) shall submit Schedules and any updates to such Schedules to the CAISO based on the most current forecast of Delivered Energy consistent with the VER Forecasting Program whenever the VER Forecasting Program is available, and consistent with Buyers' best estimate based on the information reasonably available to Buyer including Buyer's forecast whenever the VER Forecasting Program is not available.] In all cases, ***[For all Products other than Dispatchable:*** consistent with its Economic Dispatch Down

curtailment rights,] Buyer (as the Scheduling Coordinator) may, or may direct the third party Scheduling Coordinator to, submit a self-schedule or an economic bid in the applicable CAISO market in order to Schedule the Product with the CAISO.

(iv) Notices. Buyer (as Seller's SC) shall provide Seller with access to a web based system through which Seller shall submit to Buyer and the CAISO all notices and updates required under the CAISO Tariff regarding the Project's status, including, but not limited to, all outage requests, forced outages, forced outage reports, clearance requests, or must offer waiver forms. In accordance with Section 3.7 and this Section 3.2, Seller will cooperate with Buyer to provide such notices and updates. If the web based system is not available, Seller shall promptly submit such information to Buyer and the CAISO (in order of preference) telephonically, by electronic mail, or facsimile transmission to the personnel designated to receive such information.

(v) CAISO Costs and Revenues. Except as otherwise set forth below, ***[For all Products other than Dispatchable Product: in Section 3.4(c)(ii),]*** and elsewhere in this Agreement, Buyer (as Seller's SC) shall be responsible for CAISO costs (including penalties, ***[For As-Available Product VER Forecasting Program Participants only: Negative Imbalance Energy costs or revenues,]*** and other charges) and shall be entitled to all CAISO revenues (including credits, ***[For As-Available Product VER Forecasting Program Participants only: Positive Imbalance Energy revenues or costs,]*** and other payments) as the Scheduling Coordinator for the Project, including revenues associated with CAISO dispatches, bid cost recovery, inter-SC trade credits, or other credits in respect of the Product Scheduled or delivered from the Project; provided, however that during periods when the Project is under curtailment for both System Dispatch Down and Economic Dispatch Down during the same CAISO settlement interval, Imbalance Energy costs and revenues shall be allocated in accordance with Section 3.4(c)(ii). ***[For As-Available Product VER Forecasting Program Participants only: Seller shall be responsible for all CAISO charges or penalties net of credits and payments (including without limitation all Imbalance Energy costs), in each case, resulting from the Seller not notifying the CAISO and Buyer (as Seller's SC) of outages or other unavailability of Project capacity in a timely manner (in accordance with the CAISO Tariff and as set forth in Section 3.7) or any other failure by Seller to abide by the CAISO Tariff.]*** ***[For all Products other than As-Available Product VER Forecasting Program Participants: Seller shall be responsible for all CAISO charges or penalties net of credits and payments, in each case, resulting from the Project not being available, the Seller not notifying the CAISO and Buyer (as Seller's SC) of outages in a timely manner (in accordance with the CAISO Tariff and as set forth in Section 3.7), any other failure by Seller to abide by the CAISO Tariff, and deviations between Delivered Energy and Scheduled Energy that are attributable to Seller, the Project, or any event, circumstance, act, or incident occurring prior to or at the Delivery Point, including without limitation uninstructed deviation penalties.]*** The Parties agree that any Availability Incentive Payments are for the benefit of the Seller and for Seller's account and that any Non-Availability Charges or other CAISO charges associated with the Project not providing sufficient Resource Adequacy capacity are the responsibility of the Seller and for Seller's account. In addition, if during the Delivery Term, the CAISO implements or has implemented any sanction or penalty related to scheduling, outage reporting, or generator operation, and any such sanctions or penalties are imposed upon the Project or to Buyer as Scheduling Coordinator due to the actions or inactions of Seller, the cost of the sanctions or penalties shall be the Seller's responsibility.

(vi) CAISO Settlements. Buyer (as Seller's SC) shall be responsible for all settlement functions with the CAISO related to the Project. Buyer shall render a separate invoice to Seller for any CAISO charges or penalties ("CAISO Charges Invoice") for which Seller is responsible under this Agreement. CAISO Charges Invoices shall be rendered after settlement information becomes available from the CAISO that identifies any CAISO charges. Notwithstanding the foregoing, Seller acknowledges that the CAISO will issue additional invoices reflecting CAISO adjustments to such CAISO charges. Seller shall pay the amount of CAISO Charges Invoices within ten Business Days of Seller's receipt of the CAISO Charges Invoice. If Seller fails to pay such CAISO Charges Invoice within that period, Buyer may net or offset any amounts owing to it for these CAISO Charges Invoices against any future amounts it may owe to Seller under this Agreement. The obligations under this section with respect to payment of CAISO Charges Invoices shall survive the expiration or termination of this Agreement.

(vii) Dispute Costs. Buyer (as Seller's SC) may be required to dispute CAISO settlements in respect of the Project. Seller agrees to pay Buyer's costs and expenses (including reasonable attorneys' fees, including reasonably allocated costs of in-house counsel of the Buyer) associated with its involvement with such CAISO disputes. In no event shall Buyer (or its third party designee, as Scheduling Coordinator) be liable to Seller for the actions, inactions, errors, or omissions of the CAISO or its agents in the performance of their scheduling functions and/or market operations.

(viii) Terminating Buyer's Designation as Scheduling Coordinator. At least thirty (30) days prior to expiration of this Agreement or as soon as reasonably practicable upon an earlier termination of this Agreement, the Parties will take all actions necessary to terminate the designation of Buyer as Scheduling Coordinator for the Project as of 11:59 p.m. on such expiration date.

(ix) Master File and Resource Data Template. Seller shall provide the data to the CAISO (and to Buyer) that is required for the CAISO's Master File and Resource Data Template (or successor data systems) for this Project consistent with this Agreement. Neither Party shall change such data without the other Party's prior written consent.]

(c) Annual Delivery Schedules. No later than forty-five (45) days before (A) the first day of the first Contract Year of the Delivery Term and (B) the beginning of each calendar year for every subsequent Contract Year during the Delivery Term, Seller shall provide a non-binding forecast of each month's average-day expected Delivered Energy, by hour, for the following calendar year.

(d) Monthly Delivery Schedules. Ten (10) Business Days before the beginning of each month during the Delivery Term, Seller shall provide a non-binding forecast of each day's average expected Delivered Energy, by hour, for the following month ("Monthly Delivery Forecast").

(e) Daily Delivery Schedules. By 5:30 AM Pacific Prevailing Time on the Business Day immediately preceding the date of delivery, Seller shall [*When Seller is SC for the Project:* cause its Scheduling Coordinator to] provide Buyer with a [*For As-Available intermittent Product only:* non-binding forecast of the Project's available capacity (or if the VER Forecasting

Program is not available for any reason, the expected Delivered Energy))] ***[For all Products other than As-Available intermittent:*** binding forecast of the expected Delivered Energy] for each hour of the immediately succeeding day (“Day-Ahead Forecast”) ***[For all Products other than As-Available intermittent:*** ***[When Seller is SC for the Project:*** concurrent with delivery to the CAISO] ***[When SDGE is SC for the Project:*** and Buyer shall submit a Schedule to the CAISO consistent with such Day-Ahead Forecast], it being understood that, ***[For all Products other than Dispatchable:*** consistent with its Economic Dispatch Down curtailment rights,] Buyer (as the Scheduling Coordinator) may, or may direct the third party Scheduling Coordinator to, submit a self-schedule or an economic bid in the applicable CAISO market in order to Schedule the Product with the CAISO]. A Day-Ahead Forecast provided in a day prior to any non-Business Day(s) shall include Schedules for the immediate day, each succeeding non-Business Day and the next Business Day. Each Day-Ahead Forecast shall clearly identify, for each hour, Seller’s best estimate of ***[For As-Available intermittent Product only:*** the Project’s available capacity (or if the VER Forecasting Program is not available for any reason, the expected Delivered Energy)] ***[For all Products other than As-Available intermittent:*** the expected Delivered Energy]. Seller may not change such Schedule past the deadlines provided in this section except in the event of a Forced Outage or Schedule change imposed by Buyer or the CAISO, in which case Seller shall promptly provide Buyer with a copy of any and all updates to such Schedule indicating changes from the then-current Schedule. These notices and changes to the Schedules shall be sent to Buyer’s on-duty Scheduling Coordinator. If Seller fails to provide Buyer with a Day-Ahead Forecast as required herein, then for such unscheduled delivery period only Buyer shall rely on the delivery Schedule provided in the Monthly Delivery Forecast or Buyer’s best estimate based on information reasonably available to Buyer and Seller shall be liable for Scheduling and delivery based on such Monthly Delivery Forecast or Buyer’s best estimate.

(f) Real Time Delivery Schedules. Notwithstanding anything to the contrary herein, in the event Seller makes a change to its Schedule on the actual date of delivery for any reason including Forced Outages (other than a scheduling change imposed by Buyer or CAISO) which results in a change to its deliveries (whether in part or in whole), Seller shall notify Buyer immediately by calling Buyer’s on-duty Scheduling Coordinator. Seller shall notify Buyer and the CAISO of Forced Outages in accordance with Section 3.7. Seller shall keep Buyer informed of any developments that will affect either the duration of the outage or the availability of the Project during or after the end of the outage.

(g) ***[For Dispatchable Product Only:*** Availability Notices. During the Delivery Term, no later than two (2) Business Days before each Schedule day for the day-ahead market in accordance with WECC scheduling practices, Seller shall provide Buyer with an hourly Schedule of the capacity that the Project is expected to have available for each hour of such Schedule day (the “Availability Notice”). Seller will notify Buyer immediately if the available capacity of the Project may change after Buyer’s receipt of an Availability Notice. Seller shall accommodate Buyer’s reasonable requests for changes in the time of delivery of Availability Notices. Seller shall provide Availability Notices using the form developed by the Parties under Section 3.9 by (in order of preference) electronic mail, facsimile transmission or, telephonically to Buyer personnel designated to receive such communications.]

(h) ***[For Dispatchable Product Only:*** Dispatch Notices. Buyer or the CAISO will have the right to dispatch the Project, seven days per week and 24 hours per day (including

holidays), by providing Dispatch Notices and updated Dispatch Notices to Seller electronically, subject to the requirements and limitations set forth in this Agreement, including the system requirements under Section 3.4(b) and the Project operating restrictions set forth in Exhibit E. Each Dispatch Notice will be effective unless and until Buyer modifies such Dispatch Notice by providing Seller with an updated Dispatch Notice. In addition to any other requirements set forth or referred to in this Agreement, all Dispatch Notices and updated Dispatch Notices will be made in accordance with the timelines as specified in the CAISO Tariff.]

3.4 Dispatch Notices.

(a) General. Seller shall adjust delivery amounts as directed by the CAISO, the Participating Transmission Owner, Buyer, or a Transmission Provider during any Dispatch Down Period.

(b) System Requirements. Seller shall acquire, install, and maintain such facilities, communications links and other equipment, and implement such protocols and practices, as necessary (i) for Seller to respond and follow instructions, including an electronic signal conveying real time instructions, to operate the Project as directed by the Buyer and/or the CAISO, including to implement a System Dispatch Down or an Economic Dispatch Down in accordance with the then-current methodology used to transmit such instructions as it may change from time to time, and (ii) for Buyer and/or the CAISO to control the quantity of Product generated by the Project in order to implement a System Dispatch Down or an Economic Dispatch Down, in each case, in accordance with the then-current methodology used to transmit such instructions as it may change from time to time. As of the Execution Date, the systems required to comply with clause (i) include at a minimum the CAISO's Automatic Dispatch System (as described in the CAISO website) and the systems required to comply with clause (ii) include at a minimum the CAISO'S Application Programming Interfaces (as described in the CAISO website). If at any time during the Delivery Term Seller's facilities, communications links or other equipment, protocols or practices are not in compliance with then-current methodologies, Seller shall take all commercially reasonable steps necessary to become compliant as soon as possible. Seller shall be liable pursuant to Section ***[For all Products other than Dispatchable Product: 3.4(c)(ii)] [For Dispatchable Product: 3.3(b)((ii)/(iii))]*** for failure to comply with an order directing a Dispatch Down Period, during the time that Seller's facilities, communications links or other equipment, protocols or practices are not in compliance with then-current methodologies. For the avoidance of doubt, an order directing a Dispatch Down Period via such systems and facilities shall have the same force and effect on Seller as any other form of communication. If an electronic submittal is not possible, Buyer and/or the CAISO may provide Dispatch Notices by (in order of preference) electronic mail, telephonically, or facsimile transmission to Seller's personnel designated to receive such communications, as provided by Seller in writing and Seller shall maintain communications systems necessary to permit such transmittal of Dispatch Notices. The Parties shall describe with more specificity the Economic Dispatch Down process (including the automated communication process for Dispatch Notices) in the operating procedures developed by the Parties pursuant to Section 3.9.

(c) ***[For all Products other than Dispatchable Product: Economic Dispatch Down.*** Each of Buyer and the CAISO has the right to order Seller to curtail deliveries of Energy from the Project to the Delivery Point for Economic Dispatch Down purposes, seven days per

week and 24 hours per day (including holidays), by providing Dispatch Notices and updated Dispatch Notices to Seller electronically via the communications systems described in Section 3.4(b), subject to the requirements and limitations set forth in this Agreement, including the Project operating restrictions set forth in Exhibit E. Each Dispatch Notice will be effective unless and until Buyer (or the CAISO) modifies such Dispatch Notice by providing Seller with an updated Dispatch Notice. In addition to any other requirements set forth or referred to in this Agreement, all Dispatch Notices and updated Dispatch Notices will be made in accordance with the timelines as specified in the CAISO Tariff. Seller agrees to adjust the Project's Delivered Energy as set forth in a Dispatch Notice that meets the requirements of Economic Dispatch Down.]

(i) Buyer Payments. Buyer shall pay Seller, on the date payment would otherwise be due in respect of the month in which any such Economic Dispatch Down occurred an amount equal to the positive difference, if any, of (Y) the product of the Energy Price, times the amount of Deemed Bundled Green Energy resulting from such Economic Dispatch Down [*For Projects receiving PTCs:* plus the product of the after tax value of any lost PTC benefits (in dollars per megawatt hour) that Seller has not been able to mitigate after use of reasonable efforts, times the amount of Deemed Bundled Green Energy resulting from such Economic Dispatch Down], minus (Z) the product of the positive value of the Sales Price, if received, times the amount of Deemed Bundled Green Energy resulting from such Economic Dispatch Down. [*For Projects receiving PTCs:* Seller shall provide Buyer with documentation that establishes to Buyer's reasonable satisfaction (A) that Seller would have been entitled to receive PTCs for the Deemed Bundled Green Energy if it had actually been generated; and (B) the after tax value of any lost PTC benefits (in dollars per megawatt hour) due under this Section 3.4(c)(i).]

(ii) Failure to Comply. If Seller fails to comply with a Dispatch Notice that is in compliance with this Agreement, then, for the deviation between the Delivered Energy and the amount set forth in the Dispatch Notice, Seller shall pay Buyer an amount equal to the sum of (A) + (B) + (C), where: (A) is the amount, if any, paid to Seller by Buyer for any Delivered Energy in excess of the amount set forth in the Dispatch Notice, and (B) is all Imbalance Energy costs or charges (excluding any revenues or credits), and (C) is any penalties or other charges resulting from Seller's failure to comply with the Dispatch Notice.]

3.5 Standards of Care.

(a) General Operation. Seller shall comply with all applicable requirements of Law, the CAISO, NERC and WECC relating to the Project (including those related to safety, construction, ownership and/or operation of the Project).

(b) CAISO and WECC Standards. Each Party shall perform all generation, scheduling and transmission services in compliance with all applicable (i) operating policies, criteria, rules, guidelines, tariffs and protocols of the CAISO, (ii) WECC scheduling practices and (iii) Good Industry Practices.

(c) Reliability Standard. Seller agrees to abide by all (i) NERC, WECC and CAISO reliability requirements, including all such reliability requirements for generator owners and generator operators, and, if applicable, CPUC General Order No.167, "Enforcement of

Maintenance and Operation Standards for Electrical Generating Facilities,” and (ii) all applicable requirements regarding interconnection of the Project, including the requirements of the interconnected Transmission Provider.

(d) CAISO Interconnection. Seller shall perform all studies, pay all fees, obtain all necessary approvals and execute all necessary agreements with the CAISO and the Participating Transmission Owner to Schedule and deliver the Product from the Project to the Delivery Point [*For Projects Providing Resource Adequacy*: under “Full Capacity Deliverability Status” (as defined in the CAISO Tariff)].

(e) Permitting. Seller shall maintain all Governmental Approvals and other approvals necessary for the construction, operation, and maintenance of the Project.

(f) Diverse Business Entities. At Buyer’s request, Seller shall provide information to Buyer relating to Seller’s or Seller’s contractor’s use, during Project construction or operation, of “Women-Owned Businesses” or “Minority-Owned Businesses” or “Disabled Veteran Business Enterprises” as defined in CPUC General Order 156, and the number of new employees hired by Seller or Seller’s contractors and the number of women, minority, and disabled veterans trained or hired by Seller or Seller’s contractor’s as contemplated under Cal. Public Utilities Code §910(a)(8), as each such group of entities and individuals may be amended from time to time or further defined, supplemented, or superseded by applicable Law or replaced with similar designations or certifications. [*Include other covenants related to “women-owned business” or “minority-owned business” as may be applicable to the Seller’s RFO bid.*]

3.6 Metering.

(a) CAISO Revenue Meter. All output from the Project per the terms of this Agreement must be delivered through a single CAISO revenue meter and that meter must be dedicated exclusively to the Project described herein. All Product purchased under this Agreement must be measured by the Project’s CAISO revenue meter to be eligible for payment under this Agreement. Seller shall bear all costs relating to all metering equipment reasonably necessary to accommodate the Project. In addition, Seller hereby agrees to provide all meter data to Buyer in a form acceptable to Buyer, and consents to Buyer obtaining from the CAISO the CAISO meter data applicable to the Project and all inspection, testing and calibration data and reports. Seller shall grant Buyer the right to retrieve the meter reads from the CAISO meter reporting website and/or directly from the CAISO meter(s) at the Project site. If the CAISO makes any adjustment to any CAISO meter data for a given time period, Seller agrees that it shall submit revised monthly invoices, pursuant to Section 6.2, covering the entire applicable time period in order to conform fully such adjustments to the meter data. Seller shall submit any such revised invoice no later than thirty (30) days from the date on which the CAISO provides to Seller such binding adjustment to the meter data.

(i) Testing and Calibration. Seller shall perform or cause to be performed, at its expense, annual testing and calibration of the electric meters in accordance with Good Industry Practice and the CAISO Tariff. Seller shall give Buyer reasonable advance notice of any inspection, testing or calibration of the electric meters. Buyer shall have the right to have a representative or designee present at such inspection, test or calibration of the electric meters.

Buyer shall have the right to require, at Buyer's expense, except as required below, a test of any of the electric meters not more often than two (2) times every twelve (12) months.

(ii) Inaccurate Meters. If any of the electric meters is deemed to be inaccurate under the Meter Service Agreement, deliveries shall be measured by reference to Seller's check-meters, if any are installed and registering accurately, or the meter readings for the period of inaccuracy shall be adjusted as far as can be reasonably ascertained by Seller from the best available data, subject to review and approval by Buyer. If the period of the inaccuracy cannot be ascertained reasonably, any such adjustment shall be for a period equal to one-half of the time elapsed since the preceding test by applying the percentage of inaccuracy so found. Seller shall promptly cause such electric meters to be corrected and, where such inaccuracy was determined pursuant to a test required by Buyer, Seller shall bear the expense of any such test.

(iii) Delivered MWh Adjustments. In the event that, due to correction for inaccurate electric meters deemed to be inaccurate under the Meter Service Agreement, the Delivered Energy is increased or decreased, the revised Delivered Energy shall be used for purposes of calculating payments. If any of such amounts for any period have already been calculated using the previous amount of Delivered Energy, they shall be recalculated using the revised amount of Delivered Energy. If the recalculation changes the amount payable for the period in question, revised payments shall be made by Buyer or Seller, as applicable, in accordance with Section 6.2.

(b) Real Time Telemetry. Seller shall install, activate and maintain metering, communication and telemetry equipment for the Project in a centralized system to which Buyer shall have real time access. Seller shall link its system to Buyer via an approved Buyer communication network, utilizing existing industry standard network protocol, as reasonably approved by Buyer. Seller shall correct any problems with such equipment as soon as practicable.

(c) *[The following section is for As-Available Intermittent Products only]* Meteorological Station. Seller, at its own expense, shall install and maintain such stand-alone meteorological stations at the Project as may be required under the VER Forecasting Program and the CAISO Tariff to monitor and report weather data to both the CAISO and Buyer's weather station data collection system. Each station shall be equipped with instruments and equipment that meet the specifications of the VER Forecasting Program and shall measure, collect, record, format, and communicate the data required under the VER Forecasting Program. Seller shall submit to Buyer for review and approval, which shall not be unreasonably withheld, its technical specifications for the meteorological station along with a site plan showing the location of the station within the Project. Seller shall correct any problems with such equipment as soon as practicable.

3.7 Outage Notification.

(a) Planned Outages. Seller shall schedule Planned Outages for the Project in accordance with Good Industry Practices and with the prior written consent of Buyer, which consent may not be unreasonably withheld or conditioned. The Parties acknowledge that in all circumstances, Good Industry Practices shall dictate when Planned Outages should occur. Seller shall notify Buyer of its proposed Planned Outage schedule for the Project for the following

calendar year by submitting a written Planned Outage schedule no later than October 1st of each year during the Delivery Term. The Planned Outage schedule is subject to Buyer's approval, which approval may not be unreasonably withheld or conditioned. Buyer shall promptly respond with its approval or with reasonable modifications to the Planned Outage schedule and Seller shall use its best efforts in accordance with Good Industry Practices to accommodate Buyer's requested modifications. Notwithstanding the submission of the Planned Outage schedule described above, Seller shall also submit a completed Outage Notification Form to Buyer no later than fourteen (14) days prior to each Planned Outage and all appropriate outage information or requests to the CAISO in accordance with the CAISO Tariff. Seller shall contact Buyer with any requested changes to the Planned Outage schedule if Seller believes the Project must be shut down to conduct maintenance that cannot be delayed until the next scheduled Planned Outage consistent with Good Industry Practices. Seller shall not change its Planned Outage schedule without Buyer's approval, not to be unreasonably withheld or conditioned. Seller shall use its best efforts in accordance with Good Industry Practices not to schedule Planned Outages during the months of July, August, September and October. At Buyer's request, Seller shall use commercially reasonable efforts to reschedule Planned Outage so that it may deliver Product during CAISO declared or threatened emergency periods. Seller shall not substitute Energy from any other source for the output of the Project during a Planned Outage.

(b) Forced Outages. Within [*When Seller is the SC for the Project:* Within two hours of any Forced Outage,] [*When SDG&E is the SC for the Project:* Within one-half of the notification time prescribed under the CAISO Tariff for Forced Outages,] Seller shall submit a completed Outage Notification Form to the Buyer in accordance with the instructions shown on the form and shall submit outage information to the CAISO in accordance with the CAISO Tariff [*When SDG&E is the SC for the Project:* and Section 3.3(b)(ii) above]. Seller shall not substitute Energy from any other source for the output of the Project during a Forced Outage.

(c) Coordination with CAISO. Seller shall be responsible [*When SDG&E is SC for the Project:* in accordance with Section 3.3(b)(ii)] for all outage coordination communications with the CAISO. Buyer shall cooperate with Seller in arranging and coordinating all Project outages with the CAISO.

3.8 Operations Logs and Access Rights.

(a) Operations Logs. Seller shall maintain a complete and accurate log of all material operations and maintenance information on a daily basis. Such log shall include, but not be limited to, information on power production, fuel consumption, efficiency, availability, maintenance performed, outages, results of inspections, manufacturer recommended services, replacements, electrical characteristics of the generators, control settings or adjustments of equipment and protective devices. Seller shall maintain this information for at least two (2) years and shall provide this information electronically to Buyer within one day of Buyer's request.

(b) Access Rights. Buyer, its authorized agents, employees and inspectors shall have the right of ingress to and egress from the Project during normal business hours upon reasonable advance Notice and for any purposes reasonably connected with this Agreement.

3.9 Operating Procedures. No later than forty-five (45) days before the Initial Delivery Date, and from time to time as reasonably determined necessary by the Parties, the Parties shall meet to address how each Party will perform its respective obligations under this Agreement, including, but not limited to: (1) the method of day-to-day communications; (2) key personnel lists for each Party; (3) procedures for Forced Outage and Planned Outage reporting; (4) procedures for delivery forecasting; (5) procedures for record keeping; (6) Scheduling procedures; and (7) invoicing and payment procedures; provided, that the failure to agree on these operating procedures will not relieve the Parties of their respective obligations under this Agreement, and any failure to agree shall be resolved in accordance with the dispute resolution procedures in Article 12.

ARTICLE FOUR: COMPENSATION; MONTHLY PAYMENTS

4.1 *[For Dispatchable Product Only: Capacity Payment.*

(a) Capacity Price.

Contract Year	Capacity Price (\$/KW)
1	

(b) Monthly Capacity Payment. For each month, Buyer shall pay Seller for the Product the amount calculated as follows (“Monthly Capacity Payment”):

$$MCP = CC \times CP \times SF \times AAF$$

Where:

MCP is the Monthly Capacity Payment expressed in Dollars for such month of the Delivery Term.

CC is the Contract Capacity, expressed in kW, rounded to the nearest 100 kW.

CP is the Capacity Price expressed in Dollars per kW-year, for the applicable month.

SF is the Monthly Shaping Factor for the applicable month, as set forth in the following table:

Month	Monthly Shaping Factor (%)
January	6.7

Month	Monthly Shaping Factor (%)
February	5.0
March	5.0
April	5.8
May	6.3
June	8.3
July	15.8
August	17.5
September	11.7
October	5.8
November	5.8
December	6.3

AAF is the Availability Adjustment Factor for each month, expressed as a three-place decimal and determined as follows:

- (a) If the Equivalent Availability Factor (“EAF”) for the month is less than or equal to 0.980, then the *AAF* equals $EAF / 0.98$.
- (b) If the *EAF* for the month is greater than 0.980 but less than 0.990, then the *AAF* equals 1.0.
- (c) If the *EAF* for the month is greater than or equal to 0.990, then the *AAF* equals $EAF / 0.99$.

EAF is the Equivalent Availability Factor for each month determined as follows:

$$EAF = (PH - (EDH - EEDH)) / PH$$

Where:

PH is the number of period hours;

EDH is the number of equivalent derate hours calculated as the sum, for each derate, of the product of the number of hours of full or partial derate hours times the size of the reduction from the Contract Capacity divided by the Contract Capacity for the month. For the purposes of this calculation, a derate includes all outages for any reason, including without limitation, Forced Outages, Force Majeure events, Dispatch Down Periods, Planned Outages, Buyer’s failure to perform, and other times when any portion of the Contract Capacity is not available and when

the Delivered Energy of the Project is less than the amount of Energy dispatched by Buyer; and

EEDH is the number of equivalent excused derate hours solely due to either Dispatch Down Periods or Buyer’s failure to perform (and for no other reason), calculated as the sum, for each excused derate, of the product of the number of hours of full or partial derate hours times the size of the reduction from the Contract Capacity, divided by the Contract Capacity for the month.

4.2 Energy Payment.

(a) Energy Price. The price for the Bundled Green Energy and Deemed Bundled Green Energy that is delivered to Buyer in each Contract Year shall be as follows (“Energy Price”):

Contract Year	Energy Price (\$/MWh)

provided, however, that:

(i) if Seller delivers Bundled Green Energy in the aggregate for any CAISO settlement interval (not to exceed one hour) in excess of the product of the Contract Capacity times the length of such settlement interval, expressed in hours, then the Energy Price for such excess Bundled Green Energy in such settlement interval shall be reduced to zero dollars (\$0), and if the real time Locational Marginal Price for the Delivery Point during such settlement interval is less than zero dollars (\$0), Seller shall pay to Buyer an amount equal to the absolute value of such negative Locational Marginal Price times such excess Bundled Green Energy;

(ii) if Seller delivers Bundled Green Energy plus Deemed Bundled Green Energy in the aggregate for any Contract Year during the Delivery Term in excess of one hundred fifteen percent (115%) of the annual Contract Quantity, then the Energy Price for such excess Bundled Green Energy and Deemed Bundled Green Energy, if any, for each settlement interval for the remainder of that Contract Year shall be reduced to zero dollars (\$0) and Seller shall be entitled to the CAISO revenues (including positive Locational Marginal Prices, credits and other payments) in respect of such excess amounts and Seller shall be responsible for the CAISO costs (including negative Locational Marginal Prices, penalties, sanctions and other charges) in respect of such excess amounts.

(iii) Reserved

(b) ***Reserved***

(c) **Monthly Energy Payment**. For each month, Buyer shall pay Seller for the Product an amount equal to the sum for each hour in the month of the product of the Energy Price times the sum of Bundled Green Energy plus Deemed Bundled Green Energy in each hour (“Monthly Energy Payment”).

$$\text{Monthly Energy Payment} = \sum \text{Energy Price} \times (\text{Bundled Green Energy} + \text{Deemed Bundled Green Energy})$$

For any period where the quantity of Bundled Green Energy is less than the quantity of Delivered Energy and the quantity of Bundled Green Energy cannot practicably be determined for each settlement interval during such period (for example, where WREGIS does not specify in which settlement intervals Renewable Energy Credits were delivered or not delivered), then the quantity of Bundled Green Energy for any settlement interval during the entire period shall be equal to the product of the quantity of Delivered Energy for a settlement interval multiplied by the quotient of the aggregate quantity of Green Attributes that are delivered to Buyer during such entire period divided by the aggregate quantity of Delivered Energy that is delivered to Buyer during such entire period.

4.3 **Imbalance Energy**. Seller shall use commercially reasonable efforts to deliver Energy in accordance with the Scheduled Energy. Buyer and Seller recognize that from time to

time the amount of Delivered Energy will deviate from the amount of Scheduled Energy. When Delivered Energy minus Scheduled Energy is a positive amount, it shall be considered “Positive Imbalance Energy;” when Delivered Energy minus Scheduled Energy is a negative amount, the absolute (i.e., positive) value of that amount shall be considered the “Negative Imbalance Energy.” ***[When Seller is SC for the Project or when Buyer is SC but Project is not in the VER Forecasting Program:*** Seller shall be responsible for settlement of Imbalance Energy with the CAISO and all fees, liabilities, assessments, or similar charges assessed by the CAISO in connection with Imbalance Energy.] Buyer and Seller shall cooperate to minimize charges and imbalances associated with Imbalance Energy to the extent possible. Seller shall promptly notify Buyer as soon as possible of any material imbalance that is occurring or has occurred. ***[When SDG&E is SC for the Project and Project is in the VER Forecasting Program:*** Buyer shall receive all Green Attributes for the Positive Imbalance Energy in all settlement intervals.]

[When Seller is SC for the Project or when Buyer is SC but Project is not in the VER Forecasting Program, include the following two paragraphs:

(a) Positive Imbalance Energy (Over Deliveries). In the event that Delivered Energy for any CAISO settlement interval is equal to or greater than Scheduled Energy for such CAISO settlement interval, Buyer shall have no payment obligation in respect of the Positive Imbalance Energy. Buyer shall receive all Green Attributes for the Positive Imbalance Energy in such CAISO settlement interval regardless as to whether it was sold into the CAISO. Seller shall be entitled to all payments or credits from the CAISO to Seller’s SC and Seller shall make all payments to the CAISO in respect of the Positive Imbalance Energy.

(b) Negative Imbalance Energy (Under Deliveries). In the event that Delivered Energy for any CAISO settlement interval is less than Scheduled Energy for such CAISO settlement interval, Buyer shall have no payment obligation in respect of the Negative Imbalance Energy. Seller shall make all payments to the CAISO and Seller shall be entitled to all payments or credits from the CAISO to Seller’s SC in respect of the Negative Imbalance Energy required under the CAISO Tariff.]

4.4 Additional Compensation. To the extent not otherwise provided for in this Agreement, in the event that Seller is compensated by a third party for any Product produced by the Project, including, but not limited to, compensation for Resource Adequacy or Green Attributes, Seller shall remit all such compensation directly to Buyer; provided that for avoidance of doubt, nothing herein precludes Seller from retaining credits related to transmission upgrades funded by Seller.

ARTICLE FIVE: EVENTS OF DEFAULT; FORCE MAJEURE

5.1 Events of Default. An “Event of Default” shall mean,

(a) with respect to a Party that is subject to the Event of Default the occurrence of any of the following:

(i) the failure by such Party to make, when due, any payment required pursuant to this Agreement and such failure is not remedied within five (5) Business Days after Notice thereof;

(ii) any representation or warranty made by such Party herein is false or misleading in any material respect when made or when deemed made or repeated, and such default is not remedied within thirty (30) days after Notice thereof;

(iii) the failure by such Party to perform any material covenant or obligation set forth in this Agreement (except to the extent constituting a separate Event of Default, and except for such Party's unexcused failure to perform its obligations to Schedule, deliver, or receive (as applicable), or sell or purchase (as applicable) the Product for a period or a series of periods that is cumulatively no longer than thirty (30) days, the exclusive remedy for which is provided in Section 3.1(h)) and such failure is not remedied within thirty (30) days after Notice thereof;

(iv) the failure by such Party to perform its obligations to Schedule, deliver or receive (as applicable), or sell or purchase (as applicable) the Product for a period or a series of periods that is cumulatively longer than thirty (30) days and such failure is not excused as described in Section 3.1(h);

(v) such Party becomes Bankrupt;

(vi) such Party assigns this Agreement or any of its rights hereunder other than in compliance with Section 13.2; or

(vii) such Party consolidates or amalgamates with, or merges with or into, or transfers all or substantially all of its assets to, another entity and, at the time of such consolidation, amalgamation, merger or transfer, the resulting, surviving or transferee entity fails to assume all the obligations of such Party under this Agreement to which it or its predecessor was a party by operation of Law or pursuant to an agreement reasonably satisfactory to the other Party.

(b) with respect to Seller as the Defaulting Party, the occurrence of any of the following:

(i) if at any time, Seller delivers or attempts to deliver to the Delivery Point for sale under this Agreement Energy that was not generated by the Project *[If the Project is located outside of the CAISO: other than Imbalance Energy from the Transmission Provider]*;

(ii) *[For Baseload, Peaking, Dispatchable Product: the Contract Capacity at the Initial Delivery Date or at any other time pursuant to a Capacity Test is less than [] MW and such default is not remedied within thirty (30) days after Notice thereof;]*

(iii) *[For Baseload, Peaking, As-Available Product: the failure by Seller to achieve the Guaranteed Energy Production requirement during any Performance Measurement Period as set forth in Section 3.1(e) of this Agreement] [For Dispatchable Product: the Default Availability Factor of the Project is less than [] percent for any rolling twelve (12) consecutive calendar month period];*

(iv) failure by Seller to satisfy the collateral requirements pursuant to Sections 8.3 or 8.4 of this Agreement;

(v) with respect to any Guaranty provided for the benefit of Buyer, the failure by Seller to provide for the benefit of Buyer either (1) cash, (2) a replacement Guaranty from a different Guarantor meeting the criteria set forth in the definition of Guarantor, or (3) a replacement Letter of Credit from an issuer meeting the criteria set forth in the definition of Letter of Credit, in each case, in the amount required hereunder within five (5) Business Days after Seller receives Notice of the occurrence of any of the following events:

(A) if any representation or warranty made by the Guarantor in connection with this Agreement is false or misleading in any material respect when made or when deemed made or repeated, and such default is not remedied within thirty (30) days after Notice thereof;

(B) the failure of the Guarantor to make any payment required or to perform any other material covenant or obligation in any Guaranty;

(C) the Guarantor becomes Bankrupt;

(D) the Guarantor shall fail to meet the criteria for an acceptable Guarantor as set forth in the definition of Guarantor;

(E) the failure of the Guaranty to be in full force and effect (other than in accordance with its terms) prior to the indefeasible satisfaction of all obligations of Seller hereunder; or

(F) the Guarantor shall repudiate, disaffirm, disclaim, or reject, in whole or in part, or challenge the validity of any Guaranty; or

(vi) with respect to any outstanding Letter of Credit provided for the benefit of Buyer that is not then required under this Agreement to be canceled or returned, the failure by Seller to provide for the benefit of Buyer either (1) cash, or (2) a substitute Letter of Credit from a different issuer meeting the criteria set forth in the definition of Letter of Credit, in each case, in the amount required hereunder within five (5) Business Days after Seller receives Notice of the occurrence of any of the following events:

(A) the issuer of the outstanding Letter of Credit shall fail to maintain a Credit Rating of at least "A-" by S&P or "A3" by Moody's;

(B) the issuer of such Letter of Credit becomes Bankrupt;

(C) the issuer of the outstanding Letter of Credit shall fail to comply with or perform its obligations under such Letter of Credit and such failure shall be continuing after the lapse of any applicable grace period permitted under such Letter of Credit;

(D) the issuer of the outstanding Letter of Credit shall fail to honor a properly documented request to draw on such Letter of Credit;

(E) the issuer of the outstanding Letter of Credit shall disaffirm, disclaim, repudiate or reject, in whole or in part, or challenge the validity of, such Letter of Credit;

(F) such Letter of Credit fails or ceases to be in full force and effect at any time; or

(G) Seller shall fail to renew or cause the renewal of each outstanding Letter of Credit on a timely basis as provided in the relevant Letter of Credit and as provided in accordance with this Agreement, and in no event less than sixty (60) days prior to the expiration of the outstanding Letter of Credit.

5.2 Remedies; Declaration of Early Termination Date. If an Event of Default with respect to a Defaulting Party shall have occurred and be continuing, the other Party (“Non-Defaulting Party”) shall have the right (a) to send Notice, designating a day, no earlier than the day such Notice is deemed to be received and no later than twenty (20) days after such Notice is deemed to be received, as an early termination date of this Agreement (“Early Termination Date”) that terminates this Agreement and ends the Delivery Term effective as of the Early Termination Date, to accelerate all amounts owing between the Parties, and to collect liquidated damages calculated in accordance with Section 5.3 below (“Termination Payment”); (b) to withhold any payments due to the Defaulting Party under this Agreement; (c) to suspend performance; and (d) to exercise any other right or remedy available at law or in equity, including specific performance or injunctive relief, except to the extent such remedies are expressly limited under this Agreement.

5.3 Termination Payment. The Termination Payment for a Terminated Transaction shall be the aggregate of all Settlement Amounts plus any or all other amounts due to the Non-Defaulting Party netted into a single amount. Except in the case of a termination of this Agreement by the Non-Defaulting Party solely as a result of an Event of Default by the Defaulting Party under Section 5.1(a)(iv) [Bankruptcy], if the Non-Defaulting Party’s aggregate Gains exceed its aggregate Losses and Costs, if any, resulting from the termination of this Agreement, the Termination Payment shall be zero. The Non-Defaulting Party shall calculate, in a commercially reasonable manner, a Settlement Amount for the Terminated Transaction as of the Early Termination Date. Third parties supplying information for purposes of the calculation of Gains or Losses may include, without limitation, dealers in the relevant markets, end-users of the relevant product, information vendors and other sources of market information. The Settlement Amount shall not include consequential, incidental, punitive, exemplary, indirect or business interruption damages; provided, however, that any lost Capacity Attributes and Green Attributes shall be deemed direct damages covered by this Agreement. Without prejudice to the Non-Defaulting Party’s duty to mitigate, the Non-Defaulting Party shall not have to enter into replacement transactions to establish a Settlement Amount. Each Party agrees and acknowledges that (a) the actual damages that the Non-Defaulting Party would incur in connection with a Terminated Transaction would be difficult or impossible to predict with certainty, (b) the Termination Payment described in this section is a reasonable and appropriate approximation of such damages, and (c) the Termination Payment described in this section is the exclusive remedy of the Non-Defaulting Party in connection with a Terminated Transaction but shall not otherwise act to limit any of the

Non-Defaulting Party's rights or remedies if the Non-Defaulting Party does not elect a Terminated Transaction as its remedy for an Event of Default by the Defaulting Party.

5.4 Notice of Payment of Termination Payment. As soon as practicable after a Terminated Transaction, Notice shall be given by the Non-Defaulting Party to the Defaulting Party of the amount of the Termination Payment and whether the Termination Payment is due to the Non-Defaulting Party. The Notice shall include a written statement explaining in reasonable detail the calculation of such amount and the sources for such calculation. The Termination Payment shall be made to the Non-Defaulting Party, as applicable, within ten (10) Business Days after such Notice is effective.

5.5 Disputes With Respect to Termination Payment. If the Defaulting Party disputes the Non-Defaulting Party's calculation of the Termination Payment, in whole or in part, the Defaulting Party shall, within five (5) Business Days of receipt of the Non-Defaulting Party's calculation of the Termination Payment, provide to the Non-Defaulting Party a detailed written explanation of the basis for such dispute. Disputes regarding the Termination Payment shall be determined in accordance with Article 12.

5.6 Rights And Remedies Are Cumulative. Except where liquidated damages are provided as the exclusive remedy, the rights and remedies of a Party pursuant to this Article 5 shall be cumulative and in addition to the rights of the Parties otherwise provided in this Agreement.

5.7 Mitigation. Any Non-Defaulting Party shall be obligated to mitigate its Costs, losses and damages resulting from any Event of Default of the other Party under this Agreement.

5.8 Force Majeure. To the extent either Party is prevented by Force Majeure from carrying out, in whole or part, its obligations under this Agreement and such Party gives Notice and details of the Force Majeure to the other Party as detailed below, then, the Party impacted by Force Majeure shall be excused from the performance of its obligations to the extent impacted. Within forty-eight (48) hours of commencement of an event of Force Majeure, the non-performing Party shall provide the other Party with oral notice of the event of Force Majeure, and within two (2) weeks of the commencement of an event of Force Majeure the non-performing Party shall provide the other Party with Notice in the form of a letter describing in detail the particulars of the occurrence giving rise to the Force Majeure claim. Seller shall not substitute Product from any other source for the output of the Project during an outage resulting from Force Majeure. The suspension of performance due to a claim of Force Majeure must be of no greater scope and of no longer duration than is required by the Force Majeure. Buyer shall not be required to make any payments for any Product that Seller fails to Schedule, deliver or provide as a result of Force Majeure during the term of a Force Majeure. This Agreement may be terminated by the non-claiming Party with no further obligation to the Force-Majeure-claiming Party if a Force Majeure event prevents the performance of a material portion of the obligations of the Force-Majeure-claiming Party hereunder and such Force Majeure event is not resolved within eight (8) months after the commencement of such Force Majeure event.

ARTICLE SIX: PAYMENT

6.1 Billing and Payment. On or about the tenth (10th) day of each month beginning with the second month of the first Contract Year and every month thereafter, and continuing through and including the first month following the end of the Delivery Term, Seller shall provide to Buyer (a) records of metered data, including CAISO metering and transaction data sufficient to document and verify the generation of Product by the Project for any CAISO settlement time interval during the preceding months, (b) access to any records, including invoices or settlement data from CAISO, necessary to verify the invoice; and (c) an invoice, in a format reasonably specified by Buyer, covering the services provided in the preceding month determined in accordance with Article 4 (which may include preceding months), with all component charges and unit prices identified and all calculations used to arrive at invoiced amounts described in reasonable detail. Buyer shall pay the undisputed amount of such invoices on or before thirty (30) days after receipt of the invoice. If either the invoice date or payment date is not a Business Day, then such invoice or payment shall be provided on the next following Business Day. Each Party will make payments by electronic funds transfer, or by other mutually agreeable method(s), to the account designated by the other Party. Any undisputed amounts not paid by the due date will be deemed delinquent and will accrue interest at the Default Rate, such interest to be calculated from and including the due date to but excluding the date the delinquent amount is paid in full. Invoices may be sent by facsimile or e-mail.

6.2 Disputes and Adjustments of Invoices. A Party may, in good faith, dispute the correctness of any invoice or any adjustment to an invoice, rendered under this Agreement or adjust any invoice for any arithmetic or computational error within twelve (12) months of the date the invoice, or adjustment to an invoice, was rendered. In the event an invoice or portion thereof, or any other claim or adjustment arising hereunder, is disputed, payment of the undisputed portion of the invoice shall be required to be made when due. Any invoice dispute or invoice adjustment shall be in writing and shall state the basis for the dispute or adjustment. Payment of the disputed amount shall not be required until the dispute is resolved. Upon resolution of the dispute, any required payment shall be made within two (2) Business Days of such resolution along with interest accrued at the Default Rate from and including the original due date to but excluding the date paid. Inadvertent overpayments shall be returned upon request or deducted by the Party receiving such overpayment from subsequent payments, with interest accrued at the Interest Rate from and including the date of such overpayment to but excluding the date repaid or deducted by the Party receiving such overpayment. Any dispute with respect to an invoice is waived if the other Party is not notified in accordance with this Section 6.2 within twelve (12) months after the invoice is rendered or subsequently adjusted, except to the extent any misinformation was from a third party not Affiliated with any Party and such third party corrects its information after the twelve-month period. If an invoice is not rendered within twelve (12) months after the close of the month during which performance occurred, the right to payment for such performance is waived.

6.3 Netting of Payments. The Parties hereby agree that they shall discharge mutual debts and payment obligations due and owing to each other on the same date through netting, in which case all amounts owed by each Party to the other Party for the purchase and sale of Product during the monthly billing period under this Agreement, including any related damages calculated

pursuant to Section 3.1(h), interest, and payments or credits, shall be netted so that only the excess amount remaining due shall be paid by the Party who owes it.

ARTICLE SEVEN: LIMITATIONS

7.1 Limitation of Remedies, Liability and Damages. EXCEPT AS SET FORTH HEREIN, THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY AND ALL IMPLIED WARRANTIES ARE DISCLAIMED. THE PARTIES CONFIRM THAT THE EXPRESS REMEDIES AND MEASURES OF DAMAGES PROVIDED IN THIS AGREEMENT SATISFY THE ESSENTIAL PURPOSES HEREOF. FOR BREACH OF ANY PROVISION FOR WHICH AN EXPRESS REMEDY OR MEASURE OF DAMAGES IS PROVIDED, SUCH EXPRESS REMEDY OR MEASURE OF DAMAGES SHALL BE THE SOLE AND EXCLUSIVE REMEDY, THE OBLIGOR'S LIABILITY SHALL BE LIMITED AS SET FORTH IN SUCH PROVISION AND ALL OTHER REMEDIES OR DAMAGES AT LAW OR IN EQUITY ARE WAIVED, UNLESS THE PROVISION IN QUESTION PROVIDES THAT THE EXPRESS REMEDIES ARE IN ADDITION TO OTHER REMEDIES THAT MAY BE AVAILABLE. EXCEPT FOR A PARTY'S INDEMNITY OBLIGATION IN RESPECT OF THIRD PARTY CLAIMS OR AS OTHERWISE EXPRESSLY HEREIN PROVIDED, NEITHER PARTY SHALL BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES, LOST PROFITS OR OTHER BUSINESS INTERRUPTION DAMAGES, BY STATUTE, IN TORT OR CONTRACT, UNDER ANY INDEMNITY PROVISION OR OTHERWISE. UNLESS EXPRESSLY HEREIN PROVIDED, AND SUBJECT TO THE PROVISIONS OF SECTION 11.2 (INDEMNITIES), IT IS THE INTENT OF THE PARTIES THAT THE LIMITATIONS HEREIN IMPOSED ON REMEDIES AND THE MEASURE OF DAMAGES BE WITHOUT REGARD TO THE CAUSE OR CAUSES RELATED THERETO, INCLUDING THE NEGLIGENCE OF ANY PARTY, WHETHER SUCH NEGLIGENCE BE SOLE, JOINT OR CONCURRENT, OR ACTIVE OR PASSIVE. TO THE EXTENT ANY DAMAGES REQUIRED TO BE PAID HEREUNDER ARE LIQUIDATED, THE PARTIES ACKNOWLEDGE THAT THE DAMAGES ARE DIFFICULT OR IMPOSSIBLE TO DETERMINE, OR OTHERWISE OBTAINING AN ADEQUATE REMEDY IS INCONVENIENT AND THE DAMAGES CALCULATED HEREUNDER CONSTITUTE A REASONABLE APPROXIMATION OF THE HARM OR LOSS.

ARTICLE EIGHT: CREDIT AND COLLATERAL REQUIREMENTS

8.1 Buyer Financial Information. If requested by Seller, Buyer shall deliver (i) within one hundred twenty (120) days following the end of each fiscal year, a copy of Buyer's annual report containing audited consolidated financial statements for such fiscal year and (ii) within sixty (60) days after the end of each of its first three fiscal quarters of each fiscal year, a copy of Buyer's quarterly report containing unaudited consolidated financial statements for such fiscal quarter. In all cases the statements shall be for the most recent accounting period and prepared in accordance with generally accepted accounting principles; provided, however, that should any such statements not be available on a timely basis due to a delay in preparation or certification, such delay shall not be an Event of Default so long as Buyer diligently pursues the preparation, certification and delivery of the statements. Buyer shall be deemed to have satisfied such delivery requirement if the applicable report is publicly available.

8.2 Seller Financial Information. Seller shall provide the following financial information:

(a) If requested by Buyer, Seller shall deliver (i) within one hundred twenty (120) days following the end of each fiscal year, a copy of Seller's annual report containing audited consolidated financial statements for such fiscal year and (ii) within sixty (60) days after the end of each of its first three fiscal quarters of each fiscal year, a copy of Seller's quarterly report containing unaudited consolidated financial statements for such fiscal quarter. In all cases the statements shall be for the most recent accounting period and prepared in accordance with generally accepted accounting principles; provided, however, that should any such statements not be available on a timely basis due to a delay in preparation or certification, such delay shall not be an Event of Default so long as Seller diligently pursues the preparation, certification and delivery of the statements.

(b) *[If a Guaranty may be provided:* If a Guaranty is provided and if requested by Buyer, Seller shall deliver (i) within one hundred twenty (120) days following the end of each fiscal year, a copy of Guarantor's annual report containing audited consolidated financial statements for such fiscal year and (ii) within sixty (60) days after the end of each of its first three fiscal quarters of each fiscal year, a copy of Guarantor's quarterly report containing unaudited consolidated financial statements for such fiscal quarter certified by an officer of Guarantor. In all cases the statements shall be for the most recent accounting period and prepared in accordance with generally accepted accounting principles; provided, however, that should any such statements not be available on a timely basis due to a delay in preparation or certification, such delay shall not be an Event of Default so long as Guarantor diligently pursues the preparation, certification and delivery of the statements. Seller shall be deemed to have satisfied such delivery requirement if the applicable report is publicly available.]

8.3 Grant of Security Interest/Remedies. To secure its obligations under this Agreement and to the extent Seller delivers Performance Assurance hereunder, Seller hereby grants to Buyer a present and continuing first priority security interest in, and lien on (and right of setoff against), and assignment of, all cash collateral and cash equivalent collateral and any and all proceeds resulting therefrom or the liquidation thereof, whether now or hereafter held by, on behalf of, or for the benefit of, Buyer, and each Party agrees to take such action as the other Party reasonably requires in order to perfect the Buyer's first-priority security interest in, and lien on (and right of setoff against), such collateral and any and all proceeds resulting therefrom or from the liquidation thereof. Upon or any time after the occurrence and during the continuation of an Event of Default by Seller or an Early Termination Date as a result thereof, Buyer may do any one or more of the following: (i) exercise any of the rights and remedies of a secured party with respect to all Performance Assurance, including any such rights and remedies under Law then in effect; (ii) exercise its rights of setoff against such collateral and any and all proceeds resulting therefrom or from the liquidation thereof; (iii) draw on any outstanding Letter of Credit issued for its benefit; and (iv) liquidate all or any portion of any Performance Assurance then held by or for the benefit of Buyer free from any claim or right of any nature whatsoever of Seller, including any equity or right of purchase or redemption by Seller. Buyer shall apply the proceeds of the collateral realized upon the exercise of any such rights or remedies to reduce the Seller's obligations under the Agreement (Seller remaining liable for any amounts owing to Buyer after such application),

subject to Buyer's obligation to return any surplus proceeds remaining after such obligations are satisfied in full.

8.4 Performance Assurance.

(a) *[For Agreements with Delivery Terms greater than two years: CPUC Approval Security,] Pre-Delivery Term Security, Delivery Term Security.* To secure its obligations under this Agreement Seller agrees to deliver to Buyer and maintain in full force and effect for the period set forth below, the following Performance Assurance:

(i) *[For Agreements with Delivery Terms greater than two years: CPUC Approval Security,* in the amount of [_____] in the form of cash or a Letter of Credit [or a Guaranty] from the Execution Date of this Agreement until the return date specified in Section 8.4(b)(i) below;]

(ii) Pre-Delivery Term Security in the amount of [_____] in the form of cash or a Letter of Credit [or a Guaranty] from *[For Agreements with Delivery Terms greater than two years: the CPUC Approval Date] [For all other Agreements: the Execution Date of this Agreement]* until the return date specified in Section 8.4(b)(i)/(ii) below;

(iii) Delivery Term Security in the amount of [_____] in the form of cash or a Letter of Credit [or a Guaranty] from the commencement of the Delivery Term until the return date specified in Section 8.4(b)(ii)/(iii) below.

Except as set forth in Section 2.2 as it pertains to *[For Agreements with Delivery Terms greater than two years: the CPUC Approval Security and] the Pre-Delivery Term Security, any such* Performance Assurance shall not be deemed a limitation of damages.

(b) Return of Performance Assurance.

(i) *[For Agreements with Delivery Terms greater than two years: Buyer shall promptly return to Seller the unused portion of the CPUC Approval Security after the earlier of (A) the date on which Seller has delivered the Pre-Delivery Term Security or the Delivery Term Security, as applicable, and (B) termination of the Agreement under Section 2.4(b)(ii).*

(ii) Buyer shall promptly return to Seller the unused portion of the Pre-Delivery Term Security after the earlier of (A) the date on which Seller has delivered the Delivery Term Security, (B) termination of the Agreement under Section 2.4(b)(ii), and (C) the date that all payment obligations of the Seller arising under this Agreement, including compensation for penalties, Termination Payment, indemnification payments or other damages are paid in full (whether directly or indirectly such as through set-off or netting) after an Early Termination Date.

(iii) Buyer shall promptly return to Seller the unused portion of the Delivery Term Security after the following have occurred: (A) the Delivery Term has expired or terminated early; and (B) all payment obligations of the Seller arising under this Agreement, including compensation for penalties, Termination Payment, indemnification payments or other damages are paid in full (whether directly or indirectly such as through set-off or netting).

8.5 Interest on Cash. If Seller provides Performance Assurance in the form of cash, Buyer shall pay interest on such cash held as [*For Agreements with Delivery Terms greater than two years:* CPUC Approval Security,] Pre-Delivery Term Security, or Delivery Term Security, as applicable, at the Interest Rate. On or before each Interest Payment Date, Buyer shall transfer the sum of all accrued and unpaid Interest Amounts due to Seller for such security in the form of cash by wire transfer to the bank account specified under “Wire Transfer” in the Cover Sheet.

8.6 Costs of Letter of Credit. If Seller provides Performance Assurance in the form of a Letter of Credit, in all cases, the reasonable costs and expenses of (including but not limited to the reasonable costs, expenses, and attorneys’ fees, including reasonably allocated costs of in-house counsel of the Buyer) establishing, renewing, substituting, canceling, increasing and reducing the amount of (as the case may be) one or more Letters of Credit shall be borne by the Seller.

ARTICLE NINE: GOVERNMENTAL CHARGES

9.1 Cooperation. Each Party shall use reasonable efforts to implement the provisions of and to administer this Agreement in accordance with the intent of the Parties to minimize all taxes, so long as neither Party is materially adversely affected by such efforts.

9.2 Governmental Charges. Seller shall pay or cause to be paid all taxes imposed by any governmental authority (“Governmental Charges”) on or with respect to the Product or the transaction under this Agreement arising prior to and at the Delivery Point, including, but not limited to, ad valorem taxes and other taxes attributable to the Project, land, land rights or interests in land for the Project. Buyer shall pay or cause to be paid all Governmental Charges on or with respect to the Product or the transaction under this Agreement from the Delivery Point. In the event Seller is required by Law or regulation to remit or pay Governmental Charges which are Buyer’s responsibility hereunder, Buyer shall promptly reimburse Seller for such Governmental Charges. If Buyer is required by Law or regulation to remit or pay Governmental Charges which are Seller’s responsibility hereunder, Buyer may deduct such amounts from payments to Seller with respect to payments under the Agreement; if Buyer elects not to deduct such amounts from Seller’s payments, Seller shall promptly reimburse Buyer for such amounts upon request. Nothing shall obligate or cause a Party to pay or be liable to pay any Governmental Charges for which it is exempt under the Law.

ARTICLE TEN: REPRESENTATIONS AND WARRANTIES; COVENANTS

10.1 General Representations and Warranties. On the Execution Date and the CP Satisfaction Date, each Party represents and warrants to the other Party that:

(a) it is duly organized, validly existing and in good standing under the Laws of the jurisdiction of its formation;

(b) it has all Governmental Approvals necessary for it to perform its obligations under this Agreement, except for as of the Execution Date (i) CPUC Approval in the case of Buyer, and (ii) all Governmental Approvals necessary to construct, operate and maintain the Project and related interconnection facilities in the case of Seller;

(c) the execution, delivery and performance of this Agreement is within its powers, have been duly authorized by all necessary action and do not violate any of the terms and conditions in its governing documents, any contracts to which it is a party or any applicable Law;

(d) this Agreement and each other document executed and delivered in accordance with this Agreement constitutes a legally valid and binding obligation enforceable against it in accordance with its terms, subject to any Equitable Defenses;

(e) it is not Bankrupt and there are no proceedings pending or being contemplated by it or, to its knowledge, threatened against it which would result in it being or becoming Bankrupt;

(f) except as may be set forth in its reports filed with the SEC, there is not pending or, to its knowledge, threatened against it or any of its Affiliates any legal proceedings that could materially adversely affect its ability to perform its obligations under this Agreement;

(g) no Event of Default with respect to it has occurred and is continuing and no such event or circumstance would occur as a result of its entering into or performing its obligations under this Agreement;

(h) it is acting for its own account, has made its own independent decision to enter into this Agreement and as to whether this Agreement is appropriate or proper for it based upon its own judgment, is not relying upon the advice or recommendations of the other Party in so doing, and is capable of assessing the merits of and understanding, and understands and accepts, the terms, conditions and risks of this Agreement; and

(i) it has entered into this Agreement in connection with the conduct of its business and it has the capacity or the ability to make or take delivery of the Product as provided in this Agreement.

10.2 Seller Representations and Warranties.

(a) Seller, and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement that: (i) the Project qualifies and is certified by the CEC as an Eligible Renewable Energy Resource (“ERR”) as such term is defined in Public Utilities Code Section 399.12 or Section 399.16; and (ii) the Project’s output delivered to Buyer qualifies under the requirements of the California Renewables Portfolio Standard. To the extent a change in Law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in Law.

(b) Seller and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement the Renewable Energy Credits transferred to Buyer conform to the definition and attributes required for compliance with the California Renewables Portfolio Standard, as set forth in CPUC Decision 08-08-028, and as may be modified by subsequent decision of the CPUC or by subsequent legislation. To the extent a change in Law occurs after execution of this Agreement that causes this representation and warranty to be

materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in Law.

(c) *[Include other appropriate representations, warranties, and covenants to satisfy the California RPS content category requirements.]*

10.3 Covenants.

(a) General Covenants. Each Party covenants that throughout the Delivery Term:

(i) it shall continue to be duly organized, validly existing and in good standing under the Laws of the jurisdiction of its formation;

(ii) it shall maintain (or obtain from time to time as required, including through renewal, as applicable) all Governmental Approvals necessary for it to legally perform its obligations under this Agreement;

(iii) it shall perform its obligations under this Agreement in a manner that does not violate any of the terms and conditions in its governing documents, any contracts to which it is a party or any applicable Law; and

(iv) it shall not dispute its status as a “forward contract merchant” within the meaning of the United States Bankruptcy Code.

(b) Seller Covenants.

(i) Seller covenants throughout the Delivery Term that it, or its permitted successors or assigns, shall maintain ownership of a fee, easement, long-term leasehold interest, or other similar asset ownership interest in the Project.

(ii) Seller covenants throughout the Delivery Term that it shall maintain market based rate authority from FERC to sell Product to Buyer under the terms of this Agreement.

(iii) If at any time during the Delivery Term, Seller’s representations and warranties set forth in Section 10.2 become materially false or misleading, Seller covenants that it shall provide prompt Notice to Buyer describing such default along with a description of its efforts to cure such default.

(iv) *[Include other appropriate representations, warranties, and covenants to satisfy the California RPS content category requirements.]*

(v) *[Include other appropriate covenants regarding the use of contractors that may be diverse business enterprises.]*

ARTICLE ELEVEN: TITLE, RISK OF LOSS, INDEMNITIES

11.1 Title and Risk of Loss. Title to and risk of loss related to the Product shall transfer from Seller to Buyer at the Delivery Point. Seller warrants that it will deliver to Buyer the Product free and clear of all liens, security interests, claims and encumbrances or any interest therein or thereto by any person arising prior to or at the Delivery Point.

11.2 Indemnities.

(a) Indemnity by Seller. Seller shall release, indemnify, defend, and hold harmless Buyer, its Affiliates, and its and their directors, officers, employees, agents, and representatives against and from any and all actions, suits, losses, costs, damages, injuries, liabilities, claims, demands, penalties and interest, including reasonable costs and attorneys' fees ("Claims") resulting from, or arising out of or in any way connected with (i) any event, circumstance, act, or incident relating to the Product delivered under this Agreement up to and at the Delivery Point, (ii) Seller's development, permitting, construction, ownership, operation and/or maintenance of the Project, (iii) the failure by Seller or the failure of the Project to comply with applicable Law, including without limitation the CAISO Tariff, (iv) any Governmental Charges for which Seller is responsible hereunder, or (v) any liens, security interests, encumbrances, or other adverse claims against the Product delivered hereunder made by, under, or through Seller, in all cases including, without limitation, any Claim for or on account of injury, bodily or otherwise, to or death of persons, or for damage to or destruction of property belonging to Buyer, Seller, or others, excepting only such Claim to the extent caused by the willful misconduct or gross negligence of Buyer, its Affiliates, and its and their directors, officers, employees, agents, and representatives.

(b) Indemnity by Buyer. Buyer shall release, indemnify, defend, and hold harmless Seller, its Affiliates, and its and their directors, officers, employees, agents, and representatives against and from any and all Claims resulting from, or arising out of or in any way connected with (i) any event, circumstance, act, or incident relating to the Product received by Buyer under this Agreement after the Delivery Point, (ii) the failure by Buyer to comply with applicable Law, including without limitation the CAISO Tariff, or (iii) any Governmental Charges for which Buyer is responsible hereunder, in all cases including, without limitation, any Claim for or on account of injury, bodily or otherwise, to or death of persons, or for damage to or destruction of property belonging to Buyer, Seller, or others, excepting only such Claim to the extent caused by the willful misconduct or gross negligence of Seller, its Affiliates, and its and their directors, officers, employees, agents, and representatives.

ARTICLE TWELVE: DISPUTE RESOLUTION

12.1 Intent of the Parties. Except as provided in the next sentence, the sole procedure to resolve any claim arising out of or relating to this Agreement or any related agreement is the dispute resolution procedure set forth in this Article 12. Either Party may seek a preliminary injunction or other provisional judicial remedy if such action is necessary to prevent irreparable harm or preserve the status quo, in which case both Parties nonetheless will continue to pursue resolution of the dispute by means of the dispute resolution procedure set forth in this Article 12.

12.2 Management Negotiations.

(a) The Parties will attempt in good faith to resolve any controversy or claim arising out of or relating to this Agreement or any related agreements by prompt negotiations between each Party's authorized representative designated in writing as a representative of the Party (each a "Manager"). Either Manager may, by Notice to the other Party, request a meeting to initiate negotiations to be held within ten (10) Business Days of the other Party's receipt of such request, at a mutually agreed time and place (either in person or telephonically). If the matter is not resolved within fifteen (15) Business Days of their first meeting ("Initial Negotiation End Date"), the Managers shall refer the matter to the designated senior officers of their respective companies that have authority to settle the dispute ("Executive(s)"). Within five (5) Business Days of the Initial Negotiation End Date ("Referral Date"), each Party shall provide one another Notice confirming the referral and identifying the name and title of the Executive who will represent the Party.

(b) Within five (5) Business Days of the Referral Date, the Executives shall establish a mutually acceptable location and date, which date shall not be greater than thirty (30) days from the Referral Date, to meet. After the initial meeting date, the Executives shall meet, as often as they reasonably deem necessary, to exchange relevant information and to attempt to resolve the dispute.

(c) All communication and writing exchanged between the Parties in connection with these negotiations shall be confidential and shall not be used or referred to in any subsequent binding adjudicatory process between the Parties.

(d) If the matter is not resolved within forty-five (45) days of the Referral Date, or if the Party receiving the Notice to meet, pursuant to Section 12.2(a) above, refuses or does not meet within the ten (10) Business Day period specified in Section 12.2(a) above, either Party may initiate arbitration of the controversy or claim by providing Notice of a demand for binding arbitration at any time thereafter.

12.3 Arbitration. Any dispute that cannot be resolved by management negotiations as set forth in Section 12.2 above shall be resolved through binding arbitration by a retired judge or justice from the [AAA][JAMS] panel conducted in San Diego, California, administered by and in accordance with [AAA's Commercial Arbitration Rules] [JAMS [Comprehensive][Streamlined] Arbitration Rules and Procedures] ("Arbitration").

(a) Any arbitrator shall have no affiliation with, financial or other interest in, or prior employment with either Party and shall be knowledgeable in the field of the dispute. The Parties shall cooperate with one another in selecting the arbitrator within sixty (60) days after Notice of the demand for arbitration. If, notwithstanding their good faith efforts, the Parties are unable to agree upon a mutually-acceptable arbitrator, the arbitrator shall be appointed as provided for in [AAA's Commercial Arbitration Rules] [JAMS [Comprehensive][Streamlined] Arbitration Rules and Procedures].

(b) At the request of a Party, the arbitrator shall have the discretion to order depositions of witnesses to the extent the arbitrator deems such discovery relevant and appropriate.

Depositions shall be limited to a maximum of three (3) per Party and shall be held within thirty (30) days of the making of a request. Additional depositions may be scheduled only with the permission of the arbitrator, and for good cause shown. Each deposition shall be limited to a maximum of six (6) hours duration unless otherwise permitted by the arbitrator for good cause shown. All objections are reserved for the Arbitration hearing except for objections based on privilege and proprietary and confidential information. The arbitrator shall also have discretion to order the Parties to exchange relevant documents. The arbitrator shall also have discretion to order the Parties to answer interrogatories, upon good cause shown.

(c) The arbitrator shall have no authority to award punitive or exemplary damages or any other damages other than direct and actual damages and the other remedies contemplated by this Agreement.

(d) The arbitrator shall prepare in writing and provide to the Parties an award including factual findings and the reasons on which their decision is based.

(e) The arbitrator's award shall be made within nine (9) months of the filing of the notice of intention to arbitrate (demand) and the arbitrator shall agree to comply with this schedule before accepting appointment. However, this time limit may be extended by agreement of the Parties or by the arbitrator, if necessary.

(f) Judgment on the award may be entered in any court having jurisdiction.

(g) The prevailing Party in this dispute resolution process is entitled to recover its costs. Until such award is made, however, the Parties shall share equally in paying the costs of the Arbitration.

(h) The arbitrator shall have the authority to grant dispositive motions prior to the commencement of or following the completion of discovery if the arbitrator concludes that there is no material issue of fact pending before the arbitrator.

(i) The existence, content, and results of any Arbitration hereunder is confidential information that is subject to the provisions of Section 13.1.

ARTICLE THIRTEEN: MISCELLANEOUS

13.1 Confidentiality.

(a) **General.** Neither Party shall disclose the non-public terms or conditions of this Agreement or any transaction hereunder to a third party, other than (i) the Party's Affiliates and its and their officers, directors, employees, lenders, counsel, accountants or advisors who have a need to know such information and have agreed to keep such terms confidential, (ii) for disclosure to the Buyer's Procurement Review Group, as defined in CPUC Decision (D) 02-08-071, subject to a confidentiality agreement, (iii) to the CPUC under seal for purposes of review, (iv) disclosure of terms specified in and pursuant to Section 13.1(b) of this Agreement; (v) in order to comply with any applicable Law, regulation, or any exchange, control area or CAISO rule, or order issued by a court or entity with competent jurisdiction over the disclosing Party ("Disclosing Party"), other than to those entities set forth in subsection (vi); or (vi) in order to comply with any

applicable regulation, rule, or order of the CPUC, CEC, or the Federal Energy Regulatory Commission. In connection with requests made pursuant to clause (v) of this Section 13.1(a) (“Disclosure Order”) each Party shall, to the extent practicable, use reasonable efforts to prevent or limit such disclosure. After using such reasonable efforts, the Disclosing Party shall not be: (i) prohibited from complying with a Disclosure Order or (ii) liable to the other Party for monetary or other damages incurred in connection with the disclosure of the confidential information. Except as provided in the preceding sentence, the Parties shall be entitled to all remedies available at law or in equity to enforce, or seek relief in connection with, this confidentiality obligation.

(b) RPS Confidentiality. Notwithstanding Section 13.1(a) of this Agreement, at any time on or after the date on which the Buyer makes its filing seeking CPUC Approval for this Agreement, either Party shall be permitted to disclose the following terms with respect to this Agreement: Party names, resource type, Delivery Term, Project location, Contract Capacity, anticipated Initial Delivery Date, Contract Quantity, and Delivery Point.

(c) Publicity. Except as otherwise agreed to in this Section 13.1 above, no announcement, publicity, advertising, press release, promotional or marketing materials regarding the arrangement contemplated under this Agreement, including the existence hereof, shall be made by either Party without the prior written approval of the other Party which approval shall not be unreasonably withheld or delayed.

13.2 Assignment. Neither Party shall assign this Agreement or its rights hereunder without the prior written consent of the other Party, which consent shall not be unreasonably withheld. For purposes hereof, the transfer of more than fifty percent (50%) of the equity ownership or voting interest of Seller (or any parent entity holding directly or indirectly at least fifty percent (50%) of the equity ownership or voting interest of Seller if such interest constitutes more than twenty percent (20%) of the fair market value of the assets of such parent entity) to a person that is not an Affiliate of Seller shall also constitute an assignment of this Agreement requiring Buyer’s prior written consent. Notwithstanding the foregoing, either Party may, without the consent of the other Party (and without relieving itself from liability hereunder), transfer, sell, pledge, encumber, or assign this Agreement or the accounts, revenues or proceeds hereof to its financing providers. In connection with any financing or refinancing of the Project by Seller, Buyer shall in good faith negotiate and agree upon a consent to collateral assignment of this Agreement in a form that is commercially reasonable and customary in the industry.

13.3 Audit. Each Party has the right, at its sole expense and during normal working hours, to examine the records of the other Party to the extent reasonably necessary to verify the accuracy of any statement, charge or computation made pursuant to this Agreement including amounts of Delivered Energy or Scheduled Energy. If any such examination reveals any inaccuracy in any statement, the necessary adjustments in such statement and the payments thereof will be made promptly and shall bear interest calculated at the Default Rate from the date the overpayment or underpayment was made until paid; provided, however, that no adjustment for any statement or payment will be made unless objection to the accuracy thereof was made prior to the lapse of twelve (12) months from the rendition thereof, and thereafter any objection shall be deemed waived except to the extent any misinformation was from a third party not Affiliated with any Party and such third party corrects its information after such twelve-month period. In addition, Buyer shall have the right, at its sole expense and during normal working hours, to examine the

records of Seller to the extent reasonably necessary to verify Seller's compliance with its representations and warranties set forth in Section 10.2.

13.4 Sarbanes-Oxley and SEC Requirements. The Parties acknowledge that accounting principles generally accepted in the United States of America ("GAAP") and SEC rules require Buyer and its independent auditor to evaluate whether Buyer must consolidate Seller's financial information (but not financial information of Seller's constituent members unless deemed to be included in the entity under GAAP). Buyer may require access to information concerning Seller's organizational structure, including its debt/capital structure, as well as to personnel of Seller to determine if consolidated financial reporting is required. If Buyer and its independent auditor determine at any time that the Buyer must consolidate the Seller's financial statements to comply with GAAP and/or SEC rules regarding consolidated financial reporting, then:

(a) Buyer shall require from Seller and Seller agrees to provide to Buyer the following during the Term of this Agreement:

(i) Unaudited financial statements of the Seller prepared in accordance with GAAP as of the end of the quarterly period. The financial statements should include quarter to date and year to date information and are to be provided within fifteen (15) calendar days of the end of the applicable reporting period (or the Business Day thereafter);

(ii) Unaudited financial schedules of the Seller, as deemed necessary for Buyer to prepare its consolidated financial statements and related footnotes to the financial statements in accordance with GAAP as of the end of the quarterly period. The financial schedules should include quarter to date and year to date information underlying the financial statements and footnotes to the financial statements and are to be provided within fifteen (15) calendar days of the end of the applicable reporting period (or the Business Day thereafter);

(iii) Access to Seller's accounting and other records, and accounting and management personnel as reasonably determined by both Buyer and Seller so that (A) Buyer's independent auditor or its internal auditors may conduct financial audits (in accordance with the standards of the Public Company Accounting Oversight Board (United States)) as well as internal control audits (in accordance with Section 404 of the Sarbanes-Oxley Act of 2002) and (B) Buyer can be provided analytical information, as needed, to enable Buyer to meet its SEC filing requirements, including but not limited to those under Item 2 on Form 10-Q, and Item 7 on Form 10-K, "Management's Discussion and Analysis of Financial Condition and Results of Operations;"

(iv) Upon the request of Buyer, such certifications by a duly authorized representative(s) of Seller as may be reasonably requested by Buyer (which certifications shall presumptively be reasonable if the certifications are substantially identical to those required by Buyer or its parent of business units of Buyer or its parent); and

(v) As reasonably requested by Buyer, such information or schedules, similar to the items noted in clauses (i)-(iv) above, to enable Buyer to prepare consolidated financial statements and schedules as may be required for Buyer to obtain financing or to prepare other reports as required by regulatory bodies, such as the SEC, for periods other than as of the end of the monthly, quarterly or year to date periods then ended.

(b) If Buyer (i) in its sole discretion determines that the financial statements of the Seller would be considered material to the Buyer or its parent company's financial statements, financial condition, or internal controls over financial reporting, and (ii) reasonably determines Seller's internal controls over financial reporting are not operating effectively or have resulted in a control deficiency, Buyer shall provide Notice to Seller. Upon receipt of such Notice, Seller will have thirty (30) days to remediate any deficiency in Seller's internal controls over financial reporting identified by the Buyer, which Buyer and Buyer's independent auditor deem to be necessary to ensure Seller's internal controls over financial reporting are adequate, during or as a result of the audits permitted under Section 13.4(a)(iii) or any other provision of this Agreement.

(c) As soon as possible, but in no event later than two (2) Business Days following any occurrence that would affect Seller in any material way, Seller shall provide to Buyer a Notice describing such occurrence in sufficient detail to permit the Buyer to file a report on SEC Form 8-K. Such occurrences include all reportable events on the then current Form 8-K that applies to Buyer and its parent company at such time, including but not limited to a material acquisition or disposition of assets, a material direct financial obligation or off-balance sheet financing arrangement, material litigation, and the execution or termination of a material contract.

(d) Any information provided to Buyer shall be treated as confidential except that it may be disclosed in connection with the preparation, review, certification and publication of Buyer's financial statements.

(e) Seller shall notify Buyer at any time during the term of this Agreement of any services provided or proposed to be provided to Seller by Buyer's independent auditor. Seller, and any of Seller's Affiliates, are prohibited from engaging Buyer's independent auditor for any services or in any consulting agreement without the express written consent of partner in charge of Buyer's independent audit.

13.5 Entire Agreement. This Agreement, together with the Cover Sheet and each and every appendix, attachment, amendment, schedule and any written supplements hereto, if any, between the Parties constitutes the entire agreement between the Parties.

13.6 Recording. Unless a Party expressly objects to a Recording (defined below) at the beginning of a telephone conversation, each Party consents to the creation of a tape or electronic recording ("Recording") of all telephone conversations between the Parties to this Agreement, and that any such Recordings will be retained in confidence, secured from improper access, and may be submitted in evidence in any proceeding or action relating to this Agreement. Each Party waives any further notice of such monitoring or recording, and agrees to notify its officers and employees of such monitoring or recording and to obtain any necessary consent of such officers and employees.

13.7 Forward Contract. The Parties acknowledge and agree that this Agreement constitutes a "forward contract" within the meaning of the United States Bankruptcy Code.

13.8 Governing Law. THIS AGREEMENT AND THE RIGHTS AND DUTIES OF THE PARTIES HEREUNDER SHALL BE GOVERNED BY AND CONSTRUED, ENFORCED AND PERFORMED IN ACCORDANCE WITH THE LAWS OF THE STATE OF

CALIFORNIA, WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW. TO THE EXTENT ENFORCEABLE AT SUCH TIME, EACH PARTY WAIVES ITS RESPECTIVE RIGHT TO ANY JURY TRIAL WITH RESPECT TO ANY LITIGATION ARISING UNDER OR IN CONNECTION WITH THIS AGREEMENT.

13.9 Attorneys' Fees. In any proceeding brought to enforce this Agreement or because of the breach by any Party of any covenant or condition herein contained, the prevailing Party shall be entitled to reasonable attorneys' fees (including reasonably allocated fees of in-house counsel) in addition to court costs and any and all other costs recoverable in said action.

13.10 General. This Agreement shall be considered for all purposes as prepared through the joint efforts of the Parties and shall not be construed against one Party or the other as a result of the preparation, substitution, submission or other event of negotiation, drafting or execution hereof. Except to the extent provided for herein, no amendment or modification to this Agreement shall be enforceable unless reduced to writing and executed by both Parties. This Agreement shall not impart any rights enforceable by any third party (other than a permitted successor or assignee bound to this Agreement). Waiver by a Party of any default by the other Party shall not be construed as a waiver of any other default. The headings used herein are for convenience and reference purposes only. This Agreement shall be binding on each Party's successors and permitted assigns.

13.11 Severability. If any provision in this Agreement is determined to be invalid, void or unenforceable by any court having jurisdiction, such determination shall not invalidate, void, or make unenforceable any other provision, agreement or covenant of this Agreement and the Parties shall use their best efforts to modify this Agreement to give effect to the original intention of the Parties.

13.12 Counterparts. This Agreement may be executed in one or more counterparts each of which shall be deemed an original and all of which shall be deemed one and the same Agreement. Delivery of an executed counterpart of this Agreement by fax will be deemed as effective as delivery of an originally executed counterpart. Any Party delivering an executed counterpart of this Agreement by facsimile will also deliver an originally executed counterpart, but the failure of any Party to deliver an originally executed counterpart of this Agreement will not affect the validity or effectiveness of this Agreement.

13.13 Notices. Whenever this Agreement requires or permits delivery of a "Notice" (or requires a Party to "notify"), the Party with such right or obligation shall provide a written communication delivered personally, by a nationally recognized overnight courier, mailed by registered or certified mail (return receipt requested), or by facsimile or e-mail (if facsimile numbers or e-mail addresses are identified on the Cover Sheet or by subsequent Notice) to the receiving Party at the addresses identified on the Cover Sheet (or at such other addresses as such receiving Party shall identify by like Notice to the other Party); provided, however, that notices of Outages or other Scheduling or dispatch information or requests, shall be provided in accordance with the terms set forth in the relevant section of this Agreement. Invoices may be sent by facsimile or e-mail (if facsimile numbers or e-mail addresses are identified on the Cover Sheet or by subsequent Notice). A Notice delivered in accordance herewith shall be deemed received (i) on the date of delivery, if hand delivered, (ii) two Business Days after the date of sending, if sent by

a nationally recognized overnight courier, or at such earlier time as is confirmed by the receiving Party, (iii) three Business Days after the date of mailing, if mailed by registered or certified mail, return receipt requested, or at such earlier time as is confirmed by the receiving Party, and (iv) on the Business Day on which such Notice was transmitted by facsimile transmission or e-mail (where permitted); provided, however, that a Notice delivered in accordance with this Section but received on any day other than a Business Day or after 5:00 p.m. in the place of receipt will be deemed received on the next Business Day. Each Party shall provide Notice to the other Party of the persons authorized to nominate and/or agree to a Schedule or Dispatch Order for the delivery or acceptance of the Product or make other Notices on behalf of such Party and specify the scope of their individual authority and responsibilities, and may change its designation of such persons from time to time in its sole discretion by providing Notice.

13.14 Mobile Sierra. Notwithstanding any provision of this Agreement, neither Party shall seek, nor shall they support any third party in seeking, to prospectively or retroactively revise the rates, terms or conditions of service of this Agreement through application or complaint to FERC pursuant to the provisions of Section 205, 206 or 306 of the Federal Power Act, or any other provisions of the Federal Power Act, absent prior written agreement of the Parties. Further, absent the prior agreement in writing by both Parties, the standard of review for changes to the rates, terms or conditions of service of this Agreement proposed by a Party, a non-Party or the FERC acting *sua sponte* shall be the “public interest” application of the “just and reasonable” standard of review set forth in *United Gas Pipe Line Co. v. Mobile Gas Service Corp.*, 350 US 332 (1956) and *Federal Power Commission v. Sierra Pacific Power Co.*, 350 US 348 (1956) and clarified by *Morgan Stanley Capital Group Inc. v. Pub. Util. Dist. No. 1 of Snohomish County*, 128 S. Ct. 2733 (2008).

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed as of the date first above written.

[_____]

a [_____]

SAN DIEGO GAS & ELECTRIC
COMPANY
a California corporation

By: _____

Name: _____

Title: _____

By: _____

Name: _____

Title: _____

Exhibit A

PROJECT DESCRIPTION INCLUDING DESCRIPTION OF SITE

PROJECT DESCRIPTION

Project name _____

Project Site name: _____

Project physical address: _____

Total number of electric generating units at the Project (committed and not committed to Buyer) _____

Technology Type: _____

Substation:

The term "Site" as defined in the Agreement means the following parcel description upon which the Project is located:

Latitude and Longitude of Project:_____.

The nameplate capacity of the Project is _____.

The electric generating units utilized as generation assets as part of the Project are described below:

[INSERT MAP]

Exhibit B

FORM OF LETTER OF CREDIT

[DATE]

To: San Diego Gas & Electric Company
555 W. Fifth Street
Mail Code: ML 18A3
Los Angeles, CA 90013

Re: Our Irrevocable Standby Letter of Credit No. _____
In the Amount of US _____

Ladies and Gentlemen:

We hereby open our irrevocable standby Letter of Credit Number _____ in favor of [name of Beneficiary] (“Beneficiary”), by order and for account of [name of Applicant] (“Applicant”), [address of Applicant], available at sight upon demand at our counters, at [location] for an amount of US\$ _____ [amount spelled out and xx/100 U.S. Dollars] against presentation one of the following documents:

1- Statement signed by a person purported to be an authorized representative of Beneficiary stating that: “[name of Applicant] (“Applicant”) is in default under the Power Purchase Agreement between Beneficiary and Applicant dated _____ or under any transaction contemplated thereby (whether by failure to perform or pay any obligation thereunder or by occurrence of a “default”, “event of default” or similar term as defined in such agreement, any other agreement between Beneficiary and Applicant, or otherwise). The amount due to Beneficiary is U.S. \$_____.”

or

2- Statement signed by a person purported to be an authorized representative of Beneficiary stating that: “[name of Applicant] (“Applicant”) has forfeited all or part of its [*For Agreements with Delivery Terms greater than two years:* CPUC Approval Security or] Pre-Delivery Term Security as set forth and defined in the Power Purchase Agreement between Beneficiary and Applicant dated _____. The amount due to Beneficiary, whether or not a default has occurred, is U.S. \$_____.”

or

3- Statement signed by a person purported to be an authorized representative of Beneficiary stating that: “as of the close of business on [insert date, which is less than 60 days prior to the expiration date of the Letter of Credit] you have provided written

notice to us indicating your election not to permit extension of this Letter of Credit beyond its current expiry date. The amount due to Beneficiary, whether or not a default has occurred, is U.S. \$_____.”

Special Conditions:

- All costs and banking charges pertaining to this Letter of Credit are for the account of Applicant.
- Partial and multiple drawings are permitted.
- Fax of Document 1 or 2 or 3 above is acceptable. Notwithstanding anything to the contrary herein, any drawing hereunder may be requested by transmitting the requisite documents as described above to us by facsimile at _____ or such other number as specified from time to time by us. The facsimile transmittal shall be deemed delivered when received. It is understood that drawings made by facsimile transmittal are deemed to be the operative instrument without the need of originally signed documents.

This Letter of Credit expires on _____ at our counters.

We hereby engage with Beneficiary that upon presentation of a document as specified under and in compliance with the terms of this Letter of Credit, this Letter of Credit will be duly honored in the amount stated in Document 1, 2, or 3 above. If a document is so presented by 1:00 pm on any New York banking day, we will honor the same in full in immediately available New York funds on that day and, if so presented after 1:00 pm on a New York banking day, we will honor the same in full in immediately available New York funds by noon on the following New York banking day.

It is a condition of this Letter of Credit that it shall be deemed automatically extended without an amendment for a one year period beginning on the present expiry date hereof and upon each anniversary of such date, unless at least ninety (90) days prior to any such expiry date we have sent you written notice by regular and registered mail or courier service that we elect not to permit this Letter of Credit to be so extended beyond, and will expire on its then current expiry date. No presentation made under this Letter of Credit after such expiry date will be honored.

We agree that if this Letter of Credit would otherwise expire during, or within 30 days after, an interruption of our business caused by an act of god, riot, civil commotion, insurrection, act of terrorism, war or any other cause beyond our control or by any strike or lockout, then this Letter of Credit shall expire on the 30th day following the day on which we resume our business after the cause of such interruption has been removed or eliminated and any drawing on this Letter of Credit which could properly have been made but for such interruption shall be permitted during such extended period.

This Letter of Credit is subject to the Uniform Customs and Practice for Documentary Credits (2007 Revision) International Chamber of Commerce, Publication No. 600 (“UCP”), except to the extent that the terms hereof are inconsistent with the provisions of the UCP, including but not limited to Articles 14(b) and 36 of the UCP, in which case the terms of this Letter of Credit shall

govern. Matters not covered by the UCP shall be governed and construed in accordance with the laws of the State of California.

[Name of Bank]

Authorized Signature(s)

Exhibit C

FORM OF GUARANTY

GUARANTY

In consideration of San Diego Gas & Electric Company (“Company”) entering into a power purchase agreement with [NAME OF COUNTERPARTY] (hereinafter referred to as “Applicant”), [NAME OF GUARANTOR], a [TYPE OF LEGAL ENTITY i.e. California corporation], (hereinafter referred to as “Guarantor”) agrees with Company as follows:

1. The term “Obligations” shall mean all obligations, liabilities and indebtedness of any kind whatsoever arising in connection with _____ or arising in connection with or under any security agreement or other agreement between the Company and Applicant. The amount of Obligations existing from time to time shall be calculated after giving effect to all contractual netting arrangements between Applicant and the Company.

2. Guarantor unconditionally and irrevocably guarantees to Company the full, prompt and faithful payment and performance when due of each and all of the Obligations.

3. This is a continuing guaranty relating to the Obligations. Guarantor acknowledges that there is a continuing consideration to Guarantor for this Guaranty and therefore Guarantor waives and relinquishes the right to revoke or terminate this Guaranty as provided in California Civil Code Section 2815.

4. Any of the Obligations may be amended, modified, waived, or increased (whether or not beyond any dollar limitation hereunder), further agreements may be entered into between Company and Applicant, Company may provide additional goods or services or credit to Applicant or increase or decrease the dollar value of such goods, services or credit, and further obligations (including, without limitation, the provision or pledging of security to Company for any obligation), indebtedness and liabilities may be entered into or incurred from time to time by Applicant and without further authorization from or notice to Guarantor and no such action shall terminate, release, impair, reduce, discharge, diminish or in any way affect any of the obligations of Guarantor hereunder or any security furnished by Guarantor or give Guarantor any recourse or defense against Company. Company need not inquire into the power of Applicant or the authority of its officers, directors, partners or agents acting or purporting to act in its behalf.

5. With respect to all Obligations, this is a guaranty of payment and performance and not of collection, and Guarantor waives and agrees not to assert or take advantage of:

(a) any right to require Company to proceed against Applicant or any other person or to resort to, proceed against or exhaust any security held by it at any time or to pursue any other remedy in its power before proceeding against any Guarantor;

(b) demand, presentment, protest and notice of any kind including, without limiting the generality of the foregoing, notice of nonperformance, protest, dishonor and acceptance of this Guaranty, notice under Section 9611 of the California Commercial Code, and

notice of the existence, creation or incurring of any new or additional indebtedness or obligation or of any action or non-action on the part of Applicant, Company, a guarantor under this or any other instrument, or creditor of Applicant or any other person whomsoever, in connection with any of the Obligations or any collateral for any of the Obligations or in connection with any of the Obligations; and

(c) any suretyship defenses and suretyship rights of every nature otherwise available under California law and the laws of any other state or jurisdiction, including, without limitation, all defenses and rights arising under Sections 2787 through 2855 of the California Civil Code (the “Suretyship Provisions”) and any successor provisions to those Sections. Without limiting the generality of the foregoing, Guarantor acknowledges his, her or its understanding that the Suretyship Provisions provide various partial or complete defenses to the recovery by Company from Guarantor and/or grant Guarantor rights the enforcement of which could reduce or eliminate entirely Guarantor’s liability hereunder to Company. Among the defenses and rights contained in the Suretyship Provisions are the following: (1) Section 2809 of the Civil Code, which provides, in part, that the obligation of a surety must not be either larger in amount or in other respects more burdensome than that of the principal; (2) Section 2810 of the Civil Code, which provides, in part, that a surety is not liable if for any reason other than the mere personal disability of the principal there is no liability upon the part of the principal at the time of execution of the contract, or the liability of the principal thereafter ceases; (3) Section 2819 of the Civil Code, which provides, in part, that a surety is exonerated if the creditor alters the original obligation of the principal without the consent of the surety; (4) Section 2845 of the Civil Code, which provides, in part, that a surety is exonerated to the extent that the creditor fails to proceed against the principal, or to pursue any other remedy in the creditor’s power which the surety cannot pursue and which would lighten the surety’s burden; (5) Section 2846 of the Civil Code, which provides that a surety may compel his principal to perform the obligation when due; (6) Section 2847 of the Civil Code, which provides, in part, that if a surety satisfies the principal obligation, or any part thereof, the principal is obligated to reimburse the surety for the amounts paid by the surety; (7) Section 2848 of the Civil Code, which provides, in part, that a surety, upon satisfaction of the obligation of the principal is entitled to enforce remedies which the creditor then has against the principal; (8) Section 2849 of the Civil Code, which provides, in part, that a surety is entitled to the benefit of security held by the creditor for the performance of the principal obligation held by the creditor; (9) Section 2850 of the Civil Code, which provides, in part, that whenever the property of a surety is hypothecated with property of the principal, the surety is entitled to have the property of the principal first applied to the discharge of the obligation; and (10) Section 2822 of the Civil Code, which provides, in part, for a right to have the principal designate the portion of any obligation to be satisfied by the surety in the event that the principal provides partial satisfaction of such obligation.

6. All existing and future indebtedness of Applicant to Guarantor (“Intercompany Obligations”) is subordinated to all Obligations hereby guaranteed. All of Guarantor’s right, title and interest in and to the Intercompany Obligations and rights to receive any payments of the Intercompany Obligations are hereby granted and assigned to Company as continuing security for the Obligations hereby guaranteed, and, in the event of any default in the payment of any of the Obligations when due and until the Obligations guaranteed hereby have been paid in full (a) at the Company’s request, Applicant shall forthwith pay to the Company all or any part of such Intercompany Obligations and any capital which Guarantor is entitled to withdraw until all of the

Obligations guaranteed hereby have been paid in full, and (b) Guarantor shall pay to Company immediately any payments of such Intercompany Obligations received by Guarantor.

7. Guarantor agrees to pay all attorneys' fees (including without limitation, reasonably allocated fees of in-house counsel) and all other costs and expenses which may be incurred by Company in the enforcement of this Guaranty against Guarantor.

8. This Guaranty is not assignable by Guarantor without Company's consent. This Guaranty shall inure to the benefit of Company and its successors and assigns, including the assignees of any Obligations, and bind the heirs, executors, administrators, successors and permitted (if any) assigns of Guarantor. This Guaranty is assignable by Company with respect to all or any portion of the Obligations, and when so assigned Guarantor shall be liable to the assignees under this Guaranty without in any manner affecting the liability of Guarantor hereunder with respect to any Obligations retained by Company.

9. This Guaranty shall be governed by and construed in accordance with the laws of the State of California, without reference to its choice of law provisions. Guarantor hereby irrevocably and unconditionally agrees that any legal action or proceeding against Guarantor or any of Guarantor's property with respect to this Guaranty may be brought in the courts of the State of California in the County of San Diego or the courts of the United States in the County of San Diego, as Company may elect, and by executing and delivering this Guaranty Guarantor hereby submits to and accepts with regard to any such action or proceeding for himself, herself or itself and in respect of his, her or its property, generally, irrevocably and unconditionally, the jurisdiction of the above mentioned courts. Guarantor hereby irrevocably appoints the Secretary of State of the State of California as his, her or its agent for service of process in any suit or proceeding if the Guarantor is located outside the State of California at the time of service or cannot reasonably be located by Company. The foregoing, however, shall not limit the right of Company as it may elect to bring any legal action or proceeding or to obtain execution of judgment in any other appropriate jurisdiction including but not limited to any other jurisdiction in which Guarantor or his, her or its property is located.

10. Except as provided in any other written agreement now or at any time hereafter in force between Company and Guarantor, this Guaranty shall constitute the entire agreement of Guarantor with Company with respect to the subject matter hereof and no representation, understanding, promise or condition concerning the subject matter hereof shall be binding upon Company unless expressed herein.

11. All notices, demands, requests and other communications required or permitted hereunder shall be in writing and shall be given personally, by certified or registered mail, postage prepaid, return receipt requested, or by reliable overnight courier to the address of the Company set forth below (or to such new address as Company may designate hereafter in a notice to Guarantor) in the case of a communication to the Company and to the address appearing next to Guarantor's signature on this Guaranty (or to such new address as Guarantor may designate hereafter in a notice to Company) in the case of a communication to Guarantor. Any notice served personally shall be deemed delivered upon receipt, and any notice served by certified or registered mail or by reliable overnight courier shall be deemed delivered on the date of receipt as shown on

the addressee's registry or certification of receipt or on the date receipt is refused as shown on the records or manifest of the U.S. Postal Service or such courier.

San Diego Gas & Electric Company
555 W. Fifth Street
Attn: Major Markets 18A3, Credit Manager
Los Angeles, CA 90013
Fax No.: (213) 244-8316

12. Until all of the Obligations guaranteed hereby have been satisfied in full, Guarantor shall have no right of subrogation or reimbursement from the Applicant which Guarantor may have as a result of any payment by Guarantor under this Guaranty, and waives any right to enforce any remedy which Company now has or may hereafter have against the Applicant as a result of such payment by Guarantor under this Guaranty and waives any right under section 2849 of the California Civil Code and any other benefit of or right to participate in any security now or hereafter held by Company.

13. All amounts payable by Guarantor hereunder shall be paid without set-off or counterclaim and without any deduction or withholding whatsoever unless and to the extent that Guarantor shall be prohibited by law from doing so, in which case Guarantor shall pay to Company such additional amount as shall be necessary to ensure that Company receives the full amount it would have received if no such deduction or withholding had been made.

14. If any portion of this Guaranty is held to be unenforceable by a court of competent jurisdiction, the remainder of this Guaranty shall remain in full force and effect.

IN WITNESS WHEREOF, the undersigned Guarantor has executed this Guaranty on [MONTH AND DAY], [YEAR].

GUARANTOR:
[NAME OF GUARANTOR]

Signature

Title

Printed Name of Person Signing for
Guarantor

Guarantor's Address

City, State, Zip

Guarantor's Phone No.

Exhibit D

OUTAGE NOTIFICATION FORM

OUTAGE NOTIFICATION FORM

This form may be used to comply with CAISO's outage notification requirements for both planned and forced outages. Report outages as soon as possible by submitting form via email to TSched@SempraUtilities.com or via fax at (858) 650-6191.

Request Type:
New Scheduled Maintenance Outage

Previous Notification (if applicable)
Date Sent: mm/dd/yyyy
Time Sent: hh:mm

Generator Name:
Location Code:
Address:

(For times, use 24hr format)
Today's Date: mm/dd/yyyy
Current Time: hh:mm

Contact Name:
Phone Number:
Email:

Outage Start Date: mm/dd/yyyy
Outage Start Time: hh:mm

Alternate Name:
Alternate Number:
Email:

Outage End Date: mm/dd/yyyy
Outage End Time: hh:mm

Outage Duration:
MW Available During Outage:
MW Unavailable During Outage:
RMR Unit? Yes/No

System (Select One)

- Boiler Codes 0010-1999
Generator Codes 4500-4899
Regulatory, Safety, Environmental Codes 9504-9720
Balance of Plant Codes 3110-3999
Pollution Control Equipment Codes 8000-8835
Others Codes 9900-9999
Steam Turbine Codes 4000-4499
External Codes 9000-9040

Cause Code Ranges / Affected Component

(Select One)

Cause Code / Component Problem

(Select One)

Comments

Comments section with multiple lines for text entry.

Exhibit E

PROJECT OPERATING RESTRICTIONS

Operational characteristics of the Project must be equal to or greater than the resource flexibility reflected in the resource Master File, as such term is defined in the CAISO Tariff. Buyer may request that CAISO modify the Master File for the Project to reflect the findings of a CAISO audit of the Project and to ensure that the information provided by Seller is true and accurate. Seller agrees to coordinate with Buyer and any third party Scheduling Coordinator to ensure all information provided to the CAISO regarding the operational and technical constraints in the Master File for the Project are accurate and are actually based on physical characteristics of the resource. The Parties agree to make reasonable modifications to this Exhibit E to modify existing operating restrictions or add additional operating restrictions that may be necessary to address changes in the CAISO Tariff or applicable Law applicable to the Products provided from this Project.

- Nameplate capacity of the Project: ____MW
- Minimum operating capacity: ____MW
- Advance notification required for a Dispatch Notice: ____
- Ramp Rate: ____MW/minute



APPENDIX 7

2019 RPS RENEWABLE ENERGY CREDIT (“REC”) AGREEMENT

**EEI AGREEMENT
REC CONFIRMATION
BETWEEN**
[_____]
AND
SAN DIEGO GAS & ELECTRIC COMPANY

This REC Confirmation ("Confirmation") confirms the renewable energy credit transaction ("Transaction") between [] ("Seller") and San Diego Gas & Electric Company ("Buyer"), each individually a "Party" and together the "Parties", effective as of [], 20__ (the "Confirmation Effective Date"). This Transaction is governed by the EEI Master Power Purchase & Sale Agreement effective as of 4/25/00 (attached hereto as Exhibit A with [TO BE NEGOTIATED: all elections, including credit, confidentiality, and government entity language.](the "EEI Agreement"). The EEI Agreement and this Confirmation shall be collectively referred to herein as the "Agreement." Capitalized terms used but not otherwise defined in this Confirmation have the meanings ascribed to them in the EEI Agreement or in the RPS (as defined below).

**ARTICLE 1
COMMERCIAL TERMS**

Seller: _____		Buyer: San Diego Gas & Electric Company
Contact Information:	Name: ("Seller") _____	Name: San Diego Gas & Electric Company ("Buyer")
	All Notices: Attn: <u>Contract Administration</u> Phone: _____ Facsimile: _____ Duns: _____ Federal Tax ID Number: _____	All Notices: San Diego Gas & Electric Company Street: 8315 Century Park Court City: San Diego, CA Zip: 92123 Attn: Electric & Fuel Procurement Contract Administration Phone: (858) 650-6176 Facsimile: (858) 650-6190 Duns: 006911457 Federal Tax ID Number: 95-1184800
	Invoices: _____ _____ _____ Attn: _____ Phone: _____ Facsimile: _____	Invoices: San Diego Gas & Electric Company 8315 Century Park Ct. San Diego, California 92123-1593 Attn: Energy Accounting Manager Phone: (858) 650-6177 Facsimile: (858) 650-6190

	<p>Scheduling:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Attn: _____</p> <p>Phone: _____</p> <p>Facsimile: _____</p>	<p>Scheduling:</p> <p>San Diego Gas & Electric Company 8315 Century Park Ct. San Diego, California 92123-1593 Attn: Transaction Scheduling Manager Phone: (858) 650-6160 Facsimile: (858) 650-6191</p>
	<p>Payments:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Attn: _____</p> <p>Phone: _____</p> <p>Facsimile: _____</p>	<p>Payments:</p> <p>San Diego Gas & Electric Company PO Box 25110 Santa Ana, CA 92799-5110 Attn: Mail Payments Phone: (619) 696-4521 Facsimile: (619) 696-4899</p>
	<p>Wire Transfer:</p> <p>BNK: _____</p> <p>ABA: _____</p> <p>ACCT: _____</p> <p>Confirmation: _____</p> <p>FAX: _____</p>	<p>Wire Transfer:</p> <p>BNK: Union Bank of California for: San Diego Gas & Electric Company ABA: Routing # 122000496 ACCT: #4430000352 Confirmation: SDG&E, Major Markets FAX:(213) 244-8316</p>
	<p>Credit and Collections:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Attn: _____</p> <p>Phone: _____</p> <p>Facsimile: _____</p> <p>Defaults: With additional Notices of an Event of Default or Potential Event of Default to:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Attn: _____</p> <p>Phone: _____</p> <p>Facsimile: _____</p>	<p>Credit and Collections:</p> <p>San Diego Gas & Electric Company, Major Markets 555 W. Fifth Street, ML 10E3 Los Angeles, CA 90013-1011 Attn.: Major Markets, Credit and Collections Manager Fax No.: (213) 244-8316 Phone: (213) 244-4343</p> <p>Defaults: With additional Notices of an Event of Default or Potential Event of Default to:</p> <p>San Diego Gas & Electric Company 8330 Century Park Ct. San Diego, California 92123 Attn: General Counsel Phone: (858) 650-6141 Facsimile: (858) 650-6106</p>
<p>Product:</p>	<p>All California RPS-eligible RECs associated with the Contract Quantity and Green Attributes from the Project for the applicable Product Vintage. The obligation of Seller to deliver the Product exclusively to Buyer, for each of the applicable Product Vintage years, is as follows:</p> <p>Obligation: (Check One):</p> <p><input type="checkbox"/> Resource Contingent</p> <p><input type="checkbox"/> Firm</p>	
<p>Contract Quantity:</p>	<p>[[] MWh REC per month for all months of the Vintage specified herein.] [All RECs associated with [the entire output of the Project/[__%] of the output from the project] for all months of the Vintage specified herein.]</p>	

		mm/yy	mm/yy	mm/yy	mm/yy	Total																						
	# RECs																											
Contract Price:	[\$[]/MWh REC]																											
Product Vintage:	_____																											
Project:	<p>Name of Facility: Location: EIA Number: CEC ID: WREGIS ID: Certification Date: On-line Date:</p> <p>[For Pooled Facilities (for use only with Firm Product): All Product sold hereunder shall be from one or more of the <i>[type of generation]</i> facilities listed below:</p> <table border="1"> <tr> <td></td> <td>Name of Facility: []</td> <td>Name of Facility: []</td> </tr> <tr> <td>Location:</td> <td></td> <td></td> </tr> <tr> <td>EIA Number:</td> <td></td> <td></td> </tr> <tr> <td>CEC ID:</td> <td></td> <td></td> </tr> <tr> <td>WREGIS ID:</td> <td></td> <td></td> </tr> <tr> <td>Certification Date:</td> <td></td> <td></td> </tr> <tr> <td>On-line Date:</td> <td></td> <td></td> </tr> </table> <p>(collectively, the "Pooled Facilities")</p> <p>The Parties acknowledge and agree that the Project consists of the Pooled Facilities and Seller is permitted to utilize the Pooled Facilities in order to satisfy its obligations hereunder.</p> <p>The Parties further acknowledge and agree that, with respect to Section 3.1(a) of this Confirmation, Product shall solely be limited to the actual Product generated and delivered by the Pooled Facilities used to satisfy the Contract Quantity, and that Buyer is not entitled to any additional Product produced by the Pooled Facilities in the Project above and beyond the Contract Quantity.</p> <p>Each of the Pooled Facilities shall have been certified by the CEC as an RPS-eligible resource and Seller shall have obtained LORS Certification for each of the Pooled Facilities.]</p>								Name of Facility: []	Name of Facility: []	Location:			EIA Number:			CEC ID:			WREGIS ID:			Certification Date:			On-line Date:		
	Name of Facility: []	Name of Facility: []																										
Location:																												
EIA Number:																												
CEC ID:																												
WREGIS ID:																												
Certification Date:																												
On-line Date:																												
Renewable Energy Source:	_____																											

Term:	The Term of this Transaction shall commence upon the Confirmation Effective Date and shall continue until the later of (i) the expiration of the Delivery Period and (ii) the satisfaction of all obligations of the Parties under this Agreement.
Delivery Period:	The Delivery Period of this Transaction shall commence on [], 20[] and shall continue until [delivery by Seller to Buyer of the Product has been completed/[], 20[]].
Delivery Point:	Buyer's WREGIS account: SDG&E Account ID: 39
Conditions:	<p>The commencement of the Delivery Period shall be contingent upon satisfaction of the condition (the "Condition") that the Buyer obtain CPUC Approval of this Confirmation and the requested relief contained in the related advice letter filing.</p> <p>Both Parties shall take all reasonable action to satisfy this Condition.</p> <p>Either Party has the right to terminate this Agreement on notice, which will be effective five (5) Business Days after such notice is given, if the Condition has not been satisfied or waived by Buyer in its sole discretion within [] days after Buyer files its request for CPUC Approval and a notice of termination is given on or before the [] day after Buyer files the request for CPUC Approval.</p> <p>In the event of a termination under this section, neither Party shall be liable for any Termination Payment and Article 5 of the EEI Agreement shall not apply.</p>

ARTICLE 2 DEFINITIONS

"Accepted Electrical Practices" means (a) those practices, methods, applicable codes, and acts engaged in or approved by a significant portion of the electric power industry during the relevant time period, or (b) in the absence of such practices, methods, applicable codes, and acts, any of the practices, methods, and acts which, in exercise of reasonable judgment in light of the facts known at the time a decision is made, could have been expected to accomplish a desired result at reasonable cost consistent with good business practices, reliability, safety, and expedition. Acceptable Electrical Practices are not intended to be limited to the optimum practices, methods, or acts to the exclusion of other, but rather refers to a spectrum of practices, methods, and acts generally accepted, or approved by a significant portion of the electric power industry in the relevant region, during the relevant time period, as described in the immediately preceding sentence.

"CPUC" means the California Public Utilities Commission or its regulatory successor.

"CPUC Approval" means a final and non-appealable order of the CPUC, without conditions or modifications unacceptable to the Parties, or either of them, which contains the following terms:

- (a) Approves this Agreement in its entirety, including payments to be made by the Buyer, subject to CPUC review of the Buyer's administration of the Agreement; and
- (b) Finds that any procurement pursuant to this Agreement is procurement of Renewable Energy Credits that conform to the definition and attributes required for compliance with the California Renewables Portfolio Standard, as set forth in California Public Utilities Commission Decision 08-08-028, and as may be modified by subsequent decision of the California Public Utilities Commission or by subsequent legislation, for purposes of determining Buyer's compliance with any obligation that it may have to procure eligible renewable energy resources pursuant

to the California Renewables Portfolio Standard (Public Utilities Code Section 399.11 *et seq.*), Decision 03-06-071, or other applicable law.

CPUC Approval will be deemed to have occurred on the date that a CPUC decision containing such findings becomes final and non-appealable.

“Delivered” or “Delivery” or “Deliver” means the transfer from Seller to Buyer of the Contract Quantity of the Product in accordance with the California RPS Program, including its regulations and procedures, necessary for recognition by WREGIS of the transfer to Buyer, or Seller’s delivery to Buyer of a WREGIS Certificate.

“Delivery Date” means the date or dates on which the Product is Delivered pursuant to this Confirmation.

“Delivery Term” means “Delivery Period”.

“Firm” means Seller has agreed to sell and Deliver, and Buyer has agreed to buy and receive the Contract Quantity of the Product during the Delivery Period consistent with the terms of this Confirmation without excuse for non-Delivery by Seller except for Force Majeure, and as such, if Seller fails to Deliver the Product for any reason other than for Force Majeure, then Seller shall be the non-performing Party as set forth in Section 4.1 of the EEI Agreement and Buyer shall be the performing Party and shall be entitled to receive from Seller an amount determined pursuant to Section 4.1 of the EEI Agreement.

“Green Attributes” means any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Project, and its avoided emission of pollutants. Green Attributes include but are not limited to Renewable Energy Credits, as well as:

- (1) Any avoided emission of pollutants to the air, soil or water such as sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO) and other pollutants;
- (2) Any avoided emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of altering the Earth’s climate by trapping heat in the atmosphere;¹
- (3) The reporting rights to these avoided emissions, such as Green Tag Reporting Rights.

Green Tag Reporting Rights are the right of a Green Tag Buyer to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party at the Green Tag Buyer’s discretion, and include without limitation those Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program. Green Tags are accumulated on a MWh basis and one Green Tag represents the Green Attributes associated with one (1) MWh of energy. Green Attributes do not include:

- (i) Any energy, capacity, reliability or other power attributes from the Project,
- (ii) Production tax credits associated with the construction or operation of the Project and other financial incentives in the form of credits, reductions, or allowances associated with the Project that are applicable to a state or federal income taxation obligation,
- (iii) Fuel-related subsidies or “tipping fees” that may be paid to Seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits, or
- (iv) Emission reduction credits encumbered or used by the Project for compliance with local, state, or federal operating and/or air quality permits.

¹ Avoided emissions may or may not have any value for GHG compliance purposes. Although avoided emissions are included in the list of Green Attributes, this inclusion does not create any right to use those avoided emissions to comply with any GHG regulatory program.

If the Project is a biomass or biogas facility and Seller receives any tradable Green Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Green Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project.

"LORS Certification" means certification by the CEC of an electric generation facility not located within the state of California that such facility meets California's environmental quality laws, ordinances, regulations, and standards as set forth in the CEC's RPS Eligibility Guidebook.

"Renewable Energy Credit" or "REC" has the meaning set forth in California Public Utilities Code Section 399.12(f) and CPUC Decision 10-03-021, as modified by CPUC Decision 11-01-025 and as may be amended from time to time or as further defined or supplemented by law.

"Renewable Energy Facility" means an electric generation unit or other facility or installation that produces electric energy using a Renewable Energy Source.

"Renewable Energy Source" means an energy source that is not fossil carbon-based, non-renewable or radioactive, and may include solar, wind, biomass, geothermal, landfill gas or wave, tidal and thermal ocean technologies.

"Reporting Year" means a twelve-month compliance period specified under WREGIS.

"Resource Contingent" means that Seller is obligated to Deliver the Product to the extent that the applicable Renewable Energy Source supports energy production by the applicable Renewable Energy Facility, subject to Force Majeure, curtailment ordered directly or indirectly from the CAISO, and the planned or forced outage of the Renewable Energy Facility (which is not the result of Seller's negligence or willful misconduct), ***Insert the following provision if SDG&E is not purchasing 100% of the output:*** and further subject to Seller's obligation to allocate the production among all of its purchasers of Product from the Renewable Energy Facility during the Vintage [as follows: [insert].] If Seller otherwise fails to Deliver the Product, then Seller shall be the non-performing Party as set forth in Section 4.1 of the EEI Agreement and Buyer shall be the performing Party and shall be entitled to receive from Seller an amount determined pursuant to Section 4.1 of the EEI Agreement.

"RPS" means the California Renewables Portfolio Standard Program as codified at California Public Utilities Code Section 399.11 *et seq.*, and any decisions by the CPUC related thereto.

"Vintage" means the calendar year, Reporting Year or other period specified by the Parties or WREGIS in which the Product is created or first valid for use under the RPS.

"WREGIS" means the Western Renewable Energy Generation Information System or its successor organization recognized under applicable laws for the registration or recordation of Delivery, ownership or transfer of RECs.

"WREGIS Certificate" means "Certificate" as defined by WREGIS in the WREGIS Operating Rules.

"WREGIS Operating Rules" means the operating rules and requirements adopted by WREGIS.

ARTICLE 3 CONVEYANCE OF RENEWABLE ATTRIBUTES

3.1 Seller's Conveyance of Contract Quantity of the Product and Green Attributes

(a) Seller hereby provides and conveys all Green Attributes associated with all electricity generation from the Project to Buyer as part of the Product being delivered. Seller represents and warrants that Seller holds the rights to all Green Attributes from the Project, and Seller agrees to convey and hereby conveys all such Green Attributes to Buyer as included in the delivery of the Product from the Project.

(b) For each month of the Delivery Period, Seller shall deliver and convey the Contract Quantity of the Product and the Green Attributes pursuant to this Article 3 within five (5) Business Days after the end of the month in which the WREGIS Certificates for such Contract Quantity of the Product

and the Green Attributes are created by properly transferring such WREGIS Certificates, in accordance with WREGIS Operating Rules, equivalent to Contract Quantity of the Product and the quantity of such Green Attributes, to Buyer into Buyer's WREGIS account such that all right, title and interest in and to such WREGIS Certificates shall transfer from Seller to Buyer.

3.2 WREGIS Registration

During the Term, Seller, at its own cost and expense, shall maintain its registration of the Project with WREGIS and shall use commercially reasonable efforts to ensure that the Contract Quantity of the Product and all Green Attributes transferred to Buyer under this Confirmation count towards Buyer's RPS requirements. The Project shall be certified by the CEC as an RPS-eligible resource and the Contract Quantity of the Product and all Green Attributes transferred by Seller hereunder shall be designated California RPS-compliant with WREGIS. Seller shall, at its sole expense, use WREGIS as required pursuant to the WREGIS Operating Rules to effectuate the transfer of the Contract Quantity of the Product and the Green Attributes to Buyer in accordance with WREGIS reporting protocols and WREGIS Operating Rules.

3.3 Cooperation on Delivery; Review of Records; and Audit Rights

(a) Upon either Party's receipt of notice from WREGIS that the transfer of any portion of the Product pursuant to this Confirmation will not be recognized, that Party will immediately so notify the other Party, providing a copy of such notice, and both Parties will cooperate in taking such actions as are necessary and commercially reasonable to cause such transfer to be recognized and the Delivery Obligation to be met. Each Party agrees to provide copies of its records to the extent reasonably necessary for WREGIS to perform the functions necessary pursuant to this Confirmation and to verify the accuracy of any fact, statement, charge or computation made pursuant hereto if requested by the other Party. If any fact, statement, charge or computation contained any inaccuracy, the necessary adjustments and any resulting payments will be made within 30 calendar days after the notification date, and the payments will bear interest at the Interest Rate from the date the overpayment or underpayment was made until paid.

(b) If Seller is not the owner or operator of the Project, Seller will cooperate with Buyer in any efforts to review the records of the original seller of such Product.

The obligations set forth in this Section shall terminate with respect to this Transaction on the later of 30 days following the last banking date under WREGIS for the Vintage of the Product Delivered, or the third anniversary of the Delivery Date.

(c) In addition to any audit rights that Buyer may have under the EEI Agreement, Seller shall, along with the initial invoice sent to Buyer by Seller under this Confirmation for any calendar year during the Term and at other times as may be requested by Buyer, provide documentation, including, but not limited to, meter data as recorded by a meter approved by the CAISO, sufficient to demonstrate that the Product has been conveyed and delivered, subject to the terms of this Confirmation, to Buyer. [**NOTE: CAISO meters may not be required for certain projects.**]

(d) Seller shall, at its own cost and expense, instruct WREGIS to provide Buyer with a WREGIS produced report of the generation activity from the Project following each month that the Project generates energy that is being used to Deliver the Product. Such information shall be limited to the amount of electric energy generated by the Project during the Term, and shall not include any information or reference to the transfer of WREGIS Certificates from Seller's account to any other entity.

ARTICLE 4 CPUC FILING AND APPROVAL

Buyer shall file with the CPUC the appropriate request for CPUC Approval of this Confirmation. Buyer shall expeditiously seek CPUC Approval, including promptly responding to any requests for information related to the request for CPUC Approval. Seller shall use commercially reasonable efforts to support

Buyer in obtaining CPUC Approval. Buyer has no obligation to seek rehearing or to appeal a CPUC decision which fails to approve this Confirmation or which contains findings required for CPUC Approval with conditions or modifications unacceptable to either Party.

ARTICLE 5 CREDIT AND COLLATERAL

5.1 General Provisions

[The Parties agree that Sections 8.1(b) and 8.2(b) of the EEI Agreement shall not apply to this Confirmation. All implied rights relating to financial assurances arising from Section 2-609 of the Uniform Commercial Code or case law applying similar doctrines, are hereby waived.]**[Credit terms will follow the policy outlined in Section 12 of the RFO.]**

5.2 Seller Collateral Requirements

[Credit terms will follow the policy outlined in the Credit Section of the RFO.]

ARTICLE 6 REPRESENTATIONS, WARRANTIES AND COVENANTS

6.1 Seller's Representation, Warranties, and Covenants

(a) Seller and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement the Renewable Energy Credits transferred to Buyer conform to the definition and attributes required for compliance with the California Renewables Portfolio Standard, as set forth in California Public Utilities Commission Decision 08-08-028, and as may be modified by subsequent decision of the California Public Utilities Commission or by subsequent legislation. To the extent a change in law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in law.

(b) Seller warrants that all necessary steps to allow the Renewable Energy Credits transferred to Buyer to be tracked in the Western Renewable Energy Generation Information System will be taken prior to the first delivery under the contract. To the extent that the WREGIS Operating Rules require such step(s) to be taken after the first delivery date under the contract and, in those cases, Seller warrants that it will take all such steps within the timelines set forth in the WREGIS Operating Rules

For the avoidance of doubt, the term "contract" as used in the immediately preceding paragraph means this Agreement.

(c) In addition to the foregoing, Seller warrants, represents and covenants, as of the Confirmation Effective Date and throughout the Term that:

- (i) Seller has the contractual rights to sell all right, title, and interest in the Product agreed to be delivered hereunder;
- (ii) Seller has not sold the Product to be delivered under this Confirmation to any other person or entity;
- (iii) at the time of Delivery, all rights, title, and interest in the Product to be delivered under this Confirmation are free and clear of all liens, taxes, claims, security interests, or other encumbrances of any kind whatsoever; and

- (iv) Seller warrants that all necessary steps to allow the Renewable Energy Credits transferred to Buyer to be tracked in the Western Renewable Energy Generation Information System will be taken prior to the first delivery under the contract.

6.2 Seller's Representation, Warranties, and Covenants Related to the Project

Seller warrants, represents and covenants that:

- (a) Seller will inspect, maintain, repair and operate the Project in accordance with applicable industry standards, the Project's permit requirements, and Accepted Electrical Practices; and
- (b) Seller will abide by all applicable laws in operating the Project.

ARTICLE 7 PAYMENT

For purposes of Article 6 of the EEI Agreement, Seller shall invoice Buyer for the payment amount calculated as: (a) the Contract Price multiplied by (b) the Contract Quantity of the applicable Product specified herein. Buyer shall remit payment for the full amount on the thirtieth day of the calendar month following the month in which Buyer has verified the transfer and Delivery of the Product.

ARTICLE 8 AMENDMENTS TO EEI AGREEMENT

8.1 Force Majeure

Notwithstanding Section 3.3 of the EEI Agreement to the contrary, Buyer and Seller agree that any failure by Seller to deliver the Product pursuant to this Confirmation due to any Force Majeure shall be deemed to be a failure by Seller to perform such delivery obligation if such failure continues for a period of [ninety (90) days] or more after the time such delivery was due to be made. Otherwise, the terms of Section 3.3 of the EEI Agreement shall apply to this Confirmation. Force Majeure may include the failure or disruption in Deliveries by WREGIS that is not the fault of the Party asserting the Force Majeure.”.

8.2 Governing Law/Waiver of Jury Trial/Venue

For purposes of this Confirmation, Section 10.6, Governing Law, of the EEI Agreement is amended by replacing the Section in its entirety with the following:

“GOVERNING LAW/WAIVER OF JURY TRIAL/VENUE. THIS AGREEMENT AND THE RIGHTS AND DUTIES OF THE PARTIES HEREUNDER SHALL BE GOVERNED BY AND CONSTRUED, ENFORCED AND PERFORMED IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA, WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW. TO THE EXTENT ENFORCEABLE AT SUCH TIME, EACH PARTY WAIVES ITS RESPECTIVE RIGHT TO ANY JURY TRIAL WITH RESPECT TO ANY LITIGATION ARISING UNDER OR IN CONNECTION WITH THIS AGREEMENT. IN THE EVENT OF ANY LITIGATION TO ENFORCE OR INTERPRET ANY TERMS OF THIS AGREEMENT, THE PARTIES AGREE THAT SUCH ACTION WILL BE BROUGHT IN THE SUPERIOR COURT OF THE COUNTY OF SAN DIEGO, CALIFORNIA (OR, IF THE FEDERAL COURTS HAVE EXCLUSIVE JURISDICTION OVER THE SUBJECT MATTER OF THE DISPUTE, IN THE U.S. DISTRICT COURT FOR THE SOUTHERN

DISTRICT OF CALIFORNIA), AND THE PARTIES HEREBY SUBMIT TO THE EXCLUSIVE JURISDICTION OF SUCH COURTS.”

8.3 **Confidentiality** Section 10.11, Confidentiality, of the EEI Agreement is amended by deleting Section 10.11 in its entirety and inserting the following:

“10.11(a) Neither Party shall disclose the non-public terms or conditions of this Agreement or any transaction hereunder to a third party, other than (i) the Party’s Affiliates and its and their officers, directors, employees, lenders, counsel, accountants or advisors who have a need to know such information and have agreed to keep such terms confidential, (ii) for disclosure to the Buyer’s Procurement Review Group, as defined in CPUC Decision (D) 02-08-071, subject to a confidentiality agreement, (iii) to the CPUC under seal for purposes of review, (iv) disclosure of terms specified in and pursuant to Section 10.11(b) of this Agreement; (v) in order to comply with any applicable Law, regulation, or any exchange, control area or CAISO rule, or order issued by a court or entity with competent jurisdiction over the disclosing Party (“Disclosing Party”), other than to those entities set forth in subsection (vi); or (vi) in order to comply with any applicable regulation, rule, or order of the CPUC, CEC, or the Federal Energy Regulatory Commission. In connection with requests made pursuant to clause (v) of this Section 10.11(a) (“Disclosure Order”) each Party shall, to the extent practicable, use reasonable efforts to prevent or limit such disclosure. After using such reasonable efforts, the Disclosing Party shall not be: (i) prohibited from complying with a Disclosure Order or (ii) liable to the other Party for monetary or other damages incurred in connection with the disclosure of the confidential information. Except as provided in the preceding sentence, the Parties shall be entitled to all remedies available at law or in equity to enforce, or seek relief in connection with, this confidentiality obligation.

10.11(b) RPS Confidentiality. Notwithstanding Section 10.11(a) of this Agreement, at any time on or after the date on which the Buyer makes its filing seeking CPUC Approval of this Agreement, either Party shall be permitted to disclose the following terms with respect to this Agreement: Party names, resource type, Delivery Period, Project location, Contract Quantity, and Delivery Point.

10.11(c) **Publicity.** Except as otherwise agreed to in Section 10.11(b) above, no announcement, publicity, advertising, press release, promotional or marketing materials regarding the arrangement contemplated under this Agreement, including the existence hereof, shall be made by either Party without the prior written approval of the other Party which approval shall not be unreasonably withheld or delayed.” Notwithstanding the foregoing, the Parties understand acknowledge and agree that Buyer is a California Public Agency and that certain actions and documents of Buyer are subject to public notice and/or disclosure under applicable laws and regulations, including, but not limited to, the California Public Records Act and/or the California Ralph M. Brown Act, and that Buyer is not obligated to seek prior approval of Seller when Buyer is complying, in its sole and absolute discretion, with such laws and regulations.”

ARTICLE 9 GENERAL PROVISIONS

9.1 **Prevailing Wage**

To the extent applicable, Seller shall comply with the prevailing wage requirements of Public Utilities Code Section 339.14, subdivision (h).

9.2 Facility Identification [If Project consists of Pooled Facilities]

Within five (5) Business Days after the end of each month during the Delivery Period, Seller shall (a) identify the facility(s) from the Pooled Facility that the Product was delivered from for that month; (b) provide estimates of the quantity of Product that will be provided in the next month and the facility(s) from which it will be provided.

**ARTICLE 10
TERMINATION**

Notwithstanding anything to the contrary in the EEI Agreement, including Section 7.1, the Parties shall determine the Termination Payment for this Transaction in accordance with Section 5 of the EEI Agreement. Furthermore, with respect to this Transaction only, the following language is to be added at the end of Section 5.2:

“If Buyer is the Non-Defaulting party and Buyer reasonably expects to incur penalties or fines from the CPUC, the California ISO or any other governmental entity for failure to meet RPS requirements due to Seller’s Event of Default, then Buyer may, in good faith, estimate the amount of those penalties or fines and include this estimate in its determination of the Termination Payment, subject to accounting to Seller when those penalties or fines are finally ascertained. The rights and obligations with respect to determining and paying any Termination Payment and any dispute resolution with respect thereto, shall survive termination of this Transaction and shall continue until after those penalties or fines are finally ascertained.”

**ARTICLE 11
ADDITIONAL EVENTS OF DEFAULT**

It shall constitute an Event of Default as to Seller under Section 5.1 of the EEI Agreement if:

- (a) Seller sells, assigns, or otherwise transfers, or commits to sell, assign, or otherwise transfer, the Product, or any portion thereof, or any benefits derived therefrom, to any party other than the Buyer; or
- (b) Seller or the Project owner fails to maintain CEC Certification or LORS Certification, as applicable, for the Project from the CEC.

ACKNOWLEDGED AND AGREED TO AS OF THE CONFIRMATION EFFECTIVE DATE:

By: _____
Name: _____
Title: _____

By: _____
Name: _____
Title: _____

Exhibit A

[attach EEI]



APPENDIX 8

2019 LEAST-COST BEST-FIT (“LCBF”)

SDG&E's RPS RFO Evaluation Methodology

Below is the assessment methodology and process to be taken by SDG&E and the Independent Evaluator (“IE”) to ensure that the bid selection process is transparent and does not favor any technology or counterparty, and is aligned with SDG&E’s compliance requirements. Although SDG&E has worked diligently with its IE to develop this methodology, this document may require adjustment before issuing of the RFO in order to account for potential market, regulatory, and/or business context changes.

1. Receive all bids prior to the closing date at Noon Pacific Standard Time

- a. Bids will be uploaded to the PowerAdvocate® website for any RPS RFO event, to which the IE will have access.
- b. By Noon on the day after closing, SDG&E will accept bids that, because of technical difficulties, could not be uploaded to the PowerAdvocate® website. The IE makes the call of “no more bids.”

2. After the day after closing, organize bid data

- a. The IE and SDG&E will compare folder structures and file sizes to ensure the bid population of the IE is identical to the bid population to be analyzed by the SDG&E RFO team. To the extent the folders do not match, a reconciliation effort begins until folders match.
- b. The relevant data of all bids is exported into a data table for analysis.

3. Initial Bid Assessment & Completeness Check

- a. A snapshot of the key statistics of the bids is produced for presentation to the PRG. These statistics will not include prices; at this stage of the process, bids have not been

checked for conformance vis-à-vis the RFO requirements. Bids are reviewed for completeness and certain eligibility requirements.

4. Bid Evaluation

a. Determine Congestion Cost: SDG&E will conduct a marginal analysis to determine the difference in locational pricing between the project's point of delivery and SDG&E's default load aggregation point ("DLAP"). SDG&E and the IE will add the relevant Congestion Charges to the Bids once derived or obtained from SDG&E Transmission.

i. In the event that a congestion study is required, SDG&E and the IE will jointly prepare the relevant data needed for the SDG&E Transmission Planning team to calculate Congestion Costs. This process will group together, on a no-name basis, the relevant data of bids (mainly anticipated generation and energy delivery profile) by interconnection points. The SDG&E evaluation team or IE will then forward this information to SDG&E's Transmission Planning team.

ii. Transmission Planning will run studies to determine hourly congestion costs associated with each of the proposed offer groups and provide results to SDG&E's evaluation team and the IE.

b. Determine Transmission Cost: For offers for new projects or projects proposing to increase the size of existing facilities, SDG&E performs an initial analysis of costs for transmission network upgrades or additions that are to be directly reimbursed to the bidder using the relevant transmission network upgrade cost studies submitted with the bids. Offers without transmission upgrade cost studies will be rejected as non-

conforming (unless the offer includes acceptable proof of an existing interconnection arrangement).

- i. The total reimbursable transmission upgrade cost specified in the project's transmission studies will be divided by the number of years in which the utility will reimburse the network transmission costs to the bidder to produce an annual transmission upgrade cost.
 - ii. The present value of the annual transmission upgrade costs will be divided by the present value of the estimated energy deliveries during the contract period to produce the Transmission Cost Charge.
 - iii. SDG&E and the IE will add the relevant Transmission Cost Charges to the Bids once they are determined from the transmission cost studies submitted with the Bids and confirmed by both SDG&E and the IE after mutual agreement.
- c. Calculate the Energy Benefit:** The Energy Benefit is calculated based on forecasted electricity prices for each contract year.
- d. Calculate the Ancillary Services Benefit:** The Ancillary Services ("A/S") Benefit is calculated based on a 2-year historical ratio of A/S prices to energy prices. This ratio is applied to the forecasted electricity price for each A/S type: Spin, Non-Spin, Regulation Up and Regulation Down, for each month to determine the forecasted A/S prices. The forecasted A/S prices are multiplied by the product of the available A/S capacity for each of the A/S types and the expected commitment percentage to determine the A/S Benefit. The expected commitment percentage is a 2-year

historical ratio of A/S capacity offered versus A/S awarded in the CAISO Day-Ahead Market for each of the A/S types.

- e. **Calculate the Capacity Benefit:** Capacity Benefit will be calculated as a percentage of Capacity Value as described below. Capacity Value is based on the estimated Net Qualifying Capacity (“NQC”) ratio for each technology multiplied by SDG&E’s forecasted capacity price. NQC will be calculated using both the existing exceedance methodology and the effective load carrying capacity methodology (“ELCC”).

For projects located in SDG&E’s service territory connecting to transmission or distribution facilities at a point that is electrically west of the ECO or Suncrest substations (“Local Area Projects”) bidding as fully deliverable:¹

$$\text{Capacity Benefit} = 100 \% \text{ of Capacity Value}$$

For projects that are in the greater Imperial Valley (“IV”) area as defined by the CAISO,² meaning those projects connecting to transmission or distribution facilities at a point that is at, or electrically east of, the ECO or Suncrest substations bidding as fully deliverable³ and for projects other than Local Area Projects or IV Area Projects that still qualify for Resource Adequacy pursuant to the CAISO Tariff (“System Area Projects”) bidding as fully deliverable:

$$\text{Capacity Benefit} = \text{Capacity Value} \times 33.59\%$$

¹ Projects connecting at the ECO or Boulevard Substation are considered to be IV Area Projects for these purposes.

² Please refer to the CAISO’s 2014 Local Capacity Technical Analysis, Final Report and Study Results, April 30, 2013.

³ Projects connected to the Imperial Valley, Drew, Ocotillo, ECO or Boulevard Substations are considered to be IV Area Projects for these purposes.

For all energy-only projects, or projects interconnected to non-California Balancing Authorities unable to provide resource adequacy benefits to SDG&E that are specific to the project being bid to SDG&E:

Capacity Benefit = 0

Resource adequacy substitutions will not be granted any non-zero Capacity Benefit projects under SDG&E's RPS bid process.

f. Calculate the Renewable Integration Cost Adder:⁴ The integration cost adder will be calculated using the adopted interim valuation methodology. This methodology calculates two components for the cost of integration:

1. Variable integration cost
2. Fixed integration cost – the cost to SDG&E of procuring additional flexible and non-flexible RA over the contract period. This is a product of (a) and (b) below:
 - a. The monthly increase (or decrease) in flexible capacity requirement due to the increment of wind or solar being considered for the solicitation. Calculated based on the overall system flexible capacity requirement and then applies the percentage contribution from wind and solar.
 - b. The forecasted monthly flexible RA price.

⁴ SDG&E's valuation process does not lead to double-counting of the Integration Cost adder. The creation of SDG&E's price forecasts does not use the Integration Cost adder as an input. The Integration Cost adder is applied in the LCBF process during the NMV calculation, as a separate component that differentiates variable renewable energy resources from each other and other resource types. The calculated energy benefit attributed to renewable resources in the NMV calculation is the same with or without an Integration Cost adder, which is added later in the valuation process.

g. Calculate Net Market Value: For bundled product purchase offers, convert Bid prices into the Net Market Value (NMV) prices as follows:

For bundled products $NMV = (\text{Energy Benefit} + \text{Ancillary Services Benefits} + \text{Capacity Benefits}) - (\text{Levelized Contract Cost} + \text{Transmission Cost} + \text{Congestion Cost}) - (\text{Integration Cost Adder})$

For unbundled RECs: the negative unbundled REC price measured in \$/MWh

5. Develop Shortlist:

SDG&E determines its RPS Compliance Period 3 and 4 Renewable Net Short (“RNS”) as described in its RPS Plan and ranks all the Bids by LCBF price until SDG&E has met its need. The shortlist ranking enables SDG&E to determine which offers are most attractive based on an NMV price.

Offers with deliveries outside the acceptable RPS delivery windows will be considered non-conforming, unless SDG&E’s need assessment has changed materially between the time of issuance of this RPS Plan and the determination of the shortlist.

6. Final Shortlists:

- a. The highest ranking bids are subjected to a detailed conformance screen before being added to the shortlist.⁵ To the extent offers are not conforming, SDG&E will likely discard (given the high number of anticipated offers) the bid.
- b. Qualitative Factors: SDG&E may review the qualitative factors of offers of similar cost,⁶ including: (in no particular order)

⁵ Conformance check will start earlier if possible.

⁶ The term “similar cost” is used to indicate expected indifference by the PRG and CPUC as to the cost of one offer or another. The PRG will have access to SDG&E’s evaluation and the quantitative and qualitative components of those offers prior to SDG&E’s recommendation filing to the CPUC.

- Project Viability⁷
- Local reliability
- Benefits to Disadvantaged Communities: Disadvantaged Communities (DAC) are those identified as Environmental Justice (EJ) communities through California's Environmental Protection Agency's CalEnviroScreen 2.0. Offer documents must include any environmental or economic benefits that the proposed project would provide to EJ communities with high poverty or unemployment rates, and/or high emission levels of toxic air contaminants.
- Resource diversity
- Environmental stewardship
- Rate Impacts
- Workforce Development Assessment: Offer documents must include projected California employment growth during construction and operation, including: number of hires; duration of hire; and indication of whether the bidder has entered into Project Labor Agreements or Maintenance Labor Agreements in California for the proposed project.

c. SDG&E and the IE will then develop the preliminary final shortlists that includes congestion costs and transmission cost study results. Qualitative factors may impact the final shortlist.

⁷ SDG&E considers project viability as a qualitative factor and relies on the Energy Division's Project Viability Calculator. For projects that SDG&E rejects due to low viability scores, SDG&E rescues the projects to affirm the bidder did not unfairly score itself too low. For projects that SDG&E shortlists, SDG&E rescues the project to affirm that the bidder did not unfairly score itself too high. Projects below a certain viability threshold will not be considered for the shortlist.

- d. The preliminary final shortlist is prepared and shared with the PRG during the next viable meeting.
- e. After discussion with the PRG and the Energy Division, SDG&E will determine the final shortlist.



APPENDIX 9

2019 RPS SALES REQUEST FOR PROPOSALS (“RFP”)



SAN DIEGO GAS AND ELECTRIC COMPANY
ELECTRIC AND GAS PROCUREMENT DEPARTMENT
8315 CENTURY PARK COURT, CP21D
SAN DIEGO, CA 92123

2019

**REQUEST FOR PROPOSAL
FOR THE SALE OF
RENEWABLE ENERGY
PRODUCTS**

ISSUED

||

OFFERS DUE

||

RFP WEBSITE

||

EMAIL QUESTIONS/COMMENTS TO
RECSaleRFP@semprautilities.com

TABLE OF CONTENTS

Table of Contents	2
1.0 Scope of Request.....	3
2.0 RFP Website and Communications.....	6
3.0 RFP Schedule.....	8
Pre-Bid Conferences	8
4.0 RFP Response Instructions.....	9
5.0 RPS Program Parameters	10
California RPS Program	10
RPS Eligibility Criteria.....	11
Procurement Review Group.....	11
Independent Evaluator.....	11
6.0 SDG&E Background	12
7.0 Products & Eligibility Requirements	13
8.0 Evaluation Criteria and shortlisting	14
Quantitative Evaluation.....	14
Qualitative Evaluation	14
Adherence to Terms and Conditions.....	14
Bid Conformance Evaluation.....	14
9.0 Rejection of Offers	16
10.0 Confidentiality	17
11.0 Credit Terms and Conditions	19
12.0 CPUC Approval.....	20

1.0 SCOPE OF REQUEST

As authorized by D.XX-XX-XXX, San Diego Gas & Electric Company (“SDG&E”) is issuing this Request for Proposal (“RFP”) seeking proposals from third parties (“Respondents”) who are interested in purchasing products from eligible renewable resources under contract with SDG&E (“Resources”). By responding, Respondents are bound by the terms and conditions of this RFP. Products are derived from Resources that meet the California Renewables Portfolio Standard (“RPS”) eligibility criteria set forth by the California Energy Commission (“CEC”) (See Section 5.0 for additional information on RPS Program Parameters). This RFP solicits bids from financial institutions, energy service providers, utilities, municipal utilities, industrial end users, wholesale power marketers, and any other entity that would have a need to purchase bundled energy and RECs or unbundled RECs.

Table 1 – Acceptable Product Types

Product Types:	Bundled Energy and Unbundled RECs
Minimum Term:	1 month
Maximum Term:	5 years (60 months)
Delivery Window:	Start no earlier than X, End no later than X+60 months ¹
Point of Delivery:	Point of Interconnection of the Project to the CAISO Grid or WREGIS Account
Min Volume:	No Min

A. Definition of Products

SDG&E is required to serve its customers with 33% of retail sales from renewable resources by December 31, 2020, with reasonable progress made in 2017-2019 (“Compliance Period” or “CP” 3). Following CP3, the renewable procurement requirements are: (a) 44% of retail sales by December 31, 2024, with reasonable progress made in 2021-2023 (CP4); (b) 52% of retail sales by December 31, 2027, with reasonable progress made in 2025-2026 (CP5); (c) 60% of retail sales by December 31, 2030, with reasonable progress made in 2028-2029 (CP6); and (d) 60% of retail sales for all subsequent CPs.

SDG&E must meet these goals by procuring renewable resources that meet the requirements of the products outlined in Public Utilities Code 399.16(b). A summary of two eligible product types is provided below:

(Public Utilities Code 399.16(b)(1)(A-B)): Bundled Energy Products

¹ Respondent to propose dates for purchase, start date can be in 2019 or a subsequent year (See “Delivery Period” in RFP WSPP Agreement).

- Must have first point of interconnection (“POI”) with a California Balancing Authority (“CBA”); **or**
- Must have first POI with distribution facilities used to serve end users within a CBA; **or**
- Must be scheduled from the eligible renewable resource (“ERR”) into a CBA without substituting electricity from another source²; **or**
- Have an agreement to dynamically transfer electricity to a CBA.

(Public Utilities Code 399.16(b)(3): Unbundled Renewable Energy Credits (“RECs”))

- ERR products, or any fraction of the electricity generated, **including unbundled RECs**, that do not qualify under 399.16(b)(1-2).

The table below provides a high level overview of product types being offered in this RFP. A more detailed discussion of RFP eligibility requirements is provided in Section 7.0 “Products & Eligibility Requirements.” SDG&E will also consider annual bids for less than the full compliance period, and bids for projects beyond Compliance Period 3.

Table 2 – Product Types by Compliance Period

	Compliance Period 3: January 1, 2017- December 31, 2020	Compliance Period 4: January 1, 2021 Forward
Bundled Energy Product	Volume As Bid	Volume As Bid
Unbundled RECs	Volume As Bid	Volume As Bid

SDG&E is not selling Resource Adequacy (“RA”) with any of these transactions. The final portfolio sale will be shaped as specified by the seller in the bid form. Offered resources may be:

- 1) Re-powered or existing facilities;
- 2) New facilities;
- 3) New facilities that are scheduled to come online during the years specified in this RFP; and/or
- 4) Other facilities.

² If using another source to provide real-time ancillary services required to maintain an hourly or sub-hourly import schedule into a CBA is permitted, but only the fraction generated by the ERR will count as a bundled energy product.

B. Transaction Documents

a) Bundled Energy Products

Respondents bidding on bundled energy products must mark up a Western Systems Power Pool (“WSPP”) Agreement. Any resulting agreement shall be subject to CPUC approval. Additional respondent criteria are described in Section 7.0 “Products & Eligibility Requirements.”

b) Unbundled REC Agreements

Respondents bidding on unbundled RECs products must mark up SDG&E’s WSPP Agreement. Any resulting agreement shall be subject to CPUC approval. Additional eligibility requirements are described in Section 7.0 “Products & Eligibility Requirements.”

2.0 RFP WEBSITE AND COMMUNICATIONS

The RFP and all subsequent revisions and documents are available for download from the RFP Website []. Potential Respondents are responsible for monitoring the RFP Website for subsequent updates, notices and postings.

Offers for the 2018 RPS REC Sale RFP must be submitted through the PowerAdvocate® website. Offerors intending to submit an Offer but who do not yet have an existing account with PowerAdvocate® must first register to create a username/password to receive access to the event. See below for instructions to log in/register:

Logging In

You access the PowerAdvocate platform via a web browser.

To log in

1. Open a web browser and go to www.poweradvocate.com.

PowerAdvocate functions in most web browsers; however, using browsers other than Internet Explorer (IE) version 6 or higher may cause certain functionality to work unexpectedly. Should you encounter problems, PowerAdvocate support may be unable to provide assistance until the issue has been replicated in a supported version of Internet Explorer.

2. Click **Login**.

The Login page appears; you may wish to bookmark it for quick access.

3. Enter your account **User Name** and **Password**.

Both are case-sensitive.

If you do not have an account, go to poweradvocate.com and click the **Registration** link at the top of the page. If you have an account but do not remember your user information, click **Forgot User Name** or **Forgot Password** and they will be emailed to you.

4. Click **Login**.

First-time users must register as a **Supplier** using the instructions above and the Referral information below to access the RFP event:

Referral Information

Are you registering for a specific Event: * Yes
 No, I would simply like to register.

Who referred you to this Event: *

Name of that individual's company: *

Name or description of the Event: *

Users with an existing PowerAdvocate® account may request access to the event by searing open RFPS or by using the link below:

Public Registration Link: [\[\]](#)

All questions or other communications regarding this RFP must be submitted via email to [\[\]](#) and **MUST** cc [\[\]](#). SDG&E will not accept questions or comments in any other form, except at the bidder's Conference. Question submitted after the deadline as specified in the RFP Schedule will only be answered at the sole discretion of SDG&E or the IE. All questions and their answers will be posted publicly on this website anonymously soon after receipt. We cannot respond directly to or confidentially to any questions.

3.0 RFP SCHEDULE

The following schedule and deadlines apply to this RFP. SDG&E reserves the right to revise this schedule at any time and in SDG&E's sole discretion. Respondents are responsible for accessing the RFP Website for updated schedules and possible amendments to the RFP or the solicitation process.

NO.	ITEM	APPROX. DATE
1.	RFP Issued	
2.	Pre-Bid Conference (Webinar)	
3.	DEADLINE TO SUBMIT QUESTIONS Question submittal cut-off date. Answers to all questions will be posted on the website no later than 3 business days following question submittal cutoff date	
4.	CLOSING DATE: Offers must be emailed to and received by the RFP email inbox no later than NOON (Pacific Standard Time).	
6.	SDG&E notifies shortlisted Bidder(s).	
8.	SDG&E submits FINAL list of shortlisted Bidders to Commission and PRG.	
9.	SDG&E issues appreciation notices to unsuccessful Bidders.	
10.	SDG&E commences with Transaction Document negotiations.	
11.	SDG&E submits Tier 1 or Tier 3 Advice Letter(s) with agreements for Commission approval.	

PRE-BID CONFERENCES

SDG&E will host one pre-bid webinar conference on []. While encouraged, participation in the pre-bid conference is NOT mandatory to submit an offer. Please monitor the RFP Website periodically. The venue and time of the pre-bid conference will be posted as soon as arrangements are finalized.

Any party interested in attending this pre-bid conference and/or webinar should email the following information to RECSaleRFP@semprautilities.com. Please limit your participation to two representatives per organization.

- Company name
- Attendees' names, titles and contact information

4.0 RFP RESPONSE INSTRUCTIONS

Forms are available on the RFP Website. The failure to provide the listed information may result in the bids being deemed non-conforming and may disqualify the proposal from further consideration.

Required Forms for Bundled Energy Product Offers:

- 1) Participation Summary and Bid Form
- 2) Credit Application
- 3) Transaction Document – Respondents shall populate and redline the Transaction Agreement.

Required Forms for Unbundled REC Offers:

- 1) Participation Summary and REC Bid Form
- 2) Credit Application
- 3) Model REC Agreement – To be provided by SDG&E at time of shortlisting.

Submissions containing unsolicited materials or submissions of individual Offer documents in file formats other than the formats of the original Offer forms, will be rejected. This RFP is an electronic only Solicitation; Respondents need not submit paper documents nor e-binders.

All offer materials submitted in accordance with the above Response Instructions shall be subject to the confidentiality provisions of Section 10 “Confidentiality” of this RFP.

SDG&E will review and may utilize all information, if any, submitted by a Respondent that is not specifically requested as a part of any forms. During all stages of the RFP process, SDG&E reserves the right to request additional information from individual Respondents or to request any Respondent to submit supplemental materials in fulfillment of the content requirements of this RFP or to meet additional information needs. SDG&E also reserves the unilateral right to waive any technical or format requirements contained in the RFP.

ALL BIDS SHOULD BE VALID AND BINDING FOR THE DURATION OF THE RFP.

SDG&E WILL NOT REIMBURSE RESPONDENTS FOR THEIR EXPENSES UNDER ANY CIRCUMSTANCES, REGARDLESS OF WHETHER THE RFP PROCESS PROCEEDS TO A SUCCESSFUL CONCLUSION OR IS ABANDONED BY SDG&E IN ITS SOLE DISCRETION.

5.0 RPS PROGRAM PARAMETERS

CALIFORNIA RPS PROGRAM

California's Renewable Portfolio Standard ("RPS") Program was adopted in 2002 and is codified at Public Utility Code sec 399.11, *et seq.*³ In adopting the RPS legislation, the Legislature specifically found and declared that increasing California's reliance on renewable energy resources promotes the purpose of and may accomplish each of the following:

- Increase the diversity, reliability, public health and environmental benefits of the energy mix
- Promote stable electricity prices
- Protect public health and improve environmental quality
- Stimulate sustainable economic development and create new employment opportunities
- Reduce reliance on imported fuels
- Ameliorate air quality problems
- Improve public health by reducing the burning of fossil fuels

Current law requires all California load-serving entities ("LSEs") to procure renewable energy in the amount of 33% of retail sales by 2020⁴. Unlike the prior annual RPS program, the 33% regime sets increasing targets for three multi-year Compliance Periods ("CPs"). The targets are set at 20% by the end of CP1 (2011-2013), 25% at the end of CP2 (2014-2016), and 33% by the end of CP3 (2017-2020). Following CP3, the renewable procurement requirements are: (a) 44% of retail sales by December 31, 2024, with reasonable progress made in 2021-2023 ("CP4"); (b) 52% of retail sales by December 31, 2027, with reasonable progress made in 2025-2026 ("CP5"); (c) 60% of retail sales by December 31, 2030, with reasonable progress made in 2028-2029 ("CP6"); and (d) 60% of retail sales for all subsequent CPs.⁵ The CPUC issued its first decision implementing the RPS Program, D.03-06-071 on June 19, 2003. This decision established certain basic RPS Program parameters. The CPUC has subsequently issued several additional RPS-related decisions in rulemaking proceeding R.04-04-026, and successor proceedings R.06-02-012, R.06-05-027, R.08-08-009, R.11-05-005, and R.15-02-020. SDG&E will comply with all CPUC decisions governing RPS procurement. These decisions are publicly available on the CPUC's website at <http://www.cpuc.ca.gov/PUC/energy/Renewables/decisions.htm>.

This RFP is being conducted in compliance with relevant statutory and regulatory directives. Requirements set forth within the law and all directives shall be incorporated herein by reference. A full text of the law and the above-mentioned CPUC decisions can be downloaded from the CPUC website. Respondents are encouraged to review all RPS-related, CPUC issued directives available on the same Internet websites and are responsible for understanding and abiding by all RPS provisions.

³ See, Senate Bill (SB) 1078 (Stats. 2002 Ch. 516), as amended by SB 107, (Stats. 2006, Ch. 464).

⁴ See, Senate Bill (SB) 2 (1x) (Simitian), stats. 2011, ch. 1

⁵ On September 10, 2018, SB 100, which sets new RPS targets for the final year of each CP and changes the 2030 RPS target to 60%, was signed into law by Governor Brown.

RPS ELIGIBILITY CRITERIA

Resources being offered in this solicitation are certifiable as an “eligible renewable resource” by the CEC. Eligibility criteria are set forth by the CEC in its Renewable Portfolio Standard Eligibility Guidebook, which can be downloaded from the CEC's website at <http://www.energy.ca.gov/renewables/documents/index.html>. Respondents are encouraged to review all RPS-related, CEC issued directives available on the same Internet website and are responsible for understanding and abiding by all RPS provisions. All requirements set forth within the CEC's guidebooks and all RPS-related documents shall be incorporated herein by reference.

PROCUREMENT REVIEW GROUP

The Procurement Review Group (“PRG”), a CPUC-endorsed entity, is composed of non-market participants such as ratepayers’ advocacy groups, state energy commissions, power authorities, utility-related labor unions and other non-commercial, energy-related special interest groups. CPUC Decision D.03-06-071 established the role of the PRG. The PRG is charged with overseeing the IOU’s procurement process, reviewing procedural fairness, examining overall procurement prudence and providing feedback during all stages. From RFP language development to offer evaluation to contract negotiation, IOUs brief the PRG on a periodic basis during the entire process.

Respondents are hereby notified that revealing confidential offer information to the PRG is required during PRG briefings in accordance with Section 11 (“Confidentiality”). Each Respondent must clearly identify, as part of its offer, what type of information it considers to be confidential.

INDEPENDENT EVALUATOR

The CPUC requires each IOU to use an Independent Evaluator to separately evaluate and report on the IOU’s entire solicitation, evaluation, and selection process for this solicitation. This will serve as an independent review of SDG&E’s implementation of the RFP process and final selections. The Independent Evaluator shall make periodic presentations regarding its findings to the IOU, and the IOU’s PRG including the CPUC Energy Division staff. The intent is to preserve the independence of the Independent Evaluator by ensuring free and unfettered communication between the Independent Evaluator and the CPUC as well as an open, fair, and transparent process that the Independent Evaluator can affirm.

SDG&E is committed to ensuring an open and transparent solicitation, and to providing a fair, reasonable and competitive process.

6.0 SDG&E BACKGROUND

SDG&E provides electricity to 3.6 million consumers. It delivers the electricity through 1.4 million meters in San Diego County and an adjacent portion of southern Orange County. SDG&E also delivers natural gas through 873,000 meters in San Diego County and transports electricity and natural gas for others.

SDG&E's electric transmission network is comprised of 140 substations with 938 miles of 69-kV, 256 miles of 138-kV, 564 miles of 230-kV, and 249 miles of 500-kV transmission lines. Local ("on system") generating resources include the Carlsbad Energy Center (interconnected into SDG&E's grid at 230 kV), the Palomar Energy Center (interconnected at 230kV), the Otay Mesa Energy Center (interconnected at 230kV), the Pio Pico Energy Center (interconnected at 230kV), and a number of combustion turbine facilities located around the service area (interconnected at 69 kV). The majority of imported resources are received from the east via the Miguel Substation as the delivery point for power flow on the Southwest Power Link and Sunrise, which are SDG&E's 500-kV transmission lines that traverse Arizona into San Diego along the U.S./Mexico border, and from the north via the San Onofre 230-kV switchyard.

The figure below shows a simplified diagram of existing SDG&E's service area, which encompasses an area of 4,100 square-miles and spans 2 counties and 25 communities.



For a map California IOU service territories please visit:

http://www.energy.ca.gov/maps/serviceareas/electric_service_areas.html

7.0 PRODUCTS & ELIGIBILITY REQUIREMENTS

A. Compliance Periods.

In this RFP, SDG&E intends to offer bundled and unbundled RECs for the periods defined in Table 2 of this document. Such products are defined below.

I. Bundled Energy Products

- a. Term: 5 years or less
- b. Pricing: Index Price plus Green Attributes Price \$/MWh
- c. Volume: To be bid in

II. Unbundled REC Products

- a. Term: 5 years or less
- b. Pricing: Bid REC price expressed in \$/MWh
- c. Volume: To be bid in

Eligibility Requirements

1. WREGIS Account; and
2. Credit Capability (See Section 12.0 “Credit Terms and Conditions”).

8.0 EVALUATION CRITERIA AND SHORTLISTING

All incoming Bids will be assessed for conformance to the RFP requirements. Respondents shall conform to the minimum eligibility criteria in order to be considered, please see RFP Response Instructions.

SDG&E will utilize all the information provided in the required forms and narratives to evaluate all Bids. Respondents are responsible for the accuracy of all information provided in response to this RFP.

SDG&E will periodically brief the members of the PRG during the various stages of evaluation. Upon completion of SDG&E's evaluation process, SDG&E will brief the PRG members regarding SDG&E's recommendations for its shortlist. Based upon the comments and recommendations received from the PRG, SDG&E may modify the preliminary list of shortlisted bids.

QUANTITATIVE EVALUATION

SDG&E evaluates and ranks bids based on the pricing, volume and term information provided by the Bidders. SDG&E's analysis evaluates both quantitative and qualitative aspects of each bid to estimate its value to SDG&E's customers and its relative value in comparison to other Offers. SDG&E considers the value of selling Renewable Energy as compared to the potential value of using such Renewable Energy to defer future RPS purchases to meet RPS compliance targets through banking. The quantitative valuation of an Offer takes into account SDG&E's RPS position and any opportunity costs associated with each transaction. A bid that minimizes overall cost to SDG&E's customers and satisfies all volumetric and timing constraints will be selected. The Offer will be shortlisted if it fulfills the quantitative and qualitative criteria and SDG&E decides to move forward to close a transaction.

QUALITATIVE EVALUATION

Qualitative factors and benefits may be used to determine advancement onto the shortlist or evaluate tie-breakers, if any.

ADHERENCE TO TERMS AND CONDITIONS

Respondents may not make material modification to the supplied Transaction Documents. SDG&E will review modifications of any terms and conditions proposed in the Offer and consider the materiality of these changes. Material changes will result in disqualification.

BID CONFORMANCE EVALUATION

In addition to the elements described above, SDG&E may also reject a Bid if:

1. SDG&E uncovers evidence of market manipulation in the bid preparation and Offer process;
2. The Respondent does not provide adequate evidence it meets minimum participation criteria;
3. If there is a question as to whether the bids meet minimum eligibility criteria;

4. If the Respondent cannot fulfill the terms and conditions of the supplied Transaction Documents;
5. If the Respondent is unable to comply with RFP timing and other solicitation requirements; and/or
6. Respondent in SDG&E's sole judgment may not be able to provide or maintain the level of security of the transaction.

9.0 REJECTION OF OFFERS

WHILE SDG&E IS MINDFUL OF THE BENEFITS OF THIS RFP, IT MAKES NO GUARANTEE THAT A CONTRACT AWARD SHALL RESULT FROM THIS RFP EVEN AFTER A BID HAS BEEN SHORTLISTED. IN ADDITION, SDG&E NOTES THAT SHORTLISTING A BID DOES NOT CONSTITUTE SDG&E ACCEPTANCE OF ALL REDLINED CHANGES TO THE REQUIRED TRANSACTION AGREEMENT. SDG&E RESERVES THE RIGHT AT ANY TIME, AT ITS SOLE DISCRETION, TO ABANDON THIS RFP PROCESS, TO CHANGE THE BASIS FOR EVALUATION OF BIDS, TO TERMINATE FURTHER PARTICIPATION IN THIS PROCESS BY ANY PARTY, TO ACCEPT ANY BID OR TO ENTER INTO ANY DEFINITIVE AGREEMENT, TO EVALUATE THE QUALIFICATIONS OF ANY RESPONDENT OR THE TERMS AND CONDITIONS OF ANY BID, OR TO REJECT ANY OR ALL BIDS, ALL WITHOUT NOTICE AND WITHOUT ASSIGNING ANY REASONS AND WITHOUT LIABILITY OF SEMPRA ENERGY, SDG&E, OR ANY OF THEIR SUBSIDIARIES, AFFILIATES, OR REPRESENTATIVES TO ANY RESPONDENT. SDG&E SHALL HAVE NO OBLIGATION TO CONSIDER ANY BID.

10.0 CONFIDENTIALITY

EXCEPT AS STATED BELOW OR WITH THE PRIOR WRITTEN CONSENT OF SDG&E, RESPONDENTS MAY NOT DISCLOSE (OTHER THAN BY ATTENDANCE ALONE AT ANY MEETING TO WHICH MORE THAN ONE RESPONDENT IS INVITED BY SDG&E) TO ANY OTHER RESPONDENT OR POTENTIAL RESPONDENT THEIR PARTICIPATION IN THIS RFP, AND RESPONDENTS MAY NOT DISCLOSE, COLLABORATE ON, OR DISCUSS WITH ANY OTHER RESPONDENT, OFFER STRATEGIES OR THE SUBSTANCE OF OFFERS, INCLUDING WITHOUT LIMITATION THE PRICE OR ANY OTHER TERMS OR CONDITIONS OF ANY INDICATIVE OR FINAL OFFER. RESPONDENT MAY DISCLOSE THEIR PARTICIPATION IN THIS RFP, THEIR OFFER INFORMATION, AND THE NEGOTIATION PROCESS, TO THE CPUC, ITS STAFF, THE PRG AND THE IE UNDER APPROPRIATE CONFIDENTIALITY PROTECTIONS.

SDG&E WILL USE THE HIGHER OF THE SAME STANDARD OF CARE IT USES WITH RESPECT TO ITS OWN PROPRIETARY OR CONFIDENTIAL INFORMATION OR A REASONABLE STANDARD OF CARE TO PREVENT DISCLOSURE OR UNAUTHORIZED USE OF RESPONDENT'S CONFIDENTIAL AND PROPRIETARY INFORMATION THAT IS LABELED AS "PROPRIETARY AND CONFIDENTIAL" ON THE OFFER PAGE ON WHICH THE PROPRIETARY INFORMATION APPEARS ("CONFIDENTIAL INFORMATION"). RESPONDENT SHALL SUMMARIZE ELEMENTS OF THE OFFER(S) IT DEEMS CONFIDENTIAL. THE SUMMARY MUST CLEARLY IDENTIFY WHETHER PRICE, PROJECT NAME, LOCATION, SIZE, TERM OF DELIVERY AND TECHNOLOGY TYPE (EITHER COLLECTIVELY OR INDIVIDUALLY) ARE TO BE CONSIDERED CONFIDENTIAL INFORMATION. CONFIDENTIAL INFORMATION MAY BE MADE AVAILABLE ON A "NEED TO KNOW" BASIS TO SDG&E'S DIRECTORS, OFFICERS, EMPLOYEES, CONTRACTORS, CONSULTANTS, THE INDEPENDENT EVALUATOR, AGENTS AND ADVISORS ("REPRESENTATIVES") FOR THE PURPOSE OF EVALUATING RESPONDENT'S OFFER, BUT SUCH REPRESENTATIVES SHALL BE REQUIRED TO OBSERVE THE SAME CARE WITH RESPECT TO DISCLOSURE AS SDG&E.

NOTWITHSTANDING THE FOREGOING, SDG&E MAY DISCLOSE ANY OF THE CONFIDENTIAL INFORMATION TO COMPLY WITH ANY LAW, RULE, OR REGULATION OR ANY ORDER, DECREE, SUBPOENA OR RULING OR OTHER SIMILAR PROCESS OF ANY COURT, SECURITIES EXCHANGE, CONTROL AREA OPERATOR, GOVERNMENTAL AGENCY OR GOVERNMENTAL OR REGULATORY AUTHORITY AT ANY TIME EVEN IN THE ABSENCE OF A PROTECTIVE ORDER, CONFIDENTIALITY AGREEMENT OR NON-DISCLOSURE AGREEMENT, AS THE CASE MAY BE, WITHOUT NOTIFICATION TO THE RESPONDENT AND WITHOUT LIABILITY OR ANY RESPONSIBILITY OF SDG&E TO THE RESPONDENT.

IT IS EXPRESSLY CONTEMPLATED THAT MATERIALS SUBMITTED BY A RESPONDENT IN CONNECTION WITH THIS RFP WILL BE PROVIDED TO THE CPUC,

ITS STAFF, THE CEC, ITS STAFF, AND THE PRG. SDG&E WILL SEEK CONFIDENTIAL TREATMENT PURSUANT TO CPUC DECISION NUMBER 06-06-066 AND ITS SUCCESSIVE DECISIONS, PUBLIC UTILITIES CODE SECTION 583 AND GENERAL ORDER 66-D OF THE CPUC, WITH RESPECT TO ANY RESPONDENT CONFIDENTIAL INFORMATION SUBMITTED BY SDG&E TO THE CPUC FOR THE PURPOSES OF OBTAINING REGULATORY APPROVAL. SDG&E WILL ALSO SEEK CONFIDENTIALITY PROTECTION FROM THE CEC FOR RESPONDENT'S CONFIDENTIAL INFORMATION AND WILL SEEK CONFIDENTIALITY AND/OR NON-DISCLOSURE AGREEMENTS WITH THE PRG. SDG&E CANNOT, HOWEVER, ENSURE THAT THE CPUC OR CEC WILL AFFORD CONFIDENTIAL TREATMENT TO A RESPONDENT'S CONFIDENTIAL INFORMATION OR THAT CONFIDENTIALITY AGREEMENTS OR ORDERS WILL BE OBTAINED FROM AND/OR HONORED BY THE PRG, CEC, OR CPUC.

SDG&E, ITS REPRESENTATIVES, SEMPra ENERGY, AND ANY OF THEIR SUBSIDIARIES DISCLAIM ANY AND ALL LIABILITY TO A RESPONDENT FOR DAMAGES OF ANY KIND RESULTING FROM DISCLOSURE OF ANY OF RESPONDENT'S INFORMATION.

11.0 CREDIT TERMS AND CONDITIONS

SDG&E has the unilateral right to evaluate and determine the credit-worthiness of the Respondent relative to this RFP. The Respondent is required to complete, execute and submit the RFP credit application as part of its offer. The application requests financial and other relevant information needed to demonstrate creditworthiness. Respondents may download the application from the RFP Website.

Winning Respondents will be required to comply with the Credit and, Collateral and Service Warrantee/Guarantee requirements set forth in the Transaction Agreement. The amount of such requirements will be determined by SDG&E at the time of shortlisting and will be based on product, deliveries, price, and term, among other variables. For clarity, bidders should not include credit costs within their bid price (note: respondents are required to provide information regarding the added cost of collateral per [insert amount] increment to satisfy the initial collateral requirement if SDG&E decides not to extend unsecured credit – this information will be gathered via the credit application form. These costs will be considered as discussed in the quantitative evaluation section within this document).

12.0 CPUC APPROVAL

SDG&E shall submit all signed agreements to the CPUC for approval. CPUC approval that is final and non-appealable will be required as a condition precedent to the effective date of any contract resulting from this RFP. Deliveries under any contract will not start prior to CPUC approval.



APPENDIX 9.A

2019 RPS SALES MODEL PPA (BUNDLED PRODUCT)

**WSPP AGREEMENT
CONFIRMATION
BETWEEN
SAN DIEGO GAS & ELECTRIC COMPANY
AND
[INSERT NAME]**

This confirmation letter ("Confirmation") confirms the transaction ("Transaction") between **San Diego Gas & Electric Company** ("Seller" or "SDG&E" "Party B") and _____ ("Buyer" or "Party A"), each individually a "Party" and together the "Parties", effective as of _____, 2018 (the "Confirmation Effective Date"). This Transaction is governed by the **WSPP Agreement** effective as of June 21, 2018 (the "Master Agreement"), along with any amendments and annexes executed between the Parties thereto (the "Master Agreement"). The Master Agreement and this Confirmation shall be collectively referred to herein as the "Agreement." Capitalized terms used but not otherwise defined in this Confirmation have the meanings ascribed to them in the Master Agreement, Tariff or RPS (as defined below). If any term in this Confirmation conflicts with the Master Agreement, the definitions set forth in this Confirmation shall supersede.

CONTACT INFORMATION

Contact Information:	Name: [INSERT] ("Buyer")	Name: San Diego Gas & Electric Company ("Seller")
	<p align="center">All Notices:</p> <p>Attn: Phone: Facsimile: Duns: Federal Tax ID Number:</p>	<p align="center">All Notices:</p> <p>San Diego Gas & Electric Company 8315 Century Park Court San Diego, CA Zip: 92123 Attn: Electric & Fuel Procurement Contract Administration Phone: (858) 650-5536 Facsimile: (858) 650-6190 Duns: 006911457 Federal Tax ID Number: 95-1184800</p>
	<p align="center">Invoices:</p>	<p align="center">Invoices:</p> <p>San Diego Gas & Electric Company 8315 Century Park Ct. San Diego, California 92123-1593 Attn: Energy Accounting Manager Phone: (858) 650-6177 Facsimile: (858) 650-6190</p>
	<p align="center">Wire Transfer:</p>	<p align="center">Wire Transfer:</p> <p>BNK: Union Bank of California for: San Diego Gas & Electric Company ABA: Routing # 122000496 ACCT: #4430000352 Confirmation: SDG&E, Major Markets FAX:(213) 244-8316</p>

	<p>Credit and Collections:</p> <p>Defaults: With additional Notices of an Event of Default or Potential Event of Default to:</p>	<p>Credit and Collections: San Diego Gas & Electric Company, Major Markets 555 W. Fifth Street, ML 10E3 Los Angeles, CA 90013-1011 Attn.: Major Markets, Credit and Collections Manager Fax No.: (213) 244-8316 Phone: (213) 244-4343</p> <p>Defaults: With additional Notices of an Event of Default or Potential Event of Default to: San Diego Gas & Electric Company 8330 Century Park Ct. San Diego, California 92123 Attn: General Counsel Phone: (858) 650-6141 Facsimile: (858) 650-6106</p>
--	---	--

DRAFT

ARTICLE 1. COMMERCIAL TERMS

The Parties hereby agree that the General Terms and Conditions are incorporated herein, and to the following provisions as provided for in the General Terms and Conditions:

<p>Product:</p>	<p>The “Product” is a Firm Delivery Obligation of electric energy and associated Green Attributes in the Contract Quantity.</p> <p>During the Delivery Period, Seller shall deliver and sell, and Buyer shall purchase and receive, this Product, subject to the terms and conditions of this Confirmation. Seller shall not substitute or purchase any Green Attributes from any generating resource other than the Project for delivery hereunder.</p>
<p>Project:</p>	<p>All Product sold hereunder shall be from one or more of the facilities, each meeting the requirement of 6.1(a) and as listed in Exhibit A, as may be updated from time to time by written notice from Seller to Buyer (collectively, the “Project”). The Project from which Product is sold by Seller to Buyer shall: (a) that have a first point of interconnection with a California balancing authority, (b) have a first point of interconnection with distribution facilities used to serve end users within a California balancing authority area, or (c) are scheduled from the eligible renewable energy resource into a California balancing authority without substituting electricity from another source.</p> <p>The Parties acknowledge and agree that the Project consists of a pool of facilities and that Seller is permitted to utilize one or more of these pooled facilities in order to satisfy its obligations hereunder.</p> <p>The Parties further acknowledge and agree that, with respect to Section 3 of this Confirmation, Product shall solely be limited to the actual Product generated and delivered by the pooled facilities used to satisfy the Contract Quantity, and that Buyer is not entitled to any additional Product produced by the pooled facilities in the Project above and beyond the Contract Quantity.</p>
<p>Contract Capacity</p>	<p>In any hour throughout the Delivery Term, the “Contract Capacity” shall be, in MW, as determined by Seller in accordance with the Contract Quantity section of this Confirmation.</p>
<p>Contract Quantity:</p>	<p>“Contract Quantity” shall be equal to [___] MWhs per calendar month for a total of [___] MWhs during the Delivery Period. In the event Seller does not deliver any of the above specified quantities in a particular calendar month for any reason, except as excused by Uncontrollable Force, the Parties shall agree upon the make-up schedules for any undelivered quantities. If the Parties are unable to come to agreement on such make-up schedule, Buyer shall deliver the quantities to Seller in a reasonable manner and within a reasonable time.</p>
<p>Contract Price:</p>	<p>Index Price plus Green Attributes Price</p>
<p>Index Price:</p>	<p>“Index Price” means the CAISO Integrated Forward Market Day-Ahead price (as such term is defined in the Tariff) for SP15 for each applicable hour as published by the CAISO on the CAISO website; or any successor thereto, unless a substitute publication and/or index is mutually agreed to by the Parties.</p>
<p>Green Attributes Price:</p>	<p>[\$XX.XX] / MWh</p>

<p>Term:</p>	<p>The “Term” of this Transaction shall commence upon the Confirmation Effective Date and shall continue until delivery by Seller to Buyer of the Contract Quantity of the Product has been completed and all other obligations of the Parties under this Agreement have been satisfied, unless terminated earlier due to failure to satisfy the Condition Precedent or as otherwise provided in the Agreement.</p>
<p>Delivery Period:</p>	<p>The “Delivery Period” of this Transaction shall commence on [MM/DD/YYYY] (the “Start Date”), and continue until midnight on [MM/DD/YYYY]; provided that if CPUC Approval is not received by the Start Date above, then the Start Date shall be the first day of the month following the month in which CPUC Approval is received and shall continue until midnight on the last day of the month in which the [#] anniversary of the Start Date, unless extended for make-up deliveries as specified in the Contract Quantity Section or terminated in accordance with the terms herein.</p>
<p>Delivery Point:</p>	<p>The “Delivery Point” is [insert].</p>
<p>Firm Delivery Obligation:</p>	<p>“Firm Delivery Obligation” shall have the following meaning: The obligation to provide the Contract Quantity is a firm obligation in that Seller shall deliver the quantity of the Product from the Project, instantaneously with its receipt of such Product, consistent with the terms of this Confirmation without excuse other than Uncontrollable Force. If a failure by Seller to deliver the quantity from the Project is not excused by Uncontrollable Force, Seller shall make up such failure in accordance with the “Contract Quantity” Section.</p>
<p>Scheduling Obligations:</p>	<p>Seller, or a qualified third party designated by Seller, shall act as Scheduling Coordinator. Buyer hereby authorizes Seller, or its third-party Scheduling Coordinator designee, to deliver the Product, or cause the Product to be delivered, to the CAISO at the Delivery Point.</p>
<p>Condition Precedent:</p>	<p>The commencement of the Delivery Period in accordance with Section 3 below shall be contingent upon the Seller obtaining or waiving CPUC Approval of this Confirmation. Either Party has the right to terminate this Confirmation upon notice in accordance with Section 12 of the WSP Agreement, which will be effective five (5) Business Days after such notice is given, if: (i) the CPUC does not issue a final and non-appealable order approving this Agreement or the requested relief contained in the related advice letter filing, both in their entirety, (ii) the CPUC issues a final and non-appealable order which contains conditions or modifications unacceptable to either Party, or (iii) the final and non-appealable CPUC Approval has not been obtained by Seller, on or before [INSERT DEADLINE DATE].</p> <p>The date on which CPUC Approval of this Confirmation has been obtained or waived, by Seller, in its sole discretion, shall hereinafter be the “Condition Precedent Satisfaction Date.”</p> <p>Any termination made by a Party under this section shall be without liability or obligation to the other Party.</p> <p>Notwithstanding any other provision in this Confirmation, Seller will have no obligation to transfer Green Attributes to Purchaser unless the Condition Precedent Satisfaction Date has occurred.</p>

ARTICLE 2. DEFINITIONS

“Buyer” means “Purchaser”.

“CAISO” means the California Independent System Operator.

“CAISO Energy” means “Energy” as defined in the Tariff.

“Renewables Portfolio Standard” or “RPS” means the renewable energy program and policies established

by California State Senate Bills 1078, X1 - 2 and 350, codified in California Public Utilities Code Sections 399.11 through 399.32 and California Public Resources Code Sections 25740 through 25751, as such provisions are amended or supplemented from time to time.

"Condition Precedent Satisfaction Date" means the date on which CPUC Approval, as fully described in the "Condition Precedent" provision, has been obtained or waived, by Seller, in its sole discretion.

"CPUC" means the California Public Utilities Commission or its regulatory successor.

"CPUC Approval" means a final and non-appealable order of the CPUC, without conditions or modifications unacceptable to the Parties, or either of them, which contains the following terms:

- (a) Approves this Agreement in its entirety, including payments to be made by the Buyer, subject to CPUC review of the Buyer's administration of the Agreement; and
- (b) Finds that any procurement pursuant to this Agreement is procurement from an eligible renewable energy resource for purposes of determining Buyer's compliance with any obligation that it may have to procure eligible renewable energy resources pursuant to the California Renewables Portfolio Standard (Public Utilities Code Section 399.11 *et seq.*), Decision 03-06-071, or other applicable law.

CPUC Approval will be deemed to have occurred on the date that a CPUC decision containing such findings becomes final and non-appealable.

Notwithstanding the foregoing, if a Tier 2 or Tier 3 advice letter process is used to obtain CPUC Approval of this Agreement, CPUC Approval will also be deemed to have occurred on the date that a CPUC Energy Division disposition which contains such findings or deems approved an advice letter requesting such findings becomes final and non-appealable.

"Day-Ahead" has the meaning set forth in the Tariff.

"Delivery Period" means "Delivery Term". "Designated Contract Capacity" means the amount determined by Seller in accordance with the Scheduling Obligations section of this Confirmation.

"Governmental Authority" means any federal, state, local or municipal government, governmental department, commission, board, bureau, agency, or instrumentality, or any judicial, regulatory or administrative body, having jurisdiction as to the matter in question.

"Green Attributes" means any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Project, and its avoided emission of pollutants. Green Attributes include but are not limited to Renewable Energy Credits, as well as:

- (i) any avoided emission of pollutants to the air, soil or water such as sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO) and other pollutants;
- (ii) any avoided emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of altering the Earth's climate by trapping heat in the atmosphere;¹
- (iii) the reporting rights to these avoided emissions, such as Green Tag Reporting Rights. Green Tag Reporting Rights are the right of a Green Tag Purchaser to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party at the Green Tag Purchaser's discretion, and include without limitation those Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program. Green Tags

¹ Avoided emissions may or may not have any value for GHG compliance purposes. Although avoided emissions are included in the list of Green Attributes, this inclusion does not create any right to use those avoided emissions to comply with any GHG regulatory program.

are accumulated on a MWh basis and one Green Tag represents the Green Attributes associated with one (1) MWh of Energy.

Green Attributes do not include;

- (i) any energy, capacity, reliability or other power attributes from the Project,
- (ii) production tax credits associated with the construction or operation of the Project and other financial incentives in the form of credits, reductions, or allowances associated with the Project that are applicable to a state or federal income taxation obligation,
- (iii) fuel-related subsidies or "tipping fees" that may be paid to Seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits, or
- (iv) emission reduction credits encumbered or used by the Project for compliance with local, state, or federal operating and/or air quality permits.

If the Project is a biomass or biogas facility and Seller receives any tradable Green Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Green Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project.

"Integrated Forward Market" has the meaning set forth in the Tariff.

"Tariff" means the tariff and protocol provisions, including any current CAISO-published "Operating Procedures" and "Business Practice Manuals," as amended or supplemented from time to time, of the CAISO.

"Vintage" means the calendar year and month during the Delivery Period in which the WREGIS Certificate is created through the generation of the Product.

"WREGIS" means the Western Renewable Energy Generation Information System or other process recognized under applicable laws for the registration, transfer or ownership of Green Attributes.

"WREGIS Certificate" means "Certificate" as defined by WREGIS in the WREGIS Operating Rules.

"WREGIS Operating Rules" means the operating rules and requirements adopted by WREGIS.

ARTICLE 3. CONVEYANCE OF RENEWABLE ENERGY

3.1. Seller's Conveyance Of Electric Energy

Except as stated in this Section 3.1 and beginning on the first day of the Delivery Period and throughout all applicable months of the Delivery Period, Seller shall deliver and sell, and Buyer shall purchase and receive, the Product, subject to the terms and conditions of this Confirmation. Seller will not be obligated to sell or replace any Product that is not or cannot be delivered as a result of Uncontrollable Force.

Should any electric energy provided by Seller under this Confirmation be determined to have originated from a resource other than the Project, Seller shall remedy such failure in a manner reasonably acceptable to Buyer within a reasonable period of time after written notice of such failure is given to the Seller by the Buyer.

3.2. Seller's Conveyance Of Green Attributes

(a) Green Attributes. Seller hereby provides and conveys all Green Attributes associated with all electricity generation from the Project to Buyer as part of the Product being delivered. Seller represents and warrants that Seller holds the rights to all Green Attributes from the Project, and Seller agrees to convey and hereby conveys all such Green Attributes to Buyer as included in the delivery of the Product from the Project. The Green Attributes are delivered and conveyed upon completion of all actions described in Section 3.2(b) below.

- (b) Green Attributes Initially Credited to Seller's WREGIS Account
- (i) During the Delivery Period, Seller, at its own cost and expense, shall maintain its registration with WREGIS. All Green Attributes transferred by Seller hereunder shall be designated California RPS-compliant with WREGIS. Seller shall, at its sole expense, use WREGIS as required pursuant to the WREGIS Operating Rules to effectuate the transfer of Green Attributes to Buyer in accordance with WREGIS reporting protocols and WREGIS Operating Rules.
 - (ii) For each applicable month of the Delivery Period, Seller shall deliver and convey the Green Attributes associated with the electric energy delivered in Section 3.1 within five (5) Business Days after the end of the month in which the WREGIS Certificates for the Green Attributes are created by properly transferring such WREGIS Certificates, in accordance with the rules and regulations of WREGIS, equivalent to the quantity of Green Attributes to Purchaser into Purchaser's WREGIS account such that all right, title and interest in and to the WREGIS Certificates shall transfer from Seller to Purchaser.
 - (iii) In addition to its other obligations under this Section 3.2, Seller shall convey to Buyer WREGIS Certificates from the Project that are of the same Vintage as the Product that was provided under Section 3.1 of this Confirmation.

ARTICLE 4. PERFORMANCE ASSURANCE; CPUC FILING AND APPROVAL

4.1. Performance Assurance

(a) To secure its obligations under this Agreement, Buyer agrees to deliver to Seller and maintain in full force and effect Performance Assurance in the amount of **[\$[INSERT AMOUNT]]** in the form of cash or a Letter of Credit from the Execution Date and for the Delivery Term of this Agreement.

(b) Buyer hereby grants to Seller a present and continuing first priority security interest in, and lien on (and right of setoff against), and assignment of, all cash collateral and cash equivalent collateral and any and all proceeds resulting therefrom or the liquidation thereof, whether now or hereafter held by, on behalf of, or for the benefit of, Seller, and each Party agrees to take such action as the other Party reasonably requires in order to perfect the Seller's first-priority security interest in, and lien on (and right of setoff against), such collateral and any and all proceeds resulting therefrom or from the liquidation thereof. Upon or any time after the occurrence and during the continuation of an Event of Default by Seller or an Early Termination Date as a result thereof, Seller may do any one or more of the following: (i) exercise any of the rights and remedies of a secured party with respect to all Performance Assurance, including any such rights and remedies under Law then in effect; (ii) exercise its rights of setoff against such collateral and any and all proceeds resulting therefrom or from the liquidation thereof; (iii) draw on any outstanding Letter of Credit issued for its benefit; and (iv) liquidate all or any portion of any Performance Assurance then held by or for the benefit of Seller free from any claim or right of any nature whatsoever of Buyer, including any equity or right of purchase or redemption by Buyer. Seller shall apply the proceeds of the collateral realized upon the exercise of any such rights or remedies to reduce the Buyer's obligations under the Agreement (Buyer remaining liable for any amounts owing to Seller after such application), subject to Seller's obligation to return any surplus proceeds remaining after such obligations are satisfied in full.

(c) Upon an Event of Default of Buyer prior to CPUC Approval, Seller may terminate this Agreement in which case Buyer shall owe Seller liquidated damages in the amount of the Performance Assurance and Seller may retain such Performance Assurances to pay such liquidated damages. Each Party agrees and acknowledges that (a) the actual damages that Buyer would incur due to an Event of Default of Buyer prior to CPUC Approval would be difficult or impossible to predict with certainty, (b) the liquidated damages set forth in this section are a reasonable and appropriate approximation of such damages, and (c) the liquidated damages set forth in this section are the exclusive remedy for an Event of Default of Seller prior to CPUC Approval.

- (d) [NOTE ADDITIONAL CREDIT TERMS TO BE INSERTED DEPENDING ON LENGTH OF

TERM, ETC.]

4.2. CPUC Filing and Approval

Within **[INSERT]** days after the Confirmation Effective Date, Seller shall file with the CPUC the appropriate request for CPUC Approval of this Agreement and possibly other agreements. Seller shall seek CPUC Approval of the filing, including promptly responding to any requests for information related to the request for CPUC Approval. Buyer shall use commercially reasonable efforts to support Seller in obtaining CPUC Approval. Seller and Buyer have no obligation to seek rehearing or to appeal a CPUC decision which fails to approve this Agreement, or which fails to meet the requirements contained in the Condition Precedent section. Notwithstanding anything to the contrary in the Confirmation, Seller shall not have any obligation or liability to Buyer or any third party for any action or inaction of the CPUC or other Governmental Authority affecting the approval or status of this Confirmation as a transaction eligible for portfolio content category, as defined in California Public Utilities Code Section 399.16(b)(1).

ARTICLE 5. COMPENSATION

5.1. Calculation Period

The "Calculation Period" shall be each calendar month, or portion thereof, during the Delivery Period.

5.2. Monthly Cash Settlement Amount

Purchaser shall pay Seller the Monthly Cash Settlement Amount, in arrears, for each Calculation Period in the amount equal to the sum (a) plus (b) minus (c), where:

(a) equals the sum, over all hours of the Calculation Period, of the applicable Index Price for each hour, multiplied by the quantity of CAISO Energy scheduled, delivered and received by Purchaser pursuant to Section 3.1 during that hour; and

(b) equals the product of the Green Attributes Price multiplied by the quantity of Green Attributes (in MWhs) delivered or credited to Purchaser's WREGIS account pursuant to Section 3.2 during the applicable Calculation Period; and

(c) equals the sum, over all hours of the Calculation Period, of the applicable Index Price for each hour, multiplied by the quantity of CAISO Energy scheduled, delivered and received by Purchaser pursuant to Section 3.1 during that hour.

5.3. Payment Date

Notwithstanding any provision to the contrary in Section 9.2 of the Master Agreement, payments of each Monthly Cash Settlement Amount by Purchaser to Seller under this Confirmation shall be due and payable on or before the later of the twentieth (20th) day of the month in which the Purchaser receives from Seller an invoice for the Calculation Period to which the Monthly Cash Settlement Amount pertains, or within ten (10) Business Days, or, if such day is not a Business Day, then on the next Business Day, following receipt of an invoice issued by Seller for the applicable Calculation Period. The invoice shall include a statement detailing the portion of Product transferred to Purchaser during the applicable Calculation Period.

Invoices to Buyer will be sent by Excel/PDF format via email to Buyer's Invoice Contact set forth above in Contact Information, and for purposes of this Confirmation, Buyer shall be deemed to have received an invoice upon the receipt of the Excel/PDF format of the invoice. Payment to Seller shall be made by electronic funds transfer pursuant to the Wire Transfer instructions set forth above in Contract Information.

ARTICLE 6. SELLER'S REPRESENTATIONS, WARRANTIES AND COVENANTS

(a) Seller, and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement that:

- (i) the Project qualifies and is certified by the CEC as an Eligible Renewable Energy Resource ("ERR") as such term is defined in Public Utilities Code Section 399.12 or Section 399.16; and
- (ii) the Project's output delivered to Buyer qualifies under the requirements of the California Renewables Portfolio Standard. To the extent a change in law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in law.
- (iii) Seller and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement the Renewable Energy Credits transferred to Buyer conform to the definition and attributes required for compliance with the California Renewables Portfolio Standard, as set forth in California Public Utilities Commission Decision 08-08-028, and as may be modified by subsequent decision of the California Public Utilities Commission or by subsequent legislation.

To the extent a change in law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in law.

The term "commercially reasonable efforts" as set forth in Sections 6.1 (a) and (b) above shall not require Seller to incur out-of-pocket expenses in excess of **\$(INSERT)** in the aggregate in any one calendar year between the Confirmation Effective Date and the last day of the Term.

(c) Seller warrants that all necessary steps to allow the Renewable Energy Credits transferred to Buyer to be tracked in the Western Renewable Energy Generation Information System will be taken prior to the first delivery under the contract.

For the avoidance of doubt, the term "contract" as used in the immediately preceding paragraph means this Agreement.

(d) In addition to the foregoing, Seller warrants, represents and covenants, as of the Confirmation Effective Date and throughout the Delivery Period, that:

- (i) Seller has the contractual rights to sell all right, title, and interest in the Product agreed to be delivered hereunder;
- (ii) Seller has not sold the Product to be delivered under this Confirmation to any other person or entity; and
- (iii) at the time of delivery, all rights, title, and interest in the Product to be delivered under this Confirmation are free and clear of all liens, taxes, claims, security interests, or other encumbrances of any kind whatsoever.
- (iv) The original upstream third party contract(s), under which Buyer is re-selling, meets the criteria of California Public Utilities Code Section 399.16(b)(1)(A);
- (v) This Agreement transfers only Energy and Green Attributes that have not yet been generated prior to the commencement of the Delivery Period; and
- (vi) The Energy transferred hereunder is transferred to Buyer in real time.

ARTICLE 7. GENERAL PROVISIONS

7.1. Facility Identification

Upon Buyer's reasonable request, within ten (10) Business Days after the end of each month during the Delivery Period, Seller shall provide indicative identification, based on preliminary meter data, of the facility(s) from the pooled facility that the Product was delivered from for that month.

7.2. Governing Law/Venue

THIS AGREEMENT AND THE RIGHTS AND DUTIES OF THE PARTIES HEREUNDER SHALL BE GOVERNED BY AND CONSTRUED, ENFORCED AND PERFORMED IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA, WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW. TO THE EXTENT ENFORCEABLE AT SUCH TIME, EACH PARTY WAIVES ITS RESPECTIVE RIGHT TO ANY JURY TRIAL WITH RESPECT TO ANY LITIGATION ARISING UNDER OR IN CONNECTION WITH THIS AGREEMENT. The Parties hereby irrevocably and unconditionally agrees that any legal action or proceeding with respect to this Agreement shall be brought in the courts of the State of California in the County of San Diego or the courts of the United States in the County of San Diego, and by executing and delivering this Agreement, both Parties hereby submit to and accept irrevocably and unconditionally, the jurisdiction of the above mentioned courts. The foregoing, however, shall not limit the right of either Party as it may elect to bring any legal action or proceeding or to obtain execution of judgment in any other appropriate jurisdiction. **[SDG&E will consider binding arbitration for longer term deals.]**

7.3. SOVEREIGN IMMUNITY

[NOTE TO BIDDERS: insert only if applicable to governmental agencies, etc.] For purposes of this Confirmation only, the WSPP Agreement is amended by adding the following new provision: "Purchaser hereby waives sovereign immunity with regard to disputes relating to this Confirmation."]

7.4. Confidentiality Amendment to WSPP Agreement.

Changes to the WSPP shall apply to this Confirmation only. For purposes of this Confirmation, Section 30 (Confidentiality) of the WSPP Agreement is deleted in its entirety and replaced with the following:

"30.1(a) Neither Party shall disclose the non-public terms or conditions of this Agreement or any transaction hereunder to a third party, other than (i) the Party's Affiliates and its and their officers, directors, employees, lenders, counsel, accountants or advisors who have a need to know such information and have agreed to keep such terms confidential, (ii) for disclosure to the Buyer's Procurement Review Group, as defined in CPUC Decision (D) 02-08-071, subject to a confidentiality agreement, (iii) to the CPUC under seal for purposes of review, (iv) disclosure of terms specified in and pursuant to Section 30.1(b) of this Agreement; (v) in order to comply with any applicable law, regulation, including, but not limited to, the California Public Records Act and/or the California Ralph M Brown Act, or any exchange, control area or CAISO rule, or order issued by a court or entity with competent jurisdiction over the disclosing Party ("Disclosing Party"), other than to those entities set forth in subsection (vi); or (vi) in order to comply with any applicable regulation, rule, or order of the CPUC, CEC, or the Federal Energy Regulatory Commission. In connection with requests made pursuant to clause (v) of this Section 30.1(a) ("Disclosure Order") each Party shall, to the extent practicable, use reasonable efforts within its sole and absolute discretion to pursue rights under such applicable laws, regulations, rules or orders which allow for the prevention or limitation of such disclosure. The Disclosing Party's determination of what efforts might be reasonable shall not be subject to challenge by the other Party. After using such reasonable efforts, the Disclosing Party shall not be: (i) prohibited from complying with a Disclosure Order or (ii) liable to the other Party for monetary or other damages incurred in connection with the disclosure of the confidential information. Except as provided in the preceding sentence, the Parties shall be entitled to all remedies available at law or in equity to enforce, or seek relief in connection with, this confidentiality obligation.

(b) RPS Confidentiality. Notwithstanding Section 30.1(a) of this Agreement, at any time on or after the date on which the Seller makes its filing seeking CPUC Approval for this Agreement, either Party shall be permitted to disclose the following terms with respect to this Agreement: Party names, resource type, Delivery Term, project location, Contract Capacity, Contract Quantity, and Delivery Point.

(c) Publicity. Except as otherwise agreed to in this Section 30.1 above, no announcement, publicity, advertising, press release, promotional or marketing materials regarding the arrangement contemplated under this Agreement, including the existence hereof, shall be made by either Party without the prior written approval of the other Party which approval shall not be unreasonably withheld or delayed." Notwithstanding the foregoing, the Parties understand acknowledge and agree that Buyer is a California Public Agency and

that certain actions and documents of Buyer are subject to public notice and/or disclosure under applicable laws and regulations, including, but not limited to, the California Public Records Act and/or the California Ralph M. Brown Act, and that Buyer is not obligated to seek prior approval of Seller when Buyer is complying, in its sole and absolute discretion, with such laws and regulations.

ACKNOWLEDGED AND AGREED TO AS OF THE CONFIRMATION EFFECTIVE DATE:

SAN DIEGO GAS & ELECTRIC COMPANY [INSERT NAME OF PURCHASER]

BY: _____

BY: _____

NAME: Emily C. Shults

NAME:

TITLE: Vice President - Electric & Fuel
Procurement

TITLE:

_____ APPROVED AS TO LEGAL FORM

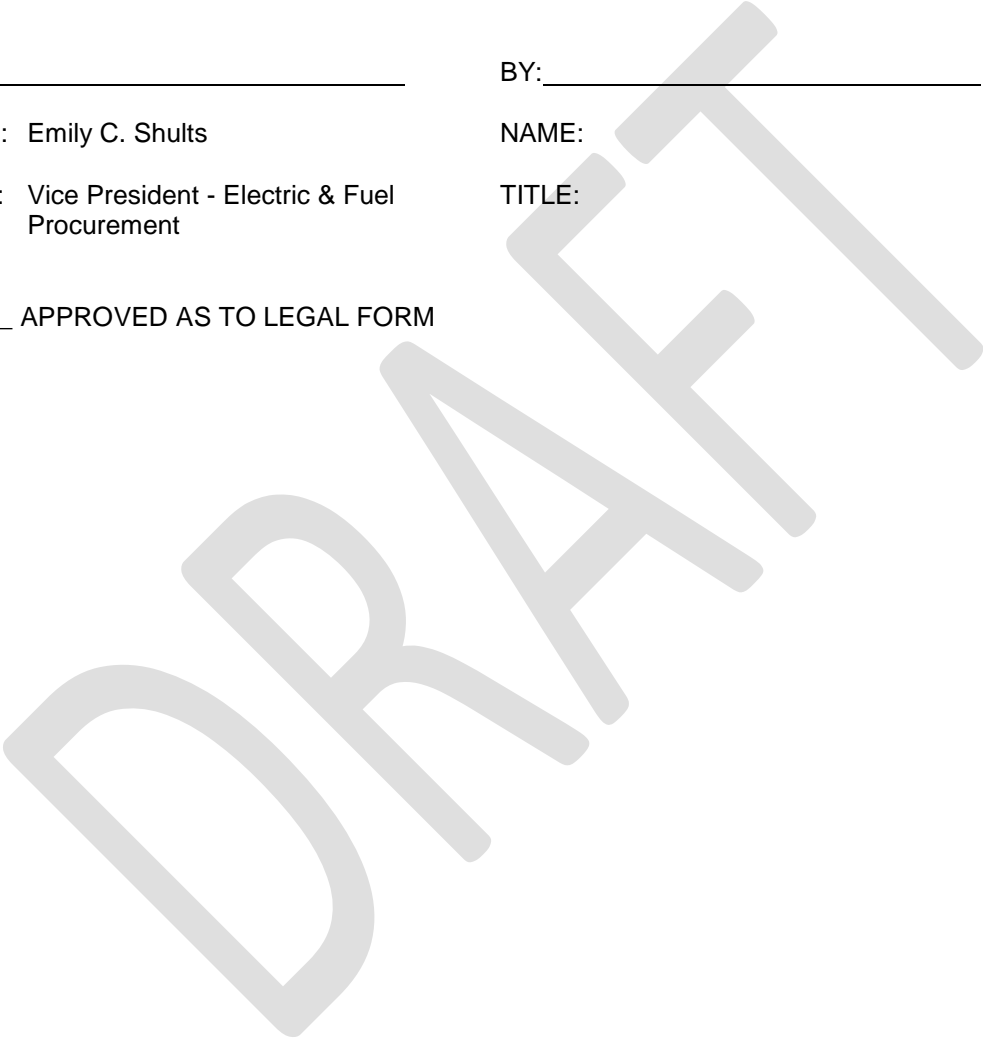


EXHIBIT A

**TO THE CONFIRMATION BETWEEN _____ AND SAN DIEGO GAS & ELECTRIC
COMPANY**

DATED: _____

PROJECT FACILITY(IES)

Name of Facility	Resource	Capacity (MW)	CEC RPS ID	WREGIS GU ID	Host Balancing Authority

DRAFT

EXHIBIT B

FORM OF LETTER OF CREDIT

[DATE]

To: San Diego Gas & Electric Company
555 W. Fifth Street
Mail Code: ML 18A3
Los Angeles, CA 90013

Re: Our Irrevocable Standby Letter of Credit No. _____
In the Amount of US _____

Ladies and Gentlemen:

We hereby open our irrevocable standby Letter of Credit Number _____ in favor of [name of Beneficiary] ("Beneficiary"), by order and for account of [name of Applicant] ("Applicant"), [address of Applicant], available at sight upon demand at our counters, at [location] for an amount of US\$ _____ [amount spelled out and xx/100 U.S. Dollars] against presentation one of the following documents:

1. Statement signed by a person purported to be an authorized representative of Beneficiary stating that: "[name of Applicant] ("Applicant") is in default under the WSPP Agreement and Confirmation between Beneficiary and Applicant dated _____ or under any transaction contemplated thereby (whether by failure to perform or pay any obligation thereunder or by occurrence of a "default", "event of default" or similar term as defined in such agreement, any other agreement between Beneficiary and Applicant, or otherwise). The amount due to Beneficiary is U.S. \$ _____."

or,

2. Statement signed by a person purported to be an authorized representative of Beneficiary stating that: "as of the close of business on [insert date, which is less than 60 days prior to the expiration date of the Letter of Credit] you have provided written notice to us indicating your election not to permit extension of this Letter of Credit beyond its current expiry date. The amount due to Beneficiary, whether or not a default has occurred, is U.S. \$ _____."

Special Conditions:

- All costs and banking charges pertaining to this Letter of Credit are for the account of Applicant.
- Partial and multiple drawings are permitted.
- Fax of Document 1 or 2 above is acceptable. Notwithstanding anything to the contrary herein, any drawing hereunder may be requested by transmitting the requisite documents as described above to us by facsimile at _____ or such other number as specified from time to time by us. The facsimile transmittal shall be deemed delivered when received. It is understood that drawings made by facsimile transmittal are deemed to be the operative instrument without the need of originally signed documents.

This Letter of Credit expires on _____ at our counters.

We hereby engage with Beneficiary that upon presentation of a document as specified under and in compliance with the terms of this Letter of Credit, this Letter of Credit will be duly honored in the amount

stated in Document 1, or 2 above. If a document is so presented by 1:00 pm on any New York banking day, we will honor the same in full in immediately available New York funds on that day and, if so presented after 1:00 pm on a New York banking day, we will honor the same in full in immediately available New York funds by noon on the following New York banking day.

It is a condition of this Letter of Credit that it shall be deemed automatically extended without an amendment for a one-year period beginning on the present expiry date hereof and upon each anniversary of such date, unless at least ninety (90) days prior to any such expiry date we have sent you written notice by regular and registered mail or courier service that we elect not to permit this Letter of Credit to be so extended beyond, and will expire on its then current expiry date. No presentation made under this Letter of Credit after such expiry date will be honored.

We agree that if this Letter of Credit would otherwise expire during, or within 30 days after, an interruption of our business caused by an act of god, riot, civil commotion, insurrection, act of terrorism, war or any other cause beyond our control or by any strike or lockout, then this Letter of Credit shall expire on the 30th day following the day on which we resume our business after the cause of such interruption has been removed or eliminated and any drawing on this Letter of Credit which could properly have been made but for such interruption shall be permitted during such extended period.

This Letter of Credit is subject to the Uniform Customs and Practice for Documentary Credits (2007 Revision) International Chamber of Commerce, Publication No. 600 ("UCP"), except to the extent that the terms hereof are inconsistent with the provisions of the UCP, including but not limited to Articles 14(b) and 36 of the UCP, in which case the terms of this Letter of Credit shall govern. Matters not covered by the UCP shall be governed and construed in accordance with the laws of the State of California.

[Name of Bank]

Authorized Signature(s)



APPENDIX 9.B

2018 RPS SALES MODEL PPA (UNBUNDLED PRODUCT)

Draft: for discussion purposes only.
SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

**WSPP AGREEMENT
CONFIRMATION
BETWEEN
SAN DIEGO GAS & ELECTRIC COMPANY
AND
[INSERT NAME]**

This confirmation letter ("Confirmation") confirms the transaction ("Transaction") between **San Diego Gas & Electric Company** ("Seller" or "SDG&E" "Party B") and _____ ("Buyer" or "Party A"), each individually a "Party" and together the "Parties", effective as of _____, 2018 (the "Confirmation Effective Date"). This Transaction is governed by the **WSPP Agreement** effective as of June 21, 2018 along with any amendments and annexes executed between the Parties thereto (the "Master Agreement"). The Master Agreement and this Confirmation shall be collectively referred to herein as the "Agreement." Capitalized terms used but not otherwise defined in this Confirmation have the meanings ascribed to them in the Master Agreement, Tariff, or in the RPS (as defined below). If any term in this Confirmation conflicts with the Master Agreement, the definitions set forth in this Confirmation shall supersede.

Contact Information:	Name: [INSERT] ("Buyer")	Name: San Diego Gas & Electric Company ("Seller")
	All Notices: Attn: Phone: Facsimile: Duns: Federal Tax ID Number:	All Notices: San Diego Gas & Electric Company 8315 Century Park Court San Diego, CA Zip: 92123 Attn: Electric & Fuel Procurement Contract Administration Phone: (858) 650-5536 Facsimile: (858) 650-6190 Duns: 006911457 Federal Tax ID Number: 95-1184800
	Invoices:	Invoices: San Diego Gas & Electric Company 8315 Century Park Ct. San Diego, California 92123-1593 Attn: Energy Accounting Manager Phone: (858) 650-6177 Facsimile: (858) 650-6190
	Wire Transfer:	Wire Transfer: BNK: Union Bank of California for: San Diego Gas & Electric Company ABA: Routing # 122000496 ACCT: #4430000352 Confirmation: SDG&E, Major Markets FAX:(213) 244-8316

Draft: for discussion purposes only.

SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

	<p>Credit and Collections:</p>	<p>Credit and Collections: San Diego Gas & Electric Company, Major Markets 555 W. Fifth Street, ML 10E3 Los Angeles, CA 90013-1011 Attn.: Major Markets, Credit and Collections Manager Fax No.: (213) 244-8316 Phone: (213) 244-4343</p>
	<p>Defaults: With additional Notices of an Event of Default or Potential Event of Default to:</p>	<p>Defaults: With additional Notices of an Event of Default or Potential Event of Default to: San Diego Gas & Electric Company 8330 Century Park Ct. San Diego, California 92123 Attn: General Counsel Phone: (858) 650-6141 Facsimile: (858) 650-6106</p>

**ARTICLE 1
COMMERCIAL TERMS**

The Parties hereby agree that the General Terms and Conditions are incorporated herein, and to the following provisions as provided for in the General Terms and Conditions:

Product:	<p>The "Product" is a Firm Delivery Obligation of Green Attributes in the Contract Quantity.</p> <p>During the Delivery Term, Seller shall deliver and sell, and Buyer shall purchase and receive, this Product, subject to the terms and conditions of this Confirmation. Seller shall not substitute or purchase any Green Attributes from any generating resource other than the Project for delivery hereunder.</p>
Project:	<p>All Product sold hereunder shall be from one or more of the facilities, each meeting the requirement of 6.1(a) and as listed in Exhibit A, as may be updated from time to time by written notice from Seller to Buyer (collectively, the "Project").</p> <p>The Parties acknowledge and agree that the Project consists of a pool of facilities and that Seller is permitted to utilize one or more of these pooled facilities in order to satisfy its obligations hereunder.</p> <p>The Parties further acknowledge and agree that, with respect to Section 3.2(a) of this Confirmation, Product shall solely be limited to the actual Product generated and delivered by the pooled facilities used to satisfy the Contract Quantity, and that Buyer is not entitled to any additional Product produced by the pooled facilities in the Project above and beyond the Contract Quantity.</p>

SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

Contract Quantity:	“Contract Quantity” shall be equal a total of [___] MWhs during the Delivery Term. In the event Seller does not deliver any of the above specified quantity(ies) for any reason, except as excused by Uncontrollable Force, the Parties shall agree upon the make-up schedules for any undelivered quantities. If the Parties are unable to come to agreement on such make-up schedule, Buyer shall deliver the quantities to Seller in a reasonable manner and within a reasonable time.
Contract Price:	The Green Attributes Price.
Green Attributes Price:	[XXXX] per MWh of Green Attributes (RECs).
Term:	The “Term” of this Transaction shall commence upon the Confirmation Effective Date and shall continue until delivery by Seller to Buyer of the Contract Quantity of the Product has been completed and all other obligations of the Parties under this Agreement have been satisfied, unless terminated earlier due to failure to satisfy the Condition Precedent or as otherwise provided in the Agreement.
Delivery Term:	SDG&E shall deliver the Product to Buyer within five (5) Business days after CPUC Approval, or as otherwise set forth in the “Contract Quantity” Section. For purposes of this Confirmation, the “Delivery Term” shall be the date upon which the Product is delivered.
Firm Delivery Obligation:	“Firm Delivery Obligation” shall have the following meaning: The obligation to provide the Contract Quantity is a firm obligation in that Seller shall deliver the quantity of the Product from the Project consistent with the terms of this Confirmation without excuse other than Uncontrollable Force. If a failure by Seller to deliver the quantity from the Project is not excused by Uncontrollable Force, Seller shall make up such failure in accordance with the “Contract Quantity” Section.
Delivery	Buyer hereby authorizes Seller, or its third party designee, to deliver the Product, or cause the Product to be delivered into Buyer’s WREGIS account in the quantity(ies) and timeline(s) set forth in the “Contract Quantity” Section, .
Condition Precedent:	Seller’s obligation to sell and deliver the Product shall be contingent upon the Seller obtaining or waiving CPUC Approval of this Confirmation. Either Party has the right to terminate this Confirmation upon notice in accordance with Section 12 of the WSP Agreement, which will be effective five (5) Business Days after such notice is given, if: (i) the CPUC does not issue a final and non-appealable order approving this Agreement or the requested relief contained in the related advice letter filing, both in their entirety, (ii) the CPUC issues a final and non-appealable order which contains conditions or modifications unacceptable to either Party, or (iii) the final and non-appealable approval by the CPUC has not been obtained by Seller, on or before [INSERT DEADLINE DATE] . The date on which approval of the CPUC of this Confirmation has been obtained or waived, by Seller, in its sole discretion, shall hereinafter be the “Condition Precedent Satisfaction Date.”

SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

	<p>Any termination made by a Party under this section shall be without liability or obligation to the other Party.</p> <p>Notwithstanding any other provision in this Confirmation, Seller will have no obligation to transfer Green Attributes to Purchaser unless the Condition Precedent Satisfaction Date has occurred.</p>
--	---

ARTICLE 2 DEFINITIONS

"Buyer" means "Purchaser".

"CAISO" means the California Independent System Operator.

"Condition Precedent Satisfaction Date" means the date on which CPUC Approval, as fully described in the "Condition Precedent" provision, has been obtained or waived, by Seller, in its sole discretion.

"CPUC" means the California Public Utilities Commission or its regulatory successor.

"CPUC Approval" means a final and non-appealable order of the CPUC, without conditions or modifications unacceptable to the Parties, or either of them, which contains the following terms:

- (a) Approves this Agreement in its entirety, including payments to be made by the Buyer, subject to CPUC review of the Buyer's administration of the Agreement; and
- (b) Finds that any procurement pursuant to this Agreement is procurement from an eligible renewable energy resource for purposes of determining Buyer's compliance with any obligation that it may have to procure eligible renewable energy resources pursuant to the California Renewables Portfolio Standard (Public Utilities Code Section 399.11 *et seq.*), Decision 03-06-071, or other applicable law.

CPUC Approval will be deemed to have occurred on the date that a CPUC decision containing such findings becomes final and non-appealable.

Notwithstanding the foregoing, if a Tier 2 or Tier 3 advice letter process is used to obtain CPUC Approval of this Agreement, CPUC Approval will also be deemed to have occurred on the date that a CPUC Energy Division disposition which contains such findings or deems approved an advice letter requesting such findings becomes final and non-appealable.

"Green Attributes" means any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Project, and its avoided emission of pollutants. Green Attributes include but are not limited to Renewable Energy Credits, as well as:

- (1) any avoided emission of pollutants to the air, soil or water such as sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO) and other pollutants;
- (2) any avoided emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of altering the Earth's climate by trapping heat in the atmosphere;¹

¹ Avoided emissions may or may not have any value for GHG compliance purposes. Although

SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

- (3) the reporting rights to these avoided emissions, such as Green Tag Reporting Rights. Green Tag Reporting Rights are the right of a Green Tag Purchaser to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party at the Green Tag Purchaser's discretion, and include without limitation those Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program. Green Tags are accumulated on a MWh basis and one Green Tag represents the Green Attributes associated with one (1) MWh of Energy.

Green Attributes do not include;

- (i) any energy, capacity, reliability or other power attributes from the Project,
- (ii) production tax credits associated with the construction or operation of the Project and other financial incentives in the form of credits, reductions, or allowances associated with the Project that are applicable to a state or federal income taxation obligation,
- (iii) fuel-related subsidies or "tipping fees" that may be paid to Seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits, or
- (iv) emission reduction credits encumbered or used by the Project for compliance with local, state, or federal operating and/or air quality permits.

If the Project is a biomass or biogas facility and Seller receives any tradable Green Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Green Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project.

"Governmental Authority" means any federal, state, local or municipal government, governmental department, commission, board, bureau, agency, or instrumentality, or any judicial, regulatory or administrative body, having jurisdiction as to the matter in question.

"Tariff" means the tariff and protocol provisions, including any current CAISO-published "Operating Procedures" and "Business Practice Manuals," as amended or supplemented from time to time, of the CAISO.

"Vintage" means the calendar year and month in which the underlying energy for the Product is generated.

"WREGIS" means the Western Renewable Energy Generation Information System or other process recognized under applicable laws for the registration, transfer or ownership of Green Attributes.

"WREGIS Certificate" means "Certificate" as defined by WREGIS in the WREGIS Operating Rules.

"WREGIS Operating Rules" means the operating rules and requirements adopted by WREGIS.

avoided emissions are included in the list of Green Attributes, this inclusion does not create any right to use those avoided emissions to comply with any GHG regulatory program.

Draft: for discussion purposes only.

SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

ARTICLE 3 CONVEYANCE OF RENEWABLE ENERGY

3.1 Seller's Conveyance Of Green Attributes

Except as stated in this Section 3.1, Seller shall deliver and sell, and Buyer shall purchase and receive, the Product, subject to the terms and conditions of this Confirmation. Seller will not be obligated to sell or replace any Product that is not or cannot be delivered as a result of Uncontrollable Force.

Should any Green Attributes provided by Seller under this Confirmation be determined to have originated from a resource other than the Project, Seller shall remedy such failure in a manner reasonably acceptable to Buyer within a reasonable period of time after written notice of such failure is given to the Seller by the Buyer.

3.2 Seller's Conveyance Of Green Attributes

(a) The Green Attributes are delivered and conveyed upon completion of all actions described in Section 3.2(b) below.

(b) Green Attributes Initially Credited to Seller's WREGIS Account

During the Delivery Period, Seller, at its own cost and expense, shall maintain its registration with WREGIS. All Green Attributes transferred by Seller hereunder shall be designated California RPS-compliant with WREGIS. Seller shall, at its sole expense, use WREGIS as required pursuant to the WREGIS Operating Rules to effectuate the transfer of Green Attributes to Buyer in accordance with WREGIS reporting protocols and WREGIS Operating Rules.

ARTICLE 4 PERFORMANCE ASSURANCE; CPUC FILING AND APPROVAL

4.1 Performance Assurance

- (a) To secure its obligations under this Agreement, Buyer agrees to deliver to Seller and maintain in full force and effect Performance Assurance in the amount of ***[\$INSERT AMOUNT]*** in the form of cash or a Letter of Credit from the Execution Date and for the Delivery Term of this Agreement.
- (b) Buyer hereby grants to Seller a present and continuing first priority security interest in, and lien on (and right of setoff against), and assignment of, all cash collateral and cash equivalent collateral and any and all proceeds resulting therefrom or the liquidation thereof, whether now or hereafter held by, on behalf of, or for the benefit of, Seller, and each Party agrees to take such action as the other Party reasonably requires in order to perfect the Seller's first-priority security interest in, and lien on (and right of setoff against), such collateral and any and all proceeds resulting therefrom or from the liquidation thereof. Upon or any time after the occurrence and during the continuation of an Event of Default by Seller or an Early Termination Date as a result thereof, Seller may do any one or more of the following: (i) exercise any of the rights and remedies of a secured party with respect to all Performance Assurance, including any such rights and remedies under Law then in effect; (ii) exercise its rights of setoff against such collateral and any and all proceeds resulting therefrom or from the liquidation thereof; (iii) draw on any outstanding Letter of Credit issued for its benefit; and (iv) liquidate all or any portion of any Performance Assurance then held by or for the benefit of Seller free from

SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

any claim or right of any nature whatsoever of Buyer, including any equity or right of purchase or redemption by Buyer. Seller shall apply the proceeds of the collateral realized upon the exercise of any such rights or remedies to reduce the Buyer's obligations under the Agreement (Buyer remaining liable for any amounts owing to Seller after such application), subject to Seller's obligation to return any surplus proceeds remaining after such obligations are satisfied in full.

- (c) Upon an Event of Default of Buyer prior to CPUC Approval, Seller may terminate this Agreement in which case Buyer shall owe Seller liquidated damages in the amount of the Performance Assurance and Seller may retain such Performance Assurances to pay such liquidated damages. Each Party agrees and acknowledges that (a) the actual damages that Buyer would incur due to an Event of Default of Buyer prior to CPUC Approval would be difficult or impossible to predict with certainty, (b) the liquidated damages set forth in this section are a reasonable and appropriate approximation of such damages, and (c) the liquidated damages set forth in this section are the exclusive remedy for an Event of Default of Seller prior to CPUC Approval.

[INSERT additional credit terms depending on term, etc.]

4.2 CPUC Filing and Approval

Within [INSERT] days after the Confirmation Effective Date, Seller shall file with the CPUC the appropriate request for CPUC Approval of this Agreement and possibly other agreements. Seller shall seek CPUC Approval of the filing, including promptly responding to any requests for information related to the request for CPUC Approval. Buyer shall use commercially reasonable efforts to support Seller in obtaining CPUC Approval. Seller and Buyer have no obligation to seek rehearing or to appeal a CPUC decision which fails to approve this Agreement, or which fails to meet the requirements contained in the Condition Precedent section. Notwithstanding anything to the contrary in the Confirmation, Seller shall not have any obligation or liability to Buyer or any third party for any action or inaction of the CPUC or other Governmental Authority affecting the approval or status of this Confirmation as a transaction eligible for content category, as defined in California Public Utilities Code Section 399.16(b)(1).

**ARTICLE 5
COMPENSATION**

5.1 Monthly Cash Settlement Amount

Purchaser shall pay Seller in the amount equal to (the product of \$[INSERT PRICE] multiplied by the quantity of Green Attributes (in MWhs) delivered or credited to Purchaser's WREGIS account pursuant to Section 3.2 during the applicable Calculation Period.

5.2 Payment Date

Seller shall issue an invoice to Buyer promptly after delivery of the Product into Buyer's WREGIS account, as set forth in the Contract Quantity Section and the Condition Precedent Section. Such invoice shall set forth in reasonable detail the quantity of Green Attributes transferred, the price, and the total payment owed to Buyer. Notwithstanding any provision to the contrary in Section 9.2 of the Master Agreement, payment shall be due and payable shall be made to Seller within ten (10) Business Days, or, if such day is not a Business Day, then on the next Business Day, following receipt of an invoice issued by Seller. The invoice shall include a statement detailing the quantity of Product transferred to Purchaser.

Draft: for discussion purposes only.
SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

Invoices to Buyer will be sent by Excel/PDF format via email to: **[TO BE INSERTED]**

Attn:
Email:
Phone:
Facsimile:

For purposes of this Confirmation, Buyer shall be deemed to have received an invoice upon the receipt of the Excel/PDF format of the invoice.

Payment to Seller shall be made by electronic funds transfer pursuant to the following:

BNK: Union Bank of California
For: San Diego Gas & Electric Company
ABA: Routing # 122000496
ACCT: #4430000352
Confirmation: SDG&E, Major Markets
FAX :(213) 244-8316

With a copy to:

San Diego Gas & Electric Company
8315 Century Park Ct.
San Diego, California 92123-1593
Attn: Energy Accounting Manager
Phone: (858) 650-6177
Facsimile: (858) 650-6190

ARTICLE 6

SELLER'S REPRESENTATIONS, WARRANTIES AND COVENANTS RELATED TO GREEN ATTRIBUTES

6.1 Seller's Representation, Warranties, and Covenants Related to Green Attributes

- (a) Seller, and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement that:
- (i) the Project qualifies and is certified by the CEC as an Eligible Renewable Energy Resource ("ERR") as such term is defined in Public Utilities Code Section 399.12 or Section 399.16; and
 - (ii) To the extent the Product includes the Project's output, the Project's output delivered to Buyer qualifies under the requirements of the California Renewables Portfolio Standard. To the extent a change in law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in law.

(b) Seller and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement the Renewable Energy Credits transferred to Buyer conform to the definition and attributes required for compliance with the California Renewables Portfolio Standard, as set forth in California Public Utilities Commission Decision 08-08-028, and as may be modified by subsequent decision of the California Public Utilities Commission or by subsequent legislation.

To the extent a change in law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of

Draft: for discussion purposes only.

SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

Default if Seller has used commercially reasonable efforts to comply with such change in law.

The term “commercially reasonable efforts” as set forth in Sections 6.1 (a) and (b) above shall not require Seller to incur out-of-pocket expenses in excess of \$[INSERT] in the aggregate in any one calendar year between the Confirmation Effective Date and the last day of the Term.

(c) Seller warrants that all necessary steps to allow the Renewable Energy Credits transferred to Buyer to be tracked in the Western Renewable Energy Generation Information System will be taken prior to the first delivery under the contract.

For the avoidance of doubt, the term “contract” as used in the immediately preceding paragraph means this Agreement.

(d) In addition to the foregoing, Seller warrants, represents and covenants, as of the Confirmation Effective Date and throughout the Delivery Period, that:

- (i) Seller has the contractual rights to sell all right, title, and interest in the Product agreed to be delivered hereunder;
- (ii) Seller has not sold the Product to be delivered under this Confirmation to any other person or entity; and
- (iii) at the time of delivery, all rights, title, and interest in the Product to be delivered under this Confirmation are free and clear of all liens, taxes, claims, security interests, or other encumbrances of any kind whatsoever.

ARTICLE 7 GENERAL PROVISIONS

7.1 {Reserved}

ARTICLE 8 GOVERNING LAW

8.1 **Governing Law/Venue**

THIS AGREEMENT AND THE RIGHTS AND DUTIES OF THE PARTIES HEREUNDER SHALL BE GOVERNED BY AND CONSTRUED, ENFORCED AND PERFORMED IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA, WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW. TO THE EXTENT ENFORCEABLE AT SUCH TIME, EACH PARTY WAIVES ITS RESPECTIVE RIGHT TO ANY JURY TRIAL WITH RESPECT TO ANY LITIGATION ARISING UNDER OR IN CONNECTION WITH THIS AGREEMENT. The Parties hereby irrevocably and unconditionally agrees that any legal action or proceeding with respect to this Agreement shall be brought in the courts of the State of California in the County of San Diego or the courts of the United States in the County of San Diego, and by executing and delivering this Agreement, both Parties hereby submit to and accept irrevocably and unconditionally, the jurisdiction of the above mentioned courts. The foregoing, however, shall not limit the right of either Party as it may elect to bring any legal action or proceeding or to obtain execution of judgment in any other appropriate jurisdiction.

Draft: for discussion purposes only.

SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

ARTICLE 9 SOVEREIGN IMMUNITY

9.1 Sovereign Immunity

[NOTE TO BIDDERS: insert only if applicable to governmental agencies, etc.] For purposes of this Confirmation only, the WSPP Agreement is amended by adding the following new provision: “Purchaser hereby waives sovereign immunity with regard to disputes relating to this Confirmation.”

ARTICLE 10 CONFIDENTIALITY

10.1 Confidentiality Amendment to WSPP Agreement. Changes to the WSPP shall apply to this Confirmation only. For purposes of this Confirmation, Section 30 (Confidentiality) of the WSPP Agreement is deleted in its entirety and replaced with the following:

“30.1(a) Neither Party shall disclose the non-public terms or conditions of this Agreement or any transaction hereunder to a third party, other than (i) the Party’s Affiliates and its and their officers, directors, employees, lenders, counsel, accountants or advisors who have a need to know such information and have agreed to keep such terms confidential, (ii) for disclosure to the Buyer’s Procurement Review Group, as defined in CPUC Decision (D) 02-08-071, subject to a confidentiality agreement, (iii) to the CPUC under seal for purposes of review, (iv) disclosure of terms specified in and pursuant to Section 30.1(b) of this Agreement; (v) in order to comply with any applicable law, regulation, including, but not limited to, the California Public Records Act and/or the California Ralph M Brown Act, or any exchange, control area or CAISO rule, or order issued by a court or entity with competent jurisdiction over the disclosing Party (“Disclosing Party”), other than to those entities set forth in subsection (vi); or (vi) in order to comply with any applicable regulation, rule, or order of the CPUC, CEC, or the Federal Energy Regulatory Commission. In connection with requests made pursuant to clause (v) of this Section 30.1(a) (“Disclosure Order”) each Party shall, to the extent practicable, use reasonable efforts within its sole and absolute discretion to pursue rights under such applicable laws, regulations, rules or orders which allow for the prevention or limitation of such disclosure. The Disclosing Party’s determination of what efforts might be reasonable shall not be subject to challenge by the other Party. After using such reasonable efforts, the Disclosing Party shall not be: (i) prohibited from complying with a Disclosure Order or (ii) liable to the other Party for monetary or other damages incurred in connection with the disclosure of the confidential information. Except as provided in the preceding sentence, the Parties shall be entitled to all remedies available at law or in equity to enforce, or seek relief in connection with, this confidentiality obligation.

(b) RPS Confidentiality. Notwithstanding Section 30.1(a) of this Agreement, at any time on or after the date on which the Seller makes its filing seeking CPUC approval for this Agreement, either Party shall be permitted to disclose the following terms with respect to this Agreement: Party names, resource type, Delivery Term, project location, Contract Capacity, Contract Quantity, and Delivery Point.

(c) Publicity. Except as otherwise agreed to in this Section 30.1 above, no announcement, publicity, advertising, press release, promotional or marketing materials regarding the arrangement contemplated under this Agreement, including the existence hereof, shall be made by either Party without the prior written approval of the other Party which approval shall not be unreasonably withheld or delayed.” Notwithstanding the foregoing, the Parties understand acknowledge and agree that Buyer is a California Public Agency and that certain actions and documents of Buyer are subject to public notice and/or disclosure under applicable laws and regulations, including, but not limited to, the California Public Records Act and/or the California Ralph M. Brown Act, and that Buyer is not obligated to seek prior approval of Seller when Buyer is complying, in its sole and

Draft: for discussion purposes only.
SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

absolute discretion, with such laws and regulations.

ACKNOWLEDGED AND AGREED TO AS OF THE CONFIRMATION EFFECTIVE DATE:

SAN DIEGO GAS & ELECTRIC COMPANY

[INSERT NAME OF PURCHASER]

BY: _____

BY: _____

NAME: Emily C. Shults

NAME:

TITLE: Vice President-
Energy Supply

TITLE:

____ APPROVED AS TO LEGAL FORM

DRAFT

Draft: for discussion purposes only.
SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

EXHIBIT A

**TO THE CONFIRMATION BETWEEN _____ AND SAN DIEGO GAS & ELECTRIC
COMPANY DATED: _____**

PROJECT FACILITY(IES)

Name of Facility	Resource	Capacity (MW)	CEC RPS ID	WREGIS GU ID	Host Balancing Authority

DRAFT

Draft: for discussion purposes only.
SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

EXHIBIT B

TO THE CONFIRMATION BETWEEN _____ AND SAN DIEGO GAS & ELECTRIC
COMPANY DATED: _____

CONTRACT QUANTITIES

MONTH	YEAR					
	2018	2019	2020	2021	2022	2023
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						

DRAFT

EXHIBIT C

FORM OF LETTER OF CREDIT

[DATE]

To: San Diego Gas & Electric Company
555 W. Fifth Street
Mail Code: ML 18A3
Los Angeles, CA 90013

Re: Our Irrevocable Standby Letter of Credit No. _____
In the Amount of US _____

Ladies and Gentlemen:

We hereby open our irrevocable standby Letter of Credit Number _____ in favor of [name of Beneficiary] ("Beneficiary"), by order and for account of [name of Applicant] ("Applicant"), [address of Applicant], available at sight upon demand at our counters, at [location] for an amount of US\$ _____ [amount spelled out and xx/100 U.S. Dollars] against presentation one of the following documents:

1. Statement signed by a person purported to be an authorized representative of Beneficiary stating that: "[name of Applicant] ("Applicant") is in default under the WSPP Agreement and Confirmation between Beneficiary and Applicant dated _____ or under any transaction contemplated thereby (whether by failure to perform or pay any obligation thereunder or by occurrence of a "default", "event of default" or similar term as defined in such agreement, any other agreement between Beneficiary and Applicant, or otherwise). The amount due to Beneficiary is U.S. \$ _____."
2. Statement signed by a person purported to be an authorized representative of Beneficiary stating that: "as of the close of business on [insert date, which is less than 60 days prior to the expiration date of the Letter of Credit] you have provided written notice to us indicating your election not to permit extension of this Letter of Credit beyond its current expiry date. The amount due to Beneficiary, whether or not a default has occurred, is U.S. \$ _____."

Special Conditions:

- All costs and banking charges pertaining to this Letter of Credit are for the account of Applicant.
- Partial and multiple drawings are permitted.
- Fax of Document 1 or 2 or 3 above is acceptable. Notwithstanding anything to the contrary herein, any drawing hereunder may be requested by transmitting the requisite documents as described above to us by facsimile at _____ or such other number as specified from time to time by us. The facsimile transmittal shall be deemed delivered when received. It is

Draft: for discussion purposes only.

SDG&E may insist on using the EEI master agreement depending on the credit evaluation.

understood that drawings made by facsimile transmittal are deemed to be the operative instrument without the need of originally signed documents.

This Letter of Credit expires on _____ at our counters.

We hereby engage with Beneficiary that upon presentation of a document as specified under and in compliance with the terms of this Letter of Credit, this Letter of Credit will be duly honored in the amount stated in Document 1, 2, or 3 above. If a document is so presented by 1:00 pm on any New York banking day, we will honor the same in full in immediately available New York funds on that day and, if so presented after 1:00 pm on a New York banking day, we will honor the same in full in immediately available New York funds by noon on the following New York banking day.

It is a condition of this Letter of Credit that it shall be deemed automatically extended without an amendment for a one-year period beginning on the present expiry date hereof and upon each anniversary of such date, unless at least ninety (90) days prior to any such expiry date we have sent you written notice by regular and registered mail or courier service that we elect not to permit this Letter of Credit to be so extended beyond, and will expire on its then current expiry date. No presentation made under this Letter of Credit after such expiry date will be honored.

We agree that if this Letter of Credit would otherwise expire during, or within 30 days after, an interruption of our business caused by an act of god, riot, civil commotion, insurrection, act of terrorism, war or any other cause beyond our control or by any strike or lockout, then this Letter of Credit shall expire on the 30th day following the day on which we resume our business after the cause of such interruption has been removed or eliminated and any drawing on this Letter of Credit which could properly have been made but for such interruption shall be permitted during such extended period.

This Letter of Credit is subject to the Uniform Customs and Practice for Documentary Credits (2007 Revision) International Chamber of Commerce, Publication No. 600 ("UCP"), except to the extent that the terms hereof are inconsistent with the provisions of the UCP, including but not limited to Articles 14(b) and 36 of the UCP, in which case the terms of this Letter of Credit shall govern. Matters not covered by the UCP shall be governed and construed in accordance with the laws of the State of California.

[Name of Bank]

Authorized Signature(s)



APPENDIX 9.C

2019 RPS SALES OFFER FORM

Renewable Products Offer Form (RPS REC Sale RFP)



General Instructions

Form Field Key:

Free Form Field
Pull Down Menu

Instructions:

- Follow instructions as they appear in each fields' comments or pop-up messages
- Complete ALL fields. Enter N/A if the question is not applicable. Don't put units in the cells, just the raw numbers. (i.e. 10, not 10 MWh)
- Fill out all fields in the units requested
- Do not add, change, or move any cells, rows, columns or worksheets in the workbook
- Confidential Information should be entered in Red Font
- Limit and focus the discussion of the free form fields
- Submit One Offer Form per offer variation
- There is no limit on the number of Forms that can be submitted. Therefore, respondents are encouraged, but not required, to submit additional offers for our consideration, such as bids with different tenors and escalators

Company Information

Company Name Submitting Offer:	
Company Name on Potential Contract:	
Company Address:	
Company City:	
Company State:	
Company Zip:	
Company Country:	
Is the company Women/Minority/Disabled Veteran owned Business Enterprise as per CPUC General Order 156?	
How did the company hear of the RFD? (SDG&E website, SDG&E email, Colleague, Other (please elaborate))	
Does the Developer have the appropriate experience?	

Company Representative

	Primary Contact	Secondary Contact
Contact Name:		
Contact Title:		
Office Number:		
Cell Number:		
Email:		
Is the Respondent an affiliate of SDG&E?		
Does the Respondent have one or more contracts with SDG&E?		

Corporate Profile and Experience

Describe your corporate background and organizational structure for the project. Please submit a complete organizational chart with all affiliates and parents.	
You must list all companies who participated in putting together this offer and who helped prepare documents.	

Product Information	
Product Type:	
Point of Delivery:	

Comments / Other Information
Is there additional relevant information necessary for SDG&E to evaluate the merits of the proposal?

Quantitative Description

Please determine whether delivery term will be monthly OR annually. Provide Bid Quantity and Bid Price in the schedule below.

Note: Tables below are illustrative and start/stop months are subject to change based on the timing in which SDG&E launches a solicitation.

Annually		
Date	Bid Quantity (MWhs or RECs)	Index Price + Premium (\$/MWh)
<u>Nov-2019</u>		
<u>Nov-2020</u>		
<u>Nov-2021</u>		
<u>Nov-2022</u>		
<u>Nov-2023</u>		
<u>Nov-2024</u>		

Monthly		
Date	Bid Quantity (MWhs or RECs)	Index Price + Premium (\$/MWh)
<u>Jun-2019</u>		
<u>Jul-2019</u>		
<u>Aug-2019</u>		
<u>Sep-2019</u>		
<u>Oct-2019</u>		
<u>Nov-2019</u>		
<u>Dec-2019</u>		
<u>Jan-2020</u>		
<u>Feb-2020</u>		
<u>Mar-2020</u>		
<u>Apr-2020</u>		
<u>May-2020</u>		
<u>Jun-2020</u>		
<u>Jul-2020</u>		
<u>Aug-2020</u>		
<u>Sep-2020</u>		
<u>Oct-2020</u>		
<u>Nov-2020</u>		
<u>Dec-2020</u>		
<u>Jan-2021</u>		
<u>Feb-2021</u>		
<u>Mar-2021</u>		
<u>Apr-2021</u>		
<u>May-2021</u>		

<u>Jun-2021</u>		
<u>Jul-2021</u>		
<u>Aug-2021</u>		
<u>Sep-2021</u>		
<u>Oct-2021</u>		
<u>Nov-2021</u>		
<u>Dec-2021</u>		
<u>Jan-2022</u>		
<u>Feb-2022</u>		
<u>Mar-2022</u>		
<u>Apr-2022</u>		
<u>May-2022</u>		
<u>Jun-2022</u>		
<u>Jul-2022</u>		
<u>Aug-2022</u>		
<u>Sep-2022</u>		
<u>Oct-2022</u>		
<u>Nov-2022</u>		
<u>Dec-2022</u>		
<u>Jan-2023</u>		
<u>Feb-2023</u>		
<u>Mar-2023</u>		
<u>Apr-2023</u>		
<u>May-2023</u>		
<u>Jun-2023</u>		
<u>Jul-2023</u>		
<u>Aug-2023</u>		
<u>Sep-2023</u>		
<u>Oct-2023</u>		
<u>Nov-2023</u>		
<u>Dec-2023</u>		
<u>Jan-2024</u>		
<u>Feb-2024</u>		
<u>Mar-2024</u>		
<u>Apr-2024</u>		
<u>May-2024</u>		
<u>Jun-2024</u>		
<u>Jul-2024</u>		
<u>Aug-2024</u>		
<u>Sep-2024</u>		
<u>Oct-2024</u>		
<u>Nov-2024</u>		



APPENDIX 9.D

2019 FRAMEWORK FOR ASSESSING POTENTIAL RPS SALES

SDG&E's Framework for Assessing Potential RPS Sales

SDG&E's 2019 RPS Plan addresses the potential sale of renewable generation, stating that SDG&E will address opportunities as they arise, and SDG&E will bank or sell based on whether such a sale is beneficial for its customers.¹ SDG&E has previously been directed by the Commission to include a Sales RFP, PPA, and Framework (attached hereto as Appendices 9, 9.A, and 9.D) if its RPS Plan contemplates selling eligible renewable energy products.² SDG&E has modified these documents as described in Appendix 4, and has also included an additional PPA and its offer form (attached hereto as Appendices 9.B and 9.C).

I. Products

SDG&E could sell bundled energy and renewable attributes or unbundled Renewable Energy Credits (RECs) from its portfolio. For buyers interested in bundled energy products, SDG&E could sell bundled energy products not generated prior to the effective date of the resale contract (that is, generated on a go-forward basis).³ For buyers interested in unbundled REC products, SDG&E could sell unbundled RECs from any contract within its portfolio.⁴

II. Criteria

SDG&E will consider both quantitative and qualitative criteria when determining whether to bank or sell excess renewable generation. As a threshold matter, if the results of this analysis indicate that a sales scenario would provide the greatest value to customers, then a sale may be pursued. If the banking vs. sales analysis indicates that banking provides the greatest customer value, then the excess generation will likely be banked.

• Quantitative Criteria

- Banking vs. Sales Analysis: As described in more detail under Section 4 in Attachment A, SDG&E will consider the time value of revenues from the potential sale, and the potential replacement cost when evaluating potential sales opportunities.

¹ See Section 4 of Attachment A.

² 2016 ACR, p. 13.

³ D.11-12-052, pp. 37, 52.

⁴ D.11-12-052, pp. 36, 56.

- Impact on Rates: Another consideration is the magnitude of the impact a potential sale will have on customer bills.

- **Qualitative Criteria**

- RPS Position: SDG&E will consider any change in the point at which it may need to procure to fill a future need as a result of either selling or banking renewable generation.
- Market Liquidity: It is important to SDG&E that the market for renewable products remains liquid so that sales and purchases on behalf of customers can be made at competitive prices. As one of the three largest retail sellers in the State, SDG&E also has one of the three largest RPS portfolios in the State, and therefore it must consider possible impacts on the market of any potential sales volumes.
- Accounting Rules: SDG&E will consider the potential accounting impacts of selling renewable generation. Such impacts may include a scenario in which both the sales contract and the underlying contract(s) supplying the energy for the sales contract are marked to market value in each reporting period in accordance with generally accepted accounting principles. Due to market volatility, the mark to market adjustment may create volatility in SDG&E's financial statements.
- Impact on GHG Reduction Goals and IRP Targets: With the passage of SB 350, the State is moving toward a more holistic planning process with the goal of reducing GHG emissions through a suite of tools, one of which is the RPS program.⁵ As described under Section 2 of Attachment A, SDG&E has taken a strong leadership position with respect to the State's RPS targets, and in doing so has inherently advanced the goals of the IRP. Although the IRP framework is still under development, the impact of any potential sale as it relates to SDG&E's progress towards IRP goals will be incorporated into SDG&E's analysis as appropriate.
- Uncertainty: SDG&E's analysis involves assumptions regarding future market pricing and structure, regulatory framework, and legislative goals many years into the future. While SDG&E believes its assumptions to be reasonable, it acknowledges that

⁵ See Section 4 of Attachment A.

markets change over time and the future is not predictable; therefore, this risk must be considered when evaluating any potential sale.

Additionally, SDG&E, along with all other public utilities, is required by law to seek and receive authorization from the Commission to sell assets valued above five million dollars that are useful in its services to the public.⁶ In other words, SDG&E's quantitative and qualitative evaluation must determine that the generation being sold through the potential resale contract is in fact not needed by customers.⁷

III. Buyers

Potential buyers could contract with SDG&E under various scenarios. One scenario would be by responding to a Sales RFP that SDG&E may issue. As mentioned above, SDG&E's 2019 Plan includes a Sales RFP that SDG&E may choose to issue, and if so, it would receive and evaluate purchase proposals from the market. Another scenario would be through a bilateral transaction. In this scenario, a counterparty may approach SDG&E with an unsolicited proposal, or may be approached by SDG&E. Section 4 of Attachment A describes the potential benefits of a bilateral transaction, which is a valuable tool for both purchases and sales due to its flexibility in addressing situations that involve timing constraints and/or complex terms.

IV. Pricing

The overarching goal of SDG&E's sales framework is to identify the best possible outcome for its customers. Given the host of considerations listed above, particularly the intrinsic market uncertainty, establishing either an absolute price target or floor at this juncture would be premature. As with SDG&E's past Commission-approved sales transactions, the appropriate price thresholds of any potential sales opportunity will be dependent upon the results of SDG&E's quantitative and qualitative evaluation at the time of the transaction, and its reasonableness will be determined by the Commission as it acts on SDG&E's advice letter requesting approval of the transaction.

⁶ Section 851.

⁷ For example, see Commission Resolution E-4741.



APPENDIX 10

REDLINE OF DRAFT 2019 RPS PLAN (ATTACHMENT A)



ATTACHMENT A

SAN DIEGO GAS & ELECTRIC COMPANY
~~2018~~2019 RPS PROCUREMENT PLAN

TABLE OF CONTENTS

I.	EXECUTIVE SUMMARY	1
II.	ASSESSMENT OF RPS PORTFOLIO SUPPLIES AND DEMAND	4
	A. <i>Need Determination Methodology</i>	4
	i. Assessment of Probability of Success for Various Project Types as a Key Component of Calculating the Probability Weighted RPS Position Forecast	6
	ii. Assessment of Other Portfolio Impacts	8
	iii. Determination of the Compliance Needs for Each Compliance Period	15
	iv. Utility Tax Equity Investment and Utility Ownership Opportunities	18
	v. System Requirements	19
	B. <i>Portfolio Optimization Strategy</i>	20
	i. RNS Optimization	21
	ii. Cost Optimization	23
	iii. Value Optimization	24
	iv. Risk Optimization	26
	C. <i>Lessons Learned & Trends</i>	32
	i. Lessons Learned	32
	ii. Trends	34
III.	PROJECT DEVELOPMENT STATUS UPDATE	37
	A. <i>Impact of Project Development Status</i>	38
IV.	POTENTIAL COMPLIANCE DELAYS	38
	A. <i>Transmission and Permitting</i>	38
	i. Interconnection	38
	ii. Jurisdictional Agency Permitting Delays	43
	C. <i>Debt Equivalence and Accounting</i>	43
	D. <i>Regulatory Factors Affecting Procurement</i>	44
	E. <i>Unanticipated Curtailment</i>	45
	F. <i>Insufficient Supply of Renewable Resources</i>	45
	G. <i>Unanticipated Increases in Retail Sales</i>	45

H.	<i>Impact of Potential Delays</i>	46
V.	RISK ASSESSMENT	46
VI.	QUANTITATIVE INFORMATION	48
VII.	MINIMUM MARGIN OF OVER PROCUREMENT	49
VIII.	BID SOLICITATION PROTOCOL, INCLUDING LEAST COST, BEST FIT	50
A.	<i>Workforce Development Assessment Proposal</i>	53
B.	<i>Assessment of Benefits to Disadvantaged Communities</i>	54
IX.	CONSIDERATION OF PRICE ADJUSTMENT MECHANISMS	54
X.	ECONOMIC CURTAILMENT FREQUENCY, COSTS, & FORECASTING	55
A.	<i>Market & Operational Observations</i>	55
B.	<i>Analysis, Initiatives, & Strategy</i>	57
C.	<i>Activities</i>	57
D.	<i>2018 RPS Plan</i>	59
XI.	COST QUANTIFICATION	61
XII.	IMPERIAL VALLEY	62
XIII.	IMPORTANT CHANGES TO DRAFT 2018 RPS PLAN	62
XIV.	SAFETY CONSIDERATIONS	62
XV.	RENEWABLE AUCTION MECHANISM	63
A.	<i>Procurement Need</i>	63
B.	<i>Documents & Updated Parameters</i>	63
C.	<i>Approval Process</i>	65
XVI.	GREEN TARIFF SHARED RENEWABLES PROGRAM	65
A.	<i>Program History and Status</i>	65
B.	<i>Progress Towards Target and Reservations</i>	66
C.	<i>Reporting</i>	66
XVII.	OTHER RPS PLANNING CONSIDERATIONS AND ISSUES	68
A.	<i>SDG&E's Current Standard Base TOU Periods</i>	68
B.	<i>SDG&E's Grandfathered TOU Periods</i>	68
1.	IMPORTANT CHANGES TO DRAFT 2019 RPS PLAN	1

2.	EXECUTIVE SUMMARY	1
3.	SUMMARY OF RECENT LEGISLATIVE AND/OR REGULATORY CHANGES	3
4.	ASSESSMENT OF RPS PORTFOLIO SUPPLIES AND DEMAND.....	4
	A. Portfolio Supply & Demand	4
	i. Assessment of Probability of Success for Various Project Types as a Key Component of Calculating the Probability-Weighted RPS Position Forecast	6
	ii. Assessment of Other Portfolio Impacts	8
	iii. Determination of the Compliance Needs for Each Compliance Period.....	15
	iv. Utility Tax Equity Investment and Utility Ownership Opportunities.....	18
	B. Alignment with Load Curves.....	19
	i. RNS Optimization	21
	ii. Cost Optimization	23
	iii. Value Optimization.....	24
	iv. Risk Optimization.....	26
	C. Responsiveness to LSE Policies & Goals, Statutes, & Commission Policies	27
	D. Portfolio Diversity & Reliability	31
	E. Lessons Learned & Trends	32
	i. Lessons Learned	32
	ii. Trends	34
	F. Conformance with IRP	37
5.	PROJECT DEVELOPMENT STATUS UPDATE	37
	A. Impact of Project Development Status	38
6.	POTENTIAL COMPLIANCE DELAYS	38
	A. Transmission and Permitting	38
	i. Interconnection	38
	ii. Jurisdictional Agency Permitting Delays.....	43
	C. Debt Equivalence and Accounting.....	43
	D. Regulatory Factors Affecting Procurement	44

E.	Unanticipated Curtailment.....	45
F.	Insufficient Supply of Renewable Resources	45
G.	Unanticipated Increases in Retail Sales	45
H.	Impact of Potential Delays.....	46
7.	RISK ASSESSMENT	46
A.	Project Risk.....	46
B.	Diversity & Reliability.....	48
C.	Impact	48
8.	QUANTITATIVE INFORMATION	48
9.	MINIMUM MARGIN OF OVER-PROCUREMENT	49
A.	Methodology & Inputs.....	49
B.	Scenarios	50
10.	BID SOLICITATION PROTOCOL, INCLUDING LEAST-COST, BEST-FIT	50
A.	Solicitation Protocols for Renewables Sales.....	50
i.	Lessons Learned	50
ii.	Sales Solicitation Documents	51
iii.	Assignment Description.....	51
B.	Bid Selection Protocols.....	53
C.	LCBF Criteria	53
i.	Workforce Development Assessment Proposal.....	53
ii.	Assessment of Benefits to Disadvantaged Communities.....	54
iii.	State Policies.....	54
11.	CONSIDERATION OF PRICE ADJUSTMENT MECHANISMS	54
12.	ECONOMIC CURTAILMENT FREQUENCY, COSTS, & FORECASTING	55
A.	Market & Operational Observations	55
B.	Analysis, Initiatives, & Strategy	57
C.	Activities	57
D.	2019 RPS Plan	59

13.	COST QUANTIFICATION	61
14.	SAFETY CONSIDERATIONS	62
15.	COORDINATION WITH IRP PROCEEDING	62
16.	IMPERIAL VALLEY	62
17.	RENEWABLE AUCTION MECHANISM.....	63
	A. Procurement Need	63
	B. Documents & Updated Parameters.....	63
	C. Approval Process	65
18.	GREEN TARIFF SHARED RENEWABLES PROGRAM.....	65
	A. Program History and Status	65
	B. Progress Towards Target and Reservations.....	66
	C. Reporting	66
19.	OTHER RPS PLANNING CONSIDERATIONS AND ISSUES	68

1. IMPORTANT CHANGES TO DRAFT 2019 RPS PLAN

Important changes made to SDG&E's Draft 2019 RPS Plan are detailed in Appendix 4.

1.2. EXECUTIVE SUMMARY

San Diego Gas & Electric Company's ("SDG&E's") ~~2018~~2019 Renewable Portfolio Standard ("RPS") Procurement Plan (the "RPS Plan") describes the processes used by SDG&E to determine its RPS procurement need, as well as the methods it will use to manage its RPS portfolio to meet RPS program compliance targets in a cost-effective manner.¹ The RPS Plan establishes guidelines for SDG&E's procurement of Least-Cost Best-Fit ("LCBF") RPS-eligible resources that have enabled and, in the future, will enable SDG&E to achieve the required level of renewable procurement during each Compliance Period ("CP"). ~~Pursuant to the email rulings of Administrative Law Judge Robert M. Mason III, dated July 9, 2018, and September 24, 2018, SDG&E filed its updated draft 2018 RPS Plan on October 8, 2018 to address Senate Bill ("SB") 100, which was signed into law on September 10, 2018. SB 100 has not yet been implemented, and SDG&E looks forward to working with the Commission and stakeholders to implement this bill.~~

The year ~~2018~~2019 falls within CP3, which requires renewable procurement equivalent to 33% of retail sales by December 31, 2020, with reasonable progress made in 2017-2019. Following CP3, the renewable procurement requirements are: (a) 44% of retail sales by December 31, 2024, with reasonable progress made in 2021-2023 (~~("CP4");~~); (b) 52% of retail sales by December 31, 2027, with reasonable progress made in 2025-2026 (~~("CP5");~~); (c) 60% of retail sales by December 31, 2030, with reasonable progress made in 2028-2029 (~~("CP6");~~); and (d) 60% of retail sales for all subsequent CPs.² The RPS Plan also accounts for the

¹ SDG&E reserves the right to update its ~~2018~~2019 RPS Plan, including all Appendices attached hereto, as necessary.

² Compliance towards ~~CP's~~CPs 1, 2, and 3 shall be measured in accordance with Decision ("D.") 11-12-020, Ordering Paragraphs ("OP") 1-3. SB 350 added ~~CP's~~CPs 4, 5, 6, and three-year compliance periods beginning in 2031. On December 15, 2016, the California Public Utilities Commission ("Commission") issued D.16-12-040 implementing the new compliance periods and procurement quantity requirements per SB 350, which changed the RPS target to 50% by 2030. On September 10, 2018, SB 100, which sets new RPS targets for the final year of each CP and changes the 2030 RPS target to 60%, was signed into law by Governor Brown. ~~This law has not yet been implemented by the Commission. As such, this revised draft 2018~~This Commission is in the process of implementing this law as explained in its May 22, 2019 Proposed Decision (PD). See

requirement that beginning in 2021, 65% of the procurement a retail seller counts towards its RPS compliance must be from long-term contracts (“65% long-term contracting requirement”).³ To date, SDG&E is one of the leaders in the State in RPS procurement, achieving 44% renewable energy in 2017. In 2018, SDG&E achieved 43% renewable energy~~in 2016. In 2017, SDG&E achieved 44% renewable energy, 9897%~~ of which was from long-term contracts; see Appendix 21 for further detail.

To determine the quantity of renewable generation that must be procured to meet SDG&E’s RPS procurement need in each CP, SDG&E will follow the Need Determination Methodology described below. To determine its optimal portfolio mix, SDG&E manages its portfolio to conform to the portfolio content, balance, and 65% long-term contracting requirements established through the RPS program. SDG&E will implement a work plan to fulfill its need, if any, including potentially soliciting additional multi-product and multi-term contracts through RPS solicitations, considering bilateral proposals, utilizing banked procurement, selling surplus RPS generation when appropriate, and pursuing utility investment opportunities and/or utility ownership when economic and prudent. SDG&E will use all tools available to seek to manage its existing RPS -portfolio and the investment in SDG&E’s banked procurement in the best interest of its customers. As explained in more detail below, based on SDG&E’s current portfolio and forecasted position, the most reasonable course of action for SDG&E is to not hold an RPS Request for Offer (“RFO”) during the 20182019 procurement cycle. The authorization not to hold an RPS RFO should span from the time the Final RPS Plans are approved through the time the subsequent years’ RPS Plan is approved.

<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M292/K932/292932713.PDF>. SDG&E’s Draft 2019 RPS Plan reflects the changes in the specified RPS targets per 399.15(b)(2)(B) and estimates the interim targets for each year in each CP using the straight-line method adopted by D.11-12-020 and D.16-12-040, which is also consistent with the PD.

³ SB 350 added a new long-term contracting requirement under 399.13(b), which was formalized in D.17-06-026, issued on July 5, 2017. To count towards this requirement, RPS-eligible procurement must be from: (i) facilities owned by the retail seller; (ii) facilities in which the retail seller has an ownership agreement for a duration of 10 years or more; and (iii) contracts with a duration of 10 years or more. Grandfathered contracts, which are those meeting the requirements of 399.16(d), also count in full towards the long-term contracting requirement per D.17-06-026. SDG&E elected early compliance (beginning in CP3) with the 65% long-term contracting requirement, submitting its letter to the Director of Energy Division on July 17, 2017, and has incorporated this requirement into its RPS Plan. All statutory references herein are to the Public Utilities Code unless otherwise noted.

Edits throughout the RPS Plan reflect the direction provided by the *Assigned Commissioner and Assigned Administrative Law Judge’s Ruling Identifying Issues and Schedule of Review for ~~2018~~2019 Renewables Portfolio Standard Procurement Plans* (“the ACR”), issued on ~~June 21, 2018, and April 19, 2019, as modified by the *Decision Accepting Draft 2018 Renewables Portfolio Standard Procurement Plans*, issued on February 28, 2019,~~⁴ as well as ALJ’s May 7, 2019 Ruling modifying the procedural schedule. SDG&E’s 2019 RPS Plan also addresses recent legislation as ~~edits reflecting~~ required (such as Senate Bills (“SB”) 350, 100, and 901, described in more detail below under Section 3), incorporates updates necessary due to the passage of time,⁵ and includes edits to explain SDG&E’s proposed changes. Pursuant to D.19-02-007, SDG&E ~~will participate~~ is actively participating in the stakeholder process to develop information-only Time of ~~Day Factors~~ Delivery factors (“TODs”), which SDG&E will utilize going forward. SDG&E has removed all reference to TOD factors within its RPS Plan, RPS long-term and Appendices 6, 7 short-term model PPA, and 9 Least-Cost Best-Fit methodology. Once the stakeholder process is complete and the Commission has approved the information-only TODs, SDG&E will update its RPS Plan in subsequent cycles as necessary.

~~Additionally, it is important to note that~~

3. SUMMARY OF RECENT LEGISLATIVE AND/OR REGULATORY CHANGES

SDG&E’s 2019 RPS Plan accounts for recent RPS-related legislation, specifically California Senate Bill (“SB”) 350 includes a wide-sweeping planning process, (2015), SB 100 (2018), and SB 901 (2018), as well as related proceedings, such as the Integrated Resource Planning Plan (“IRP”) process, and Power Charge Indifference Amount (“PCIA”).

Regarding legislation, SB 350 and SB 100 made changes to the RPS section of the Public Utilities Code to establish new RPS targets for each CP and to increase the RPS target. The most current set of RPS targets, which can be found in SB 100, are listed above and included in SDG&E’s Renewable Net Short (“RNS”) table in Appendix 1. SB 350 also added the 65% long-term contracting requirement referenced above, which was unchanged by SB 100 and is included in SDG&E’s RNS table. SB 901 requires that retail sellers offer a 5-year extension to any

⁴ ~~Decision (“D.”) 19-02-007.~~

⁵ The use of “passage of time” in this document denotes basic updates (e.g., decision issuance since prior plan version).

contracts executed under the Bioenergy Renewable Auction Mechanism (“BioRAM”) program and is discussed below under Section 4.

Regarding related proceedings, SB 350 initiated the IRP, which is a wide-sweeping planning process that is discussed in more detail below under Section 4. SDG&E anticipates that this proceeding will optimize RPS planning and procurement, within a larger framework that looks at meeting State policies at the lowest possible cost ~~as is discussed in more detail below under Section H.C. In short, the current.~~ This is a shift away from the historical siloed approach to procurement, in which resource procurement mandates are imposed on a program-by-program basis without reference to other potential forms of supply— and/or demand—side procurement; ~~runs directly counter to both the goal of optimization and the new statutory direction. Procurement should be done in a manner.~~ It is expected that ~~maximizes customer benefits while minimizing bill impacts.~~ The holistic process contemplated by the IRP ~~must~~will evaluate the costs and benefits of all available resources when developing portfolios that comply with the requirements set by SB 350 and will be able to better guide RPS planning and procurement, thereby maximizing the value of customer dollars and minimizing customer exposure to excessive costs. SDG&E remains focused on effective cost and risk management, as described in more detail below under Section H.B.4, and ~~it~~ looks forward to assisting the Commission in its implementation of the new IRP regime.

And finally, the Power Charge Indifference Amount (“PCIA”) reform proceeding, discussed further in Section H.A.ii.a4, may impact the RPS proceeding going forward. The PCIA reform proceeding, which is currently in process, is re-examining the method for allocating costs under a departing load scenario; and will be resolved through a series of decisions. SDG&E will incorporate any required changes into subsequent RPS Plans.

2.4. **ASSESSMENT OF RPS PORTFOLIO SUPPLIES AND DEMAND**

~~A.~~ *Need Determination Methodology*

A. **Portfolio Supply & Demand**

SDG&E makes procurement decisions based on how its risk-adjusted RPS position forecast (referred to herein as its “RPS position”) compares to its RPS program compliance requirements, the result of which is its probability-weighted procurement need or Renewable Net Short (“RNS”). In order to calculate its RPS Position, SDG&E ~~assigns a probability of success;~~

following conducts a qualitative and quantitative assessment, and assigns a probability of success to the expected deliveries for each project that is not yet online in its portfolio,⁶ ~~and~~ then adds the risk-adjusted expected deliveries across all projects in its entire RPS portfolio. These risks include approval (*e.g.*, Commission approval and the timing of such), development (*e.g.*, permitting, financing, or transmission interconnection), delivery (*e.g.*, generation fluctuations given the variant-intermittent nature of some renewable resources; or operational challenges), and other factors (*e.g.*, under-development of transmission infrastructure common to a group of projects).

In general, if SDG&E's RPS Position is less than its RPS requirements, SDG&E will plan to procure additional RPS resources on a schedule that will allow for the procurement and development of resources in time to provide deliveries to meet anticipated shortfalls. If, on the other hand, its RPS Position is greater than its RPS requirements, SDG&E will consider opportunities to bank or sell bundled and/or unbundled renewable energy credits ("RECs"). In addition, to optimize the relative value of renewable energy across compliance periods, SDG&E also considers short-term contracts when, for example, it is short⁷ in the most immediate CP but long in the subsequent CP. SDG&E will also consider procurement strategies that are in the best interest of customers across compliance periods in order to secure greater value from approved RPS expenditures. For example, SDG&E strives to have a well-diversified RPS portfolio so that its RPS compliance, particularly in the most immediate compliance period, is not unduly exposed to any given risk (*e.g.*, a particular technology, region, counterparty, etc.). SDG&E's RPS portfolio management strategy involves identifying needs and risks and managing them in a cost-effective manner in the best interest of its customers.

The following sections explain SDG&E's methodology for determining its RNS. First, the process used to compute the RPS Position is explained. Then, procurement needs by compliance periods are inferred by comparing RPS requirements to RPS Positions.

⁶ For purposes of determining its RPS Position, SDG&E considers its portfolio to include all executed contracts until contract expiration (*e.g.*, it does not assume expiring contracts will be renewed and excludes contracts under-negotiation unless indicated otherwise) and investment and utility-owned generation ("UOG") projects where relevant progress has been made.

⁷ The term "short" is used herein to refer to an RPS Position that is lower than the relevant RPS program requirements. The term "long" is used to refer to an RPS Position that is higher than relevant RPS program requirements.

i. Assessment of Probability of Success for Various Project Types as a Key Component of Calculating the Probability-Weighted RPS Position Forecast

SDG&E must assess the probability of success and/or expected generation of the following main types of projects: (a) delivering; (b) approved but not yet delivering; and (c) not yet approved.⁸ SDG&E evaluates the probability of success for each project in its portfolio on a monthly basis in order to calculate its RNS, which is the basis for its procurement need. To do this, SDG&E conducts a monthly review with an interdisciplinary team and uses the most up-to-date qualitative and quantitative information to assign a probability of success and/or determine the expected generation of each individual project. SDG&E's most up-to-date assessment as of ~~June 2018~~April 2019 is set forth in Appendix ~~21~~21. SDG&E applies the following methodology to analyze each project type:

a. Assessment of Performance of Delivering Projects

Projects that have already achieved commercial operation and have begun delivering energy provide the most stable source of RPS deliveries when forecasting RPS procurement need. These projects have overcome development hurdles and are supported by steady revenues under executed Power Purchase Agreements ("PPAs"). However, it is crucial to consider the potential fluctuations in deliveries that these projects can experience and the impact that such fluctuations could have on SDG&E's need to procure additional resources to meet its RPS goals.⁹ As discussed further in Section ~~V7~~7, deliveries from these projects can be impacted by resource availability, regulatory changes, economic environment, evolving technologies, and third-party systems. These types of fluctuations can be significant. In order to ensure RPS compliance, SDG&E must account for potential fluctuations (while recognizing that swings in production could be positive). The monitoring of performance of delivering contracts and the assessment of probabilities focuses on: (i) understanding the historical generation profile of each project and how it has differed year-over-year and relative to forecasts; and (ii) the operational

⁸ See the Renewable Net Short Calculation set forth in Appendix ~~21~~21.

⁹ For example, contracts with solar photovoltaic ("PV") developers incorporate a degradation factor that is used to forecast the project's performance over time as the panels age and become less efficient. SDG&E utilizes this factor in its LCBF evaluation, and when calculating project deliveries for its RPS position calculation on both a nominal (assumes deliveries from contracts will occur as expected) and probability-weighted basis. To the extent deliveries are different than the provided estimates, SDG&E will adjust its RPS position calculation accordingly.

track record of any given project. SDG&E has found that a weighting of 100% is typically appropriate for delivering contracts. The forecast of future deliveries for delivering contracts is based on historical deliveries (up to the most recent three years, if available; if not available historical deliveries are used), which SDG&E will revise as appropriate. Adjusting forecasts when necessary is a crucial component of SDG&E's need assessment methodology.

b. Assessment of the Development Progress of Approved Projects that Have Not Yet Begun Delivering

Another important aspect of SDG&E's need assessment methodology is evaluating the development status of projects approved by the Commission, but not yet delivering energy. These projects are typically much riskier than projects that have begun delivering due to the challenges that can arise during the development process that might prevent a project from completing construction and achieving commercial operation. Permitting, interconnection, regulatory factors, and other development issues are discussed further in Section IV.6. SDG&E must account for development risks when determining its procurement need, and the monitoring of development status is the most critical aspect of SDG&E's need assessment methodology. As with delivering contracts, SDG&E meets internally on a monthly basis to assign a probability of success to each of its developing projects. This factor is then applied to the expected deliveries stated in the contracts. SDG&E's current assessment as of ~~June 2018~~ April 2019 is provided in the RNS Calculation in Appendix 21.

c. Assessment of the Approval Queue for Projects that Have Been Submitted to the Commission, But Are Not Yet Approved

SDG&E typically meets monthly with its Procurement Review Group ("PRG"), which includes Energy Division staff, to discuss the likely approval timetable of projects that SDG&E has submitted to the Commission for approval. The discussion covers expected timing of Commission action and any potential constraints that might necessitate expedited Commission action or require additional information. SDG&E works collaboratively with the Commission to develop a work plan that results in timely approval. It is possible, however, that the shortage of Energy Division staff or other procedural challenges can result in approval delays that can impact a project's ability to achieve milestones. SDG&E must monitor this process closely to determine what impact, if any, delays may have on the timing of expected deliveries or sales.

ii. Assessment of Other Portfolio Impacts

Once SDG&E has determined the probability of success for each of the contracts in its portfolio, SDG&E must also consider a broader range of risk factors that can impact multiple projects or its entire portfolio. SDG&E evaluates the impact of these factors, which include, but are not limited to the following load and resource factors on a monthly basis: (i) Retail Sales; (ii) ~~RPS Program Rules;~~ (iii) Project Viability; ~~(iv) and (iii)~~ Existing RPS Contracts; ~~(v) Policy Procurement;~~ and ~~(vi) Other Procurement Authorizations.~~ A representative list of these major factors is described below. SDG&E also considers the impact of regulatory factors, which are described in more detail under Section 4.C.

a. Retail Sales – Related Factors

RPS compliance is based on an energy target (as opposed to a capacity target~~),~~ and is calculated using a percentage of retail sales. Various factors (departing load for example) impact retail sales, and these factors are reflected in the forecast. SDG&E’s most recent retail sales forecast is provided within the RNS table in Appendix 21.

- Impact of California Energy Commission (“CEC”) Forecast: In accordance with Commission guidance, SDG&E uses the latest CEC forecast consistent with the standardized planning assumptions authorized in D.12-01-033. SDG&E monitors its retail sales forecasts on a monthly basis to identify potential fluctuations and their impact on its RPS requirements.
- Impact of Transportation Electrification: The sales forecast that supports SDG&E’s RPS filing is the CEC’s ~~2017~~2018 Integrated Energy Policy Report (“IEPR”) demand forecast, also known as California Energy Demand ~~(“CED”)~~ ~~2017~~Update (“CEDU”) 2018, adopted by the CEC Commissioners at the CEC’s ~~February 21, 2018~~January 9, 2019 business meeting. For RPS purposes, SDG&E used the CEC’s ~~2017~~2018 IEPR Mid-Demand base-line forecast, with mid-case Additional Achievable Energy Efficiency (“AAEE”) and Additional Achievable Photovoltaics (“AAPV”). SDG&E reformatted the forecast to partition it into sales to bundled customers and sales to direct access and CCA customers. The CEC’s forecast accounts for electric vehicle (“EV”) charging within the Mid-Demand base-line segment of the scenario. SDG&E’s RPS assumes EV charging to be the same as presented in the CEC’s ~~2017~~2018 IEPR Mid-Demand base-line forecast. A description of the modeling approach and input assumptions made regarding

forecasting EV charging can be found in three CEC publications that document ~~CEC 2017 CEDU 2018~~.¹⁰

- Impact of Departing Load: The State has recognized the potential for departing load from utility bundled service to alternative providers such as Electric Service Providers (“ESPs”~~;~~) and Community Choice Aggregators (“CCAs”).¹¹ Within SDG&E’s service territory, Solana Beach was the first CCA (operations began in June of 2018), and various other cities are actively exploring adoption of a CCA, including the City of San Diego, which represents ~~43~~around 40% of SDG&E’s load.¹² Load departure will reduce SDG&E’s volume of retail sales, thereby impacting its RPS position. A Final Decision was issued in Rulemaking (“R”)19-03-009, on June 3, 2019 implementing SB 237, which increases the current Direct Access cap. SDG&E’s share of the authorized cap is around 380 GWh.¹³

Additionally, the Commission adopted an Order Instituting Rulemaking (“OIR”) in 2017 ~~seeking initiating R.17-06-026, the Proceeding to Allocate Customer Costs. This proceeding will review the Power Charge Indifference Adjustment (“PCIA-”), which is the methodology for allocating costs to departing load), this proceeding.~~ Phase one of the PCIA OIR has concluded, and phase two is ongoing. The guidance within the final ~~decisions~~phase two decision may impact SDG&E’s RNS as well as the volumes it may decide to sell (see Appendices ~~21~~ and ~~10-109-9.D~~, respectively), and changes to these documents may be required in subsequent versions of the RPS Plan. SDG&E looks forward to the expeditious resolution of the OIR and will modify its future RPS Plans as appropriate to reflect the outcome of this work.

~~a. RPS Program Rules – Related Factors~~

¹⁰ ~~2017 IEPR Integrated Energy Policy Report, February 2018, CEC 100-2017-001-CMF; California Energy Demand 2018-2030 Revised Forecast, February 2018, CEC 200-2018-002-CMF; Transportation Energy Demand Forecast, November 2017, CEC 200-2017-010.~~

~~https://www.energy.ca.gov/2018_energypolicy/documents/~~

¹¹ The Commission held several En Bancs to further explore this topic in 2017.

¹² The City of San Diego published its CCA Feasibility Study in July 2017:

~~https://www.sandiego.gov/sites/default/files/san_diego_cca_feasibility_study_final_draft_main_report_7-11-17.pdf~~

~~https://www.sandiego.gov/sites/default/files/san_diego_cca_feasibility_study_final_draft_main_report_7-11-17.pdf~~. On February 25, 2019 the San Diego City Council voted to move forward to implement a CCA via a Joint Powers Authority.

¹³ D.19-05-043 at 6.

~~Both the CEC and Commission oversee various parts of the RPS program. Regarding general RPS program rules, the relevant areas of responsibility as they relate to SDG&E are renewable facility eligibility and REC verification (both CEC), and RPS compliance rules (Commission). These factors impact the facilities with which SDG&E may contract, as well as SDG&E's RPS compliance determination.~~

- ~~● **Impact of California Energy Commission Requirements:** The CEC revises its RPS Guidebook with relative frequency, which sometimes results in changes to eligibility requirements for renewable energy resources. SDG&E monitors this process and works with CEC staff to determine the effects, if any, on its portfolio as a result of these periodic Guidebook revisions. The CEC is also tasked with verifying RPS procurement. SDG&E submits its procurement data from the prior year to the CEC annually by July 1 and is prepared to work with the CEC in its review process.~~
- ~~● **Impact of Banking Rules:** The banking rules adopted by SB 350 and formalized in D.17-06-026 make several changes, which are now applicable to SDG&E per its election to utilize them beginning in CP3: (i) short term Category 1 products can be banked;¹⁴ (ii) Category 2 products cannot be banked;¹⁵ and (iii) Category 2 and 3 products of any duration cannot be deducted from the bank.¹⁶ In accordance with Commission direction,¹⁷ SDG&E assumes for purposes of calculating its RNS that eligible excess procurement¹⁸ will be utilized in future compliance periods,¹⁹ and it has updated its RNS table under Appendix 2 to comport with the new SB 350 banking rules.~~

b. Project Viability – Related Factors

Renewable project developers continue to face a challenging environment. For example, studying and constructing generator interconnection upgrades continues to take years to

¹⁴ ~~399.13(a)(4)(B)(i).~~

¹⁵ ~~399.13(a)(4)(B)(ii).~~

¹⁶ ~~The current banking rules, established by D.12-06-038 (see p. 66), require that bankable excess procurement be calculated by deducting all short term RECs of any category from the total volume of bankable excess procurement. SB 350 expressly changes this by allowing the banking of short term Category 1 products (399.13(a)(4)(B)(i)), and prohibiting the deduction of any Category 2 and 3 products when determining bankable excess procurement (399.13(a)(4)(B)(ii)).~~

¹⁷ ~~Administrative Law Judge's Ruling on Renewable Net Short, issued May 21, 2014.~~

¹⁸ ~~Rules regarding excess procurement are set forth in D.12-06-038, and D.17-06-026.~~

¹⁹ ~~Note that SDG&E may manage excess procurement by selling such products when doing so would benefit customers, or by utilizing a retired REC for RPS compliance in future compliance periods.~~

complete and can significantly influence project costs. In addition, as more projects are proposed, especially in desert regions, permitting approval timelines may extend due to increased scrutiny of environmental issues and permitting agency coordination efforts. SDG&E will closely monitor project viability factors, and any effects they may have on its portfolio.

- Impact of Key Transmission Upgrades and/or Infrastructure: Transmission availability has long been recognized as a potential barrier to achieving RPS goals, and SDG&E continues to monitor the progress of transmission upgrades on which SDG&E's RPS projects depend in order to assess potential delays and possible impacts. A more detailed discussion of transmission is provided under Section ~~IV~~6.
- Impact of Permitting Delays: Many ~~smaller~~ projects have experienced local agency permitting delays ~~as they are~~. Delays occur when challenged by individuals and community groups ~~and may also occur in meeting California Environmental Quality Act ("CEQA") requirements~~. These challenges can result in increased costs to the developer and significant project delays that can jeopardize project viability and potentially lead to project failure. A more detailed discussion of permitting is provided under Section ~~IV~~6.

c. Existing RPS Contracts – Related Factors

The contracts within SDG&E's portfolio may be renewed or terminated; additionally, the RECs from SDG&E's existing contracts may be sold. The factors considered in each of these potential scenarios are described below.

- Impact of Contract Renewal: SDG&E began signing RPS contracts in 2003, most of which had terms of 20 years. Some of these contracts are expected to deliver through 2023, and may impact SDG&E's procurement needs post-2020, while others are scheduled to terminate in Compliance Period 3. As part of its RPS position calculation, and in accordance with Commission direction,²⁰ SDG&E does not assume that these contracts will be renewed. Owners of these projects will be asked to bid such projects into future ~~requests for offers~~ ("RFOs"),²¹ and these bids will be required to conform with the need identified in the then-current RFO.²¹ The benefits of this are twofold –

²⁰ R.11-05-005: *Administrative Law Judge's Ruling on Renewable Net Short*, issued May 21, 2014.

²¹ Qualifying Facilities with expiring RPS contracts may be able to sign a Standard Contract for Qualifying Facilities with a Power Rating that is Less than or Equal to 20 MW, which was approved by

competition will be enhanced, and these facilities will have the opportunity to bid to extend their contracts past the original termination dates into later years when SDG&E has a need.

- Impact of Contract Termination: As part of its contract administration process, SDG&E actively monitors contractual requirements including conditions precedent that must be met (or waived) in order for the contract to be viable. When a condition precedent ~~may not be met or~~ has not been met, or when parties can mutually agree to a termination, SDG&E may consider terminating the contract if it is in the best interest of customers.
- Impact of the Resale Market: SDG&E will closely monitor opportunities to sell excess procurement. SDG&E will assess the market when opportunities arise to determine whether it is more advantageous for SDG&E's customers to bank such excess procurement for use in a future compliance period or sell the excess procurement. If SDG&E believes that the current market is favorable and expects that it will be able to fulfill any future needs with more economic options, it may choose to sell excess procurement instead of banking it,²² if such a transaction is viewed to be in the best interests of its customers. More detail is provided ~~under Section B~~ below and within Appendix 109, attached hereto.

~~b.a. Policy Procurement Related Factors~~

~~The Governor's commitment to renewable distributed generation ("DG") continues to influence proceedings, programs, and legislation. This commitment will ultimately shape the State's renewable mix, and as load serving entities ("LSEs") reach compliance, they may be required to shift procurement from utility-scale projects to small-scale DG projects. SDG&E is monitoring the legislative and policy activities related to this goal, and any potential impacts to its portfolio.~~

~~Over the past several years, the Legislature has passed, and the Commission has implemented new renewable procurement programs consistent with the State's interest in DG:~~

the Commission on November 23, 2011 as part of the Qualifying Facilities and Combined Heat and Power Program Settlement (the "QF Settlement").

²² Note that banking a REC may either mean that the REC is held in SDG&E's active WREGIS sub-account to be used later in its 36-month active lifespan, or it can mean that the REC is retired before its 36-month active lifespan ends and is then held in SDG&E's retirement account for use in future compliance periods.

~~SB 43 (“Green Tariff Shared Renewables” or “GTSR”); SB 1122 (“Bioenergy Market Adjusting Tariff” or “BioMAT”); and the Renewable Market Adjusting Tariff (“ReMAT”). The Commission also implemented its own mandated renewable procurement program, the Renewable Auction Mechanism (“RAM”) program in 2010, as well as the Bioenergy Renewable Auction Mechanism (“BioRAM”) in 2016 in response to the Governor’s Emergency Proclamation. These programs have resulted and will result in additional RPS procurement that SDG&E must include in its RNS calculation;²³ this will impact SDG&E’s position and procurement decisions.~~

~~Per D.18-12-003, SDG&E is required to make available for sale all of the future RECs associated with SDG&E’s Bioenergy Renewable Auction Mechanism “BioRAM” contract(s) as PCC1 RECs. SDG&E will utilize the Sales RFP documents attached herein (please see Appendices 10-10.C), and will file an Advice Letter with the Commission for approval of any resulting contracts. SDG&E will update its RNS table once sales have been completed and any resulting contracts have been approved.~~

~~Per Resolution E 4977, which implements Senate Bill 901, SDG&E is required to seek to extend its BioRAM contract for 5 years. SDG&E will indicate, through the Advice Letter process, the results of its negotiations with its BioRAM counterparty and, if necessary, will update its RNS table to reflect any resulting changes in the normal annual cycle.~~

~~SDG&E’s Schedule Re-MAT Tariff closed, effective June 30, 2016. Further information on GTSR, BioMAT, RAM, and BioRAM can be found in Sections XVI, II.B, XV, and II.B, respectively. As explained under Section II.C, SDG&E anticipates that the recently codified IRP process signifies a shift away from separate programs such as these, towards a holistic planning and procurement process.~~

~~**e.a. Other Procurement Authorizations – Related Factors**~~

~~RPS-eligible procurement may occur both within and outside the RPS program. SDG&E has and will continue to monitor the relevant initiatives, which are described in more detail below. In the event SDG&E is authorized to procure renewable resources as a part of these initiatives, it will count such resources towards its RPS goals.~~

²³ SDG&E’s RNS calculation, attached hereto as Appendix 2, only includes programs that have been fully implemented.

- ~~Impact of IRP: In D.18-02-081, the Commission implemented a two-year IRP cycle, with the first IRP for all LSE's due on August 1, 2018. The IRP process may result in additional procurement authorizations, including the procurement of renewable resources, to meet the goals of the IRP.~~
- ~~Impact of Local Capacity Resource Needs: In D.14-03-004, the Commission authorized SDG&E to procure 500-800 MW of local capacity resources ("LCR") following the retirement of San Onofre Nuclear Generating Station ("SONGS") to be on-line by 2022. This decision authorizes up to 600 MW from any source, and requires that the remaining 200 MW be from preferred resources or energy storage (including a minimum of 25 MW of energy storage).²⁴ Pursuant to this decision, SDG&E submitted a conventional resource procurement plan and a preferred resources procurement plan, which were both approved in 2014. The Commission subsequently approved a power purchase tolling agreement ("PPTA") for the 500 MW Carlsbad Energy Center in D.15-05-051, and mandated that the remaining 100 MW LCR authorization "consist of preferred resources and energy storage."²⁵~~
~~In accordance with its approved procurement plans and procurement authorization, SDG&E has issued two solicitations. On April 19, 2017 SDG&E filed A.17-04-017 requesting approval of 88 MW of in-basin capacity (83.5 MW from energy storage, and 4.5 MW from Demand Response). On May 31, 2018 the Commission issued D.18-05-024 approving SDG&E's request for 88 MW of in-basin capacity. SDG&E may issue another solicitation for preferred resources, which may include renewable energy, to fill any remaining authorized LCR need.~~
- ~~Impact of Energy Storage Procurement: The Commission issued D.13-10-040²⁶ on October 1, 2013, requiring SDG&E to procure 165 MW of energy storage by 2020.²⁷ The Commission in D.17-04-034 also authorized SDG&E to procure up to 166 MW of energy storage programs and investments pursuant to AB 2868. Energy storage itself is~~

²⁴ D.14-03-004, OP 2, p. 143.

²⁵ Carlsbad Decision at D.15-05-051, p. 37, OP 2.

²⁶ This decision established the policies and mechanisms for procurement of electric energy storage pursuant to Assembly Bill 2514.

²⁷ D.13-10-040, mimeo, OP 3, p. 77.

~~not explicitly RPS-eligible, as explained in the 9th Edition of the CEC's RPS Renewables Portfolio Standard Eligibility Commission Guidebook ("RPS Guidebook").²⁸ However, to the extent SDG&E procures energy storage that, in the future the CEC determines is RPS-eligible, it will count this capacity towards its RPS targets.~~

iii. Determination of the Compliance Needs for Each Compliance Period

After probabilities are assigned to each project, SDG&E's RNS is calculated by multiplying the expected contractual deliveries (including degradation) by each contract's probability weighting and then adding the resulting expected deliveries across the portfolio.²⁹ The discussion below describes SDG&E's current forecasted RNS for each compliance period based on its assessment as of ~~August 2018~~April 2019.

As explained above, SDG&E achieved ~~44~~43% renewable energy in ~~2017, 2018~~,³⁰ of which approximately ~~98~~97% is from long-term contracts – therefore it is SDG&E's expectation that it will be able to meet its CP3 goals with RPS eligible procurement already under contract. Consistent with its assessment of supply (SDG&E's delivering and developing contracts) and demand (SDG&E's RPS targets in each CP),³¹ the most reasonable course of action at this time is to refrain from soliciting new renewable resources via an RPS-specific solicitation in the ~~2018~~2019 procurement cycle, and it is likely that SDG&E will not seek to hold an RPS RFO for the next several years, given its current forecasted position and considering future expected load departure. SDG&E notes that it continues to procure renewable energy projects under mandated procurement programs, and as described above, other procurement authorizations may result in additional renewable energy procurement in the future. SDG&E will seek permission from the Commission to procure any amounts, other than amounts separately mandated by the Commission, during the ~~2018~~2019 solicitation cycle.

~~28 RPS Guidebook, p. 40.~~

²⁹ As explained above, SDG&E's practice is to exclude contracts under-negotiation and estimates of deliveries from programs that are not yet fully implemented, and not to assume renewal for expiring contracts.

³⁰ The change in percentage from SDG&E's 2017 RPS position to SDG&E's 2018 RPS position is due to contract expiration and REC sales. Other potential impacts that may affect SDG&E's future RPS position are contracts start/end dates, portfolio optimization and departing load.

³¹ See Appendix ~~2~~1 for SDG&E's RNS as well as its list of probability weighted deliveries from contracts presently delivering and developing.

SDG&E also continues to seek optimization opportunities, which may include the sale of RPS products via bilateral sales agreements and/or a request for proposals (“RFP”). These opportunities are market-driven.³² To the extent SDG&E determines that an RFP is appropriate, it will issue the RFP attached hereto as Appendix 109. SDG&E will determine if a need for either a buy RFO or sales RFP exists following approval of its ~~final 2018~~Final 2019 RPS Plan based upon updated information available at that time. More detail on SDG&E’s need in each compliance period is provided in Appendix 21.

~~Additionally, SDG&E may issue a contract assignment RFP. As required by the ACR, the following is a description of the solicitation protocols:~~

- ~~● Overview: If it is determined that selling REC provides a greater benefit to SDG&E’s customers than banking excess RPS procurement, SDG&E may explore the option of assigning one or more entire RPS contracts to a third party. Such assignment may be done in addition to, or instead of, selling a portion of a portfolio of RPS contracts as described in Appendix 10. This process may present challenges as SDG&E would need to secure approval from the renewable facility prior to the assignment of its contract to a third party buyer.³³ In cases where SDG&E determines that an RFP for the assignment of RPS contracts may be beneficial, it may begin with a small volume to build knowledge and experience over time. The contract assignment RFP option may also present advantages, for example, portfolio fit—a third party buyer may prefer a project with a certain geographic location, delivery schedule, or counterparty, and contract assignment may provide this option.~~
- ~~● Non-Binding Process: Although SDG&E has not yet held a Contract Assignment RFP, its RPS Sales RFP process offers a framework from which to design an RFP. SDG&E envisions conducting the Contract Assignment RFP in a similar manner, and potentially in parallel with, an RPS Sales RFP. SDG&E would anticipate:
 - ~~○ Hiring an IE to oversee the process;~~
 - ~~○ Taking reasonable measures to ensure renewable facilities that may be assigned remain informed;~~
 - ~~○ Consulting with PRG before, during and after offers are received;~~~~

³² SDG&E may also be required to sell certain resources (i.e. as per D.18-12-003.)

³³ Note that consent cannot be unreasonably withheld.

- ~~○ Marketing the RFP to a large group of potential Assignees;~~
- ~~○ Publishing a clear and transparent set of RFO protocols, including an RFP document, proforma contract, and other necessary documents and/or agreements; and~~
- ~~○ Performing an LCBF analysis to determine which bids (if any) would be beneficial for SDG&E's customers (see **section D below**).~~

~~Following selection of winning bids (if any), SDG&E anticipates allowing both the counterparty(ies) and SDG&E ample time for due diligence, and seeking consent from any project prior to the assignment of its contract to a third party buyer. SDG&E will submit a Tier 2 AL to the CPUC for approval of any fully executed agreement(s), or a Tier 1 AL if no agreement(s) result from the RFP.~~

- ~~● **Proforma Agreement:** The proforma agreement for this transaction would involve a transfer from SDG&E to the Assignee of all liabilities and benefits included in the specific contract. If transfer of the agreement requires compensation, either from SDG&E to the Assignee or the Assignee to SDG&E, the agreement will include such terms and responsibilities. Additionally, SDG&E may need to enter into an agreement with the project that describes the duties, responsibilities, and any additional compensation for the contract to be assigned.~~
- ~~● **LCBF Analysis:** The LCBF analysis for a Contract Assignment would be similar to that used for SDG&E's RPS Sales RFP, and will include a comparison of the benefits of the contract assignment to that of the benefits from banking the RECs. In addition to the factors considered in SDG&E's RPS Sales RFP, Contract Assignment RFP analysis may include parameters such as payments or credits from either the Assignee or Project, administration cost savings, decrease in liability for SDG&E's customers, increased transaction viability, and decreased/increased counterparty risk.~~

a. Pre-CP3 Procurement Needs

The Commission confirmed that SDG&E met its RPS compliance requirements for CP1 on December 20, 2017. CP2 (2014-2016) has closed, and SDG&E anticipates also meeting its RPS compliance requirements for ~~this CP, CP2~~; see Appendix ~~21~~ for further detail.

b. Current CP (CP3) Procurement Needs

SDG&E expects that it will meet its CP3 RPS goals with generation from contracts that have been executed, together with the deliveries from ~~utility-owned generation (“UOG”)~~ initiatives ~~where relevant progress has been made.~~³⁴ Based on SDG&E’s current probability-weighted RPS position forecast, SDG&E will likely not require additional procurement in CP3. It is important to note, however, that this outlook is based on current data, and procurement needs are difficult to forecast for periods beyond several years into the future. The level of any new purchases required for CP3 will be a function of portfolio performance and will be subject to the level of banking, if any. SDG&E intends to fill any remaining RPS need with viable low-cost opportunities from future solicitations, bilateral transactions, and potential investments, and will continue to procure ~~from~~for mandated programs, to the extent required. SDG&E intends to manage potential over-procurement by banking it for future compliance needs, terminating contracts where conditions precedent are not met or where mutual agreement is reached, ~~and/or~~ selling such excess procurement~~—, or transferring the obligation to a new party as permitted by~~ the contract.

c. Post-CP3 Compliance Period Needs

Based on SDG&E’s current forecast, SDG&E anticipates meeting its RPS requirements for each CP through 2030 with procurement already under contract. As with CP3 above, however, it is important to note that this expectation is based on data available to date. SDG&E may undertake additional procurement at some point in the future to ensure compliance, with the understanding that any resulting excess can be either banked or sold bilaterally or through an RFP. Additional discussion regarding the analysis of selling versus banking can be found in Section 4.B below.

iv. Utility Tax Equity Investment and Utility Ownership Opportunities

SDG&E’s participation as a tax equity investor or utility owner in renewable generation and/or associated transmission projects may enhance project viability (through securing of financing) and may decrease costs for customers (given SDG&E’s cost of capital relative to the renewable financing market). SDG&E may consider additional investment opportunities where: (a) its involvement might enhance the viability or cost competitiveness of a project; and/or (b) where a project may have a positive socioeconomic impact, potentially involving a Diverse Business Enterprise (“DBE”).

³⁴~~This analysis includes SDG&E’s Solar Energy Project.~~

Additionally, SDG&E has also undertaken the construction of renewable energy facilities, for example under the Solar Energy Project program. SDG&E completed this program with the commercial operation of the 4.32 MW Ramona Solar Project on April 21, 2017.³⁵

~~v. System Requirements~~

~~A wide variety of procurement programs exist both within the RPS program, as well as in addition to the RPS program that will contribute to SDG&E's overall portfolio diversity. An overview of mandated RPS procurement programs is provided above, as is a discussion of SDG&E's recent preferred resources solicitation, and Section X below includes information on SDG&E's flexible capacity and storage procurement efforts. Together, these sections clearly address how SDG&E will increase the diversity of its portfolio and how such increase will contribute to customer value.~~

~~Another factor that will influence SDG&E's portfolio diversity as well as help to appropriately address integration and overgeneration is the LCBF calculation that SDG&E will use to select shortlisted projects. The LCBF document is attached hereto as Appendix 9. The methodology outlined in this document includes the interim integration adder, the application of which will ensure that integration is factored into bid evaluation, with the objective of selecting a diverse portfolio in consideration of system needs. The LCBF document also contains qualitative evaluation metrics described in Appendix 9, which play a part in selecting a diverse portfolio.~~

~~Additionally, SDG&E's 2018 Plan includes a section dedicated to economic curtailment, Section X, which outlines how SDG&E proposes to address the integration of renewables and the issue of overgeneration, both of which can contribute significantly to the incidence of economic curtailment. This section includes a discussion of SDG&E's analysis and activities, as well as information regarding contract modifications SDG&E has made over time to address curtailment. SDG&E notes that the 2017 ACR expressed an interest in how SDG&E is addressing the "under utilization" of renewable energy. This term implies that renewable energy is not being used to the extent possible when generated, which is not the case. As explained~~

³⁵ Approved by D.08-07-017. SDG&E was authorized to build up to 26 MWs of distributed utility-owned solar PV at a cost cap of \$3.50/W(dc). SDG&E held an RFP in the ~~fall~~Fall of 2011 and executed a contract for up to a total of 17 MW at eight sites owned by SDG&E. To stay under the cost cap, the number of projects were subsequently reduced due to permitting, site, and contractor issues. SDG&E held another RFP in the ~~spring~~Spring of 2015, and no contracts were executed as a result of the RFP.

~~further under Section X, renewable generation is not load following, and as such can result in overgeneration. One way to address overgeneration is through the use of energy storage. Section X includes an update on the status of SDG&E's energy storage portfolio, as well as more detail regarding the potential of this technology to address overgeneration.~~

~~The various procurement activities and continued refinement of both the project valuation methodology and contract are undertaken on behalf of SDG&E's customers to ensure that they receive a reliable and cost-effective portfolio of generation.~~

~~***B. Portfolio Optimization Strategy***~~

~~**B. Alignment with Load Curves**~~

~~SDG&E evaluates load curves regularly to ensure that its portfolio meets hourly system needs. SDG&E's renewable resource procurement process analyzes these curves in three phases: (i) need identification; (ii) solicitation; and (iii) resource operations. All steps within this process consider the load curves and their implications on overall portfolio performance and system requirements. The need identification phase outlines the required resource characteristics based on SDG&E's existing portfolio and forecasted load. During the solicitation phase, projects with the characteristics identified in the first phase are sought, and portfolio and system requirements are incorporated into the analysis in the form of capacity value, congestion costs, and transmission costs (see the LCBF discussion below). And finally, once projects are operational, their generation can be managed as deemed necessary via curtailment and/or energy storage (see Section 12 for further detail).~~

~~SDG&E's optimization strategy follows the phases outlined above and also includes SDG&E's participation in proposed procurement programs and its evaluation of unique procurement opportunities. This optimization strategy is designed to allow SDG&E to meet and maintain its RPS compliance, while minimizing customer costs, maximizing portfolio value and managing risk. SDG&E approaches this task from a variety of angles, as described below. SDG&E's optimization strategy is aimed at ensuring an optimal cost-effective portfolio mix based on technology, location, and contract length. SDG&E continually assesses opportunities to increase the value of its existing portfolio of contracts, and the investment in SDG&E's RPS bank in order to continually mitigate potential compliance, financial, and cost-allocation risks.~~

iii. RNS Optimization

The first step in SDG&E's portfolio optimization strategy is to determine its RPS need. As outlined above, the probability of success and/or the expected generation of each of the projects in SDG&E's portfolio is revised monthly in an interdepartmental meeting using the most current information. The result of this comprehensive review is a calculation of SDG&E's forecasted RPS position, which is then compared with SDG&E's RPS compliance requirements to determine its RNS. SDG&E uses this RNS to determine the appropriate level of procurement, including the necessary margin of over-procurement, going forward. Generally, if SDG&E were to foresee a shortfall it would then procure additional resources; if it foresees an excess then it may sell a portion or all of this excess pending the results of a detailed cost and benefit analysis of banking versus selling. Once SDG&E has determined its need, it proceeds to manage its procurement by continually reviewing its portfolio to minimize costs, maximize value and manage risk.

The *Administrative Law Judge's Ruling on Renewable Net Short*, issued May 21, 2014, included specific questions regarding the RNS calculation and assumptions. Responses to these questions are set forth below:

- a. *How do current and historical performance of online resources in your RPS portfolio impact future projections of RPS deliveries and your subsequent RNS?*

An explanation of SDG&E's methodology for forecasting project deliveries can be found in Section H4(A)(i).

- b. *Do you anticipate any future changes to the current bundled retail sales forecast? If so, describe how the anticipated changes impact the RNS.*

An explanation of SDG&E's methodology for forecasting bundled retail sales can be found in Section H4(A)(ii)(a).

- c. *Do you expect curtailment of RPS projects to impact your projected RPS deliveries and subsequent RNS?*

Curtailment is discussed in Section ~~X12~~.

- d. *Are there any significant changes to the success rate of individual RPS projects that impact the RNS?*

The average success rate of SDG&E's contracts currently in effect is discussed in Section H4(A)(i), and the success rates of individual projects are shown in Appendix 21.

- e. *As projects in development move towards their COD, are there any changes to the expected RPS deliveries? If so, how do these changes impact the RNS?*

The average success rate of SDG&E's contracts currently in effect is discussed in Section ~~H4~~(A)(i), and the success rates of individual projects are shown in Appendix ~~21~~.

- f. *What is the appropriate amount of RECs above the PQR ("Procurement Quantity Requirement") to maintain? Please provide a quantitative justification and elaborate on the need for maintaining banked RECs above the PQR.*

SDG&E's current level of RECs above its PQR is discussed in Section ~~VH9~~, and is shown in Appendix ~~21~~.

- g. *What are your strategies for short-term management (10 years forward) and long-term management (10-20 years forward) of RECs above the PQR? Please discuss any plans to use RECs above the PQR for future RPS compliance and/or to sell RECs above the PQR.*

An explanation of SDG&E's methodology for managing RECs above the PQR can be found in Sections ~~H4(B)(ii)(b) and 4(B)(ii)(c) and H(B)(ii)(d)~~.

- h. *Provide a voluntary margin of over-procurement ("VMOP") on both a short-term (10 years forward) and long-term (10-20 years forward) basis. This should include a discussion of all risk factors and a quantitative justification for the amount of VMOP.*

A discussion of risk factors affecting RPS procurement can be found in Sections ~~IV6~~ and ~~V7~~, and SDG&E's current level of RECs above its PQR is discussed in Section ~~VH9~~ and is shown in Appendix ~~21~~.

- i. *Please address the cost-effectiveness of different methods for meeting any projected VMOP procurement need, including application of forecast RECs above the PQR.*

An explanation of SDG&E's methodology for managing RECs above the PQR can be found in Sections ~~H4(B)(ii)(b) and 4(B)(ii)(c) and H(B)(ii)(d)~~.

- j. *Are there cost-effective opportunities to use banked RECs above the PQR for future RPS compliance in lieu of additional RPS procurement to meet the RNS?*

An explanation of SDG&E's methodology for managing RECs above the PQR can be found in Sections ~~H4(B)(ii)(b) and 4(B)(ii)(c) and H(B)(ii)(d)~~.

- k. *How does your current RNS fit within the regulatory limitations for PCCs? Are there opportunities to optimize your portfolio by procuring RECs across different PCCs?*

An explanation of the content categorization of SDG&E's portfolio can be found in Section **H4**(A)(iii)(a), and an explanation of SDG&E's methodology for optimizing procurement across content categories can be found in Section **H4**(B)(iv)(a) and (d).

iii.i. Cost Optimization

Cost optimization begins before a contract is executed, with contract analysis methodology development and adoption. Once this analysis methodology is utilized and a contract is executed, if an opportunity to optimize this contract becomes apparent, SDG&E will investigate it to determine the best course of action for customers.

a. Least-Cost Best-Fit Analysis

SDG&E carefully analyzes bids and bilateral proposals according to its LCBF methodology. This methodology is intended to optimize SDG&E's procurement decisions by minimizing cost and maximizing value. It includes analysis of the PPA price, which inherently includes the counterparty's interest, carrying, and transaction costs. The analysis also takes into account the energy, green attributes, and capacity value provided by each of the projects, congestion costs, and transmission costs. The LCBF process results in the quantification and subsequent ranking of the ~~cost~~ costs and benefits of each bid based on these metrics. The formula deducts the PPA Price ("Levelized Contract Cost"), transmission cost, Renewable Integration Cost Adder ("RICA"), and congestion cost from the sum of the energy, green attributes, and capacity benefits to determine a project's Net Market Value ("NMV"). These NMVs can then be compared and used to create a quantitative ranking. SDG&E then evaluates any identifiable qualitative aspects, such as project viability, developer experience, and portfolio fit to determine the shortlist. The projects that are placed on the shortlist will have the highest value to customers and best portfolio fit when compared with other bids from the particular solicitation. D.14-11-042 directed several changes to the LCBF methodology, and these changes have been included in the LCBF methodology attached hereto as Appendix **98**.³⁶ SDG&E revises its LCBF methodology as necessary to incorporate new information, such as through the outcome of the LCBF review process currently underway at the Commission, as discussed in Section **IV6**.

³⁶ D.14-11-042, pp. 16, 19, 49, 61-63.

b. Banking vs. Sales Analysis

Another optimization tool related to contract management is the analysis of the option to bank or sell excess procurement.³⁷ When SDG&E has excess RPS procurement in its portfolio, it will perform an analysis of both the short-term and long-term quantitative and qualitative costs and benefits associated with either banking this excess, or selling it. The quantitative portion of the valuation includes consideration of SDG&E's RPS position, the time value of revenues from the potential REC sale, and the potential replacement cost. The qualitative portion includes consideration of the impact on market liquidity and SDG&E's RPS position. SDG&E will reflect current industry best practices in its sales contracts.³⁸ For more information regarding SDG&E's Sales Framework, please see Appendix ~~109~~.D.

c. Retirement Analysis

There is a significant link between SDG&E's banking versus sales analysis and its retirement analysis where SDG&E evaluates its compliance position and strategy to ensure that RECs are handled in the most cost-effective way in both the short-term and the long-term for SDG&E's customers. SDG&E's retirement decisions include consideration of its RPS position and the 36-month shelf-life of the RECs. RECs can be retired and used for compliance purposes within 36 months of the REC's issuance, and any RECs in excess of the CP's required targets can be banked and will not expire. Once a REC is banked, it can be used for compliance purposes at SDG&E's discretion. SDG&E also considers the time value of the impact of potential revenues or additional RPS procurement on rates for bundled customers when making the decision to buy, sell, bank, or retire RECs.

iv.iii. Value Optimization

In addition to its contract analysis and management strategies, SDG&E also seeks to add value to the RPS procurement process by actively participating in the discussion of current and proposed procurement programs, and by evaluating unique procurement opportunities.

³⁷ SDG&E's excess procurement is SDG&E's VMOP (discussed in more detail under Section ~~VH9~~).

³⁸ In Resolution E-4572, the Commission approved SCE's request to enter into a 19.5-month renewable energy sales contract with Energy America LLC. Contractual deliveries began on May 15, 2012, and the contract was filed with the Commission on July 6, 2012. The Commission also approved, in Resolution E-4639, PG&E's request to enter into two overlapping renewable energy sales agreements for a period of approximately 1 month and 9 days with Tenaska Power Services Company. Contractual deliveries began November 22, 2013, and the contract was filed with the Commission on December 19, 2013. In order to provide maximum flexibility and value to customers, SDG&E will also consider opportunities where deliveries begin before the contract is submitted and approval is granted retroactively.

a. Program Design

SDG&E actively participates in discussions regarding the initial design and future of renewable procurement programs via comments and workshops. SDG&E’s goal is to provide recommendations that contain costs and protect customers. Examples of these efforts are SDG&E’s contribution to the BioMAT and BioRAM program design process, as well as its recommendations regarding the future of the RAM program.

The BioMAT program began in February of 2016 and is in process, ~~and~~, SDG&E met ~~is its~~ BioRAM requirement in December of 2016. The RAM program, discussed in Section ~~XV~~ ~~below~~ 17, is a tool to be used on an as-needed basis to efficiently procure low cost RPS resources.³⁹ As explained under Section ~~H.C.4.E~~, SDG&E anticipates that the ~~recently codified~~ IRP process signifies a shift away from separate programs and processes ~~(including the stand-alone RAM program)~~, towards a holistic planning and procurement process.

b. Utility Involvement

SDG&E evaluates both tax equity and utility ownership opportunities as procurement options and assesses the value of its involvement. SDG&E may participate in these types of projects if its participation would either augment the probability of project success or cost competitiveness of a project, and/or lead to a positive socioeconomic impact, for example ~~potentially~~ involving a DBE.

c. Bilateral Transactions

SDG&E will enter into bilateral purchase or sales agreements to the extent that these transactions benefit customers. Not all products are well-suited for the RFO process due to, for example, deal timing and/or complexity. The ability to contract bilaterally is a valuable tool in maximizing value to customers – it is useful in addressing an unforeseen need in a timely manner and also allows an IOU to take advantage of opportunities that are too complex to solicit through an RFO, such as tax equity, utility ownership, or buy/sell transactions. In addition, the ability to engage in bilateral deals is necessary from a practical perspective; bilateral deals assist market

³⁹ Regarding the RAM program, the Commission determined that “the original objectives of RAM have been met... [however, as] suggested by SDG&E and [the Office of Ratepayer Advocates]... RAM may provide the IOUs with a procurement tool to facilitate more streamlined procurement for RPS needs... [therefore] starting with the 2015 annual RPS procurement plans filings, the utilities shall include, at the discretion of the utility, RAM as a streamlined procurement tool.” See D.14-11-042, pp. 91-92.

development by offering an additional sales option, making project development less dependent on RPS solicitation cycles.

v.iv. Risk Optimization

SDG&E ~~addresses~~optimizes risk ~~optimization~~ through several long-term and short-term mitigation strategies ~~to mitigate this risk, and~~. SDG&E also seeks to add value by actively participating in discussions regarding compliance and enforcement rules.

a. Category 1 Procurement

~~While~~ SDG&E faces some degree of risk related to a procurement deficit, and therefore regularly reviews its RNS so that it has the best information available with which to manage its portfolio towards compliance—. However, the most significant non-compliance risk faced by SDG&E relates to contract categorization under § 399.16(b)~~),~~⁴⁰ (*i.e.*, the risk that SDG&E’s categorization of the contracts in its portfolio will not be accepted by the Commission)~~).~~ This issue has generally been alleviated by the Commission’s verification of SDG&E’s RPS compliance for CP1 on December 20, 2017.⁴¹ SDG&E’s long-term RPS compliance strategy will continue to emphasize the procurement of products it considers to be Category 1.

b. Voluntary Margin of Over-procurement

A second long-term procurement strategy utilized by SDG&E is the adoption of a “buffer” or Voluntary Margin of Over-procurement (“VMOP”~~)~~⁴²).⁴³ SDG&E’s VMOP is intended to ensure to the extent possible that SDG&E is able to reach its RPS goals, as explained

⁴⁰ For reference, the categories are as follows: (i) Category 1 is a bundled (energy + REC) product, (ii) Category 2 is a firm-and-shaped product, and (iii) Category 3 is an unbundled product (REC only).

⁴¹ Letter from Edward Randolph, Director, Energy Division, December 20, 2017.

⁴² ~~399.13(a)(4)(D):~~

~~(4) The commission shall adopt, by rulemaking, all of the following...~~

~~(D) An appropriate minimum margin of procurement above the minimum procurement level necessary to comply with the renewables portfolio standard to mitigate the risk that renewable projects planned or under contract are delayed or canceled. This paragraph does not preclude an electrical corporation from voluntarily proposing a margin of procurement above the appropriate minimum margin established by the commission.~~

⁴³ SDG&E adopts a VMOP consistent with Cal. Pub. Util. Code § 399.13(a)(4)(D):

(4) The commission shall adopt, by rulemaking, all of the following...

(D) An appropriate minimum margin of procurement above the minimum procurement level necessary to comply with the renewables portfolio standard to mitigate the risk that renewable projects planned or under contract are delayed or canceled. This paragraph does not preclude an electrical corporation from voluntarily proposing a margin of procurement above the appropriate minimum margin established by the commission.

in more detail below under Section ~~VH9~~, which describes SDG&E's VMOP formula. Project development can present challenges ~~which that~~ must be accounted for when determining need; ~~and in. In~~ combination with the constant fluctuation of RPS targets (based on retail sales), ~~as well as) and~~ continual changes in RPS deliveries, it is essentially impossible to meet the RPS targets exactly. SDG&E undertakes conservative VMOP procurement as a prudent measure to guard against any unforeseen events that may impact its portfolio and jeopardize compliance.

c. Short-term Contracts

Due to unforeseen events, a situation may occur in which SDG&E needs to procure a small amount of renewable energy in the near-term. In this scenario, short-term contracting is a viable strategy, as it allows SDG&E to respond quickly to a sudden change in portfolio status and manage a short-term need without entering into an unnecessary long-term commitment.

d. Category 3 Procurement

SDG&E may consider Category 3 procurement to the extent that such products are shown to be cost-effective and a need for additional procurement becomes evident. However, SDG&E ~~also intends plans~~ to maintain enough room below its Category 3 procurement limits ~~to ensure so~~ that Category 3 procurement is a potential strategy in the short-term, should SDG&E need ~~to procure~~ to fill any unforeseen immediate need.

C. Responsiveness to LSE Policies & Goals, Statutes, & Commission Policies

SDG&E continually seeks to manage its portfolio prudently while ensuring compliance with the State's clean energy goals. SDG&E's renewable resource procurement decisions follow relevant laws and regulations while considering all relevant information, as described within this Plan (see Section 4.A. above). Section 3 addresses current statutes and Commission proceedings/policies, and above under Section 4.A is a discussion of the portion of SDG&E's portfolio impact assessment that addresses retail sales, project viability, and existing RPS contracts. In addition to the parameters discussed in the above sections, SDG&E also considers the following regulatory factors in its portfolio impact assessment:

a. RPS Program Rules – Related Factors

Both the CEC and Commission oversee various parts of the RPS program. Regarding general RPS program rules, the relevant areas of responsibility as they relate to SDG&E are renewable facility eligibility and REC verification (both CEC), and RPS compliance rules

(Commission). These factors impact the facilities with which SDG&E may contract, as well as SDG&E’s RPS compliance determination.

- Impact of CEC Requirements: The CEC revises its RPS Guidebook with relative frequency, which sometimes results in changes to eligibility requirements for renewable energy resources. SDG&E monitors this process and works with CEC staff to determine the effects, if any, on its portfolio as a result of these periodic RPS Guidebook revisions. The CEC is also tasked with verifying RPS procurement. SDG&E submits its procurement data from the prior year to the CEC annually by July 1 and is prepared to work with the CEC in its review process.
- Impact of Banking Rules: The banking rules adopted by SB 350 and formalized in D.17-06-026 make several changes, which are now applicable to SDG&E per its election to utilize them beginning in CP3: (i) short-term Category 1 products can be banked;⁴⁴ (ii) Category 2 products cannot be banked;⁴⁵ and (iii) Category 2 and 3 products of any duration cannot be deducted from the bank.⁴⁶ In accordance with Commission direction,⁴⁷ SDG&E has updated its RNS table under Appendix 1 to comport with the new SB 350 banking rules, assuming for RNS calculation purposes that eligible excess procurement⁴⁸ will be utilized in future compliance periods.⁴⁹

b. Policy Procurement – Related Factors

California’s commitment to renewable distributed generation (“DG”) continues to influence proceedings, programs, and legislation. This commitment will ultimately shape the State’s renewable mix, and as load-serving entities (“LSEs”) reach compliance, they may be required to shift procurement from utility-scale projects to small-scale distributed generation

⁴⁴ 399.13(a)(4)(B)(i).

⁴⁵ 399.13(a)(4)(B)(ii).

⁴⁶ The current banking rules, established by D.12-06-038 (see p. 66), require that bankable excess procurement be calculated by deducting all short-term RECs of any category from the total volume of bankable excess procurement. SB 350 expressly changes this by allowing the banking of short-term Category 1 products (399.13(a)(4)(B)(i)), and prohibiting the deduction of any Category 2 and 3 products when determining bankable excess procurement (399.13(a)(4)(B)(ii)).

⁴⁷ Administrative Law Judge’s Ruling on Renewable Net Short, issued May 21, 2014.

⁴⁸ Rules regarding excess procurement are set forth in D.12-06-038, and D.17-06-026.

⁴⁹ Note that SDG&E may manage excess procurement by selling such products when doing so would benefit customers, or by utilizing a retired REC for RPS compliance in future compliance periods.

(“DG”) projects. SDG&E is monitoring the legislative and policy activities related to this goal and any potential impacts to its portfolio.

Over the past several years, the California Legislature has passed SB 43 (“Green Tariff Shared Renewables” or “GTSR”), SB 1122 (“Bioenergy Market Adjusting Tariff” or “BioMAT”), and the Renewable Market Adjusting Tariff (“ReMAT”), which have required the Commission to implement new renewable procurement programs consistent with the State’s interest in DG. The Commission also implemented its own mandated renewable procurement program, the Renewable Auction Mechanism (“RAM”) program in 2010, as well as the BioRAM in 2016, in response to Governor Brown’s Emergency Proclamation. These programs have resulted and will result in additional RPS procurement that SDG&E must include in its RNS calculation,⁵⁰ which will impact SDG&E’s position and procurement decisions.

Per D.18-12-003, SDG&E is required to make available for sale all of the future RECs associated with SDG&E’s BioRAM contract(s) as Portfolio Content Category (PCC) 1 RECs. SDG&E will utilize the Sales RFP documents attached herein (please see Appendices 9-9.C) and will file an Advice Letter with the Commission for approval of any resulting contracts. SDG&E will update its RNS table once sales have been completed and any resulting contracts have been approved.

Per Resolution E-4977, which implements Senate Bill 901, SDG&E is required to seek to extend its BioRAM contract for 5 years. SDG&E will indicate, through the Advice Letter process, the results of its negotiations with its BioRAM counterparty and, if necessary, will update its RNS table to reflect any resulting changes in the normal annual cycle.

SDG&E’s Schedule Re-MAT Tariff closed, effective June 30, 2016. Further information on GTSR, BioMAT, RAM, and BioRAM can be found in Sections 4, 17, and 18, respectively. As explained under Section 4.E, SDG&E anticipates that the IRP process signifies a shift away from separate programs such as these, towards a holistic planning and procurement process.

c. Other Procurement Authorizations – Related Factors

RPS-eligible procurement may occur both within and outside the RPS program. SDG&E continues to monitor the relevant initiatives, which are described in more detail below. If

⁵⁰ SDG&E’s RNS calculation, attached hereto as Appendix 1, only includes programs that have been fully implemented.

authorized to procure renewable resources as a part of these initiatives, SDG&E will count such resources towards its RPS goals.

- Impact of IRP: In D.18-02-081, the Commission implemented a two-year IRP cycle, and the first IRP for all LSEs was submitted on August 1, 2018. The IRP process may result in additional procurement authorizations, including the procurement of renewable resources, to meet the goals of the IRP.
- Impact of Local Capacity Resource Needs: In D.14-03-004, the Commission authorized SDG&E to procure 500-800 MW of local capacity resources (“LCR”) following the retirement of San Onofre Nuclear Generating Station (“SONGS”) to be on-line by 2022. This decision authorizes up to 600 MW from any source and requires that the remaining 200 MW be from preferred resources or energy storage (including a minimum of 25 MW of energy storage).⁵¹ Pursuant to this decision, SDG&E submitted a conventional resource procurement plan and a preferred resources procurement plan, which were both approved in 2014. The Commission subsequently approved a power purchase tolling agreement (“PPTA”) for the 500 MW Carlsbad Energy Center in D.15-05-051, and mandated that the remaining 100 MW LCR authorization “consist of preferred resources and energy storage.”⁵² SDG&E has issued two solicitations in accordance with its approved procurement plans and procurement authorization. On April 19, 2017 SDG&E filed A.17-04-017 requesting approval of 88 MW of in-basin capacity (83.5 MW from energy storage, and 4.5 MW from Demand Response). On May 31, 2018 the Commission issued D.18-05-024 approving SDG&E’s request for 88 MW of in-basin capacity. SDG&E may issue another solicitation for preferred resources, which may include renewable energy, to fill any remaining authorized LCR need.
- Impact of Energy Storage Procurement: SDG&E is required to incorporate into its RPS Procurement Plan any energy storage targets and policies that are adopted by the Commission as a result of its implementation of AB 2514.⁵³ The Commission issued

⁵¹ D.14-03-004, OP 2, p. 143.

⁵² Carlsbad Decision at D.15-05-051, p. 37, OP 2.

⁵³ See Cal. Pub. Util. Code §2837.

D.13-10-040⁵⁴ on October 1, 2013, requiring SDG&E to procure 165 MW of energy storage by 2020.⁵⁵ The Commission in D.17-04-034 also authorized SDG&E to procure up to 166 MW of energy storage programs and investments pursuant to AB 2868. Energy storage itself is not explicitly RPS-eligible, as explained in the CEC's RPS Guidebook.⁵⁶ However, SDG&E will count procured energy storage capacity towards its RPS targets in the future, if the CEC determines them to be RPS-eligible. Additional details can be found in SDG&E's Energy Storage Plan.⁵⁷

D. Portfolio Diversity & Reliability

A wide variety of procurement programs exist both within and in addition to the RPS program. This variety contributes to SDG&E's overall portfolio diversity. An overview of SDG&E's mandated RPS procurement programs and preferred resources solicitation is provided above under Section 4.C.b. Below, SDG&E describes the IRP process, and Section 12(D) includes information on SDG&E's flexible capacity and storage procurement efforts. Additionally, Section 4 provides detail regarding how transportation electrification is considered, and SDG&E's strategy for optimizing cost, value, and risk, which are also important considerations for both diversity and reliability purposes. Together, these sections clearly address how SDG&E will increase the diversity of its portfolio and contribute to grid reliability, thereby resulting in customer value.

Another factor that will influence SDG&E's portfolio diversity as well as help to appropriately address integration and overgeneration is the LCBF calculation that SDG&E will use to select shortlisted projects. The LCBF document is attached hereto as Appendix 8. The methodology outlined in this document includes the interim integration adder, the application of which will ensure that integration is factored into bid evaluation, with the objective of selecting a diverse portfolio in consideration of system needs and reliability. The LCBF document also contains qualitative evaluation metrics described in Appendix 8, which play a part in selecting a diverse portfolio.

⁵⁴ This decision established the policies and mechanisms for procurement of electric energy storage pursuant to Assembly Bill 2514.

⁵⁵ D.13-10-040, mimeo, OP 3, p. 77.

⁵⁶ The CEC's RPS Renewables Portfolio Standard Eligibility Commission Guidebook, 9th Edition, p. 40.

⁵⁷ SDG&E's Energy Storage Plan is available at:

<https://www.sdge.com/sites/default/files/regulatory/AB%202868%20application%20Final%20Draft.pdf>.

Additionally, SDG&E’s 2019 Plan includes a section dedicated to economic curtailment, Section 12, which outlines how SDG&E proposes to address the integration of renewables and the issue of overgeneration, both of which can contribute significantly to the incidence of economic curtailment. This section includes a discussion of SDG&E’s analysis and activities, as well as information regarding contract modifications SDG&E has made over time to address curtailment. SDG&E notes that the ACR expressed an interest in how SDG&E is addressing the “under-utilization” of renewable energy. This term implies that renewable energy is not being used to the extent possible when generated, which is not the case. As explained further under Section 12, renewable generation is not load-following, and as such can result in overgeneration. One way to address overgeneration is through the use of energy storage. Section 12 includes an update on the status of SDG&E’s energy storage portfolio, as well as more detail regarding the potential of this technology to address overgeneration.

The various procurement activities and continued refinement of both the project valuation methodology and contract are undertaken on behalf of SDG&E’s customers to ensure that they receive a reliable and cost-effective portfolio of generation.

C.E. Lessons Learned & Trends

The following sections discuss how trends and lessons learned over the past several years impact RPS procurement, and illustrate how SDG&E accounts for these factors in its RPS ~~plan~~Plan and procurement activities.

i. Lessons Learned

a. Overbuilding

As described in all RPS Plans since 2013, SDG&E is concerned that developers provided profiles in prior solicitations that did not match the profiles of the facilities that were ultimately built.⁵⁸ In other words, developers “overbuilt” facilities (*i.e.*, installed capacity above the amount bid and/or shaped the production profile to take advantage of higher-priced TOD periods). The resulting overgeneration has increased costs to customers through increased contract costs, and increased generation overall which increases the incidence of and payments for negative real-time energy pricing. SDG&E has modified its PPA several times to discourage this practice

⁵⁸ SDG&E 2013 RPS Plan, p. 37-; SDG&E 2014 RPS Plan, p. 25-; SDG&E 2015 RPS Plan, p. 25-; SDG&E 2016 RPS Plan, p. 28-; SDG&E 2017 RPS Plan, p. 31; SDG&E 2018 RPS Plan, p. 44.

going forward, and will continue to reevaluate its contract provisions in subsequent versions of the plan, as new information becomes available, to determine if and how its contracts should be updated.⁵⁹

b. Peak Shifting

Due to the success of the RPS program, a significant amount of renewable energy continues to be added to the grid. Substantial amounts of rooftop solar are also being added by customers behind the meter. As a result, the peak load net of variable energy resources has and will continue to shift as the California resource portfolio evolves. Renewable resources have low variable costs, and when delivering at high penetration levels during any single time during the day, may result in significant decreases in marginal energy prices and ~~even~~ significant ramping events. SDG&E is monitoring the impacts of this issue in the IRP proceeding.

c. Capacity Value

SDG&E's method for calculating energy and capacity values uses a benchmark where energy values are shaped hourly based on a forecast of SP15 energy prices and the results of production cost modeling that yields ~~a year 2022 an~~ hourly energy shape: that covers the contract term. The capacity value is shaped hourly using a ~~year 2022~~ Loss-of-Load Probability ("LOLP") study for a representative year of the contract term. The process assigns higher capacity value to hours of greater capacity need, which more accurately reflects the impact of variable energy resources upon capacity needs. The calculation provides annual capacity values for both local and IV/System area projects.⁶⁰ These annual values are then taken through a process which creates monthly capacity values using the LOLP mentioned above, then down to an hourly level using the monthly values.

These benchmark values are reasonable because, when evaluating a contract on a standalone basis, it should be measured against the avoided costs the utility might face had this

⁵⁹ SDG&E 2013 RPS Plan, p. 38-; SDG&E 2015 RPS Plan, pp. 25-28.

⁶⁰ For Local Area Projects: the Marginal Generation Capacity Cost of \$120/kW-year, which is intended to provide a proxy for the net cost of new entry, as discussed in Section 3 of the Revised Prepared Direct Testimony of David T. Barker, Chapter 5, On Behalf of SDG&E in connection with Application 11-10-002 (Application of SDG&E For Authority To Update Marginal Costs, Cost Allocation, And Electric Rate Design). Note that this value will need to be updated from time to time in correlation with market trends. The current value of \$120/kW-year is in 2012 dollars and a 2.5% annual escalation rate is applied to calculate the value beyond 2012. For IV Area Projects and System Area Projects: the CPUC penalty of \$40/kW-year associated with failure to meet system RA requirements. CPUC 2014 Filing Guide for System, Local and Flexible Resource Adequacy (RA) Compliance Filings, p. 27.

contract not been part of the portfolio. For example, if SDG&E had a resource in its portfolio, and that resource was crucial to meeting local resource adequacy requirements, the marginal value of that resource is the amount that SDG&E must pay to replace that resource if it becomes unavailable plus the cost to replace the energy that resource would have generated in order to serve hourly retail load. SDG&E will update its calculations as the assumption sources are updated.

d. Delay of COD Declaration

SDG&E is concerned that a facility could reach commercial operation prior to the contractual commercial operation date (“COD”), but delay declaring COD until the COD date in the contract. As a result, the facility would be paid for this energy at the contract price, thereby extending the term of its contract, resulting in an additional cost to customers. To mitigate this issue, SDG&E revised its PPAs several years ago to change the price paid for energy delivered prior to COD to a fixed REC value plus CAISO revenues net of CAISO costs.

ii. Trends

a. Steady Project Success Rates

As the market for renewable energy has matured, SDG&E has observed a positive trend in ~~the project success rates~~. As explained above, SDG&E reviews ~~project success rates~~the status of all projects in its portfolio on a monthly basis to incorporate the most recent information into its forecast and will continue this practice.

b. Evolving RA Requirements

The RA program is the subject of Commission rulemaking (~~“R.”~~) proceeding R.14-10-010. The Commission adopted multi-year Local RA requirements in D.18-06-030, issued on June 25, 2018. ~~Currently, the Local RA requirements are only for 1 compliance year.~~ Beginning in 2020, LSEs will have ~~a minimum of 3~~ years of Local RA requirements. ~~The Commission requested parties to submit proposals for procurement targets~~LSEs must meet 100% of Local RA requirements for 2020 and 2021 and 50% of Local RA requirements for years 3 to 5 in Track 2 of the OIR-2022.

The Commission ~~also~~ requested parties to ~~submit proposals for~~hold workshops to attempt to reach consensus on a central buyer procurement ~~agency that would procure Local RA capacity framework~~ in ~~order to maintain Local reliability on behalf~~D.19-02-022 for Track 2 of the LSEs proceeding. SDG&E is actively participating in the ~~Transmission Access Charge area if~~

such workshops to help parties reach a consensus framework. Three different procurement is necessary frameworks (Full, Residual and Hybrid), were presented to the Commission in Track 2. Multiple alternate entities were also proposed. However, because there was no consensus reached, the Commission has asked parties to further discuss and submit implementable solutions for consideration. SDG&E is monitoring the active Commission RA proceeding to determine the impact any applicable decisions will have on SDG&E's procurement practices.

e. — Multiple RPS Contract Versions Across Programs

~~SDG&E has noted that as the volume of mandated programs has increased, so have the number of contract versions that must be managed. At this time, there are five distinct PPAs for RPS products, all with separate approval processes: the Long Term and Short Term RPS PPAs (attached hereto as Appendices 6 and 7), the Green Tariff ("GT") RAM PPA (attached hereto as Appendix 11.A), the Enhanced Community Renewables ("ECR") RAM PPA Rider (attached hereto as Appendix 12.A), and the BioMAT PPA. As the Commission has acknowledged, it is logical that the TOD factors used in each PPA be consistent, to the extent possible.⁶¹ Going forward, in accordance with D.14-11-042, SDG&E intends to use the TOD factors approved in each RPS Plan in all PPAs for RPS products executed in that plan year, with updates where appropriate. Additionally, any Tier 1 AL filed by SDG&E requesting Commission approval of conforming TOD factors across its RPS Procurement Programs will be served on the R.18-07-003 service list, or then current RPS proceeding, and any entities in SDG&E's RPS procurement queue.⁶²~~

d.c. — Integrated Resource Planning

SB 350 added a provision to the Public Utilities Code directing the Commission to implement a holistic integrated resource planning process. IRP is a wide-ranging effort at the Commission, undertaken along with staff from the CEC and the California Air Resources Board ("CARB"), that will/should combine the numerous planning processes currently undertaken in separate resource-specific cases into a single look to ensure that IOU and non-IOU load-serving entities will achieve the targets to be established by CARB related to GHG emission reductions.⁶³ As explained in the IRP OIR, prior planning has not addressed the comprehensive

⁶¹ D.14-11-042, *mimeo*, p. 24.

⁶² D.15-12-025, OP 7, p. 123.

⁶³ Senate Bill 350 (Stats. 2015, Ch. 547). at 14.

resource optimization challenge presented by IRP.⁶⁴ IRP incorporates at least 19 different procurement-related proceedings, including the RPS proceeding,⁶⁵ and is bound by the following constraints which are addressed in or related to the various incorporated proceedings: (i) GHG emissions; (ii) reliability; (iii) cost; (iv) the 50% by 2030 RPS goal;⁶⁶ (v) the goal of doubling cost-effective energy efficiency savings; and (vi) the Commission’s continuing responsibility to ensure safe and reliable service at just and reasonable rates.⁶⁷

RPS procurement is currently a composite of several different procurement programs and targets that are the results of separate mandates to address the needs of a particular technology, market segment, or policy goal. As described above, these programs do not necessarily address an identified resource need, cost-effectiveness or grid implications in the broader context – these elements are necessary to ensure that customers receive the least-cost best-fit resources.

SDG&E views the IRP process and associated constraints as a marked transition away from procurement made via numerous one-off programs and separate processes towards a comprehensive, optimized and cost-effective process that evaluates a portfolio of resources on a comparative basis. IRP should enable procurement in consideration of multiple data points, not ~~just~~only what is required by a particular policy-driven program, thereby providing cost and grid optimization opportunities to the benefit of SDG&E customers as well as customers statewide. SDG&E looks forward to participating in ~~the resolution of these items and the development of~~ the IRP process, with the end goal of enhancing the cost-effectiveness of RPS and other procurement mandates. SDG&E believes that it is prudent to pause any incremental RPS-procurement, including the adoption of new procurement mandates, while IRP is being implemented, especially given SDG&E’s RPS performance to date.⁶⁸

e.d. Meeting Demand for Higher Levels of Renewables

In addition to the State’s goals (the most recent development of which was SB 100), many customers and communities within SDG&E’s service territory are interested in electricity

⁶⁴ R.16-02-007, p. 13.

⁶⁵ R.16-02-007, p. 11.

⁶⁶ SB 100 (2018) increased this goal to 60% by 2030.

⁶⁷ R.16-02-007, p. 13.

⁶⁸ With regard to R.16-02-007, IRP “Phase 1” was resolved as indicated in D.19-04-040. “Phase 2” of the IRP, the “Procurement Track,” will be initiated in the near future where the Commission will explore options for facilitating procurement that is determined to be necessary for maintaining system reliability and/or to facilitate renewable integration.

service with even higher levels of renewables than required by law. Related to SDG&E's RPS planning efforts, SDG&E will consider ways in which SDG&E can potentially providesupport offerings that are made available to customers throughout the SDG&E service territory to help meet these goals.

F. Conformance with IRP

As described above under Section 4, SDG&E has no near-term RPS need, and therefore does not plan to procure renewable resources for the 2019 RPS Plan cycle. This is also consistent with SDG&E's 2018 IRP, which did not forecast a procurement need for RPS resources in the near term. Going forward, SDG&E will incorporate any RPS procurement authorized by the IRP into its RPS Plan as necessary.

3.5. PROJECT DEVELOPMENT STATUS UPDATE

As described further in Section H4, SDG&E regularly evaluates project development status to assess each project's ability to begin deliveries pursuant to contract terms and conditions. SDG&E's portfolio of renewable energy resources currently under contract but not yet delivering (either pre-construction or in construction) are in various stages of development. Projects under development generally require numerous permitting approvals, generator interconnection, financing, and completion of construction before they can achieve commercial operation. Each of the above issues adds significant risk to the development of a project and can directly impact the success or failure of a project. SDG&E's experience is that achieving all of these milestones represents a significant challenge for developers.

As of April 2019, SDG&E has or is developing contracts for fivefour renewable projects that are in the pre-construction or construction phase (none of which are UOG), and 6159 projects that are in commercial operation (twelve of which are UOG). Information regarding these projects, including the following data points requested by the ACR, can be found in Appendix 2:1: (i) name; (ii) capacity; (iii) term; (iv) location; and (v) COD. Generally, projects in the pre-construction phase are most at risk of failure. However, projects under construction may also encounter issues that could affect their ability to achieve commercial operation, such as successful litigation against the project. In general, projects that have achieved commercial operation have a high probability of meeting their contractual obligations; however, project failure or resource fluctuations (*i.e.*, a bad wind year) can create challenges. Although a

developer's experience may improve the likelihood of a project achieving commercial operation, it does not ensure that a project will be successful. Sections ~~H, IV4, 6~~ and ~~V7~~ of this plan discuss the various delays and risks that could impact projects in various stages of development, ~~and Appendix 1 provides information on SDG&E's developing projects from SDG&E's June 2018 PRG meeting.~~

A. Impact of Project Development Status

As a practical matter, until a project actually begins commercial operation, it bears significant development risk. SDG&E currently expects that a majority of the projects in its portfolio will meet their commercial operation dates either on schedule or within the prescribed cure period. SDG&E bases its forecasting, and therefore its RNS calculation, on its individual project assessments, as is described in more detail in Section ~~H4~~. It also relies on the lessons it has learned and trends it has observed as a result of the RPS procurement process, as discussed in more detail in Section ~~H4~~. The above factors contribute to SDG&E's monthly project assessments of the likelihood of each project's success. For example, a project that has been experiencing permitting issues would receive a probability weighting reduction to account for this risk until the issue is resolved. The result of these cumulative assessments is reflected in the RNS, which SDG&E will use to inform its procurement activities. The RNS as of ~~August 2018~~April 2019 is provided in Appendix ~~21~~. For additional information on RPS products, please visit the Commission's RPS Database at http://cpuc.ca.gov/RPS_Reports_Data.

4.6. POTENTIAL COMPLIANCE DELAYS

The market for renewable energy is dynamic, ~~and~~ multiple factors can impact project development and SDG&E's attainment of its RPS program goals. The following discussion covers the major issues affecting both renewable project developers and SDG&E. It begins with the transmission, permitting, and financing hurdles faced during project development, and continues through some of the challenges experienced as a project matures – *e.g.*, viability, debt equivalence, accounting issues, and regulatory uncertainty.

A. Transmission and Permitting

i. Interconnection

The timely approval, permitting, and completion of interconnection facilities is crucial to the successful implementation of SDG&E's renewable portfolio. The completion of the East

County (“ECO”) Substation and the Drew Switchyard, as well as the interconnection of ~~fivesix~~ renewable projects to the Imperial Valley (“IV”) Substation, have all been positive developments. However, issues may arise as a result of ~~changes in flow pattern,~~ transmission facility planning, ~~or the interconnection process itself~~ that could impact project development timelines. SDG&E monitors these issues, and also actively participates in the CAISO’s Transmission Planning Process (“TPP”) by responding to competitive solicitations and proposing its own projects where appropriate, as discussed below.

~~a. — Flow Pattern Issues~~

~~Analysis conducted by the CAISO for the CAISO’s 2014-2015 Transmission Plan focused on the year 2024, and found that the closure of SONGS “had materially changed flow patterns in the area, resulting in a significant decline in forecast deliverability from” IV.⁶⁹ The 50% RPS analysis determined that a transmission project would be necessary to ensure deliverability of future IV projects. The CAISO believes “that emphasis needs to be placed on how solutions addressing future reliability concerns in the LA Basin/San Diego area integrate with potential solutions for increasing generation deliverability benefits for resource development in IV... given the high degree of interaction between the two areas.”⁷⁰ The extent to which San Onofre Nuclear Generating Station (“SONGS”) will impact IV deliverability between now and year 2024 will depend upon: (i) how quickly the CAISO Board approved mitigation solutions can be permitted and built; and (ii) the results of the CAISO’s ongoing analysis of other potential transmission upgrades. Delays in implementing these transmission solutions could limit the deliverability of existing and planned renewable resources in the IV and thereby compromise the economic viability of those resources.~~

~~**b.a. Planned Facility Issues**~~

~~Events impacting the development of certain transmission facilities may impede the development of future renewable resources. As an example, two collector switchyards north of the IV Substation were planned as part of an effort to increase the transfer capability between the Imperial Irrigation District (“IID”) and CAISO balancing authority areas and to facilitate the development of additional renewable resources northwest of IV Substation. IID chose to not~~

⁶⁹ Interregional Transmission Project Evaluation and 50% RPS Out-of-state Portfolio Assessment Study Plan, p. 2.

⁷⁰ *Id.* at p. 100-101.

~~move forward with either project,⁷¹ which could have adverse ramifications for the development of new renewable resources northwest of IV Substation. The fact that these two switchyards were ultimately not constructed does not impact SDG&E's RPS portfolio, however, future renewable resource options may be reduced as a result.~~

~~More recently~~In 2018, CAISO approved the S-Line Upgrade project ("S-Line") as an economic-driven project.⁷² ~~The existing~~ S-Line is an 18.1 mile, 230 kV single circuit wood pole ~~construction~~ line from ~~IID's~~ Imperial Irrigation District's ("IID") El Centro substation to SDG&E's ~~IV IMPERIAL VALLEY~~ substation. The project would consist of ~~the~~ CAISO ~~Participating Transmission Owner ("PTO")~~ funding the upgrade of the existing wood pole line to ~~a~~ 230 kV double circuit steel tower ~~construction~~ design, and the necessary upgrades to termination equipment, in return for entitlements to ~~a portion of~~ the incremental transmission capacity created by the upgrade. It is anticipated that SDG&E, ~~as a CAISO PTO,~~ would fund the IID upgrades and ~~retain the~~ obtain rights to ~~a portion of~~ the incremental transmission capacity. A preliminary target date of 2021 has been established, and additional siting, permitting and design activities will be necessary to establish the feasibility of that target date. The primary and most immediate benefit is a reduction in ~~the~~ local capacity requirement ("LCR") ~~in~~for the San Diego-IV area. Other ~~anticipated~~ benefits include ~~the~~ reduction of market congestion on the ~~ISO~~CAISO system and increased access to renewables in the IID and Arizona systems.

e. Interconnection Study Process Issues

~~The CAISO's cluster study process is a two-year process, from Interconnection Request ("IR") submission until Transmission Plan Deliverability ("TPD") allocation. This process identifies Network Upgrades ("NU") required for interconnection to SDG&E's transmission system. SDG&E protects customers by establishing transmission upgrade cost limits and including conditions precedent in the Power Purchase Agreement ("PPA") whereby if the upgrade costs are higher than the thresholds established in the PPA, the contract can be terminated. Due to the nature of the CAISO cluster studies and NUs identified, some developers have been faced with extremely high upgrade costs that render their projects unviable.~~

⁷¹ IID Notice of Termination, p. 1-2 & 51
<http://www.caiso.com/Documents/Dec112015NoticeofTerminationofApprovedProjectSponsorAgreementImperialIrrigationDistrictER16-508.pdf>. IID Board of Directors meeting, February 16, 2016, agenda item 17
http://imperialid.granicus.com/MediaPlayer.php?view_id=3&clip_id=150.

⁷² 2017-2018 CAISO Transmission Plan, p. 9.

~~Changes in the CAISO’s approach for identifying Network Upgrades that provide interconnecting renewable generators with fully capacity deliverability status (“FCDS”) were implemented several years ago and appear to be reducing transmission funding hurdles. The CAISO’s TPD allocation studies now identify customer funded transmission upgrades that support a specific RPS portfolio. For generators that are not part of the specific RPS portfolio, the CAISO’s interconnection studies will identify Delivery Network Upgrades (“DNU”) that are needed to support the generator’s request for FCDS. There are two types of DNUs, Local DNUs (“LDNU”) and Area DNUs (“ADNU”). After their Phase I study, generators have the option to choose not to fund construction of ADNUs and instead rely on deliverability that may be available at the time that the TPD allocation study is performed. Nevertheless, renewable generators that sought interconnection prior to Cluster 5 are still subject to financing hurdles tied to the requirement to advance construction funds for DNU.~~

~~*d. Solicitation Participation*~~

~~Transfer capability between the IV Substation and the San Diego load center has been greatly expanded with the construction of the Sunrise Powerlink project. However, several factors have led the CAISO to approve a new 230 kV Sycamore Canyon Penasquitos transmission line, specifically: (i) ongoing requests to interconnect generation (principally new renewable generation) in San Diego and IV;⁷³ (ii) anticipated retirement of coastal gas fired power plants using ocean water for cooling; and (iii) the permanent retirement of the SONGS. This new line will support the ability of renewable resources to obtain FCDS; thereby enhancing the likelihood that new renewable resources can be counted towards LSEs’ RA requirements.~~

~~The CAISO conducted a competitive solicitation for construction, ownership, and maintenance of this new line, to which SDG&E responded and was selected. SDG&E submitted an application to the Commission for a Certificate of Public Convenience and Necessity (“CPCN”) to build the new line. SDG&E obtained the CPCN on October 2016 and the project is expected to be in service around June 2018.⁷⁴ The existing series capacitors on the Southwest Powerlink (“SWPL”) and Sunrise Powerlink 500 kV lines were bypassed to increase generation deliverability,⁷⁵ however, any further delays may cause uncertainty for renewable developers~~

⁷³ 2012-2013 ISO Transmission Plan, p. 34.

⁷⁴ 2017-2018 ISO Transmission Plan, p. 332.

⁷⁵ 2016-2017 ISO Transmission Plan, p. 140.

~~whose project economics rely on the deliverability that the 230 kV Sycamore Canyon-Penasquitos project supports.~~

e.b. Project Proposals

Timely approval and construction of ~~interconnection~~transmission facilities will support the ~~schedules~~development of renewable facilities ~~under development~~, both within and external to California. ~~Accordingly~~, SDG&E submitted the SWPL High-Voltage Direct Current (“HVDC”) transmission line conversion project to both CAISO and WestConnect in March ~~2016~~2018 through their respective interregional transmission processes. SDG&E also resubmitted the project into the CAISO’s ~~2017-2018~~2019 TPP as a reliability, economic, and policy-driven transmission project⁷⁶ to mitigate ~~the~~ identified thermal overload concerns ~~in~~on SWPL/SRPL and provide regional and interregional benefits in Southern California. The project would convert the SWPL to a three-terminal HVDC system with two fully independent poles at the North Gila, IV, and Miguel substations, along with system configuration modification ~~in SRPL and the Miguel substation.~~

~~This will provide significant regional and interregional benefits including but not limited to solving loop flow issues, optimizing transfer capabilities, aiding the integration of new transmission and generation projects, and increasing the ability to deliver renewable resources into the Southern California load centers. The project will also increase import capability into the San Diego and Greater IV transmission-constrained load pockets during critical contingency conditions. The increased import capability will reduce local capacity requirements (“LCRs”) and the attendant requirement of LSEs serving load in the San Diego area to contract for comparatively scarce, and therefore costly, dependable generating capacity within those LCR areas RA generating capacity. However, CAISO found the HVDC project was not needed in this planning cycle.⁷⁷ of the SRPL and the Miguel substation. As the project relies heavily on LCR reduction benefits, the CAISO’s conservative assumptions used in the 2018-2019 planning cycle to assess those benefits have a material effect on the cost-effectiveness of the project.⁷⁸ The project is expected to be revisited in future planning cycles. Longer term direction regarding the projected cost savings associated with the reduced need for local generation should become more~~

⁷⁶ ~~2017-2018-2019~~ CAISO Transmission Plan, p. ~~205~~325.

⁷⁷ ~~2017-2018~~ CAISO Transmission Plan, p. 206

⁷⁸ Id. at 331.

evident based on the results of the CPUC's IRP process.

ii. Jurisdictional Agency Permitting Delays

Uncertainty surrounding the timely issuance of key permits associated with California Environmental Quality Act ("CEQA") and National Environmental Policy Act ("NEPA") lead agency review continues to create risks for projects under development. The permitting timeline can vary greatly based on a multitude of factors including project location, project specific environmental issues, lead/other agency resources, and public participation. First, this uncertainty may lead to scheduling challenges and corresponding problems with project elements such as site control, financing, permitting, engineering, procurement including supplier and engineering, procurement, and construction ("EPC") contracts. Second, costs to mitigate environmental issues or respond to public concerns can lead to higher than expected costs for developers to complete a project.

C. Debt Equivalence and Accounting

Two additional issues may challenge SDG&E's ability to achieve its RPS goals. The first involves debt equivalence. The cumulative debt equivalence of executed PPAs could affect SDG&E's credit profile and, consequently, its financial standing. Rating agencies may include long-term fixed financial obligations, such as PPAs, in their credit risk analysis. These obligations could be treated as additional debt during their financial ratio assessment. Standard and Poor's ("S&P") views ~~three~~two core ratios, Funds From Operations ("FFO") to Debt, and FFO to Earnings Before Interest Expense, and Debt to Capitalization, Tax, Depreciation and Amortization ("EBITDA"), as well as other supplementary ratios, as the critical components of a utility's credit profile. Debt equivalence could negatively impact all ~~three~~ ratios. Unless this risk is mitigated, a PPA would negatively impact SDG&E's credit profile by degrading credit ratios.

The second issue relates to Accounting Standards Codification ("ASC") 810 Consolidation, which includes the subject of Consolidation of Variable Interest Entities ("VIEs"). Application of ASC 810 as it pertains to Consolidation of VIEs could also impact SDG&E's ability to sign new contracts. As part of SDG&E's overall internal review and approval process for new PPAs, SDG&E conducts a review of whether each PPA will be subject to consolidation under ASC 810. Under ASC 810, no renewable PPA has been deemed subject to such consolidation, however, ASC 810 requires SDG&E to perform an evergreen assessment

for those contracts which are considered VIEs. For this reason, SDG&E believes that it is required to assess quarterly each contract or category of contracts to ensure continued compliance with ASC 810, to determine whether or not SDG&E must consolidate a seller's financial information with SDG&E's own quarterly financial reports to the Securities and Exchange Commission. The accounting rules associated with ASC 810 can change, thus wind, solar, geothermal and bio-gas renewable sellers could be impacted.

Application of ASC 810 could hinder SDG&E's ability to achieve its RPS goals, and add further costs and risk to execution of new renewable contracts. If SDG&E determines that consolidation is required, a seller must open its books to SDG&E and submit financial information, on a quarterly and monthly basis, as specified in SDG&E's contract language for the duration of the relevant agreement.

All PPAs are affected by either debt equivalence or ASC 810 requirements. The Commission is well aware of the negative impact of debt equivalence on SDG&E's credit profile. AB 57 requires that the Commission adopt procurement plans that, among other objectives, enhance the creditworthiness of the utility. ASC 810 will affect SDG&E's reported financial data and may have a negative impact on SDG&E's balance sheet and/or credit profile. ASC 810 could impact SDG&E's capital structure on a consolidated basis and cause it to be misaligned with its authorized capital structure. To the extent SDG&E must seek to mitigate the impacts of debt equivalence and ASC 810, it will do so through a separate cost of capital filing.

D. Regulatory Factors Affecting Procurement

SDG&E currently expects to meet and exceed its near-term RPS program goals, including those established by SB 100, with procurement already under contract, as explained in Sections [I2](#) and [H-above4](#). As such, any RPS procurement related initiatives pending before the Commission ([at this time, e.g.,](#) LCBF reform) will likely have a greater impact on RPS procurement undertaken to meet future need.

On June 22, 2016, the Commission issued a ruling requesting comment on the LCBF staff paper and requesting that the IOUs jointly submit a proposal for developing a standardized methodology and set of inputs and assumptions for estimating future capacity prices. Clarity surrounding the ultimate alterations to this calculation and the factors used in bid evaluation will help SDG&E understand and plan for any impacts. In addition to this initiative, the Commission is also in the process of developing a ~~renewable integration cost adder ("RICA")~~, [Common](#)

Resource Valuation Methodology (“CRVM”) as part of the IRP proceeding, and reviewing the expected qualifying capacity of new and existing wind and solar resources which will impact the Net Qualifying Capacity (“NQC”) of a resource for RA compliance purposes. It is unclear at this time how this work will impact the LCBF calculation, but SDG&E looks forward to participating in the development of these metrics, and will incorporate any new data points or methodologies into its LCBF evaluation when final.

E. Unanticipated Curtailment

As explained in more detail below under Section ~~X12~~, the incidence of curtailment has increased and will continue to do so as more and more intermittent renewable generation is brought online. SDG&E’s current strategy inherently addresses curtailment as it seeks to mitigate the need to curtail by procuring a diverse portfolio of resources that account for system needs as described above in Section ~~H4~~, and by refining its RPS PPA to ensure that the projects that are ultimately built reflect the project as bid, also described under Section ~~H4~~. Additionally, SDG&E has taken steps in its RPS PPA to provide for economic curtailment rights, and these past RPS PPA modifications are referenced in Section ~~X12~~ below.

F. Insufficient Supply of Renewable Resources

As described above under Section ~~H4~~, it is SDG&E’s expectation that it will be able to meet its CP goals through 2030 with RPS eligible procurement already under contract, and as such, it is likely that SDG&E will not seek to hold an RPS RFO for the next several years given its current forecasted position. The majority of the facilities with which SDG&E has contracted are operating, as can be seen in the probability weighted tables in Appendix ~~21~~. It is unlikely that an event₂ or series of events₂ will undermine SDG&E’s ability to procure energy from these resources. However, as mentioned in Sections ~~H4~~ and ~~VH9~~, SDG&E procures a VMOP to guard against unforeseen circumstances.

G. Unanticipated Increases in Retail Sales

SDG&E’s retail sales forecast methodology, which is intended to capture both increases and decreases, is explained above under Section ~~H4~~. It is unlikely that an event or series of events will increase SDG&E’s retail sales to a level that would prevent RPS compliance. However, as mentioned above and in Sections ~~H4~~ and ~~VH9~~, SDG&E procures a VMOP to guard against unforeseen circumstances.

H. Impact of Potential Delays

SDG&E bases its forecasting, and therefore its RNS calculation, on its individual project assessments, as described in more detail in Section [H4](#). It also considers lessons learned and trends it has observed as a result of the RPS procurement process, as discussed in more detail in Section [H4](#). The factors discussed in this section contribute to SDG&E's monthly assessment of the likelihood of each project's success. For example, a project that has been experiencing difficulty in obtaining a key permit would receive a probability weighting reduction to account for this risk until the issue is resolved. While the impacts of the regulatory proceedings mentioned above cannot be known until the final decisions are issued, SDG&E is monitoring these issues and will reflect their outcomes accordingly, when appropriate. The results of these cumulative assessments are reflected in the RNS, which SDG&E will use to inform its procurement activities. The RNS as of ~~August 2018~~[April 2019](#) is provided in Appendix [21](#).

SDG&E does not anticipate any compliance delays at this time. As required by the ACR, a summary of the justification for this position is provided above under "Insufficient Supply of Renewable Resources."

[5.7.](#) RISK ASSESSMENT

A. Project Risk

SDG&E assesses project risk on an ongoing basis utilizing written assessments from developers and periodic status update meetings with developers, especially as it relates to building new resources, delayed construction, and determining whether there is a risk that power will not be delivered. In assessing SDG&E's risk, it is important to first note that SDG&E has fewer projects in development than in prior years and current project development has been more successful. Developing projects represent only 3% of SDG&E's peak load. Further, SDG&E does not anticipate a large increase in the volume of future project build out. Given that information, SDG&E's risk assessment is mainly qualitative, such as the information referenced in Sections 4 and 5, which provides more meaningful information in which SDG&E can make assumptions on project success.⁷⁹

⁷⁹ Per the ACR, SDG&E is providing this additional discussion regarding how it assesses project risk. SDG&E does not conduct an annual risk assessment via modeling, but rather evaluates each project on a monthly basis utilizing the most recent data available, as described under Section 4.

SDG&E periodically evaluates the risk that delivering projects will underperform. In SDG&E's experience, developers are inherently motivated to achieve COD for their facilities and maintain successful operations due to several factors: (i) the significant investment required to achieve COD; (ii) the timely payments made for energy delivered once COD is reached; and (iii) the penalties incurred if the project does not meet contractual requirements to supply at least the minimum amount of energy contemplated. As explained above under Section H4, SDG&E expects to meet its CP goals through 2030 with RPS eligible procurement already under contract. However, risks are still present, and over the past decade, SDG&E has observed some dynamic factors that may affect power production from delivering projects:

- Resource Availability and Variable Generation: Renewable resources depend on natural sources of energy ~~which~~that are variable, and can be impacted by various factors. For example, a bad wind year can greatly impact a wind facility's performance and cause lower than expected generation. Another factor that could also impact generation is the occurrence of unexpected mechanical failures, which could cause a facility to be partially or fully unavailable until the issue can be resolved.
- Regulatory Changes: The expiration of subsidies or additional requirements resulting from changes in regulations could lower the revenue stream and increase costs for RPS developers and could lead to reduced production if the project has difficulty in supporting this lower revenue stream.
- Economic Environment: The interest rates and flexibility of financing arrangements entered into by developers can impact a project's success. Long-term project financing arrangements with unfavorable terms can lead to project failure or reduced production if the project has difficulty in supporting the financing cost requirements. Additionally, economic factors that negatively impact a generator's supply chain could impact its ability to comply with contract terms.
- Evolving Technology: Facilities with older generation technology that is no longer supported by the manufacturer can experience project failure or reduced production. This problem is arising now for older RPS projects, and could occur in the future as the projects built today begin to age.

- Issues with Third Party Mandatory Systems: CAISO and WREGIS systems have experienced technical issues in the past, and potential technical problems with these systems going forward could complicate the compliance process.

B. Diversity & Reliability

As explained under Section 4.D, a wide variety of procurement programs exist within and in addition to the RPS program. These programs contribute to SDG&E's overall portfolio diversity and support reliability. For a more detailed discussion, please see Section 4.D.

C. Impact

SDG&E's current overall assessment is that, ~~as an overall matter,~~ projects in its portfolio are at a low risk of non-performance, ~~but notes that this assessment is based on~~ assuming the above risk factors ~~remaining remain~~ relatively stable. As ~~noted~~ described herein, SDG&E bases its forecasting, and therefore its RNS calculation, on its individual project assessments, lessons learned and trends it has observed as a result of the RPS procurement process. The above factors contribute to SDG&E's monthly project assessments of the likelihood of each project's success. For example, the probability weighting for a project that has begun experiencing technical difficulties due to an aging system and has been unable to receive assistance from a manufacturer that no longer exists, ~~would~~ receive a probability weighting reduction to account for its reduced generation until the issue is resolved. The result of these cumulative assessments is reflected in the RNS, which SDG&E will use to inform its procurement activities. The RNS as of ~~August 2018~~ April 2019 is provided in Appendix ~~21~~.

SDG&E does not anticipate any compliance delays at this time. As required by the ACR, a summary of the justification for this position is provided above under Section ~~V,6 (F)~~, under "Insufficient Supply of Renewable Resources."

6.8. QUANTITATIVE INFORMATION

The analysis attached hereto in Appendix ~~21~~ shows the Commissions' prescribed RNS calculation with supporting probability weighting calculations by project as of ~~August 2018~~ April 2019. SDG&E intends to monitor the vintage and remaining life of RECs in order to maximize their value to the portfolio by retiring them at the most opportune time, this is discussed in more detail in Section ~~H4~~.

7.9. MINIMUM MARGIN OF OVER-PROCUREMENT

A. Methodology & Inputs

SDG&E's RPS Risk Adjusted⁸⁰ RNS Calculation, as shown in Appendix 21, provides a VMOP.⁸¹ SDG&E's VMOP is composed of a "Minimum Margin of Procurement" that is intended to account for foreseeable project failures or delays, as well as an additional volume of procurement which is undertaken to ensure that SDG&E achieves its RPS requirements despite unforeseeable risks.

Due to constant fluctuations in RPS targets (as a result of changes in retail sales) and RPS deliveries, it is nearly impossible to meet RPS targets with the exact number of MWhs required. SDG&E's VMOP is designed to ensure that it achieves its RPS goals in consideration of foreseeable and unforeseeable risks such as those discussed in Sections IV6 and V7. Because it is difficult to predict retail sales and project performance, particularly for periods farther into the future, SDG&E's VMOP may be higher in later years. SDG&E's portfolio (RPS resources necessary to reach compliance and provide a VMOP) is the result of the forecasts (including need, retail sales, and project success rates), the assessment of potential risks, and the project valuations made at the time of each individual contract execution and approval. SDG&E's RNS calculation, including its VMOP, for each year is based on the following formula:

$$\text{RPS Risk-adjusted Net Short} = (\text{Bundled Retail Sales Forecast} \times \text{RPS Procurement Quantity Requirement} + \text{Voluntary Minimum Margin of Procurement}) - (\text{Online Generation} + \text{Risk-adjusted Forecast Generation} + \text{Pre-approved Generic Generation})^{82}$$

Where:

- a. Bundled ~~Retails~~Retail Sales Forecast = the forecast developed in accordance with Section H4(A)(ii)(a) of SDG&E's ~~2018~~2019 RPS Plan

⁸⁰ Probability weightings are used to adjust estimated deliveries based on the likelihood that each developing project will reach COD, as well as the likelihood that each delivering projects will continue to deliver as estimated. The probability weighting process identifies the volume of generation under contract that SDG&E is likely to receive and be able to apply towards its RPS compliance. Based on this analysis, SDG&E can determine what additional procurement is necessary to (i) reach its RPS targets, and (ii) provide a buffer against foreseen and unforeseen events (the VMOP).

⁸¹ See Row D of the RNS Table.

⁸² All generation data listed in any of SDG&E's RPS Plans, as well as any of its RPS Plan Appendices, are from contracts that have been approved or pre-approved by the Commission.

- b. RPS Procurement Quantity Requirement = the target for the relevant CP or year
- c. Voluntary Minimum Margin of Procurement = up to the current anticipated net long position for the relevant CP or year
- d. Online Generation = the generation that SDG&E expects will be delivered by its portfolio of RPS projects that have achieved commercial operation, as discussed in Section H4(A)(i)(a) of SDG&E's 20182019 RPS Plan
- e. Risk-adjusted Forecast Generation = the generation that SDG&E expects will be delivered by its portfolio of RPS projects that have not yet achieved commercial operation, as discussed in Section H4(A)(i)(b) of SDG&E's 20182019 RPS Plan
- f. Pre-approved Generic Generation = unsubscribed volumes that SDG&E is required to procure under fully implemented CPUC-mandated procurement programs (RAM and Re-MAT)

B. Scenarios

As described above under Sections 2, 4 and 5, SDG&E's RPS portfolio is primarily composed of long-term contracts with facilities that have already commenced commercial operations. SDG&E is well-ahead of its RPS targets, and has no near-term procurement need. Given these facts, SDG&E's risk of noncompliance is low, therefore it does not test additional VMOP scenarios.

8.10. BID SOLICITATION PROTOCOL, INCLUDING LEAST-COST, BEST-FIT

A. Solicitation Protocols for Renewables Sales

i. Lessons Learned

SDG&E will enter into solicitations to the extent that these transactions benefit customers. The competitive bid solicitations such as RFPs bring together the largest possible number of market participants to make offers to buy, thus promoting market liquidity and competition. SDG&E regularly evaluates its portfolio needs to determine whether RFPs present advantages to the alternative of bilateral transactions. Through early iterations of the RPS REC sale RFP process, SDG&E identified the importance of adhering to a comprehensively developed schedule when conducting a solicitation. Deliberate planning for potential delays in the contract execution and approval processes promotes meeting all objectives in a timely manner.

ii. Sales Solicitation Documents

Attached hereto in Appendices ~~7-12.B9-9.D~~ are SDG&E's proposed RPS ~~Long and Short-Term Model PPAs, RPS REC Agreement, LCBF,~~ Sales documents:

- Appendix 9 – 2019 RPS Sales RFP;
- Appendix 9.A – 2019 RPS Sales Model PPA (Bundled Product)
- Appendix 9.B – 2019 RPS Sales Model PPAs, documentation PPA (Unbundled Product)
- Appendix 9.C – 2019 RPS Sales Offer Form
- Appendix 9.D – 2019 Framework for Assessing Potential RPS Sales

iii. Assignment Description

SDG&E may also issue a contract assignment RFP. As required by the ACR, the following is a description of the solicitation protocols:

- Overview: If it is determined that selling RECs provides a greater benefit to SDG&E's customers than banking excess RPS procurement, SDG&E may explore the option of assigning one or more entire RPS contracts to a third-party. Such assignment may be done in addition to, or instead of, selling a portion of a portfolio of RPS contracts as described in Appendix 9. This process may present challenges as SDG&E would need to secure approval from the renewable facility prior to the assignment of its contract to a third-party buyer.⁸³ In cases where SDG&E determines that an RFP for the assignment of RPS contracts may be beneficial, it may begin with a small volume to build knowledge and experience over time. The contract assignment RFP option may also present advantages to a third-party buyer, for example, portfolio fit. A third-party buyer may prefer a project with a certain geographic location, delivery schedule, or counterparty, and contract assignment may provide this option.
- Non-Binding Process: Although SDG&E has not yet held a Contract Assignment RFP, its RPS Sales RFP process offers a framework from which to design an RFP. SDG&E envisions conducting the Contract Assignment RFP in a similar manner, and potentially in parallel with, an RPS Sales RFP. SDG&E would anticipate:
 - Hiring an IE to oversee the process;

⁸³ Note that consent cannot be unreasonably withheld.

- Taking reasonable measures to ensure renewable facilities that may be assigned remain informed;
- Consulting with PRG before, during and after offers are received;
- Marketing the RFP to a large group of potential Assignees;
- Publishing a clear and transparent set of RFO protocols, including an RFP document, proforma contract, and other necessary documents and/or agreements; and
- Performing an LCBF analysis to determine which bids (if any) would be beneficial for SDG&E's customers (see [Section 10C](#)).

Following selection of winning bids (if any), SDG&E anticipates allowing both the counterparty(ies) and SDG&E ample time for due diligence, and seeking consent from any project prior to the assignment of its contract to a third-party buyer. SDG&E will submit a Tier 2 AL to the CPUC for approval of any fully executed agreement(s), or a Tier 1 AL if no agreement(s) result from the RFP.

- Proforma Agreement: The proforma agreement for this transaction would involve a transfer from SDG&E to the Assignee of all liabilities and benefits included in the specific contract. If transfer of the agreement requires compensation, either from SDG&E to the Assignee or the Assignee to SDG&E, the agreement will include such terms and responsibilities. Additionally, SDG&E may need to enter into an agreement with the project that describes the duties, responsibilities, and any additional compensation for the contract to be assigned.
- LCBF Analysis: The LCBF analysis for a Contract Assignment would be similar to that used for SDG&E's RPS Sales RFP, and will include a comparison of the benefits of the contract assignment to that of the benefits from banking the RECs. In addition to the factors considered in SDG&E's RPS Sales RFP, Contract Assignment RFP analysis may include parameters such as payments or credits from either the Assignee or Project, administration cost savings, decrease in liability for SDG&E's customers, increased transaction viability, and decreased/increased counterparty risk.

~~a GT RAM solicitation, and documentation for an ECR RAM solicitation.~~

B. Bid Selection Protocols

Although SDG&E does not intend to issue a solicitation for RPS purchases in ~~2018~~2019, it has attached RPS Long- and Short-Term Model PPAs,⁸⁴ an RPS REC Agreement, and an LCBF document. ~~Submitting these updated documents is important so that they do not become stale. As required by D.14-11-042, SDG&E has included GT RAM and ECR RAM solicitation documents. Per D.14-11-042, SDG&E will request Commission approval via a Tier 1 AL if it determines that changes to to prevent these documents are necessary.~~⁸⁵ from becoming outdated. Attached hereto in Appendices 5-8 are SDG&E's proposed RPS Sales documents:

- Appendix ~~6~~ ~~2018~~5 – 2019 RPS Long-Term Model PPA
- Appendix ~~7~~ ~~2018~~6 – 2019 RPS Short-Term Model PPA
- Appendix ~~8~~ ~~2018~~7 – 2019 RPS REC Agreement
- ~~Appendix 9 – 2018 LCBF~~
- ~~Appendix 10 – 2018 RPS Sales RFP~~
- ~~Appendix 10.A – 2018 RPS Sales Model PPA (Bundled Product)~~
- ~~Appendix 10.B – 2018 RPS Sales Model PPA (Unbundled Product)~~
- ~~Appendix 10.C – 2018 RPS Sales Offer Form~~
- ~~Appendix 10.D – 2018 Framework for Assessing Potential RPS Sales~~
- Appendix ~~11~~ ~~2018~~ GT RAM RFO~~8~~ – 2019 LCBF
- ~~Appendix 11.A – 2018 GT RAM PPA~~
- ~~Appendix 11.B – 2018 GT RAM Offer Form~~
- ~~Appendix 12 – 2018 ECR RAM RFO~~
- ~~Appendix 12.A – 2018 ECR RAM PPA Rider~~
- ~~Appendix 12.B – 2018 ECR RAM Offer Form~~

C. LCBF Criteria

i. Workforce Development Assessment Proposal

A Workforce Development Assessment is included as a qualitative factor within SDG&E's LCBF. The information used in this Assessment will be gathered as part of the required bid information for any solicitations which include renewable resources. The

⁸⁴ D.14-11-042, p. 78.

⁸⁵ ~~D.14-11-042, mimeo, p. 22.~~

Assessment results will be qualitatively compared among all renewable resource bids within the solicitation which will inform the final bid ranking, similar to all other qualitative factors.

ii. Assessment of Benefits to Disadvantaged Communities

In D.04-07-029, the Commission directed the use of “benefits to low income or minority communities” as a qualitative factor in the LCBF analysis. Consistent with this direction, SDG&E has applied this factor on a qualitative basis along with several other qualitative factors (see Appendix 98 for a full list). Benefits to the community are either described by the developer in the project description form, or can be requested by SDG&E if not provided. The results of SDG&E’s LCBF analysis (quantitative as well as any additional qualitative) are shared with the PRG and also described in the AL seeking approval for SDG&E’s shortlist.

iii. State Policies

SDG&E includes bid evaluation considerations that are policy-related and cannot be quantified in its qualitative bid review process, outlined in Appendix 8, attached hereto. These factors include equity (addressed by the Disadvantaged Communities component), the environment (addressed by environmental stewardship component), and economic development (addressed by the Workforce Development Assessment component). Additionally, to address the issue of safety, SDG&E has added a safety component to the qualitative portion of the LCBF process in this iteration of its Plan.

9.11. CONSIDERATION OF PRICE ADJUSTMENT MECHANISMS

SDG&E acknowledges that contracts with online dates occurring more than 24 months after the contract execution date can pose additional risk to customers. SDG&E has incorporated price adjustment mechanisms into some of its current contracts that are intended to alleviate some of these risks, including the following:

- Price adjustment for delay in Guaranteed Commercial Operation Date (“GCOD”): A lower price for a late GCOD provides additional incentive for developers to come online pursuant to the contract. However, this structure can create financing challenges if financing parties are not comfortable with the potentially lower price. It is also difficult to quantify an appropriate price adjustment amount and can lead to drawn out negotiations. A more effective remedy for missing the GCOD is to charge the developer daily delay damages, which SDG&E has done.

- Capped transmission upgrade costs: Placing a cap on the amount of transmission upgrade costs (which are ultimately borne by customers) that a project can incur is an effective way to limit customer exposure to such costs. This type of cap is especially important for projects that do not yet have an executed interconnection agreement, because there is some chance that transmission upgrade cost estimates could change for these projects. The cap is set as a condition precedent to SDG&E's obligations under the PPA. If estimated upgrade costs exceed the cap, SDG&E has the right not to move forward with the PPA.
- Price adjustment for higher than expected transmission upgrade costs: Another mechanism that SDG&E has successfully incorporated into past contracts is a mechanism whereby the seller agrees to a price reduction to offset higher than anticipated transmission upgrade costs. Under this mechanism, the contract price would be reduced on a dollars per megawatt-hour basis commensurate with the cost of transmission network upgrades above an agreed upon cap. The price adjustment mechanism would include an upper limit on transmission upgrade costs, above which SDG&E can terminate the contract. This mechanism is similar to the cap described immediately above except, rather than giving SDG&E the right not to move forward with the PPA, it gives the developer the choice to either proceed at a reduced price equal to the amount of transmission costs above the cap, or not go forward with the PPA. If the developer chooses the lower price, that lower price acts as a funding mechanism for the additional upgrades, thereby adhering to the projected total customer costs.
- Price adjustment for failure to achieve full capacity deliverability status: If a project is not deemed fully deliverable by CAISO at the time of COD, then the PPA price is reduced either through a negotiated amount, or the application of energy-only TOD factors in place of FCDS factors (for those contracts that include TOD factors) until such time as the project is deemed fully deliverable.

10.12. ECONOMIC CURTAILMENT FREQUENCY, COSTS, & FORECASTING

The sections below discuss observations, analysis, activities, and how the RPS Plan contents address these items.

A. Market & Operational Observations

The issue of curtailment is a result of the operational characteristics of the facilities within the renewable market.⁸⁶ These resources are as-available (that is, they generate only when the wind is blowing or the when sunlight strikes the panel, and they are negatively affected by atmospheric which interfere with this energy production, such as cloud cover) and intermittent, which results in generation profiles that do not necessarily follow load. SDG&E's net load profile now shows a pronounced shift toward an evening peak as increased solar generation has begun to offset load during SDG&E's historical peak load hours (mid-day). The shift of SDG&E's net peak into the evening hours becomes more pronounced as more renewable generation (particularly solar) is brought online, as it has over the past several years and will continue to do so as RPS penetration increases.⁸⁷ This difference leads to integration issues, specifically overgeneration, which in turn leads to an increase in economic curtailment orders and negative pricing. The CAISO, the Participating Transmission Owner or distribution operator, or the Buyer (SDG&E) can instruct a generator to curtail (take its power off of the grid) in order to manage excess generation, minimize the effect of negative pricing, and maintain grid reliability. When negative pricing occurs, and generators are not economically curtailed, SDG&E must pay the CAISO to take this power if it is the Scheduling Coordinator for the project – it is important to address and work to mitigate this issue through the valuation and contracting processes. It should also be noted that each year brings with it more information and additional opportunity for refinement of the procurement process.

With respect to the valuation component, the Commission adopted an interim renewable integration cost adder in D.14-11-042,⁸⁸ which has been incorporated into SDG&E's LCBF calculation attached hereto as Appendix 98. The final adder will be incorporated into the LCBF calculation with the objective of enhancing its effectiveness in identifying projects with the lowest cost in consideration of the cost of integration, and ideally reducing the incidence of curtailment and/or negative pricing. SDG&E looks forward to participating in this process and in the revision of the LCBF calculation as a whole, ~~as discussed in Section IV.~~

⁸⁶ Both those procured pursuant to the RPS program, as well as customer-side facilities that are incremental to the RPS program under existing rules, specifically net energy metered installations.

⁸⁷ See the CAISO "duck chart" at:

https://www.aiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf.

⁸⁸ D.14-11-042, p. 63.

Regarding the contracting component, SDG&E ~~has and will continue~~continues to address this process as it gains more and more experience with the issue of curtailment. SDG&E has made contract modifications related to curtailment, which are discussed in more detail below under Subsections C and D. These revisions are an important step in addressing the issue of curtailment, the cost of which has increased significantly over the past several years.⁸⁹

B. Analysis, Initiatives, & Strategy

SDG&E forecasts market price profiles by calculating the net load for its service territory. Net load is defined as total customer load minus utility scale solar and wind generation per hour. By definition, when combined solar and wind generation exceeds load in a given hour, this represents a negative pricing condition. SDG&E uses hourly solar and wind profiles that represent the average of the last 3 years of generation for each resource. These hourly resource generation profiles are forecasted to continue until each individual contract ends (which may extend beyond the next ten years). The forecast is modified for any expectation of contract renewal or added solar or wind generation in the future.

SDG&E has been tracking its curtailment actions and results since Q3 2014, ~~and based.~~ Based on the data available to date, its curtailment activities have resulted in significant cost savings for SDG&E customers. SDG&E will continue to track this data and report on it as appropriate.

C. Activities

SDG&E has ~~undertaken activities~~managed its exposure to manage negative market prices by having the flexibility to reduce generation when needed. SDG&E's flexibility is the result of negotiating the ability to economically curtail its contracts for renewable generation and using economic bids for its entire dispatchable generation portfolio.

⁸⁹ The Federal Energy Regulatory Commission ("FERC") issued Order No. 764 ("FERC 764") on June 22, 2012, in an effort to "adopt reforms that would remove barriers to the integration of variable energy resources and provide for related just and reasonable rates" (see CAISO Docket No. ER13-2452-000 Tariff Revisions to Comply with Order No. 764, p. 2). In response to FERC 764, the CAISO updated its open access transmission tariff, which was conditionally approved by the FERC on December 19, 2013, and implemented on May 1, 2014. As part of this tariff update, the floor on negative bids was decreased from -\$30 to -\$150, which may be modified in future years. As a result, the magnitude of potential negative prices has increased. SDG&E's customers are exposed to negative CAISO prices plus the hourly price of the contract. The likelihood of incurring these charges is greatly increased with respect to renewable facilities which, as mentioned above, typically do not follow load.

~~SDG&E has managed~~ its existing contracts, as well as ~~strengthen~~strengthened the language regarding economic curtailment in its pro forma PPA to be used in future contracting.

~~Beginning with its existing contracts, SDG&E has seen multiple instances of negative pricing since~~ Since the CAISO implemented its ~~new~~ tariff revisions on May 1, 2014, ~~and~~SDG&E has acted to minimize customer exposure by economically curtailing facilities with which it has this contractual right. These instances have generally followed the same sequence of events: (a) as facility Scheduling Coordinator, SDG&E economically bids energy from a facility into the market; (b) a negative pricing event occurs; (c) the CAISO instructs the facility that was economically bid by SDG&E to dispatch down (curtail); and (d) the facility responds to the extent possible. These actions protected customers by reducing the negative pricing payments made to the CAISO, but SDG&E's ability to curtail its current portfolio is limited by several factors: (a) a few of SDG&E's existing RPS contracts do not contain economic curtailment rights (however, as mentioned below, SDG&E has ~~initiated contract renegotiations~~ minimizing renegotiated many of its contracts to minimize adverse impacts on customers and continues to negotiate economic curtailment rights to the few remaining contracts); (b) some ~~facilities~~ have operating restrictions which impact their ability to respond immediately to an economic curtailment order; and (c) (where the contract contains economic curtailment rights) SDG&E's ability to economically curtail is limited in cases to 5% of a facility's annual deliveries. SDG&E continues to work with the counterparties, ~~where possible~~, to reduce the number of cases where these limitations apply.

The 2014 RPS Plan Decision, D.14-11-042, approved SDG&E's RPS PPA modifications which allow for uncapped economic curtailment rights, and require that the generator install the software necessary to receive, respond, and implement a dispatch notice/curtailment order,⁹⁰ and provided for the incorporation of several provisions allowing payment to the generator for the economically curtailed generation (*i.e.*, what could have been generated but for the economic curtailment). These changes will bolster grid management efforts and forecasting, and provide customer benefits. First, requiring facilities to be equipped to respond to a curtailment order will assist the CAISO in complying with the North American Electric Reliability Corporation ("NERC") reliability standards. Second, this increased ability to manage excess generation

⁹⁰ Required software: the automated dispatch system ("ADS"), and the application programming interface ("API"). See D.14-11-042, p. 38.

could help reduce the incidence of negative pricing events overall, which provides a general benefit to all customers in the State. Third, uncapped economic curtailment will allow SDG&E to better manage the incidence of negative pricing payments made to the CAISO, which is beneficial to SDG&E's customers.

SDG&E has continued Negative prices effect not just renewable generating resources, but all generating resources. SDG&E mitigates the impact of negative prices to its ratepayers by economically bidding its dispatchable resources to the CAISO. To the extent SDG&E submits cost-based bids reflecting variable costs, it allows the CAISO to reduce generation from SDG&E's resources when they are not needed or uneconomic. Thus, when feasible, SDG&E's resources will have limited generation during incidences of overgeneration.

SDG&E had a direct impact of approximately \$20 Million from 2015 to 2018 from incidences of overgeneration and associated negative market prices. This was measured by the amount SDG&E paid to the CAISO for generating during times of negative prices, for all SDG&E's resources. The majority of the costs came between 9:00 am and 3:00 PM during the spring months.

In order to manage the overall cost impact of negative prices going forward, SDG&E will continue renegotiation of dispatch down, scheduling and curtailment provisions of existing contracts. To the extent feasible, SDG&E plans to address all contracts that require updates due to CAISO's implementation of FERC Order 764. SDG&E's PPAs generally contain language⁹¹ which that contemplates the need for the buyer and seller to update the PPA when there are major market changes (such as CAISO's implementation of FERC Order 764).

D. ~~2018~~2019 RPS Plan

SDG&E's ~~2018~~2019 RPS Plan contains a comprehensive overview of SDG&E's procurement strategy, including ways to address the economic curtailment observations and activities discussed in this section. As explained above, on the evaluation side of procurement, work to revise the LCBF and incorporate a final integration adder is underway at the Commission, and until along with consideration of the CRVM. Until this adder is finalized, SDG&E will utilize the interim integration adder adopted in D.14-11-042. With respect to the

⁹¹ See RAM PPA Section 3.3.a: "In the event that the PIRP or the CAISO Tariff and/or any protocols relating thereto are changed, amended, modified replaced or terminated, Seller and Buyer agree to comply with such revisions and, to the extent practical, to implement such revisions in a manner that maintains the relative economic positions of the Parties as of the date of this Agreement."

contract side of procurement, SDG&E incorporated provisions into its PPA in the 2014 version of its RPS Plan related to curtailment and is working on the renegotiation of dispatch down and scheduling and curtailment provisions in its remaining existing contracts that have not already been amended for economic curtailment. SDG&E also made additional modifications to its RPS PPAs (attached hereto as Appendices ~~6,7,5~~ and ~~11A6~~) to ensure clarity with respect to FERC 764 changes in its 2016 RPS Plan, and as explained above under Section ~~H4~~, has made contract adjustments intended to remove the incentive to overbuild (additional and unplanned generation can contribute to negative pricing incidences and lead to economic curtailment).

Initiatives undertaken outside of the RPS proceeding also have the potential to assist in the management of intermittent generation and the resulting curtailment – specifically, the addition of flexible capacity and energy storage resources to the grid. On May 21, 2015, the Commission approved SDG&E’s 20-year term contract with the Carlsbad Energy Center in D.15-05-051, finding that “[t]he Carlsbad PPTA would provide additional benefits including reliability benefits by being able to meet SDG&E’s LCR need by 2018, renewable resources integration benefits due to its flexible dispatchability, and locational benefits by virtue of being highly compatible with the existing transmission system and on previously disturbed land.”⁹² The Carlsbad Energy Center achieved commercial operation on December 12, 2018, and the benefits will be experienced going forward. The Commission’s decisions on storage (D.13-01-040, D.14-10-045 and D.16-01-032) list a myriad of grid management issues that can be addressed via storage, for example, transmission and distribution reliability.⁹³ Storage also has the ability to respond to periods of overgeneration by adding storage system charging load during overgeneration periods, potentially mitigating the frequency of negative pricing. SDG&E is well on its way to meeting the energy storage procurement requirements included in D.13-01-040 including the procurement of at least 165 MW⁹⁴ of energy storage through a series of biannual solicitations. To date, SDG&E has completed the 2014, 2016 and 2018 energy storage procurement cycles and may hold another solicitation in 2020 if necessary. Additionally, D.14-03-004 required that SDG&E procure a minimum of 25 MW⁹⁵ of energy storage, ~~and in A.17-04-~~

⁹² D.15-05-051, p. 34.

⁹³ D.13-10-040, p. 15.

⁹⁴ D.13-10-040, p. 15.

⁹⁵ D.14-03-004, p. 2.

~~017, filed by SDG&E on April 29, 2017,⁹⁶ . SDG&E made a showing that this requirement has been fulfilled: in A.17-04-017, filed on April 29, 2017.⁹⁷~~

SDG&E has ~~3739.5~~ MW of battery energy storage on-line – Escondido (30 MW) ~~and~~, El Cajon (7.5 MW) ~~Both~~, and Miguel (2 MW). These facilities participate in the CAISO market. SDG&E anticipates increasing battery storage project participation in the CAISO market in the next couple of years. As mentioned, energy storage resources could potentially mitigate the effects of surplus energy. ~~They, as they~~ have the capability to absorb excess energy during times of high renewable generation, and discharge it at times when generation is more valuable. However, the total volume of energy storage available in the CAISO is not enough to have a significant impact on the utilization of renewable generation. As energy storage capacity increases, the ability of this resource to absorb excess energy may increase, which may decrease the need for economic curtailments.

11.13. COST QUANTIFICATION

The tables attached hereto in Appendix ~~32~~ provide an annual summary of both actual and forecasted RPS procurement costs and generation, by technology type, as of ~~June 2018~~.

~~12. IMPERIAL VALLEY~~

~~SDG&E did not hold a 2017 RPS RFO, however, the RPS portfolio currently contains 12 contracts in the IV/IID territory, that when completed will provide an estimated 3,100 GWh per year. As of June 2018, 10 April 2019, of these projects have reached commercial operation, and the generation from these projects is anticipated to be approximately 3,000 GWh per year. Additionally, projects located within IV and either directly connected or dynamically transferred via pseudo tie into SDG&E's service territory by the CAISO are eligible to participate in SDG&E's GTSR program.⁹⁸ SDG&E proposed in AL 2717-E, which addresses initial procurement for the GT component via RAM, that projects from the IV be allowed to submit bids,⁹⁹ this AL was approved without modification and became effective on June 11, 2015.~~

⁹⁶ Approved by the Commission in D.18-05-024.

⁹⁷ Approved by the Commission in D.18-05-024.

⁹⁸ D.15-01-051, p. 35.

⁹⁹ SDG&E AL 2717-E, p. 5.

Currently SDG&E has 2 GT projects in development in the Imperial Valley with total estimated generation of 116 GWh per year. SDG&E made this same recommendation for the ECR component, and the GTSR Phase IV decision allows ECR facilities that contract with SDG&E to site in the IV.¹⁰⁰

~~13. IMPORTANT CHANGES TO DRAFT 2018 RPS PLAN~~

~~Important changes made to SDG&E's Draft 2018 RPS Plan are detailed in Appendix 5.~~

14. SAFETY CONSIDERATIONS

SDG&E is committed to providing safe, reliable and environmentally sound electric service for its customers. As discussed in Appendix 43, SDG&E's RPS Plan contemplates procurement of RPS-eligible generation through both PPAs and UOG. SDG&E's emphasis on safety is reflected in: (i) the terms and conditions contained in the pro forma PPAs used in its various procurement programs; and (ii) the safety procedures that all contractors working on UOG facilities are required by SDG&E to follow.

15. COORDINATION WITH IRP PROCEEDING

Coordination with the IRP proceeding is the subject of comments due July 19, 2019. SDG&E will update this section as necessary following resolution of the proposal provided in the ACR.

16. IMPERIAL VALLEY

SDG&E did not hold a 2018 RPS RFO, however, the RPS portfolio currently contains 12 contracts in the Imperial Valley/Imperial Irrigation District territory, that when completed will provide an estimated 3,100 GWh per year. As of April 2019, eleven of these projects have reached commercial operation, and the generation from these projects is anticipated to be approximately 3,000 GWh per year. Additionally, projects located within IV and either directly connected or dynamically transferred via pseudo-tie into SDG&E's service territory by the

¹⁰⁰D.16-05-006, p. 17.

CAISO are eligible to participate in SDG&E's GTSR program.¹⁰¹ SDG&E proposed that projects from the IV be allowed to submit bids in AL 2717-E, which addresses initial procurement for the GT component via RAM.¹⁰² AL-2717-E was approved without modification and became effective on June 11, 2015. SDG&E currently has one GT project in commercial operation and one GT project in development in the Imperial Valley, with total estimated generation of 116 GWh per year. SDG&E made this same recommendation for the Enhanced Community Renewables (ECR or EcoShare) component, and the GTSR Phase IV decision allows ECR facilities that contract with SDG&E to site in the Imperial Valley.¹⁰³

15.17. RENEWABLE AUCTION MECHANISM

A. Procurement Need

As outlined above under Section H4, SDG&E anticipates meeting its CP3 need with projects it already has under contract. Consequently, SDG&E may use the RAM solicitation documentation, ~~attached hereto as Appendices 11-12.B~~, on an as-needed basis to procure for its GTSR program,¹⁰⁴ as authorized by D.15-01-051¹⁰⁵ and D.16-05-006.¹⁰⁶ ~~Attached are the most recently approved RAM documents,¹⁰⁷ which are intended for procurement of resources for the GT¹⁰⁸ component of SDG&E's GTSR program, as well as for the ECR¹⁰⁹ component of SDG&E's GTSR program. On June 21, 2018 the Commission approved D.18-06-027 adopting two new programs based on the GTSR program to grow solar in disadvantaged communities ("DACs"), DAC Green Tariff and Community Solar Green Tariff. SDG&E is required to procure new solar resources for these programs based on the structure of the underlying GTSR program; SDG&E will seek approval for solicitation documents, PPA and Rider once program implementation has been approved by the Commission.~~

B. Documents & Updated Parameters

¹⁰¹ D.15-01-051, p. 35.

¹⁰² SDG&E AL 2717-E, p. 5.

¹⁰³ D.16-05-006, p. 17.

¹⁰⁴ SDG&E will use the capacity procured via the RAM mechanism to satisfy its LCR requirement if the resources contracted with are eligible.

¹⁰⁵ D.15-01-051, OP 5, p. 180.

¹⁰⁶ D.16-05-006, OP 1, p. 41.

¹⁰⁷ ~~SDG&E AL 3206-E, effective April 28, 2018.~~

¹⁰⁸ ~~EcoChoice, formally known as SunRate.~~

¹⁰⁹ ~~EcoShare, formally known as Share the Sun.~~

~~SDG&E has attached GT RAM solicitation form documentation hereto as Appendices 11-11.B. These documents are summarized below:~~

- ~~• Appendix 11, GT RAM RFO: This document incorporates the eligibility criteria required by D.14-11-041, D.15-01-051, and D.16-05-006: allows for all RPS-eligible projects to participate in the program, allows for projects to be sized 0.5 MW to 20 MW, allows projects to be located in, or dynamically transferred into, SDG&E's territory (which is within the CAISO), requires at a minimum a Phase II Interconnection Study for projects interconnecting at the transmission level (and equivalent requirements for projects interconnecting at the distribution level), requires a 36-month construction timeline, which may be extended up to 6 months for interconnection, force majeure and/or regulatory delays, and requires the submittal of a Geographic Information System ("GIS") file of the project boundaries and associated gen-tie. SDG&E will use its RPS LCBF methodology, attached hereto as Appendix 9, to evaluate projects that bid into future RAM auctions.¹¹⁰~~
- ~~• Appendix 11.A, GT RAM PPA: SDG&E's GT RAM PPA is a modified version of the RAM PPA and includes the additional eligibility criteria required by D.15-01-051 and D.16-05-006.~~
- ~~• Appendix 11.B, GT RAM Offer Form: SDG&E's GT RAM Offer form, attached hereto as Appendix 11.B, is compatible with its LCBF methodology, attached hereto as Appendix 9. The GT Projection Description form has been consolidated into the GT RAM Offer form.~~

~~SDG&E has attached ECR RAM solicitation form documentation hereto as Appendices 12-12.B. These documents are summarized below:~~

- ~~• Appendix 12, ECR RAM RFO: This document incorporates the following eligibility criteria required by D.14-11-042, D.15-01-051¹¹¹, D.16-05-006¹¹² and D.17-07-007¹¹³ allows for projects to be sized 0.5 MW to 20 MW, allows for distributed energy resource providers ("DERPs") to aggregate, allows projects to be located in, or dynamically transferred into, SDG&E's territory (which is within the CAISO), requires at a minimum~~

¹¹⁰ D.14-11-042, pp. 23, 66, 94-101.

¹¹¹ D.15-01-051, OP 5, p. 180.

¹¹² D.16-05-006, OP 1, p. 41.

¹¹³ D.17-07-007 at OP 1, p. 15.

~~a Phase II Interconnection Study for projects interconnecting at the transmission level (and equivalent requirements for projects interconnecting at the distribution level), requires a 36-month construction timeline, which may be extended up to 6 months for interconnection, force majeure and/or regulatory delays, requires the submittal of a GIS file of the project boundaries and associated gen-tie diagrams, and a securities opinion. SDG&E will use its RPS LCBF methodology, attached hereto as Appendix 9, to evaluate projects that bid into future RAM auctions.~~

- ~~• Appendix 12.A, ECR RAM Rider: SDG&E's ECR RAM Rider was designed to modify the GT RAM PPA pursuant to D.16-05-006 to procure RPS-eligible capacity for the purpose of implementing the ECR program. Pursuant to D.16-05-006, SDG&E is authorized to use the RAM to procure RPS-eligible capacity for the purposes of implementing the ECR program.~~
- ~~• Appendix 12.B, ECR RAM Offer Form: SDG&E's ECR RAM Offer form, attached hereto as Appendix 12.B, is compatible with its LCBF methodology, attached hereto as Appendix 9. The ECR Projection Description form has been consolidated into the ECR RAM Offer form.~~

~~SDG&E's most recently approved RAM documents can be found in SDG&E AL 3206-E, effective April 28, 2018.~~¹¹⁴

C. Approval Process

D.14-11-042 allows the IOUs to propose an approval method for contracts resulting from the RAM process. At this time, SDG&E proposes no change to the current Tier 2 AL process, but may propose alternate methods in subsequent versions of its RPS Plan.

16.18. GREEN TARIFF SHARED RENEWABLES PROGRAM

A. Program History and Status

SB 43, which became effective on January 1, 2014, requires participating utilities to file an application for a GTSR program allowing customers to buy some or all of their energy from local renewable projects via a GT or ECR program.¹¹⁵ Prior to the effective date of this law,

¹¹⁴ <https://www.sdge.com/rates-and-regulations>.

¹¹⁵ These programs are branded as EcoChoice (GT) and EcoShare (ECR), and were formerly known as "connected.....to the sun".

SDG&E filed an application requesting approval of its GTSR program in January of 2012 (A.12-01-008). SDG&E subsequently modified this application to comport with the GTSR program requirements of SB 43. The ultimate GTSR program was implemented through a series of Commission Decisions¹¹⁶ as well as implementation ALs¹¹⁷ submitted by the IOUs. SDG&E has launched GTSR solicitations for GT and ECR projects in July 2015, September 2016, March 2017, November 2017, ~~and June 2018,~~ and November 2018.

B. Progress Towards Target and Reservations

SDG&E has a target of 59 MW total capacity between its GT and ECR programs, and within this target are two reservations of 10 MW each for residential customers and Environmental Justice (“EJ”) projects.¹¹⁸ The Commission approved SDG&E’s AL 3074-E, via disposition letter, effective June 5, 2017, approving a 20 MW project for SDG&E’s GT program leaving 39 MW of available capacity in SDG&E’s GTSR program. SDG&E filed AL 3214-E in May 2018, requesting approval of another 20 MW project for SDG&E’s GT program and a 2.4 MW project for SDG&E’s ECR program. This AL was approved by the Commission, effective as of June 17, 2018.

Subsequent procurement for the GT program through RAM, as described above under Section ~~XV~~18, will be based on assessment of “incremental customer enrollments and the amount of dedicated Green Tariff procurement... [already] under contract.”¹¹⁹ SDG&E will continue to hold two ECR solicitations a year through 2018.¹²⁰ SDG&E also submitted AL 3168-E to the Commission in December 2017, seeking to extend its GT and ECR programs through 2023 and to propose changes to the ECR program, such as solicitation timing and community interest requirements. A draft resolution has not yet been issued.

C. Reporting

D.15-01-051 allows an IOU to supply initial GT program demand from an interim pool of existing RPS resources under contract with that IOU.¹²¹ The decision also requires reporting regarding this pool, specifically that the IOU’s RPS Plan include “all information related to the

¹¹⁶ See D.15-01-051, D.16-05-006 and D.17-07-007.

¹¹⁷ See SDG&E ALs 2708-E, 2743-E, 2744-E, and 2745-E.

¹¹⁸ D.15-01-051, p. 5.

¹¹⁹ AL 3218, p. 8.

¹²⁰ D.16-05-006, p. 10.

¹²¹ D.15-01-051, p. 39.

transfer of megawatts from the existing RPS program to GTSR. This information includes the impact on residual net short and the need to bridge for any shortfall, accounting of RECs, list of contracts with price, and other relevant details.”¹²² SDG&E received Commission approval of its interim project pool Alternative B (list below),¹²³ and enrollment in SDG&E’s GT program began in Q4 2016. SDG&E’s reporting on the interim project pool Alternative B as of ~~June 2018~~April 2019 shows that 8 RECs in 2016, ~~and~~4,437 RECs in 2017, ~~and~~ 86,446 RECs in 2018¹²⁴ were transferred between the interim project pool Alternative B and the GTSR program. The price of contracts within interim project pool Alternative B is \$92.56/MWh.¹²⁵ Per SB 43,¹²⁶ the generation used to serve the customers enrolled in SDG&E’s GT program as well as the bundled retail load served via SDG&E’s GT program have not been included in SDG&E’s RNS table, attached hereto as Appendix 21.

SDG&E GTSR Interim Pool Contracts				
Facility Name	Technology	MW	Location	GTSR Pool %
Desert Green Solar Farm	Solar PV	6.3	Borrego Springs, CA	8%
Sol Orchard 20 - Ramona 1	Solar PV	2.0	San Diego County, CA	2%
Sol Orchard 22 - Valley Center 1	Solar PV	2.5	San Diego County, CA	3%
Sol Orchard 21 - Ramona 2	Solar PV	5.0	San Diego County, CA	5%
Sol Orchard 23 - Valley Center 2	Solar PV	5.0	San Diego County, CA	5%
Cascade Solar	Solar PV	18.4	Sun Fair, CA	20%
Calipatria, LLC	Solar PV	20.0	Calipatria, CA	18%
TallBear Seville	Solar PV	20.0	El Centro, CA	22%
Maricopa West	Solar PV	20.0	Maricopa, CA	16%

¹²² D.15-01-051, p. 41.

¹²³ SDG&E AL 2745-E, pp. 3-4.

¹²⁴ A total of 102,880 RECs were retired for the GTSR Program (EcoChoice) for 2018. 86,446 RECs were retired from the interim pool and 16,434 RECs were retired from the GTSR project.

¹²⁵ Energy Resource Recovery Account (“ERRA”) Prepared Direct Testimony of Cynthia Fang on Behalf of SDG&E, April 14, 2017, p. CF 16.

¹²⁶ Section 2833(t).

19. OTHER RPS PLANNING CONSIDERATIONS AND ISSUES

In accordance with D.17-08-030,¹²⁷ SDG&E is including the below information on its base time of use (“TOU”) periods. SDG&E’s base TOU periods are established as part of the rate design proceeding commonly referred to as the General Rate Case Phase 2 (“GRC Phase 2”).

A. SDG&E’s Current Standard Base TOU Periods

Adopted TOU Periods (Weekdays)		
TOU Period	Summer (June 1—October 31)	Winter (November 1—May 31)
On-peak	4:00 p.m.- 9:00 p.m.	4:00 p.m.- 9:00 p.m.
Off-peak	6:00 a.m.-4:00 p.m.; 9:00 p.m.- midnight	6:00 a.m.-4:00 p.m. excluding 10:00 a.m.- 2:00 p.m. in March and April; 9:00 p.m.- midnight
Super-off-peak	Midnight—6:00 a.m.	Midnight—6:00 a.m.; 10:00 a.m.-2:00 p.m. in March and April

Adopted TOU Periods (Weekends and Holidays)		
TOU Period	Summer (June 1—October 31)	Winter (November 1—May 31)
On-peak	4:00 p.m.- 9:00 p.m.	4:00 p.m.- 9:00 p.m.
Off-peak	2:00 p.m.- 4:00 p.m.; 9:00 p.m.- midnight	2:00 p.m.- 4:00 p.m.; 9:00 p.m.- midnight
Super-off-peak	Midnight—2:00 p.m.	Midnight—2:00 p.m.

B. SDG&E’s Grandfathered TOU Periods

Pursuant to D.17-01-006 and D.17-10-018, TOU Period Grandfathering permits certain eligible behind-the-meter solar customers to continue billing under grandfathered TOU period definitions.

Current TOU Periods		
TOU Period	Summer (May 1—October 31)	Winter (November 1—April 30)
On-peak	11:00 a.m.- 6:00 p.m. Weekdays	5:00 p.m.- 8:00 p.m. Weekdays
Semi-peak	6:00 a.m.-11:00 a.m. Weekdays; 6:00 p.m.- 10:00 p.m. Weekdays	6:00 a.m.-5:00 p.m. Weekdays; 8:00 p.m.- 10:00 p.m. Weekdays
Off-peak	10:00 p.m.- 6:00 a.m. Weekdays Plus Weekends & Holidays	10:00 p.m.- 6:00 a.m. Weekdays Plus Weekends & Holidays

¹²⁷ D.17-08-030 was approved by the Commission on August 24, 2017.

SDG&E has no additional considerations and issues to discuss at this time, but reserves the right to add to this section in subsequent versions of its RPS Plan.



APPENDIX 11

REDLINE OF DRAFT 2019 RPS PLAN APPENDIX 1 – APPENDIX 9.D



APPENDIX 21

2018-2019 QUANTITATIVE INFORMATION

SDG&E Renewable Net Short for RPS Procurement – ~~August~~ April 2019~~8~~:

The tables below provide the data behind SDG&E’s RPS Risk Adjusted Net Short Calculation as of ~~August~~ April, 2019~~8~~. They include the outputs required by the *Administrative Law Judge’s Ruling on Renewable Net Short*, dated May 21, 2014, and have been updated to reflect the banking rules adopted under D.17-06-026 as SDG&E has elected to use these rules beginning in CP3. A discussion of this analysis is provided in Section ~~H~~4.

Variable	Calculation	Item	Prior Deficit	2011-2013	2014-2016
-	-	Forecast Year	-	CP1	CP2
-	-	Annual RPS Requirement	-	-	-
A	-	Bundled Retail Sales Forecast (LTPD) (GWh)	-	49,040	48,288
B	-	RPS Procurement Quantity Requirement (%)	-	20.2%	23.3%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78	9,886	11,277
D	-	Voluntary Margin of Over procurement	-	0	0
E	C + D	Net RPS Procurement Need (GWh)	-	9,886	11,277
-	-	RPS Eligible Procurement	-	-	-
Fa	-	Risk Adjusted RECs from Online Generation (GWh)	-	11,287	10,300
Faa	-	Forecast Failure Rate for Online Generation (%) ⁽¹⁾	-	0%	0%
Fb	-	Risk Adjusted RECs from RPS Facilities in Development (GWh)	-	0	0
Fbb	-	Forecast Failure Rate for RPS Facilities in Development (%) ⁽²⁾	-	0%	0%
Fc	-	Pre-Approved Generic RECs ⁽³⁾ (GWh)	-	0	0
Fd	-	RECs Pending CPUC Approval (GWh)	-	0	0
Fe	-	Executed REC Sales (GWh)	-	697	1,540
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	-	10,590	17,760
F0	-	Category 0 RECs (GWh)	-	6,568	7,837
F1	-	Category 1 RECs (GWh)	-	3,780	9,922
F2	-	Category 2 RECs (GWh)	-	0	0
F3	-	Category 3 RECs (GWh)	-	242	0
F _{LT}	-	RECs from LT contracts ⁽⁴⁾ (GWh)	-	7,452	17,760
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	-	70%	100%
-	-	Gross RPS Position (Physical Net Short)	-	-	-
Ga	F - E	Annual Gross RPS Position (GWh)	-	703	6,483
Gb	F/A	Annual Gross RPS Position (%)	-	21.6%	36.7%
-	-	Application of Bank	-	-	-
Ha	I _a - I _b	Existing Banked RECs above the PQR (GWh)	-	(2)	7,031
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	-	569	6,478
Hc	-	Non-bankable RECs above the PQR (GWh)	-	126	5
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	-	567	13,509
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)	-	(0)	0
Ib	-	Planned Sales of RECs above the PQR (GWh)	-	0	0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	-	567	13,509
J0	-	Category 0 RECs ⁽⁴⁾ (GWh)	-	360	7,317
J1	-	Category 1 RECs ⁽⁴⁾ (GWh)	-	207	6,191
J2	-	Category 2 RECs ⁽⁴⁾ (GWh)	-	0	0
-	-	Expiring Contracts	-	-	-
K	-	RECs from Expiring RPS Contracts (GWh)	-	2,043	410
-	-	Net RPS Position (Optimized Net Short)	-	-	-
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	-	(2)	(0)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	-	20.2%	23.3%

Note: Values are shown in GWhs

(1) Delivery failure rate is the probability-weighted deviation below expected forecast generation, and is based upon but not limited to probability assessments of project failure, project capacity reduction, operational failure after project success, project curtailment due to transmission constraints, etc.

(2) Pre-Approved Generic Generation includes mandated programs.

(3) Excludes executed REC sales.

(4) The "Net Balance of RECs above PQR" has been allocated between PCC0 and PCC1 categories based on the historical procurement of the total RECs by each category in "F0" and "F1." For CPI, the RECs over PQR applied for compliance versus the RECs applied that meet the PQR are not broken out as all RECs to be applied for compliance are submitted together and RECs above and for PQR are not differentiated from one another.

(5) The formula was changed so that it includes the effect of the non-bankable RECs.

Variable	Calculation	Item	2017-2020	2021-2024	2025-2027
-	-	Forecast Year	CP3	CP4	CP5
-	-	Annual RPS Requirement	-	-	-
A	-	Bundled Retail Sales Forecast (LTPD) (GWh)			44,120
B	-	RPS Procurement Quantity Requirement (%)	29.9%	30.9%	49.3%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)			21,761
D	-	Voluntary Margin of Over procurement			0
E	C + D	Net RPS Procurement Need (GWh)			21,761
-	-	RPS-Eligible Procurement			-
Fa	-	Risk Adjusted RECs from Online Generation (GWh)			16,608
Faa	-	Forecast Failure Rate for Online Generation (%) ⁽¹⁾			-1%
Fb	-	Risk Adjusted RECs from RPS Facilities in Development (GWh)			1,072
Fbb	-	Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾			30%
Fe	-	Pre-Approved Generic RECs ⁽²⁾ (GWh)	0	304	455
Fd	-	RECs Pending CPUC Approval (GWh)	0	0	0
Fe	-	Executed REC Sales (GWh)	0	0	0
F	Fa + Fb + Fe + Fd - Fe	Total RPS-Eligible Procurement (GWh)	27,235	26,710	18,136
F0	-	Category 0 RECs (GWh)			4,010
F1	-	Category 1 RECs (GWh)			14,126
F2	-	Category 2 RECs (GWh)			0
F3	-	Category 3 RECs (GWh)			0
F _{LT}	-	RECs from LT contracts ⁽³⁾ (GWh)			18,136
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)			100%
-	-	Gross RPS Position (Physical Net Short)			-
Ga	F - E	Annual Gross RPS Position (GWh)			(3,625)
Gb	F/A	Annual Gross RPS Position (%)			41.1%
-	-	Application of Bank			-
Ha	L _a - I _a	Existing Banked RECs above the PQR (GWh)			55,629
Hb	+Ga - He	RECs above the PQR added to Bank (GWh)			0
He	-	Non-bankable RECs above the PQR (GWh)			0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)			55,629
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)			3,625
Ib	-	Planned Sales of RECs above the PQR (GWh)			0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)			52,004
J0	-	Category 0 RECs ⁽⁴⁾ (GWh)			18,671
J1	-	Category 1 RECs ⁽⁴⁾ (GWh)			33,333
J2	-	Category 2 RECs ⁽⁴⁾ (GWh)			0
-	-	Expiring Contracts			-
K	-	RECs from Expiring RPS Contracts (GWh)	298	552	154
-	-	Net RPS Position (Optimized Net Short)			-
La	Ga - Hb - He + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾			0
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)			49.3%

Variable	Calculation	Item	2028-2030	2031-2033	2034-2036
-	-	Forecast Year	CP6	CP7	CP8
-	-	Annual RPS Requirement	-	-	-
A	-	Bundled Retail Sales Forecast (LTPD) (GWh)	43,503	43,507	43,511
B	-	RPS Procurement Quantity Requirement (%)	57.3%	60.0%	60.0%
C	A*B	Gross RPS Procurement Quantity Requirement (GWh)	24,942	26,104	26,107
D	-	Voluntary Margin of Over procurement	0	0	0
E	C+D	Net RPS Procurement Need (GWh)	24,942	26,104	26,107
-	-	RPS-Eligible Procurement	-	-	-
Fa	-	Risk Adjusted RECs from Online Generation (GWh)	16,430	15,073	7,778
Faa	-	Forecast Failure Rate for Online Generation (%) ⁽¹⁾	-1%	-1%	-1%
Fb	-	Risk Adjusted RECs from RPS Facilities in Development (GWh)	1,068	1,064	1,025
Fbb	-	Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	30%	30%	29%
Fe	-	Pre-Approved Generic RECs ⁽²⁾ (GWh)	455	455	455
Fd	-	RECs Pending CPUC Approval (GWh)	0	0	0
Fe	-	Executed REC Sales (GWh)	0	0	0
F	Fa + Fb + Fe + Fd - Fe	Total RPS-Eligible Procurement (GWh)	17,954	16,592	9,258
F0	-	Category 0 RECs (GWh)	3,862	3,254	204
F1	-	Category 1 RECs (GWh)	14,092	13,339	9,054
F2	-	Category 2 RECs (GWh)	0	0	0
F3	-	Category 3 RECs (GWh)	0	0	0
F _{LT}	-	RECs from LT contracts ⁽³⁾ (GWh)	17,954	16,592	9,258
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	100%
-	-	Gross RPS Position (Physical Net Short)	-	-	-
Ga	F-E	Annual Gross RPS Position (GWh)	(6,988)	(9,512)	(16,849)
Gb	F/A	Annual Gross RPS Position (%)	41.3%	38.1%	21.3%
-	-	Application of Bank	-	-	-
Ha	L _a - I _a	Existing Banked RECs above the PQR (GWh)	41,297	18,068	(18,032)
Hb	+Ga - He	RECs above the PQR added to Bank (GWh)	0	0	0
He	-	Non-bankable RECs above the PQR (GWh)	0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	41,297	18,068	(18,032)
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)	6,988	8,849	(18,032)
Ib	-	Planned Sales of RECs above the PQR (GWh)	0	0	0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	34,309	9,220	0
J0	-	Category 0 RECs ⁽⁴⁾ (GWh)	11,542	2,967	0
J1	-	Category 1 RECs ⁽⁴⁾ (GWh)	22,768	6,253	0
J2	-	Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0
-	-	Expiring Contracts	-	-	-
K	-	RECs from Expiring RPS Contracts (GWh)	50	1,614	525
-	-	Net RPS Position (Optimized Net Short)	-	-	-
La	Ga - Hb - He + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	(663)	(34,881)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	57.3%	58.5%	-20.2%

Variable	Calculation	Item	Prior Deficit	2011 Actuals	2012 Actuals	2013 Actuals	2014 Actuals
-	-	Forecast Year	-		-	-	-
-	-	Annual RPS Requirement	-	-	-	-	-
A	-	Bundled Retail Sales Forecast (LTTP) (GWh)	-	16,249	16,627	16,164	16,468
B	-	RPS Procurement Quantity Requirement (%)	-	20.0%	20.0%	20.0%	21.7%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78	3,328	3,325	3,233	3,574
D	-	Voluntary Margin of Over procurement	-	-	-	-	-
E	C + D	Net RPS Procurement Need (GWh)	-	3,328	3,325	3,233	3,574
-	-	RPS-Eligible Procurement	-	-	-	-	-
Fa	-	Risk Adjusted RECs from Online Generation (GWh)	-	3,380	3,376	4,521	5,036
Faa	-	Forecast Failure Rate for Online Generation (%) ⁽¹⁾	-	0%	0%	0%	0%
Fb	-	Risk Adjusted RECs from RPS Facilities in Development (GWh)	-	0	0	0	0
Fbb	-	Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	-	0%	0%	0%	0%
Fe	-	Pre-Approved Generic RECs ⁽²⁾ (GWh)	-	0	0	0	0
Fd	-	RECs Pending CPUC Approval (GWh)	-	0	0	0	0
Fe	-	Executed REC Sales (GWh)	-	0	0	697	666
F	$\frac{Fa + Fb + Fe + Fd - Fe}{Fe}$	Total RPS Eligible Procurement (GWh)	-	3,380	3,376	3,824	5,270
F0	-	Category 0 RECs (GWh)	-	2,784	1,969	1,815	2,805
F1	-	Category 1 RECs (GWh)	-	596	1,166	2,019	2,466
F2	-	Category 2 RECs (GWh)	-	0	0	0	0
F3	-	Category 3 RECs (GWh)	-	0	242	0	0
F _{LT}	-	RECs from LT contracts ⁽³⁾ (GWh)	-	2,816	2,048	2,588	5,270
F _{LT%}	F_{LT}/F	% of RECs from LT contracts (GWh)	-	83%	61%	68%	100%
-	-	Gross RPS Position (Physical Net Short)	-	-	-	-	-
Ga	F - E	Annual Gross RPS Position (GWh)	-	52	50	601	1,697
Gb	F/A	Annual Gross RPS Position (%)	-	21%	20%	24%	32%
-	-	Application of Bank	-	-	-	-	-
Ha	$I_{a-1} + J_{a-1}$	Existing Banked RECs above the PQR (GWh)	-	0	(0)	(2)	567
Hb	$\pm Ga - Hc$	RECs above the PQR added to Bank (GWh)	-	0	0	569	1,695
Hc	-	Non-bankable RECs above the PQR (GWh)	-	52	52	32	2
H	$Ha + Hb$	Gross Balance of RECs above the PQR (GWh)	-	0	(0)	567	2,262
Ia	$-Ga < \text{Bank}$	Planned Application of RECs above the PQR towards RPS Compliance (GWh)	-	0	(0)	0	0
Ib	-	Planned Sales of RECs above the PQR (GWh)	-	-	-	-	-
J	$H - Ia - Ib$	Net Balance of RECs above the PQR (GWh)	-	0	0	567	2,262
J0	-	Category 0 RECs ⁽⁴⁾ (GWh)	-	0	0	260	1,257
J1	-	Category 1 RECs ⁽⁴⁾ (GWh)	-	0	0	207	905
J2	-	Category 2 RECs ⁽⁴⁾ (GWh)	-	0	0	0	0
-	-	Expiring Contracts	-	-	-	-	-
K	-	RECs from Expiring RPS Contracts (GWh)	-	966	721	356	115
-	-	Net RPS Position (Optimized Net Short)	-	-	-	-	-
La	$Ga - Hb - Hc + Ia$	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	-	(0)	(2)	0	(0)
Lb	$(E + La)/A$	Annual Net RPS Position after Bank Optimization (%)	-	20%	20%	20%	22%

Variable	Calculation	Item	2015 Actuals	2016 Actuals	2017 Actuals	2018 Forecast
-	-	Forecast Year	-	-	-	1
Annual RPS Requirement						
A	-	Bundled Retail Sales Forecast (LTPP) (GWh)	16,267	15,653	15,619	
B	-	RPS Procurement Quantity Requirement (%)	23.3%	25.0%	27.0%	29.0%
C	A*B	Gross RPS Procurement Quantity Requirement (GWh)	3,790	3,913	4,217	
D	-	Voluntary Margin of Over procurement	-	-	-	
E	C+D	Net RPS Procurement Need (GWh)	3,790	3,913	4,217	
RPS-Eligible Procurement						
Fa	-	Risk Adjusted REC _s from Online Generation (GWh)	6,445	6,018	6,020	
Faa	-	Forecast Failure Rate for Online Generation (%) ⁽⁴⁾	0%	0%	0%	
Fb	-	Risk Adjusted REC _s from RPS Facilities in Development (GWh)	0	0	0	
Fbb	-	Forecast Failure Rate for RPS Facilities in Development (%) ⁽⁴⁾	0%	0%	0%	
Fe	-	Pre-Approved Generic REC _s ^{(2)(GWh)}	0	0	0	0
Fd	-	REC _s Pending CPUC Approval (GWh)	0	0	0	0
Fe	-	Executed REC Sales (GWh)	714	160	0	0
F	$\frac{Fa + Fb + Fe + Fd}{Fe}$	Total RPS-Eligible Procurement (GWh)	5,732	6,758	6,920	6,973
F0	-	Category 0 REC _s (GWh)	2,567	2,465	2,368	
F1	-	Category 1 REC _s (GWh)	3,164	4,292	4,561	
F2	-	Category 2 REC _s (GWh)	0	0	0	
F3	-	Category 3 REC _s (GWh)	0	0	0	
F _{LT}	-	REC _s from LT contracts ⁽⁴⁾ (GWh)	5,732	6,758	6,770	
F _{LT%}	F_{LT}/F	% of REC _s from LT contracts (GWh)	100%	100%	98%	
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	1,942	2,844	2,712	
Gb	F/A	Annual Gross RPS Position (%)	35%	43%	44%	
Application of Bank						
Ha	$I_a + I_c$	Existing Banked REC _s above the PQR (GWh)	2,262	4,202	7,045	
Hb	$+G_a - H_e$	REC _s above the PQR added to Bank (GWh)	1,940	2,843	2,712	
He	-	Non-bankable REC _s above the PQR (GWh)	2	1	0	
H	$H_a + H_b$	Gross Balance of REC _s above the PQR (GWh)	4,202	7,045	9,757	
Ia	$-G_a \leftarrow$ Bank	Planned Application of REC _s above the PQR towards RPS Compliance (GWh)	0	0	0	
Ib	-	Planned Sales of REC _s above the PQR (GWh)	-	-	-	
J	$H - I_a - I_b$	Net Balance of REC _s above the PQR (GWh)	4,202	7,045	9,757	
J0	-	Category 0 REC _s ⁽⁴⁾ (GWh)	2,350	3,610	4,671	
J1	-	Category 1 REC _s ⁽⁴⁾ (GWh)	1,852	3,435	5,086	
J2	-	Category 2 REC _s ⁽⁴⁾ (GWh)	0	0	0	
Expiring Contracts						
K	-	REC _s from Expiring RPS Contracts (GWh)	295	0	22	92
Net RPS Position (Optimized Net Short)						
La	$G_a - H_b - H_e + I_a$	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	(0)	0	
Lb	$(E + La)/A$	Annual Net RPS Position after Bank Optimization (%)	23%	25%	27%	

Variable	Calculation	Item	2019 Forecast	2020 Forecast	2021 Forecast	2022 Forecast
-	-	Forecast Year	2	3	4	5
-	-	Annual RPS Requirement	-	-	-	-
A	-	Bundled Retail Sales Forecast (LTPP) (GWh)				14,790
B	-	RPS Procurement Quantity Requirement (%)	31.0%	33.0%	35.8%	38.5%
C	A ÷ B	Gross RPS Procurement Quantity Requirement (GWh)				5,694
D	-	Voluntary Margin of Over procurement				-
E	C + D	Net RPS Procurement Need (GWh)				5,694
-	-	RPS-Eligible Procurement				-
Fa	-	Risk Adjusted RECs from Online Generation (GWh)				6,328
Faa	-	Forecast Failure Rate for Online Generation (%) ⁽⁴⁾				-1%
Fb	-	Risk Adjusted RECs from RPS Facilities in Development (GWh)				359
Fbb	-	Forecast Failure Rate for RPS Facilities in Development (%) ⁽⁴⁾				30%
Fe	-	Pre Approved Generic RECs ⁽⁵⁾ (GWh)	0	0	0	0
Fd	-	RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe	-	Executed REC Sales (GWh)	0	0	0	0
F	$\frac{Fa + Fb + Fe + Fd}{Fe}$	Total RPS Eligible Procurement (GWh)	6,776	6,657	6,950	6,687
F0	-	Category 0 RECs (GWh)				2,017
F1	-	Category 1 RECs (GWh)				4,670
F2	-	Category 2 RECs (GWh)				0
F3	-	Category 3 RECs (GWh)				0
F _{LT}	-	RECs from LT contracts ⁽⁶⁾ (GWh)				6,673
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)				100%
-	-	Gross RPS Position (Physical Net Short)				-
Ga	F-E	Annual Gross RPS Position (GWh)				993
Gb	F/A	Annual Gross RPS Position (%)				45%
-	-	Application of Bank				-
Ha	Ia ₁ + J ₁	Existing Banked RECs above the PQR (GWh)				17,918
Hb	+Ga - He	RECs above the PQR added to Bank (GWh)				993
He	-	Non-bankable RECs above the PQR (GWh)				0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)				18,911
Ia	$\frac{-Ga}{\text{Bank}}$	Planned Application of RECs above the PQR towards RPS Compliance (GWh)				0
Ib	-	Planned Sales of RECs above the PQR (GWh)				-
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)				18,911
J0	-	Category 0 RECs ⁽⁴⁾ (GWh)				7,521
J1	-	Category 1 RECs ⁽⁴⁾ (GWh)				11,390
J2	-	Category 2 RECs ⁽⁴⁾ (GWh)				0
-	-	Expiring Contracts				-
K	-	RECs from Expiring RPS Contracts (GWh)	184	0	0	55
-	-	Net RPS Position (Optimized Net Short)				-
La	$\frac{Ga - Hb - He + Ia}{(E + La)/A}$	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾				0
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)				39%

Variable	Calculation	Item	2023 Forecast	2024 Forecast	2025 Forecast	2026 Forecast
-	-	Forecast Year	6	7	8	9
Annual RPS Requirement						
A	-	Bundled Retail Sales Forecast (LTPP) (GWh)	14,800	14,813	14,793	14,717
B	-	RPS Procurement Quantity Requirement (%)	41.3%	44.0%	46.7%	49.3%
C	A*B	Gross RPS Procurement Quantity Requirement (GWh)	6,105	6,518	6,904	7,261
D	-	Voluntary Margin of Over procurement	-	-	-	-
E	C+D	Net RPS Procurement Need (GWh)	6,105	6,518	6,904	7,261
RPS-Eligible Procurement						
Fa	-	Risk Adjusted REC _s from Online Generation (GWh)	6,252	5,901	5,651	5,480
Faa	-	Forecast Failure Rate for Online Generation (%) ⁽¹⁾	-1%	-1%	-1%	-1%
Fb	-	Risk Adjusted REC _s from RPS Facilities in Development (GWh)	259	258	258	257
Fbb	-	Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	30%	30%	30%	30%
Fe	-	Pre-Approved Generic REC _s ⁽²⁾ (GWh)	152	152	152	152
Fd	-	REC _s Pending CPUC Approval (GWh)	0	0	0	0
Fe	-	Executed REC Sales (GWh)	0	0	0	0
F	$\frac{Fa + Fb + Fe + Fd - Fe}{Fe}$	Total RPS Eligible Procurement (GWh)	6,763	6,411	6,161	5,990
F0	-	Category 0 REC _s (GWh)	1,974	1,648	1,435	1,287
F1	-	Category 1 REC _s (GWh)	4,789	4,763	4,726	4,702
F2	-	Category 2 REC _s (GWh)	0	0	0	0
F3	-	Category 3 REC _s (GWh)	0	0	0	0
F _{LT}	-	REC _s from LT contracts ⁽³⁾ (GWh)	6,763	6,411	6,161	5,990
F _{LT%}	F_{LT}/F	% of REC _s from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	658	(107)	(742)	(1,271)
Gb	F/A	Annual Gross RPS Position (%)	46%	43%	42%	41%
Application of Bank						
Ha	$I_a \pm I_c$	Existing Banked REC _s above the PQR (GWh)	18,911	19,568	19,462	18,719
Hb	$\pm Ga - He$	REC _s above the PQR added to Bank (GWh)	658	0	0	0
He	-	Non-bankable REC _s above the PQR (GWh)	0	0	0	0
H	$H_a + H_b$	Gross Balance of REC _s above the PQR (GWh)	19,568	19,568	19,462	18,719
Ia	$\frac{-Ga}{\text{Bank}}$	Planned Application of REC _s above the PQR towards RPS Compliance (GWh)	0	107	742	1,271
Ib	-	Planned Sales of REC _s above the PQR (GWh)	-	-	-	-
J	$H - I_a - I_b$	Net Balance of REC _s above the PQR (GWh)	19,568	19,462	18,719	17,448
J0	-	Category 0 REC _s ⁽⁴⁾ (GWh)	7,597	7,356	6,886	6,249
J1	-	Category 1 REC _s ⁽⁴⁾ (GWh)	11,971	12,105	11,833	11,199
J2	-	Category 2 REC _s ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K	-	REC _s from Expiring RPS Contracts (GWh)	281	216	149	4
Net RPS Position (Optimized Net Short)						
La	$G_a - H_b - H_c + I_a$	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	0	0	0
Lb	$(E + L_a)/A$	Annual Net RPS Position after Bank Optimization (%)	41%	44%	47%	49%

Variable	Calculation	Item	2027 Forecast	2028 Forecast	2029 Forecast	2030 Forecast
-	-	Forecast Year	10	11	12	13
Annual RPS Requirement						
A	-	Bundled Retail Sales Forecast (LTPP) (GWh)	14,610	14,501	14,501	14,501
B	-	RPS Procurement Quantity Requirement (%)	52.0%	54.7%	57.3%	60.0%
C	A+B	Gross RPS Procurement Quantity Requirement (GWh)	7,597	7,927	8,314	8,701
D	-	Voluntary Margin of Over procurement	-	-	-	-
E	C+D	Net RPS Procurement Need (GWh)	7,597	7,927	8,314	8,701
RPS Eligible Procurement						
Fa	-	Risk Adjusted RECs from Online Generation (GWh)	5,477	5,477	5,477	5,476
Faa	-	Forecast Failure Rate for Online Generation (%) ⁽⁴⁾	-1%	-1%	-1%	-1%
Fb	-	Risk Adjusted RECs from RPS Facilities in Development (GWh)	257	256	256	256
Fbb	-	Forecast Failure Rate for RPS Facilities in Development (%) ⁽⁴⁾	30%	30%	30%	30%
Fe	-	Pre-Approved Generic RECs ⁽⁵⁾ (GWh)	152	152	152	152
Fd	-	RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe	-	Executed REC Sales (GWh)	0	0	0	0
F	$\frac{Fa + Fb + Fe + Fd}{Fe}$	Total RPS Eligible Procurement (GWh)	5,985	5,985	5,985	5,983
F0	-	Category 0 RECs (GWh)	1,287	1,287	1,287	1,287
F1	-	Category 1 RECs (GWh)	4,698	4,698	4,698	4,696
F2	-	Category 2 RECs (GWh)	0	0	0	0
F3	-	Category 3 RECs (GWh)	0	0	0	0
F _{LT}	-	RECs from LT contracts ⁽⁶⁾ (GWh)	5,985	5,985	5,985	5,983
F _{LT%}	$\frac{F_{LT}}{F}$	% of RECs from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	(1,612)	(1,942)	(2,329)	(2,718)
Gb	F/A	Annual Gross RPS Position (%)	41%	41%	41%	41%
Application of Bank						
Ha	$I_a + I_c$	Existing Banked RECs above the PQR (GWh)	17,448	15,836	13,895	11,566
Hb	$+G_a - H_e$	RECs above the PQR added to Bank (GWh)	0	0	0	0
He	-	Non bankable RECs above the PQR (GWh)	0	0	0	0
H	$H_a + H_b$	Gross Balance of RECs above the PQR (GWh)	17,448	15,836	13,895	11,566
Ia	$-G_a \leftarrow \text{Bank}$	Planned Application of RECs above the PQR towards RPS Compliance (GWh)	1,612	1,942	2,329	2,718
Ib	-	Planned Sales of RECs above the PQR (GWh)	-	-	-	-
J	$H - I_a - I_b$	Net Balance of RECs above the PQR (GWh)	15,836	13,895	11,566	8,849
J0	-	Category 0 RECs ⁽⁴⁾ (GWh)	5,536	4,752	3,877	2,912
J1	-	Category 1 RECs ⁽⁴⁾ (GWh)	10,300	9,143	7,689	5,936
J2	-	Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K	-	RECs from Expiring RPS Contracts (GWh)	0	0	0	50
Net RPS Position (Optimized Net Short)						
La	$G_a - H_b - H_e + I_a$	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	0	0	0
Lb	$(E + La)/A$	Annual Net RPS Position after Bank Optimization (%)	52%	55%	57%	60%

Variable	Calculation	Item	2031 Forecast	2032 Forecast	2033 Forecast	2034 Forecast
-	-	Forecast Year	14	15	16	17
Annual RPS Requirement						
A	-	Bundled Retail Sales Forecast (LTPD) (GWh)	14,502	14,502	14,502	14,502
B	-	RPS Procurement Quantity Requirement (%)	60.0%	60.0%	60.0%	60.0%
C	A+B	Gross RPS Procurement Quantity Requirement (GWh)	8,701	8,701	8,702	8,702
D	-	Voluntary Margin of Over procurement	-	-	-	-
E	C+D	Net RPS Procurement Need (GWh)	8,701	8,701	8,702	8,702
RPS-Eligible Procurement						
Fa	-	Risk Adjusted RECs from Online Generation (GWh)	5,412	5,282	4,270	2,025
Faa	-	Forecast Failure Rate for Online Generation (%) ⁽⁴⁾	-1%	-1%	-1%	-1%
Fb	-	Risk Adjusted RECs from RPS Facilities in Development (GWh)	255	255	254	242
Fbb	-	Forecast Failure Rate for RPS Facilities in Development (%) ⁽⁴⁾	20%	20%	20%	20%
Fe	-	Pre-Approved Generic RECs ⁽⁴⁾ (GWh)	152	152	152	152
Fd	-	RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe	-	Executed REC Sales (GWh)	0	0	0	0
F	$\frac{Fa+Fb+Fe+Fd}{Fe}$	Total RPS-Eligible Procurement (GWh)	5,919	5,789	4,885	3,530
F0	-	Category 0 RECs (GWh)	1,277	1,152	825	200
F1	-	Category 1 RECs (GWh)	4,642	4,637	4,060	3,330
F2	-	Category 2 RECs (GWh)	0	0	0	0
F3	-	Category 3 RECs (GWh)	0	0	0	0
F _{LT}	-	RECs from LT contracts ⁽⁴⁾ (GWh)	5,919	5,789	4,885	3,530
F _{LT%}	F_{LT}/F	% of RECs from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	(2,782)	(2,912)	(3,817)	(5,172)
Gb	F/A	Annual Gross RPS Position (%)	41%	40%	34%	24%
Application of Bank						
Ha	$I_a + I_c$	Existing Banked RECs above the PQR (GWh)	8,849	6,066	2,154	(662)
Hb	$+G_a - H_e$	RECs above the PQR added to Bank (GWh)	0	0	0	0
He	-	Non-bankable RECs above the PQR (GWh)	0	0	0	0
H	$H_a + H_b$	Gross Balance of RECs above the PQR (GWh)	8,849	6,066	2,154	(662)
Ia	$-G_a \leftarrow$ Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)	2,782	2,912	2,154	(662)
Ib	-	Planned Sales of RECs above the PQR (GWh)	-	-	-	-
J	$H - I_a - I_b$	Net Balance of RECs above the PQR (GWh)	6,066	2,154	0	0
J0	-	Category 0 RECs ⁽⁴⁾ (GWh)	1,964	1,003	0	0
J1	-	Category 1 RECs ⁽⁴⁾ (GWh)	4,102	2,150	0	0
J2	-	Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K	-	RECs from Expiring RPS Contracts (GWh)	10	450	1,154	276
Net RPS Position (Optimized Net Short)						
La	$G_a - H_b - H_e + I_a$	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	0	(663)	(5,835)
Lb	$(E + La)/A$	Annual Net RPS Position after Bank Optimization (%)	60%	60%	55%	20%

Variable	Calculation	Item	2035 Forecast	2036 Forecast	2037 Forecast
-	-	Forecast Year	18	19	20
-	-	Annual RPS Requirement	-	-	-
A	-	Bundled Retail Sales Forecast (LTPP) (GWh)	14,504	14,504	14,505
B	-	RPS Procurement Quantity Requirement (%)	60.0%	60.0%	60.0%
C	$A \div B$	Gross RPS Procurement Quantity Requirement (GWh)	8,702	8,702	8,703
D	-	Voluntary Margin of Over procurement	-	-	-
E	$C + D$	Net RPS Procurement Need (GWh)	8,702	8,702	8,703
-	-	RPS Eligible Procurement	-	-	-
Fa	-	Risk Adjusted RECs from Online Generation (GWh)	2,511	2,221	2,220
Faa	-	Forecast Failure Rate for Online Generation (%) ⁽⁴⁾	-1%	-1%	-1%
Fb	-	Risk Adjusted RECs from RPS Facilities in Development (GWh)	241	241	240
Fbb	-	Forecast Failure Rate for RPS Facilities in Development (%) ⁽⁴⁾	20%	20%	20%
Fe	-	Pre-Approved Generic RECs ⁽⁵⁾ (GWh)	152	152	152
Fd	-	RECs Pending CPUC Approval (GWh)	0	0	0
Fe	-	Executed REC Sales (GWh)	0	0	0
F	$\frac{Fa + Fb + Fe + Fd - Fe}{Fe}$	Total RPS Eligible Procurement (GWh)	3,004	2,724	2,713
F0	-	Category 0 RECs (GWh)	2	2	2
F1	-	Category 1 RECs (GWh)	3,002	2,722	2,711
F2	-	Category 2 RECs (GWh)	0	0	0
F3	-	Category 3 RECs (GWh)	0	0	0
F _{LT}	-	RECs from LT contracts ⁽⁶⁾ (GWh)	3,004	2,724	2,713
F _{LT%}	F_{LT}/F	% of RECs from LT contracts (GWh)	100%	100%	100%
-	-	Gross RPS Position (Physical Net Short)	-	-	-
Ga	$F - E$	Annual Gross RPS Position (GWh)	(5,698)	(5,979)	(5,990)
Gb	F/A	Annual Gross RPS Position (%)	21%	19%	18.7%
-	-	Application of Bank	-	-	-
Ha	$Ia_{t-1} + J_{t-1}$	Existing Banked RECs above the PQR (GWh)	(5,935)	(11,533)	(17,512)
Hb	$+Ga - He$	RECs above the PQR added to Bank (GWh)	0	0	0
He	-	Non-bankable RECs above the PQR (GWh)	0	0	0
H	$Ha + Hb$	Gross Balance of RECs above the PQR (GWh)	(5,935)	(11,533)	(17,512)
Ia	$-Ga \leq \text{Bank}$	Planned Application of RECs above the PQR towards RPS Compliance (GWh)	(5,935)	(11,533)	(17,512)
Ib	-	Planned Sales of RECs above the PQR (GWh)	-	-	-
J	$H - Ia - Ib$	Net Balance of RECs above the PQR (GWh)	0	0	0
J0	-	Category 0 RECs ⁽⁴⁾ (GWh)	0	0	0
J1	-	Category 1 RECs ⁽⁴⁾ (GWh)	0	0	0
J2	-	Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0
-	-	Expiring Contracts	-	-	-
K	-	RECs from Expiring RPS Contracts (GWh)	238	11	2
-	-	Net RPS Position (Optimized Net Short)	-	-	-
La	$Ga - Hb - He + Ia$	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁶⁾	(11,533)	(17,512)	(23,502)
Lb	$(E + La)/A$	Annual Net RPS Position after Bank Optimization (%)	-20%	-61%	-102.0%

Probability Weighted Deliveries, Contracts Presently Developing — June 2018:

-	Name	CP2 Probability	Technology	Location	Date Signed	Term (yrs)	Start	Stop	Capacity (MW)	2018
1	LakeSide Biogas LLC	[REDACTED]	Biogas	LakeSide	2/14/17	15	2/14/19	2/13/34	3	[REDACTED]
2	97W18ME LLC (Midway Solar Farm III)		Solar PV	Calipatria	12/11/15	20	12/1/18	11/30/38	20	
3	Energia Sierra Juarez US 2 LLC		Wind	Meruco	11/3/17	20	9/1/20	8/31/40	105	
4	Wister Solar		Solar PV	Imperial Valley	4/19/18	20	7/1/19	6/30/39	20	
5	Cameron (SB43)		Solar PV	Campe	5/17/18	20	3/1/20	2/29/40	2	

-	2019	2020	2021	2022	2023	2024	2025	2026	2027
1	[REDACTED]								
2	[REDACTED]								
3	[REDACTED]								
4	[REDACTED]								
5	[REDACTED]								

-	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
1	[REDACTED]									
2	[REDACTED]									
3	[REDACTED]									
4	[REDACTED]									
5	[REDACTED]									

Probability Weighted Deliveries, Contracts Presently Delivering June 2018:

Index	Name	CP3 Probability	Technology	Location	Date Signed	Term (yrs)	Start	Stop	Capacity (MW)
1	San Diego Gas & Electric (Ramona Solar Energy)	100%	UOG-Solar	SD County	6/20/12	25	10/1/17	9/30/42	4
2	Otay Landfill Gas LLC (Otay Landfill I)	100%	Biogas	Chula Vista	5/1/09	10	5/1/09	4/30/19	2
3	Otay Landfill Gas LLC (Otay Landfill II)	100%	Biogas	Chula Vista	2/22/11	20	7/1/11	6/30/31	2
4	Sycamore Energy 1 LLC	100%	Biogas	Santee	11/20/09	20	5/16/11	5/15/31	2
5	MM Prima Deshecha Energy LLC	100%	Biogas	San Juan Capistrano	9/6/05	15	10/1/07	9/30/22	6
6	San Marcos Energy LLC	100%	Biogas	San Marcos	11/20/09	20	5/18/11	5/17/31	2
7	Otay Landfill Gas LLC (Otay Landfill V)	100%	Biogas	San Diego	12/27/11	20	6/21/13	6/20/33	2
8	Otay Landfill Gas LLC (Otay Landfill VI)	100%	Biogas	San Diego	12/27/11	20	6/21/13	6/20/33	2
9	MM San Diego LLC (Miramar RAM)	100%	Biogas	San Diego	11/9/12	10	5/20/13	5/19/23	5
10	Sycamore Energy 2 LLC	100%	Biogas	Santee	3/7/14	10	3/30/14	3/29/24	2
11	HL Power Company LP	100%	Biomass	Wendel	11/14/16	5	2/1/17	1/31/22	24
12	Olivenhain Municipal Water District	100%	Small Hydro	Encinitas	7/23/13	20	10/1/13	9/30/33	0
13	City of Oceanside (San Francisco Peak Hydro)	100%	Small Hydro	Oceanside	8/29/85	Evergreen	12/15/85	Evergreen	0
14	City of Escondido (Bear Valley Hydro)	100%	Small Hydro	Escondido	5/18/90	Evergreen	4/13/94	Evergreen	2
15	Centinela Solar Energy LLC	100%	Solar PV	Calexico	5/10/10	20	8/1/14	7/31/34	125
16	Centinela Solar Energy 2 LLC	100%	Solar PV	Calexico	7/29/10	20	8/15/14	8/14/34	45
17	CSolar IV South LLC	100%	Solar PV	Calexico	11/10/10	25	11/1/13	10/31/38	130
18	CSolar IV West LLC	100%	Solar PV	Imperial Valley	3/8/11	25	7/4/16	7/3/41	150
19	NRG Solar Borrego I LLC	100%	Solar PV	Borrego Springs	1/25/11	25	2/12/13	2/11/38	26
20	Desert Green Solar Farm LLC	100%	Solar PV	Borrego Springs	3/31/11	25	11/26/14	11/25/39	6
21	Campo Verde Solar LLC	100%	Solar PV	Imperial Valley	11/10/06	20	10/25/13	10/24/33	139
22	Sol Orchard 20 LLC (Ramona 1)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	2
23	Sol Orchard 21 LLC (Ramona 2)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	5
24	Sol Orchard 22 LLC (Valley Center 1)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	3
25	Sol Orchard 23 LLC (Valley Center 2)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	5
26	Arlington Valley Solar II LLC	100%	Solar PV	Hassayampa	6/3/11	25	11/5/13	11/4/38	127
27	Catalina Solar LLC	100%	Solar PV	Kern County	6/3/11	25	11/27/13	11/26/38	109
28	SG2 Imperial Valley LLC	100%	Solar PV	Imperial Valley	6/24/11	25	11/25/14	11/24/39	150
29	Imperial Valley Solar I LLC (Mount Signal I Solar Farm)	100%	Solar PV	Imperial Valley	2/10/12	25	10/10/13	10/9/38	200
30	Cascade Solar LLC	100%	Solar PV	Sun Fair	11/7/12	20	12/24/13	12/23/33	18

Index	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027

1	9,865	9,865	9,865	9,865	9,865	9,865	9,865	9,865	9,865	9,865
2	7,916	2,603	0	0	0	0	0	0	0	0
3	8,171	8,171	8,171	8,171	8,171	8,171	8,171	8,171	8,171	8,171
4	6,516	6,516	6,516	6,516	6,516	6,516	6,516	6,516	6,516	6,516
5	61,563	61,563	61,563	61,563	46,046	0	0	0	0	0
6	10,908	10,908	10,908	10,908	10,908	10,908	10,908	10,908	10,908	10,908
7	10,162	10,162	10,162	10,162	10,162	10,162	10,162	10,162	10,162	10,162
8	10,011	10,011	10,011	10,011	10,011	10,011	10,011	10,011	10,011	10,011
9	31,394	31,394	31,394	31,394	31,394	11,956	0	0	0	0
10	11,297	11,297	11,297	11,297	11,297	11,297	2,747	0	0	0
11	164,781	164,781	164,781	164,781	13,995	0	0	0	0	0
12	2,386	2,386	2,386	2,386	2,386	2,386	2,386	2,386	2,386	2,386
13	993	993	993	993	993	993	993	993	993	993
14	2,111	2,111	2,111	2,111	2,111	2,111	2,111	2,111	2,111	2,111
15	345,368	345,368	345,368	345,368	345,368	345,368	345,368	345,368	345,368	345,368
16	124,311	124,311	124,311	124,311	124,311	124,311	124,311	124,311	124,311	124,311
17	285,159	285,159	285,159	285,159	285,159	285,159	285,159	285,159	285,159	285,159
18	374,629	374,629	374,629	374,629	374,629	374,629	374,629	374,629	374,629	374,629
19	70,608	70,608	70,608	70,608	70,608	70,608	70,608	70,608	70,608	70,608
20	14,066	14,066	14,066	14,066	14,066	14,066	14,066	14,066	14,066	14,066
21	331,525	331,525	331,525	331,525	331,525	331,525	331,525	331,525	331,525	331,525
22	5,184	5,184	5,184	5,184	5,184	5,184	5,184	5,184	5,184	5,184
23	9,662	9,662	9,662	9,662	9,662	9,662	9,662	9,662	9,662	9,662
24	5,776	5,776	5,776	5,776	5,776	5,776	5,776	5,776	5,776	5,776
25	10,998	10,998	10,998	10,998	10,998	10,998	10,998	10,998	10,998	10,998
26	341,786	341,786	341,786	341,786	341,786	341,786	341,786	341,786	341,786	341,786
27	272,748	272,748	272,748	272,748	272,748	272,748	272,748	272,748	272,748	272,748
28	404,952	404,952	404,952	404,952	404,952	404,952	404,952	404,952	404,952	404,952
29	507,894	507,894	507,894	507,894	507,894	507,894	507,894	507,894	507,894	507,894
30	56,449	56,449	56,449	56,449	56,449	56,449	56,449	56,449	56,449	56,449

Index	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
-------	------	------	------	------	------	------	------	------	------	------

1	9,865	9,865	9,865	9,865	9,865	9,865	9,865	9,865	9,865	9,865
2	0	0	0	0	0	0	0	0	0	0
3	8,171	8,171	8,171	4,052	0	0	0	0	0	0
4	6,516	6,516	6,516	2,410	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	10,908	10,908	10,908	4,094	0	0	0	0	0	0
7	10,162	10,162	10,162	10,162	10,162	4,761	0	0	0	0
8	10,011	10,011	10,011	10,011	10,011	4,690	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0
12	2,386	2,386	2,386	2,386	2,386	1,785	0	0	0	0
13	993	993	993	993	993	993	993	993	993	993
14	2,111	2,111	2,111	2,111	2,111	2,111	2,111	2,111	2,111	2,111
15	345,368	345,368	345,368	345,368	345,368	345,368	200,598	0	0	0
16	124,311	124,311	124,311	124,311	124,311	124,311	76,971	0	0	0
17	285,159	285,159	285,159	285,159	285,159	285,159	285,159	285,159	285,159	285,159
18	374,629	374,629	374,629	374,629	374,629	374,629	374,629	374,629	374,629	374,629
19	70,608	70,608	70,608	70,608	70,608	70,608	70,608	70,608	70,608	70,608
20	14,066	14,066	14,066	14,066	14,066	14,066	14,066	14,066	14,066	14,066
21	331,525	331,525	331,525	331,525	331,525	269,761	0	0	0	0
22	5,184	5,184	5,184	5,184	5,184	5,184	5,184	5,184	5,184	5,184
23	9,662	9,662	9,662	9,662	9,662	9,662	9,662	9,662	9,662	9,662
24	5,776	5,776	5,776	5,776	5,776	5,776	5,776	5,776	5,776	5,776
25	10,998	10,998	10,998	10,998	10,998	10,998	10,998	10,998	10,998	10,998
26	341,786	341,786	341,786	341,786	341,786	341,786	341,786	341,786	341,786	341,786
27	272,748	272,748	272,748	272,748	272,748	272,748	272,748	272,748	272,748	272,748
28	404,952	404,952	404,952	404,952	404,952	404,952	404,952	404,952	404,952	404,952
29	507,894	507,894	507,894	507,894	507,894	507,894	507,894	507,894	507,894	507,894
30	56,449	56,449	56,449	56,449	56,449	55,212	0	0	0	0

Index	Name	CP3 Probability	Technology	Location	Date Signed	Term (yrs)	Start	Stop	Capacity (MW)
-------	------	-----------------	------------	----------	-------------	------------	-------	------	---------------

31	Calpatria LLC	100%	Solar PV	Calpatria	12/13/12	20	2/11/16	2/10/36	20
32	Tallbear Seville LLC	100%	Solar PV	El Centro	12/13/12	20	12/30/15	12/29/35	20
33	Marieopa West Solar PV LLC	100%	Solar PV	Marieopa	4/16/13	15	12/18/15	12/17/30	20
34	NLP Granger A82 LLC	100%	Solar PV	Valley Center	4/3/14	20	9/17/16	9/16/36	3
35	NLP Valley Center Solar LLC	100%	Solar PV	Valley Center	7/20/15	20	12/7/17	12/6/37	2
36	San Diego Gas & Electric (Del Sur Elementary School)	100%	UOG Solar	Various in SD County	4/13/07	10	7/1/09	6/30/19	0
37	San Diego Gas & Electric (Fairfield Grossmont Trolley)	100%	UOG Solar	Various in SD County	12/7/07	10	1/1/12	12/31/21	0
38	San Diego Gas & Electric (Hunter Industries)	100%	UOG Solar	Various in SD County	5/22/07	10	7/1/09	6/30/19	0
39	San Diego Gas & Electric (Innovative Cold Storage Enterprises)	100%	UOG Solar	Various in SD County	5/4/07	10	4/20/09	4/19/19	1
40	San Diego Gas & Electric (Ladera Ranch I)	100%	UOG Solar	Various in SD County	10/31/06	10	7/1/09	6/30/19	0
41	San Diego Gas & Electric (Pacific Station)	100%	UOG Solar	Various in SD County	1/21/11	10	6/1/13	5/31/23	0
42	San Diego Gas & Electric (Sanford-Burnham Medical Research Institute I)	100%	UOG Solar	Various in SD County	4/21/10	10	10/1/10	9/30/20	0
43	San Diego Gas & Electric (SDCCD—Skills Center)	100%	UOG Solar	Various in SD County	2/6/08	10	10/1/10	9/30/20	0
44	San Diego Gas & Electric (Towers at Bressi Ranch)	100%	UOG Solar	Various in SD County	7/10/07	10	7/1/09	6/30/19	0
45	San Diego Gas & Electric (Wilco Investments)	100%	UOG Solar	Various in SD County	6/12/08	10	1/1/12	12/31/21	0
46	San Diego Gas & Electric (X-nth)	100%	UOG Solar	Various in SD County	2/12/04	10	7/1/09	6/30/19	0
47	Oasis Power Partners LLC	100%	Wind	Mojave	10/30/02	15	12/25/04	12/24/19	60
48	Avangrid Renewables LLC (Mountain Wind)	100%	Wind	Riverside County	10/31/02	15	12/15/03	12/14/18	23
49	Avangrid Renewables LLC (Phoenix West Wind)	100%	Wind	Riverside County	11/7/03	15	12/15/03	12/14/18	2
50	FPL Energy Green Power Wind LLC	100%	Wind	Palm Springs	10/31/02	15	6/28/04	12/31/18	17
51	Kumeyaay Wind LLC	100%	Wind	Boulevard	5/31/04	20	3/21/06	12/31/25	50
52	Naturener Glacier Wind Energy 1 LLC	100%	Wind	Ethridge	5/16/08	15	12/29/08	12/28/23	107
53	Naturener Glacier Wind Energy 2 LLC	100%	Wind	Ethridge	5/23/08	15	10/16/09	10/15/24	104
54	Naturener Rim Roek Wind Energy LLC	100%	Wind	Kevin	5/5/09	20	10/15/13	10/14/33	189
55	Pacific Wind Lessee LLC	100%	Wind	Tehachapi	10/12/05	20	8/16/12	8/15/32	140
56	Coram Energy LLC	100%	Wind	Tehachapi	7/12/10	15	3/1/11	2/28/26	8
57	Ocotillo Express LLC	100%	Wind	Imperial Valley	2/1/11	21	12/27/12	7/29/33	265
58	Energia Sierra Juarez US LLC	100%	Wind	Mexico	4/6/11	20	6/5/15	6/4/35	155
59	Manzana Wind LLC	100%	Wind	Tehachapi	2/14/12	20	12/31/12	12/30/32	100
60	Oak Creek Wind Power LLC	100%	Wind	Mojave	4/16/13	10	1/26/14	1/25/24	4
61	San Gorgonio Westwinds II LLC	100%	Wind	Palm Springs	4/16/13	10	1/20/15	1/19/25	11

Index	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
31	46,975	46,975	46,975	46,975	46,975	46,975	46,975	46,975	46,975	46,975

32	54,475	54,475	54,475	54,475	54,475	54,475	54,475	54,475	54,475	54,475
33	50,717	50,717	50,717	50,717	50,717	50,717	50,717	50,717	50,717	50,717
34	7,662	7,662	7,662	7,662	7,662	7,662	7,662	7,662	7,662	7,662
35	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980
36	85	42	0	0	0	0	0	0	0	0
37	93	93	93	93	0	0	0	0	0	0
38	180	89	0	0	0	0	0	0	0	0
39	779	233	0	0	0	0	0	0	0	0
40	89	44	0	0	0	0	0	0	0	0
41	179	179	179	179	179	74	0	0	0	0
42	318	318	238	0	0	0	0	0	0	0
43	93	93	70	0	0	0	0	0	0	0
44	142	71	0	0	0	0	0	0	0	0
45	348	348	348	348	0	0	0	0	0	0
46	34	17	0	0	0	0	0	0	0	0
47	176,931	173,537	0	0	0	0	0	0	0	0
48	71,370	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0
50	24,471	0	0	0	0	0	0	0	0	0
51	152,103	152,103	152,103	152,103	152,103	152,103	152,103	152,103	0	0
52	265,209	265,209	265,209	265,209	265,209	263,029	0	0	0	0
53	264,722	264,722	264,722	264,722	264,722	264,722	209,029	0	0	0
54	589,919	589,919	589,919	589,919	589,919	589,919	589,919	589,919	589,919	589,919
55	307,128	307,128	307,128	307,128	307,128	307,128	307,128	307,128	307,128	307,128
56	24,828	24,828	24,828	24,828	24,828	24,828	24,828	24,828	4,013	0
57	586,464	586,464	586,464	586,464	586,464	586,464	586,464	586,464	586,464	586,464
58	437,738	437,738	437,738	437,738	437,738	437,738	437,738	437,738	437,738	437,738
59	249,752	249,752	249,752	249,752	249,752	249,752	249,752	249,752	249,752	249,752
60	5,582	5,582	5,582	5,582	5,582	5,582	381	0	0	0
61	34,844	34,844	34,844	34,844	34,844	34,844	34,844	1,814	0	0
Index	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
31	46,975	46,975	46,975	46,975	46,975	46,975	46,975	46,975	5,262	0

32	54,475	54,475	54,475	54,475	54,475	54,475	54,475	54,177	0	0
33	50,717	50,717	48,772	0	0	0	0	0	0	0
34	7,662	7,662	7,662	7,662	7,662	7,662	7,662	7,662	5,443	0
35	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,571
36	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0
54	589,919	589,919	589,919	589,919	589,919	463,854	0	0	0	0
55	307,128	307,128	307,128	307,128	191,326	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0
57	586,464	586,464	586,464	586,464	586,464	337,418	0	0	0	0
58	437,738	437,738	437,738	437,738	437,738	437,738	437,738	185,889	0	0
59	249,752	249,752	249,752	249,752	249,070	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0
61	0	0	0	0	0	0	0	0	0	0

Variable	Calculation	Item	Prior Deficit	2011 - 2013	2014 - 2016
		Forecast Year		CP1	CP2
Annual RPS Requirement					
A		Bundled Retail Sales Forecast (LTTP) (GWh)		49,040	48,388
B		RPS Procurement Quantity Requirement (%)		20.2%	23.3%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78	9,886	11,277
D		Voluntary Margin of Over-procurement		0	0
E	C + D	Net RPS Procurement Need (GWh)		9,886	11,277
RPS-Eligible Procurement					
Fa		Risk-Adjusted RECs from Online Generation (GWh)		11,287	19,300
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾		0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)		0	0
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾		0%	0%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)		0	0
Fd		RECs Pending CPUC Approval (GWh)		0	0
Fe		Executed REC Sales (GWh)		697	1,540
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)		10,590	17,760
F0		Category 0 RECs (GWh)		6,568	7,837
F1		Category 1 RECs (GWh)		3,780	9,922
F2		Category 2 RECs (GWh)		0	0
F3		Category 3 RECs (GWh)		242	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)		7,452	17,760
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)		70%	100%
Gross RPS Position (Physical Net Short)					
Ga	F-E	Annual Gross RPS Position (GWh)		703	6,483
Gb	F/A	Annual Gross RPS Position (%)		21.6%	36.7%
Application of Bank					
Ha	L _{a,t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)		(2)	7,031
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)		569	6,478
Hc		Non-bankable RECs above the PQR (GWh)		136	5
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)		567	13,509
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)		(0)	0
Ib		Planned Sales of RECs above the PQR (GWh)		0	0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)		567	13,509
J0		Category 0 RECs ⁽⁴⁾ (GWh)		360	7,317
J1		Category 1 RECs ⁽⁴⁾ (GWh)		207	6,191
J2		Category 2 RECs ⁽⁴⁾ (GWh)		0	0
Expiring Contracts					
K		RECs from Expiring RPS Contracts (GWh)		2,043	410
Net RPS Position (Optimized Net Short)					
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾		(2)	(0)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)		20.2%	23.3%

Note: Values are shown in GWhs

- (1) Delivery failure rate is the probability weighted deviation below expected forecast generation, and is based upon but not limited to probability assessments of project failure, project capacity reduction, operational failure after project success, project curtailment due to transmission constraints, etc
- (2) Pre-Approved Generic Generation includes mandated programs
- (3) Excludes executed REC sales
- (4) The "Net Balance of RECs above PQR" has been allocated between PCC0 and PCC1 categories based on the historical procurement of the total RECs by each category in "F0" and "F1 " For CP1, the RECs over PQR applied for compliance versus the RECs applied that meet the PQR are not broken out as all RECs to be applied for compliance are submitted together and RECs above and for PQR are not differentiated from one another
- (5) The formula was changed so that it includes the effect of the non-bankable RECs

Variable	Calculation	Item	Prior Deficit	2017 - 2020	2021 - 2024	2025 - 2027
		Forecast Year		CP3	CP4	CP5
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)				42,221
B		RPS Procurement Quantity Requirement (%)		29.9%	39.9%	49.3%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78			20,823
D		Voluntary Margin of Over-procurement				0
E	C + D	Net RPS Procurement Need (GWh)				20,823
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)				17,092
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾				0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)				939
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾				31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)		0	304	455
Fd		RECs Pending CPUC Approval (GWh)		0	0	0
Fe		Executed REC Sales (GWh)		1,706	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)		25,418	27,068	18,486
F0		Category 0 RECs (GWh)				3,872
F1		Category 1 RECs (GWh)				14,613
F2		Category 2 RECs (GWh)				0
F3		Category 3 RECs (GWh)				0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)				18,486
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)				100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)				(2,337)
Gb	F/A	Annual Gross RPS Position (%)				43.8%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)				55,921
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)				0
Hc		Non-bankable RECs above the PQR (GWh)				0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)				55,921
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)				2,337
Ib		Planned Sales of RECs above the PQR (GWh)				0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)				53,584
J0		Category 0 RECs ⁽⁴⁾ (GWh)				19,180
J1		Category 1 RECs ⁽⁴⁾ (GWh)				34,404
J2		Category 2 RECs ⁽⁴⁾ (GWh)				0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)		292	532	154
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾				0
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)				49.3%

Variable	Calculation	Item	Prior Deficit	2028 - 2030	2031 - 2033	2034 - 2036
		Forecast Year		CP6	CP7	CP8
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)		41,364	41,296	41,301
B		RPS Procurement Quantity Requirement (%)		57.3%	60.0%	60.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78	23,715	24,777	24,781
D		Voluntary Margin of Over-procurement		0	0	0
E	C + D	Net RPS Procurement Need (GWh)		23,715	24,777	24,781
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)		16,911	15,508	8,172
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾		0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)		937	935	933
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾		31%	31%	31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)		455	455	455
Fd		RECs Pending CPUC Approval (GWh)		0	0	0
Fe		Executed REC Sales (GWh)		0	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)		18,303	16,899	9,561
F0		Category 0 RECs (GWh)		3,724	3,125	220
F1		Category 1 RECs (GWh)		14,579	13,774	9,341
F2		Category 2 RECs (GWh)		0	0	0
F3		Category 3 RECs (GWh)		0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)		18,303	16,899	9,561
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)		100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)		(5,412)	(7,879)	(15,220)
Gb	F/A	Annual Gross RPS Position (%)		44.2%	40.9%	23.1%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)		45,754	27,355	(3,815)
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)		0	0	0
Hc		Non-bankable RECs above the PQR (GWh)		0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)		45,754	27,355	(3,815)
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)		5,412	7,879	(3,815)
Ib		Planned Sales of RECs above the PQR (GWh)		0	0	0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)		40,342	19,476	0
J0		Category 0 RECs ⁽⁴⁾ (GWh)		13,425	6,136	0
J1		Category 1 RECs ⁽⁴⁾ (GWh)		26,917	13,340	0
J2		Category 2 RECs ⁽⁴⁾ (GWh)		0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)		48	1,602	553
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾		0	0	(19,034)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)		57.3%	60.0%	13.9%

Variable	Calculation	Item	Prior Deficit	2037 - 2039
		Forecast Year		CP9
Annual RPS Requirement				
A		Bundled Retail Sales Forecast (LTTP) (GWh)		41,360
B		RPS Procurement Quantity Requirement (%)		60.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78	24,816
D		Voluntary Margin of Over-procurement		0
E	C + D	Net RPS Procurement Need (GWh)		24,816
RPS-Eligible Procurement				
Fa		Risk-Adjusted RECs from Online Generation (GWh)		5,077
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾		0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)		931
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾		31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)		455
Fd		RECs Pending CPUC Approval (GWh)		0
Fe		Executed REC Sales (GWh)		0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)		6,464
F0		Category 0 RECs (GWh)		9
F1		Category 1 RECs (GWh)		6,455
F2		Category 2 RECs (GWh)		0
F3		Category 3 RECs (GWh)		0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)		6,464
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)		100%
Gross RPS Position (Physical Net Short)				
Ga	F-E	Annual Gross RPS Position (GWh)		(18,352)
Gb	F/A	Annual Gross RPS Position (%)		15.6%
Application of Bank				
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)		(51,818)
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)		0
Hc		Non-bankable RECs above the PQR (GWh)		0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)		(51,818)
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)		(51,818)
Ib		Planned Sales of RECs above the PQR (GWh)		0
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)		0
J0		Category 0 RECs ⁽⁴⁾ (GWh)		0
J1		Category 1 RECs ⁽⁴⁾ (GWh)		0
J2		Category 2 RECs ⁽⁴⁾ (GWh)		0
Expiring Contracts				
K		RECs from Expiring RPS Contracts (GWh)		1,688
Net RPS Position (Optimized Net Short)				
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾		(70,170)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)		-109.7%

Variable	Calculation	Item	Prior Deficit	2011 Actuals	2012 Actuals	2013 Actuals	2014 Actuals
		Forecast Year					
Annual RPS Requirement							
A		Bundled Retail Sales Forecast (LTPP) (GWh)		16,249	16,627	16,164	16,468
B		RPS Procurement Quantity Requirement (%)		20.0%	20.0%	20.0%	21.7%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	78	3,328	3,325	3,233	3,574
D		Voluntary Margin of Over-procurement					
E	C + D	Net RPS Procurement Need (GWh)		3,328	3,325	3,233	3,574
RPS-Eligible Procurement							
Fa		Risk-Adjusted RECs from Online Generation (GWh)		3,380	3,376	4,531	5,936
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾		0%	0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)		0	0	0	0
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾		0%	0%	0%	0%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)		0	0	0	0
Fd		RECs Pending CPUC Approval (GWh)		0	0	0	0
Fe		Executed REC Sales (GWh)		0	0	697	666
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)		3,380	3,376	3,834	5,270
F0		Category 0 RECs (GWh)		2,784	1,969	1,815	2,805
F1		Category 1 RECs (GWh)		596	1,166	2,019	2,466
F2		Category 2 RECs (GWh)		0	0	0	0
F3		Category 3 RECs (GWh)		0	242	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)		2,816	2,048	2,588	5,270
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)		83%	61%	68%	100%
Gross RPS Position (Physical Net Short)							
Ga	F-E	Annual Gross RPS Position (GWh)		52	50	601	1,697
Gb	F/A	Annual Gross RPS Position (%)		21%	20%	24%	32%
Application of Bank							
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)		0	(0)	(2)	567
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)		0	0	569	1,695
Hc		Non-bankable RECs above the PQR (GWh)		52	52	32	2
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)		0	(0)	567	2,262
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (GWh)		0	(0)	0	0
Ib		Planned Sales of RECs above the PQR (GWh)					
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)		0	0	567	2,262
J0		Category 0 RECs ⁽⁴⁾ (GWh)		0	0	360	1,357
J1		Category 1 RECs ⁽⁴⁾ (GWh)		0	0	207	905
J2		Category 2 RECs ⁽⁴⁾ (GWh)		0	0	0	0
Expiring Contracts							
K		RECs from Expiring RPS Contracts (GWh)		966	721	356	115
Net RPS Position (Optimized Net Short)							
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾		(0)	(2)	0	(0)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)		20%	20%	20%	22%

Variable	Calculation	Item	2015 Actuals	2016 Actuals	2017 Actuals	2018 Forecast
		Forecast Year				1
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)	16,267	15,653	15,619	15,127
B		RPS Procurement Quantity Requirement (%)	23.3%	25.0%	27.0%	29.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	3,790	3,913	4,217	4,387
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)	3,790	3,913	4,217	4,387
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)	6,445	6,918	6,929	6,607
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾	0%	0%	0%	-1%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)	0	0	0	0
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	0%	0%	0%	0%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	0	0	0	0
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	714	160	0	130
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	5,732	6,758	6,929	6,477
F0		Category 0 RECs (GWh)	2,567	2,465	2,368	2,264
F1		Category 1 RECs (GWh)	3,164	4,292	4,561	4,213
F2		Category 2 RECs (GWh)	0	0	0	0
F3		Category 3 RECs (GWh)	0	0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)	5,732	6,758	6,770	6,295
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	98%	97%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	1,942	2,844	2,712	2,090
Gb	F/A	Annual Gross RPS Position (%)	35%	43%	44%	43%
Application of Bank						
Ha	L _{a,t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)	2,262	4,202	7,045	9,757
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	1,940	2,843	2,712	2,090
Hc		Non-bankable RECs above the PQR (GWh)	2	1	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	4,202	7,045	9,757	11,848
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (	0	0	0	0
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	4,202	7,045	9,757	11,848
J0		Category 0 RECs ⁽⁴⁾ (GWh)	2,350	3,610	4,671	5,433
J1		Category 1 RECs ⁽⁴⁾ (GWh)	1,852	3,435	5,086	6,415
J2		Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	295	0	22	87
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	(0)	0	0
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	23%	25%	27%	29%

Variable	Calculation	Item	2019 Forecast	2020 Forecast	2021 Forecast	2022 Forecast
		Forecast Year	2	3	4	5
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)				
B		RPS Procurement Quantity Requirement (%)	31.0%	33.0%	35.8%	38.5%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)				
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)				
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)				
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾				
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)				
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾				
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	0	0	0	0
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	885	691	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	5,970	6,042	6,938	6,772
F0		Category 0 RECs (GWh)				
F1		Category 1 RECs (GWh)				
F2		Category 2 RECs (GWh)				
F3		Category 3 RECs (GWh)				
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)				
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)				
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)				
Gb	F/A	Annual Gross RPS Position (%)				
Application of Bank						
Ha	L _{a,t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)				
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)				
Hc		Non-bankable RECs above the PQR (GWh)				
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)				
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)				
J0		Category 0 RECs ⁽⁴⁾ (GWh)				
J1		Category 1 RECs ⁽⁴⁾ (GWh)				
J2		Category 2 RECs ⁽⁴⁾ (GWh)				
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	184	0	0	62
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾				
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)				

Variable	Calculation	Item	2023 Forecast	2024 Forecast	2025 Forecast	2026 Forecast
		Forecast Year	6	7	8	9
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)	14,122	14,178	14,173	14,094
B		RPS Procurement Quantity Requirement (%)	41.3%	44.0%	46.7%	49.3%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	5,825	6,238	6,614	6,953
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)	5,825	6,238	6,614	6,953
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)	6,380	6,047	5,813	5,641
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾	0%	0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)	314	313	313	313
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	31%	31%	31%	31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	152	152	152	152
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	0	0	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	6,845	6,513	6,278	6,106
F0		Category 0 RECs (GWh)	1,901	1,594	1,390	1,241
F1		Category 1 RECs (GWh)	4,944	4,919	4,888	4,865
F2		Category 2 RECs (GWh)	0	0	0	0
F3		Category 3 RECs (GWh)	0	0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)	6,845	6,513	6,278	6,106
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	1,020	274	(336)	(847)
Gb	F/A	Annual Gross RPS Position (%)	48%	46%	44%	43%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)	17,853	18,873	19,147	18,811
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	1,020	274	0	0
Hc		Non-bankable RECs above the PQR (GWh)	0	0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	18,873	19,147	19,147	18,811
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (	0	0	336	847
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	18,873	19,147	18,811	17,964
J0		Category 0 RECs ⁽⁴⁾ (GWh)	7,382	7,263	6,921	6,415
J1		Category 1 RECs ⁽⁴⁾ (GWh)	11,490	11,884	11,890	11,549
J2		Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	261	208	150	4
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	0	0	0
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	41%	44%	47%	49%

Variable	Calculation	Item	2027 Forecast	2028 Forecast	2029 Forecast	2030 Forecast
		Forecast Year	10	11	12	13
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)	13,953	13,788	13,788	13,788
B		RPS Procurement Quantity Requirement (%)	52.0%	54.7%	57.3%	60.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	7,256	7,537	7,905	8,273
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)	7,256	7,537	7,905	8,273
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)	5,637	5,637	5,638	5,636
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾	0%	0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)	313	313	312	312
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	31%	31%	31%	31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	152	152	152	152
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	0	0	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	6,102	6,102	6,102	6,100
F0		Category 0 RECs (GWh)	1,241	1,241	1,241	1,241
F1		Category 1 RECs (GWh)	4,860	4,860	4,860	4,859
F2		Category 2 RECs (GWh)	0	0	0	0
F3		Category 3 RECs (GWh)	0	0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)	6,102	6,102	6,102	6,100
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	(1,154)	(1,436)	(1,803)	(2,173)
Gb	F/A	Annual Gross RPS Position (%)	44%	44%	44%	44%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)	17,964	16,810	15,374	13,571
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	0	0	0	0
Hc		Non-bankable RECs above the PQR (GWh)	0	0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	17,964	16,810	15,374	13,571
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (	1,154	1,436	1,803	2,173
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	16,810	15,374	13,571	11,397
J0		Category 0 RECs ⁽⁴⁾ (GWh)	5,844	5,216	4,503	3,706
J1		Category 1 RECs ⁽⁴⁾ (GWh)	10,966	10,158	9,067	7,691
J2		Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	0	0	0	48
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	0	0	0
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	52%	55%	57%	60%

Variable	Calculation	Item	2031 Forecast	2032 Forecast	2033 Forecast	2034 Forecast
		Forecast Year	14	15	16	17
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)	13,765	13,765	13,766	13,766
B		RPS Procurement Quantity Requirement (%)	60.0%	60.0%	60.0%	60.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	8,259	8,259	8,260	8,260
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)	8,259	8,259	8,260	8,260
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)	5,560	5,429	4,519	3,192
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾	0%	0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)	312	312	312	311
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	31%	31%	31%	31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	152	152	152	152
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	0	0	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	6,024	5,893	4,982	3,655
F0		Category 0 RECs (GWh)	1,230	1,104	791	215
F1		Category 1 RECs (GWh)	4,793	4,789	4,191	3,441
F2		Category 2 RECs (GWh)	0	0	0	0
F3		Category 3 RECs (GWh)	0	0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)	6,024	5,893	4,982	3,655
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	(2,235)	(2,366)	(3,277)	(4,604)
Gb	F/A	Annual Gross RPS Position (%)	44%	43%	36%	27%
Application of Bank						
Ha	L _{a,t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)	11,397	9,162	6,796	3,519
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	0	0	0	0
Hc		Non-bankable RECs above the PQR (GWh)	0	0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	11,397	9,162	6,796	3,519
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (	2,235	2,366	3,277	3,519
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	9,162	6,796	3,519	0
J0		Category 0 RECs ⁽⁴⁾ (GWh)	2,925	2,129	1,082	0
J1		Category 1 RECs ⁽⁴⁾ (GWh)	6,237	4,667	2,437	0
J2		Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	10	468	1,124	293
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	0	0	0	(1,086)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	60%	60%	60%	52%

Variable	Calculation	Item	2035 Forecast	2036 Forecast	2037 Forecast	2038 Forecast
		Forecast Year	18	19	20	21
Annual RPS Requirement						
A		Bundled Retail Sales Forecast (LTPP) (GWh)	13,767	13,768	13,768	13,770
B		RPS Procurement Quantity Requirement (%)	60.0%	60.0%	60.0%	60.0%
C	A * B	Gross RPS Procurement Quantity Requirement (GWh)	8,260	8,261	8,261	8,262
D		Voluntary Margin of Over-procurement				
E	C + D	Net RPS Procurement Need (GWh)	8,260	8,261	8,261	8,262
RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (GWh)	2,636	2,344	2,333	2,015
Faa		Forecast Failure Rate for Online Generation (%) ⁽¹⁾	0%	0%	0%	0%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (GWh)	311	311	311	310
Fbb		Forecast Failure Rate for RPS Facilities in Development (%) ⁽¹⁾	31%	31%	31%	31%
Fc		Pre-Approved Generic RECs ⁽²⁾ (GWh)	152	152	152	152
Fd		RECs Pending CPUC Approval (GWh)	0	0	0	0
Fe		Executed REC Sales (GWh)	0	0	0	0
F	Fa + Fb + Fc + Fd - Fe	Total RPS Eligible Procurement (GWh)	3,099	2,807	2,796	2,477
F0		Category 0 RECs (GWh)	3	3	3	3
F1		Category 1 RECs (GWh)	3,096	2,804	2,793	2,475
F2		Category 2 RECs (GWh)	0	0	0	0
F3		Category 3 RECs (GWh)	0	0	0	0
F _{LT}		RECs from LT contracts ⁽³⁾ (GWh)	3,099	2,807	2,796	2,477
F _{LT%}	F _{LT} /F	% of RECs from LT contracts (GWh)	100%	100%	100%	100%
Gross RPS Position (Physical Net Short)						
Ga	F-E	Annual Gross RPS Position (GWh)	(5,161)	(5,454)	(5,465)	(5,785)
Gb	F/A	Annual Gross RPS Position (%)	23%	20%	20.3%	18.0%
Application of Bank						
Ha	La _{t-1} + J _{t-1}	Existing Banked RECs above the PQR (GWh)	(1,086)	(6,247)	(11,701)	(17,166)
Hb	+Ga - Hc	RECs above the PQR added to Bank (GWh)	0	0	0	0
Hc		Non-bankable RECs above the PQR (GWh)	0	0	0	0
H	Ha + Hb	Gross Balance of RECs above the PQR (GWh)	(1,086)	(6,247)	(11,701)	(17,166)
Ia	-Ga < Bank	Planned Application of RECs above the PQR towards RPS Compliance (	(1,086)	(6,247)	(11,701)	(17,166)
Ib		Planned Sales of RECs above the PQR (GWh)				
J	H - Ia - Ib	Net Balance of RECs above the PQR (GWh)	0	0	0	0
J0		Category 0 RECs ⁽⁴⁾ (GWh)	0	0	0	0
J1		Category 1 RECs ⁽⁴⁾ (GWh)	0	0	0	0
J2		Category 2 RECs ⁽⁴⁾ (GWh)	0	0	0	0
Expiring Contracts						
K		RECs from Expiring RPS Contracts (GWh)	249	10	5	1,295
Net RPS Position (Optimized Net Short)						
La	Ga - Hb - Hc + Ia	Annual Net RPS Position after Bank Optimization (GWh) ⁽⁵⁾	(6,247)	(11,701)	(17,166)	(22,951)
Lb	(E + La)/A	Annual Net RPS Position after Bank Optimization (%)	15%	-25%	-64.7%	-106.7%

Probability-Weighted Deliveries, Contracts Presently Developing - April 2019:

	Name	CP3 Probability	Technology	Location	Status of New Trans. Facilities ¹	Date Signed	Term (yrs)	Start	Stop	Capacity (MW)	2019
1	Lakeside Biogas LLC		Biogas	Lakeside	None	2/15/19	20	2/15/21	2/14/41	3	
2	Energia Sierra Juarez US 2 LLC		Wind	Mexico	Completed	11/16/17	20	4/1/21	3/31/41	105	
3	Wister Solar		Solar PV	Imperial Valley	None	4/19/18	20	7/28/21	7/27/41	20	
4	Cameron (SB43)		Solar PV	Campo	IID indicates the current Project Phase for this project is <i>Development</i> ²	5/17/18	20	3/1/20	2/29/40	2	

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
1										
2										
3										
4										

	2030	2031	2032	2033	2034	2035	2036	2037	2038
1									
2									
3									
4									

¹ This column was added pursuant to the Assigned Commissioner’s April 19, 2019 Ruling within R.18-07-003. See Section 5.2, subpart 10.

² IID’s First Quarter 2019 Energy Department Project and Programs Status Report dated May 7, 2019 (https://imperialid.granicus.com/MetaViewer.php?view_id=9&clip_id=563&meta_id=42953)

Probability-Weighted Deliveries, Contracts Presently Delivering - April 2019:

Index	Name	CP3 Probability	Technology	Location	Date Signed	Term (yrs)	Start	Stop	Capacity (MW)
1	San Diego Gas & Electric (Ramona Solar Energy)	100%	UOG Solar	SD County	6/20/12	25	10/1/17	9/30/42	4
2	97W18ME LLC (Midway Solar Farm III)	100%	Solar PV	Calpatria	12/11/15	20	9/6/18	9/5/38	20
3	Otay Landfill Gas LLC (Otay Landfill I)	100%	Biogas	Chula Vista	5/1/09	10	5/1/09	4/30/19	2
4	Otay Landfill Gas LLC (Otay Landfill II)	100%	Biogas	Chula Vista	2/22/11	20	7/1/11	6/30/31	2
5	Sycamore Energy 1 LLC	100%	Biogas	Santee	11/20/09	20	5/16/11	5/15/31	2
6	MM Prima Deshecha Energy LLC	100%	Biogas	San Juan Capistrano	9/6/05	15	10/1/07	9/30/22	6
7	San Marcos Energy LLC	100%	Biogas	San Marcos	11/20/09	20	5/18/11	5/17/31	2
8	Otay Landfill Gas LLC (Otay Landfill V)	100%	Biogas	San Diego	12/27/11	20	6/21/13	6/20/33	2
9	Otay Landfill Gas LLC (Otay Landfill VI)	100%	Biogas	San Diego	12/27/11	20	6/21/13	6/20/33	2
10	MM San Diego LLC (Miramar RAM)	100%	Biogas	San Diego	11/9/12	10	5/20/13	5/19/23	5
11	Sycamore Energy 2 LLC	100%	Biogas	Santee	3/7/14	10	3/30/14	3/29/24	2
12	HL Power Company LP	100%	Biomass	Wendel	11/14/16	5	2/1/17	1/31/22	24
13	Olivenhain Municipal Water District	100%	Small Hydro	Encinitas	7/23/13	20	10/1/13	9/30/33	0
14	City of Oceanside (San Francisco Peak Hydro)	100%	Small Hydro	Oceanside	8/29/85	Evergreen	12/15/85	Evergreen	0
15	City of Escondido (Bear Valley Hydro)	100%	Small Hydro	Escondido	5/18/90	Evergreen	4/13/94	Evergreen	2
16	Centinel Solar Energy LLC	100%	Solar PV	Calexico	5/10/10	20	8/1/14	7/31/34	125
17	Centinel Solar Energy 2 LLC	100%	Solar PV	Calexico	7/29/10	20	8/15/14	8/14/34	45
18	CSolar IV South LLC	100%	Solar PV	Calexico	11/10/10	25	11/1/13	10/31/38	130
19	CSolar IV West LLC	100%	Solar PV	Imperial Valley	3/8/11	25	7/4/16	7/3/41	150
20	Solar Borrego I LLC	100%	Solar PV	Borrego Springs	1/25/11	25	2/12/13	2/11/38	26
21	Desert Green Solar Farm LLC	100%	Solar PV	Borrego Springs	3/31/11	25	11/26/14	11/25/39	6
22	Campo Verde Solar LLC	100%	Solar PV	Imperial Valley	11/10/06	20	10/25/13	10/24/33	139
23	Sol Orchard 20 LLC (Ramona 1)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	2
24	Sol Orchard 21 LLC (Ramona 2)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	5
25	Sol Orchard 22 LLC (Valley Center 1)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	3
26	Sol Orchard 23 LLC (Valley Center 2)	100%	Solar PV	San Diego County	4/11/11	25	12/31/13	12/30/38	5
27	Arlington Valley Solar Energy II LLC	100%	Solar PV	Hassayampa	6/3/11	25	11/5/13	11/4/38	127
28	Catalina Solar LLC	100%	Solar PV	Kern County	6/3/11	25	11/27/13	11/26/38	109
29	SG2 Imperial Valley LLC	100%	Solar PV	Imperial Valley	6/24/11	25	11/25/14	11/24/39	150
30	Imperial Valley Solar 1 LLC (Mt. Signal, Silver Ridge)	100%	Solar PV	Imperial Valley	2/10/12	25	10/10/13	10/9/38	200

Index	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
1	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871
2	46,660	46,162	45,930	45,698	45,466	45,234	45,002	44,770	44,538	44,306
3	8,341	0	0	0	0	0	0	0	0	0
4	7,725	7,725	7,725	7,725	7,725	7,725	7,725	7,725	7,725	7,725
5	7,522	7,522	7,522	7,522	7,522	7,522	7,522	7,522	7,522	7,522
6	63,974	63,974	63,974	47,849	0	0	0	0	0	0
7	10,259	10,259	10,259	10,259	10,259	10,259	10,259	10,259	10,259	10,259
8	9,486	9,486	9,486	9,486	9,486	9,486	9,486	9,486	9,486	9,486
9	8,981	8,981	8,981	8,981	8,981	8,981	8,981	8,981	8,981	8,981
10	23,469	23,469	23,469	23,469	8,938	0	0	0	0	0
11	15,077	15,077	15,077	15,077	15,077	3,666	0	0	0	0
12	163,149	163,149	163,149	13,856	0	0	0	0	0	0
13	34,219	34,219	34,219	34,219	34,219	34,219	34,219	34,219	34,219	34,219
14	361	361	361	361	361	361	361	361	361	361
15	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479
16	364,694	364,694	364,694	364,694	364,694	364,694	364,694	364,694	364,694	364,694
17	131,836	131,836	131,836	131,836	131,836	131,836	131,836	131,836	131,836	131,836
18	302,042	302,042	302,042	302,042	302,042	302,042	302,042	302,042	302,042	302,042
19	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496
20	67,930	67,930	67,930	67,930	67,930	67,930	67,930	67,930	67,930	67,930
21	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034
22	348,869	348,869	348,869	348,869	348,869	348,869	348,869	348,869	348,869	348,869
23	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364
24	10,016	10,016	10,016	10,016	10,016	10,016	10,016	10,016	10,016	10,016
25	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,373
26	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,265
27	359,908	359,908	359,908	359,908	359,908	359,908	359,908	359,908	359,908	359,908
28	265,654	265,654	265,654	265,654	265,654	265,654	265,654	265,654	265,654	265,654
29	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406
30	531,257	531,257	531,257	531,257	531,257	531,257	531,257	531,257	531,257	531,257

Index	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
1	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871	11,871
2	44,074	43,842	54,512	54,222	53,932	53,642	53,352	53,062	52,772	51,067
3	0	0	0	0	0	0	0	0	0	0
4	7,725	7,725	3,831	0	0	0	0	0	0	0
5	7,522	7,522	2,782	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	10,259	10,259	3,851	0	0	0	0	0	0	0
8	9,486	9,486	9,486	9,486	4,444	0	0	0	0	0
9	8,981	8,981	8,981	8,981	4,207	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0
13	34,219	34,219	34,219	34,219	25,594	0	0	0	0	0
14	361	361	361	361	361	361	361	361	361	361
15	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479	2,479
16	364,694	364,694	364,694	364,694	364,694	211,822	0	0	0	0
17	131,836	131,836	131,836	131,836	131,836	81,630	0	0	0	0
18	302,042	302,042	302,042	302,042	302,042	302,042	302,042	302,042	302,042	251,564
19	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496	379,496
20	67,930	67,930	67,930	67,930	67,930	67,930	67,930	67,930	67,930	7,817
21	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034	13,034
22	348,869	348,869	348,869	348,869	283,874	0	0	0	0	0
23	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,352
24	10,016	10,016	10,016	10,016	10,016	10,016	10,016	10,016	10,016	9,989
25	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,373	5,358
26	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,265	10,237
27	359,908	359,908	359,908	359,908	359,908	359,908	359,908	359,908	359,908	303,703
28	265,654	265,654	265,654	265,654	265,654	265,654	265,654	265,654	265,654	240,180
29	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406	418,406
30	531,257	531,257	531,257	531,257	531,257	531,257	531,257	531,257	531,257	410,451

Index	Row	Name	CP3 Probability	Technology	Location	Date Signed	Term (yrs)	Start	Stop	Capacity (MW)
31	83	Cascade Solar LLC	100%	Solar PV	Sun Fair	11/7/12	20	12/24/13	12/23/33	18
32	84	70SM1 8me LLC (Calipatria)	100%	Solar PV	Calipatria	12/13/12	20	2/11/16	2/10/36	20
33	85	Talbear Seville LLC	100%	Solar PV	El Centro	12/13/12	20	12/30/15	12/29/35	20
34	86	Maricopa West Solar PV LLC	100%	Solar PV	Maricopa	4/16/13	15	12/18/15	12/17/30	20
35	87	NLP Granger A82 LLC	100%	Solar PV	Valley Center	4/3/14	20	9/17/16	9/16/36	3
36	88	NLP Valley Center Solar LLC	100%	Solar PV	Valley Center	7/20/15	20	12/7/17	12/6/37	2
37	89	San Diego Gas & Electric (Del Sur Elementary School)	100%	UOG Solar	Various in SD County	4/13/07	15	9/5/08	9/4/23	0
38	90	San Diego Gas & Electric (Fairfield Grossmont Trolley)	100%	UOG Solar	Various in SD County	1/7/07	10	4/27/10	4/26/20	0
39	91	San Diego Gas & Electric (Hunter Industries)	100%	UOG Solar	Various in SD County	5/22/07	20	12/4/07	12/3/27	0
40	92	San Diego Gas & Electric (Innovative Cold Storage Enterprises)	100%	UOG Solar	Various in SD County	5/4/07	10	4/20/09	4/19/19	1
41	93	San Diego Gas & Electric (Ladera Ranch I)	100%	UOG Solar	Various in SD County	10/31/06	25	7/24/07	7/23/32	0
42	94	San Diego Gas & Electric (Pacific Station)	100%	UOG Solar	Various in SD County	1/21/11	10	5/16/12	5/15/22	0
43	95	San Diego Gas & Electric (Sanford-Burnhan Medical Research Institute I)	100%	UOG Solar	Various in SD County	4/21/10	10	1/28/11	1/27/21	0
44	96	San Diego Gas & Electric (SDCCD - Skills Center)	100%	UOG Solar	Various in SD County	2/6/08	10	7/8/09	7/7/19	0
45	97	San Diego Gas & Electric (Towers at Bressi Ranch)	100%	UOG Solar	Various in SD County	7/10/07	25	2/28/08	2/27/33	0
46	98	San Diego Gas & Electric (Wilco Investments)	100%	UOG Solar	Various in SD County	6/12/08	10	5/27/10	5/26/20	0
47	99	San Diego Gas & Electric (X-nth)	100%	UOG Solar	Various in SD County	2/4/04	10	7/1/09	6/30/19	0
48	100	EDF Renewable Energy Inc (Oasis Wind)	100%	Wind	Mojave	10/30/02	15	12/25/04	12/24/19	60
49	104	Kumeyaay Wind LLC	100%	Wind	Boulevard	5/31/04	20	3/21/06	12/31/25	50
50	105	Naturener Glacier Wind Energy 1 LLC	100%	Wind	Ethridge	5/16/08	15	12/29/08	12/28/23	107
51	106	Naturener Glacier Wind Energy 2 LLC	100%	Wind	Ethridge	5/23/08	15	10/16/09	10/15/24	104
52	107	Naturener Rim Rock Wind Energy LLC	100%	Wind	Kevin	5/5/09	20	10/15/13	10/14/33	189
53	108	Pacific Wind Lessee LLC	100%	Wind	Tehachapi	10/12/05	20	8/16/12	8/15/32	140
54	109	Coram Energy LLC	100%	Wind	Tehachapi	7/12/10	15	3/1/11	2/28/26	8
55	110	Ocotillo Express LLC	100%	Wind	Imperial Valley	2/1/11	21	12/27/12	7/29/33	265
56	111	Energia Sierra Juarez US LLC	100%	Wind	Mexico	4/6/11	20	6/5/15	6/4/35	155
57	113	Manzana Wind LLC	100%	Wind	Tehachapi	2/14/12	20	12/31/12	12/30/32	100
58	116	Oak Creek Wind Power LLC	100%	Wind	Mojave	4/16/13	10	1/26/14	1/25/24	4
59	117	San Gorgonio Westwinds II LLC	100%	Wind	Palm Springs	4/16/13	10	1/20/15	1/19/25	11

Index	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
31	54,611	54,611	54,611	54,611	54,611	54,611	54,611	54,611	54,611	54,611	54,611
32	46,132	46,132	46,132	46,132	46,132	46,132	46,132	46,132	46,132	46,132	46,132
33	55,174	55,174	55,174	55,174	55,174	55,174	55,174	55,174	55,174	55,174	55,174
34	49,763	49,763	49,763	49,763	49,763	49,763	49,763	49,763	49,763	49,763	49,763
35	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455	7,455
36	5,772	5,772	5,772	5,772	5,772	5,772	5,772	5,772	5,772	5,772	5,772
37	68	68	68	68	46	0	0	0	0	0	0
38	105	34	0	0	0	0	0	0	0	0	0
39	177	177	177	177	177	177	177	177	163	0	0
40	568	0	0	0	0	0	0	0	0	0	0
41	86	86	86	86	86	86	86	86	86	86	86
42	182	182	182	67	0	0	0	0	0	0	0
43	374	374	28	0	0	0	0	0	0	0	0
44	94	0	0	0	0	0	0	0	0	0	0
45	141	141	141	141	141	141	141	141	141	141	141
46	678	272	0	0	0	0	0	0	0	0	0
47	48	0	0	0	0	0	0	0	0	0	0
48	174,530	0	0	0	0	0	0	0	0	0	0
49	148,300	148,300	148,300	148,300	148,300	148,300	148,300	0	0	0	0
50	254,570	254,570	254,570	254,570	252,477	0	0	0	0	0	0
51	258,909	258,909	258,909	258,909	258,909	204,439	0	0	0	0	0
52	538,799	538,799	538,799	538,799	538,799	538,799	538,799	538,799	538,799	538,799	538,799
53	316,884	316,884	316,884	316,884	316,884	316,884	316,884	316,884	316,884	316,884	316,884
54	26,365	26,365	26,365	26,365	26,365	26,365	26,365	4,262	0	0	0
55	571,206	571,206	571,206	571,206	571,206	571,206	571,206	571,206	571,206	571,206	571,206
56	457,140	457,140	457,140	457,140	457,140	457,140	457,140	457,140	457,140	457,140	457,140
57	271,416	271,416	271,416	271,416	271,416	271,416	271,416	271,416	271,416	271,416	271,416
58	5,641	5,641	5,641	5,641	5,641	385	0	0	0	0	0
59	27,718	27,718	27,718	27,718	27,718	27,718	1,443	0	0	0	0

Index	2030	2031	2032	2033	2034	2035	2036	2037	2038
31	54,611	54,611	54,611	53,414	0	0	0	0	0
32	46,132	46,132	46,132	46,132	46,132	46,132	5,168	0	0
33	55,174	55,174	55,174	55,174	55,174	54,872	0	0	0
34	47,854	0	0	0	0	0	0	0	0
35	7,455	7,455	7,455	7,455	7,455	7,455	5,296	0	0
36	5,772	5,772	5,772	5,772	5,772	5,772	5,772	5,377	0
37	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
41	86	86	48	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0
45	141	141	141	22	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0
52	538,799	538,799	538,799	423,658	0	0	0	0	0
53	316,884	316,884	197,403	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0
55	571,206	571,206	571,206	328,639	0	0	0	0	0
56	457,140	457,140	457,140	457,140	457,140	194,128	0	0	0
57	271,416	271,416	270,674	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0
59	0	0	0	0	0	0	0	0	0



APPENDIX 32

2018-2019 COST QUANTIFICATION TABLE

Cost Quantification Table 1 (Actual Procurement Net Costs, \$)⁽¹⁾		Actual RPS Eligible Procurement Net Costs				
1	Executed CPUC Approved RPS Eligible Contracts	2003	2004	2005	2006	2007
2	Biogas	\$9,699,583	\$11,805,288	\$12,614,978	\$11,557,951	\$10,586,260
3	Biomass	\$18,888,387	\$18,693,045	\$17,205,462	\$16,965,465	\$12,237,997
4	Geothermal	\$0	\$0	\$0	\$0	\$0
5	Small Hydro	\$357,805	\$345,247	\$467,007	\$947,554	\$1,359,923
6	Solar-PV	\$0	\$0	\$0	\$0	\$0
7	Solar-Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$22,750	\$5,980,963	\$14,097,259	\$19,779,696	\$22,968,510
9	UOG-Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG-Solar	\$0	\$0	\$0	\$0	\$0
11	Unbundled-RECs	\$0	\$0	\$0	\$0	\$0
12	Total CPUC Approved RPS-Eligible Procurement Net Costs	\$28,968,525	\$36,824,543	\$44,384,706	\$49,250,666	\$47,152,690
-	[Sum-of-Rows-2-through-11]	-	-	-	-	-
13	Bundled Retail Sales (kWh)	15,043,865,000	15,811,591,000	16,001,516,000	16,846,888,000	17,056,023,000
14	Incremental Rate Impact [Row 12 divided by row 13]	0.19 ¢/kWh	0.23 ¢/kWh	0.28 ¢/kWh	0.29 ¢/kWh	0.28 ¢/kWh

(1) Because the technology type of RECs sold in the past is known, this table shows costs net of revenues for all RPS-eligible procurement.

Cost Quantification Table 1 (Actual Procurement Net Costs, \$)⁽⁴⁾		Actual RPS Eligible Procurement Net Costs				
1	Executed CPUC Approved RPS Eligible Contracts	2008	2009	2010	2011	2012
2	Biogas	\$12,895,604	\$12,750,213	\$13,219,041	\$13,657,174	\$14,588,818
3	Biomass	\$23,121,233	\$23,221,640	\$25,207,547	\$25,591,354	\$29,270,390
4	Geothermal	\$0	\$0	\$20,906,408	\$67,532,423	\$87,210,604
5	Small Hydro	\$1,676,416	\$1,269,662	\$1,143,186	\$866,991	\$1,056,364
6	Solar PV	\$0	\$0	\$0	\$0	\$22,549
7	Solar Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$23,254,999	\$60,900,350	\$54,927,101	\$67,962,777	\$62,704,117
9	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$616,522	\$1,048,718	\$1,677,565	\$2,301,472
11	Unbundled RECs	\$0	\$0	\$0	\$0	\$0
12	Total CPUC Approved RPS Eligible Procurement Net Costs	\$60,948,252	\$98,758,387	\$116,452,001	\$177,288,284	\$197,154,315
-	[Sum of Rows 2 through 11]	-	-	-	-	-
13	Bundled Retail Sales (kWh)	17,409,884,000	16,993,872,000	16,282,682,258	16,249,031,381	16,626,720,539
14	Incremental Rate Impact [Row 12 divided by row 13]	0.35 ¢/kWh	0.58 ¢/kWh	0.72 ¢/kWh	1.09 ¢/kWh	1.19 ¢/kWh

Cost Quantification Table 1 (Actual Procurement Net Costs, \$)⁽⁴⁾		Actual RPS Eligible Procurement Net Costs				
1	Executed CPUC Approved RPS Eligible Contracts	2013	2014	2015	2016	2017
2	Biogas	\$11,382,804	\$6,680,945	\$12,063,399	\$14,829,981	
3	Biomass	\$28,519,756	\$8,344,339	-\$4,751,806	\$0	
4	Geothermal	\$38,286,888	\$5,761,869	\$0	\$0	
5	Small Hydro	\$1,137,595	\$1,279,527	\$306,568	\$595,497	
6	Solar PV	\$86,221,692	\$304,437,880	\$362,976,622	\$405,034,433	
7	Solar Thermal	\$0	\$0	\$0	\$0	
8	Wind	\$147,375,881	\$182,029,742	\$185,615,615	\$231,902,873	
9	UOG Small Hydro	\$0	\$0	\$0	\$0	
10	UOG Solar	\$2,239,192	\$2,268,987	\$1,907,706	\$1,412,716	
11	Unbundled RECs	\$0	\$0	\$0	\$0	
12	Total CPUC Approved RPS Eligible Procurement Net Costs	\$315,163,808	\$510,803,288	\$558,118,104	\$653,775,500	\$668,925,533
-	[Sum of Rows 2 through 11]	-	-	-	-	-
13	Bundled Retail Sales (kWh)	16,164,015,264	16,467,854,428	16,266,948,555	15,653,127,947	15,618,775,138
14	Incremental Rate Impact [Row 12 divided by row 13]	1.95 ¢/kWh	3.10 ¢/kWh	3.43 ¢/kWh	4.18 ¢/kWh	4.28 ¢/kWh

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)⁽²⁾		Forecasted RPS Eligible Procurement Costs and Revenues			
1	Executed But Not CPUC-Approved RPS Eligible Contracts	2018	2019	2020	2021
2	Biogas	\$0	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0	\$0
8	Wind	\$0	\$0	\$3,535,966	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0	\$0
12	REC Sales	\$0	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS Eligible Procurement Net Costs	\$0	\$0	\$3,535,966	\$14,261,270
-	[Sum of Rows 2 through 12]	-	-	-	-
14	Bundled Retail Sales (kWh)				
15	Incremental Rate Impact [Row 13 divided by row 14]				
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS Eligible Procurement Costs and Revenues			
16	Executed CPUC Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2018	2019	2020	2021
17	Biogas				
18	Biomass				
19	Geothermal				
20	Small Hydro				
21	Solar PV				
22	Solar Thermal				
23	Wind				
24	UOG Small Hydro				
25	UOG Solar				
26	Unbundled RECs				

27	REC Sales				
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs	\$669,899,256	\$666,590,853	\$659,431,029	\$661,013,163
-	[Sum of Rows 17 through 27]	-	-	-	-
29	Bundled Retail Sales (kWh)				
30	Incremental Rate Impact [Row 28 divided by row 29]				
31	Total Incremental Rate Impact				
-	[Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]				

(2) Because the technology type of RECs to be sold in the future is unknown, this table shows forecasted revenues from RPS-eligible REC sales as a single line item.

Cost-Quantification Table 2 (Forecasted Costs and Revenues, \$) ⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues				
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2022	2023	2024	2025	2026
2	Biogas	\$0	\$0	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0	\$0	\$0
5	Small-Hydro	\$0	\$0	\$0	\$0	\$0
6	Solar-PV	\$0	\$0	\$0	\$0	\$0
7	Solar-Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG-Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG-Solar	\$0	\$0	\$0	\$0	\$0
11	Unbundled-RECs	\$0	\$0	\$0	\$0	\$0
12	REC-Sales	\$0	\$0	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
-	[Sum of Rows 2 through 12]	-	-	-	-	-
14	Bundled Retail Sales (kWh)	14,789,987,991	14,799,685,044	14,812,683,976	14,793,114,188	14,717,045,292
15	Incremental Rate Impact [Row 13 divided by row 14]	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost-Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues				
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV-Contracts)	2022	2023	2024	2025	2026
17	Biogas		\$8,745,595	\$6,936,459	\$6,693,321	\$6,693,321
18	Biomass		\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal		\$0	\$0	\$0	\$0
20	Small-Hydro		\$532,912	\$532,912	\$532,912	\$532,912
21	Solar-PV		\$408,378,111	\$410,074,017	\$411,792,594	\$413,534,170
22	Solar-Thermal		\$0	\$0	\$0	\$0
23	Wind		\$218,825,405	\$211,489,485	\$203,005,139	\$192,383,703
24	UOG-Small Hydro		\$0	\$0	\$0	\$0
25	UOG-Solar		\$2,116,696	\$2,085,850	\$2,096,332	\$2,106,866
26	Unbundled-RECs		\$0	\$0	\$0	\$0

27	REC Sales		\$0	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs	\$643,555,577	\$657,981,506	\$650,501,510	\$643,503,085	\$634,633,759
-	[Sum of Rows 17 through 27]	-	-	-	-	-
29	Bundled Retail Sales (kWh)	14,789,987,991	14,799,685,044	14,812,683,976	14,793,114,188	14,717,045,292
30	Incremental Rate Impact [Row 28 divided by row 29]	4.35 ¢/kWh	4.45 ¢/kWh	4.39 ¢/kWh	4.35 ¢/kWh	4.31 ¢/kWh
31	Total Incremental Rate Impact	4.45 ¢/kWh	4.54 ¢/kWh	4.49 ¢/kWh	4.45 ¢/kWh	4.41 ¢/kWh
-	[Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]	-	-	-	-	-

Cost-Quantification Table 2 (Forecasted Costs and Revenues, \$)⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues				
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2027	2028	2029	2030	2031
2	Biogas	\$0	\$0	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0	\$0	\$0
5	Small-Hydro	\$0	\$0	\$0	\$0	\$0
6	Solar-PV	\$0	\$0	\$0	\$0	\$0
7	Solar-Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG-Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG-Solar	\$0	\$0	\$0	\$0	\$0
11	Unbundled-RECs	\$0	\$0	\$0	\$0	\$0
12	REC-Sales	\$0	\$0	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
-	[Sum of Rows 2 through 12]	-	-	-	-	-
14	Bundled Retail Sales (kWh)	14,609,292,743	14,500,391,441	14,500,623,441	14,500,855,441	14,501,087,441
15	Incremental Rate Impact [Row 13 divided by row 14]	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost-Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues				
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV-Contracts)	2027	2028	2029	2030	2031
17	Biogas	\$6,693,321	\$6,693,321	\$6,693,321	\$6,693,321	\$4,994,008
18	Biomass	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal	\$0	\$0	\$0	\$0	\$0
20	Small-Hydro	\$532,912	\$532,912	\$532,912	\$532,912	\$532,912
21	Solar-PV	\$415,299,080	\$417,087,663	\$418,900,266	\$420,611,286	\$419,315,158
22	Solar-Thermal	\$0	\$0	\$0	\$0	\$0
23	Wind	\$191,950,531	\$191,950,531	\$191,950,531	\$191,950,531	\$191,950,531
24	UOG-Small Hydro	\$0	\$0	\$0	\$0	\$0
25	UOG-Solar	\$2,117,453	\$2,128,094	\$2,138,788	\$2,149,535	\$2,160,337
26	Unbundled-RECs	\$0	\$0	\$0	\$0	\$0

27	REC Sales	\$0	\$0	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs	\$635,976,085	\$637,775,309	\$639,598,605	\$641,320,373	\$638,335,733
-	[Sum of Rows 17 through 27]	-	-	-	-	-
29	Bundled Retail Sales (kWh)	14,609,292,743	14,500,391,441	14,500,623,441	14,500,855,441	14,501,087,441
30	Incremental Rate Impact [Row 28 divided by row 29]	4.35 ¢/kWh	4.40 ¢/kWh	4.41 ¢/kWh	4.42 ¢/kWh	4.40 ¢/kWh
31	Total Incremental Rate Impact	4.45 ¢/kWh	4.50 ¢/kWh	4.51 ¢/kWh	4.52 ¢/kWh	4.50 ¢/kWh
-	[Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]	-	-	-	-	-

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)⁽²⁾		Forecasted RPS Eligible Procurement Costs and Revenues					
1	Executed But Not CPUC Approved RPS Eligible Contracts	2032	2033	2034	2035	2036	2037
2	Biogas	\$0	\$0	\$0	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0	\$0	\$0	\$0
12	REC Sales	\$0	\$0	\$0	\$0	\$0	\$0
13	Total Executed But Not CPUC Approved RPS Eligible Procurement Net Costs [Sum of Rows 2 through 12]	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
-		-	-	-	-	-	-
14	Bundled Retail Sales (kWh)	14,501,319,441	14,501,551,441	14,501,783,441	14,502,015,441	14,502,247,441	14,502,479,441
15	Incremental Rate Impact [Row 13 divided by row 14]	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS Eligible Procurement Costs and Revenues					
16	Executed CPUC Approved RPS Eligible Contracts (Incl. RAM/FF/PV Contracts)	2032	2033	2034	2035	2036	2037
17	Biogas	\$3,819,957	\$2,619,167	\$188,144	\$0	\$0	\$0
18	Biomass	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal	\$0	\$0	\$0	\$0	\$0	\$0
20	Small Hydro	\$532,912	\$440,559	\$166,512	\$166,512	\$166,512	\$166,512
21	Solar PV	\$421,201,946	\$414,463,829	\$345,857,731	\$308,986,861	\$301,820,929	\$302,137,210
22	Solar Thermal	\$0	\$0	\$0	\$0	\$0	\$0
23	Wind	\$178,522,572	\$101,360,234	\$45,844,311	\$19,468,132	\$0	\$0

24	UOG-Small Hydro	\$0	\$0	\$0	\$0	\$0	\$0
25	UOG-Solar	\$2,171,193	\$2,182,104	\$2,193,069	\$2,204,089	\$2,215,165	\$2,226,297
26	Unbundled RECs	\$0	\$0	\$0	\$0	\$0	\$0
27	REC Sales	\$0	\$0	\$0	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement-Net Costs {Sum of Rows 17 through 27}	\$625,631,367	\$540,448,680	\$413,632,555	\$350,208,382	\$323,585,393	\$323,912,807
-		-	-	-	-	-	-
29	Bundled Retail Sales (kWh)	14,501,319,441	14,501,551,441	14,501,783,441	14,502,015,441	14,502,247,441	14,502,479,441
30	Incremental Rate Impact {Row 28 divided by row 29}	4.31 ¢/kWh	3.73 ¢/kWh	2.85 ¢/kWh	2.41 ¢/kWh	2.23 ¢/kWh	2.23 ¢/kWh
31	Total Incremental Rate Impact {Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30}	4.41 ¢/kWh	3.83 ¢/kWh	2.95 ¢/kWh	2.51 ¢/kWh	2.33 ¢/kWh	2.33 ¢/kWh
-		-	-	-	-	-	-

Cost Quantification Table 3 (Actual Net-Generation, MWh)⁽³⁾		Actual RPS-Eligible Net-Generation				
†	Executed CPUC-Approved RPS-Eligible Contracts	2003	2004	2005	2006	2007
2	Biogas	200,123	212,475	218,223	201,138	171,650
3	Biomass	341,718	337,466	298,945	284,031	217,967
4	Geothermal	0	0	0	0	0
5	Small Hydro	7,465	13,134	11,700	11,584	21,302
6	Solar-PV	0	0	0	0	0
7	Solar-Thermal	0	0	0	0	0
8	Wind	550	114,778	296,434	402,768	469,859
9	UOG-Small Hydro	0	0	0	0	0
10	UOG-Solar	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0
12	Total CPUC-Approved RPS-Eligible Net-Generation	549,856	677,852	825,302	899,520	880,777
-	[Sum-of-Rows 2 through 11]	-	-	-	-	-

(3) Because the technology type of RECs sold in the past is known, this table shows generation net of REC sales for all RPS-eligible procurement.

Cost Quantification Table 3 (Actual Net-Generation, MWh)⁽³⁾		Actual RPS-Eligible Net-Generation				
†	Executed CPUC-Approved RPS-Eligible Contracts	2008	2009	2010	2011	2012
2	Biogas	208,236	205,021	210,067	215,821	224,763
3	Biomass	318,941	341,361	339,899	353,605	477,323
4	Geothermal	0	0	183,000	782,976	1,090,136
5	Small Hydro	30,883	24,439	22,367	16,866	20,560
6	Solar-PV	0	0	0	0	200
7	Solar-Thermal	0	0	0	0	0
8	Wind	489,368	1,212,703	1,182,541	2,008,572	1,559,684
9	UOG-Small Hydro	0	0	0	0	0
10	UOG-Solar	0	809	1,577	2,364	3,064
11	Unbundled RECs	0	0	0	0	0
12	Total CPUC-Approved RPS-Eligible Net-Generation	1,047,428	1,784,333	1,939,451	3,380,204	3,375,730
-	[Sum-of-Rows 2 through 11]	-	-	-	-	-

Cost Quantification Table 3 (Actual Net-Generation, MWh)⁽²⁾		Actual RPS-Eligible Net-Generation				
†	Executed CPUC-Approved RPS-Eligible Contracts	2013	2014	2015	2016	2017
2	Biogas	141,509	60,196	121,501	174,561	167,951
3	Biomass	266,027	5,998	186,901	0	159,636
4	Geothermal	349,835	0	0	0	0
5	Small Hydro	21,240	21,122	4,562	10,649	3,562
6	Solar-PV	613,652	2,537,210	2,896,476	3,352,095	3,354,324
7	Solar-Thermal	0	0	0	0	0
8	Wind	2,438,308	2,642,521	2,519,440	3,218,080	3,235,729
9	UOG-Small Hydro	0	0	0	0	0
10	UOG-Solar	3,161	3,308	2,857	2,188	8,135
11	Unbundled RECs	0	0	0	0	0
12	Total CPUC-Approved RPS-Eligible Net-Generation	3,833,732	5,270,355	5,731,737	6,757,573	6,929,337
-	[Sum-of-Rows 2-through 11]	-	-	-	-	-

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)⁽⁴⁾		Forecasted RPS Eligible Generation and Sales			
1	Executed But Not CPUC-Approved RPS Eligible Contracts	2018	2019	2020	2021
2	Biogas	0	0	0	0
3	Biomass	0	0	0	0
4	Geothermal	0	0	0	0
5	Small Hydro	0	0	0	0
6	Solar PV	0	0	0	0
7	Solar Thermal	0	0	0	0
8	Wind	0	0	63,734	257,052
9	UOG Small Hydro	0	0	0	0
10	UOG Solar	0	0	0	0
11	Unbundled RECs	0	0	0	0
12	RECs Sales	0	0	0	0
13	Total Executed But Not CPUC-Approved RPS Eligible Net Generation	0	0	63,734	257,052
-	{Sum of Rows 2 through 12}	-	-	-	-
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS Eligible Generation and Sales			
14	Executed CPUC Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2018	2019	2020	2021
15	Biogas	167,183	163,371	162,242	162,242
16	Biomass	164,781	164,781	164,781	164,781
17	Geothermal	0	0	0	0
18	Small Hydro	6,271	5,490	5,490	5,490
19	Solar PV	3,326,925	3,344,951	3,371,020	3,371,378
20	Solar Thermal	0	0	0	0
21	Wind	3,191,061	3,091,827	2,918,289	2,918,289
22	UOG Small Hydro	0	0	0	0
23	UOG Solar	12,205	11,391	10,792	10,484
24	Unbundled RECs	0	0	0	0
25	RECs Sales	0	0	0	0
26	Total Executed CPUC-Approved RPS Eligible Net Generation	6,868,425	6,781,810	6,632,614	6,632,663
	{Sum of Rows 15 through 25}	-	-	-	-
27	Total Executed RPS Eligible Net Generation	6,868,425	6,781,810	6,696,348	6,889,716
	{Row 13 + 26}	-	-	-	-

(4) Because the technology type of RECs to be sold in the future is unknown, this table shows forecasted RPS eligible REC sales as a single line item.

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)⁽⁴⁾		Forecasted RPS Eligible Generation and Sales				
1	Executed But Not CPUC Approved RPS Eligible Contracts	2022	2023	2024	2025	2026
2	Biogas	0	0	0	0	0
3	Biomass	0	0	0	0	0
4	Geothermal	0	0	0	0	0
5	Small Hydro	0	0	0	0	0
6	Solar PV	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0
8	Wind	257,052	257,052	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0	0	0
10	UOG Solar	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0
12	RECs Sales	0	0	0	0	0
13	Total Executed But Not CPUC-Approved RPS Eligible Net Generation	257,052	257,052	257,052	257,052	257,052
-	[Sum of Rows 2 through 12]	-	-	-	-	-
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS Eligible Generation and Sales				
14	Executed CPUC Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2022	2023	2024	2025	2026
15	Biogas	146,725	81,240	60,735	57,988	57,988
16	Biomass	13,995	151,760	151,760	151,760	151,760
17	Geothermal	0	0	0	0	0
18	Small Hydro	5,490	5,490	5,490	5,490	5,490
19	Solar PV	3,371,156	3,370,934	3,370,714	3,370,495	3,370,278
20	Solar Thermal	0	0	0	0	0
21	Wind	2,918,289	2,916,109	2,592,187	2,349,747	2,175,016
22	UOG Small Hydro	0	0	0	0	0
23	UOG Solar	10,043	9,939	9,865	9,865	9,865
24	Unbundled RECs	0	0	0	0	0
25	RECs Sales	0	0	0	0	0
26	Total Executed CPUC-Approved RPS Eligible Net Generation	6,465,698	6,535,473	6,190,751	5,945,345	5,770,396
	[Sum of Rows 15 through 25]	-	-	-	-	-
27	Total Executed RPS Eligible Net Generation	6,722,750	6,792,525	6,447,804	6,202,397	6,027,449
	[Row 13 + 26]	-	-	-	-	-

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)⁽⁴⁾		Forecasted RPS Eligible Generation and Sales				
1	Executed But Not CPUC Approved RPS Eligible Contracts	2027	2028	2029	2030	2031
2	Biogas	0	0	0	0	0
3	Biomass	0	0	0	0	0
4	Geothermal	0	0	0	0	0
5	Small Hydro	0	0	0	0	0
6	Solar PV	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0
8	Wind	257,052	257,052	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0	0	0
10	UOG Solar	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0
12	RECs Sales	0	0	0	0	0
13	Total Executed But Not CPUC-Approved RPS Eligible Net Generation	257,052	257,052	257,052	257,052	257,052
-	[Sum of Rows 2 through 12]	-	-	-	-	-
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS Eligible Generation and Sales				
14	Executed CPUC Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2027	2028	2029	2030	2031
15	Biogas	57,988	57,988	57,988	57,988	42,949
16	Biomass	151,760	151,760	151,760	151,760	151,760
17	Geothermal	0	0	0	0	0
18	Small Hydro	5,490	5,490	5,490	5,490	5,490
19	Solar PV	3,370,061	3,369,845	3,369,631	3,367,472	3,318,487
20	Solar Thermal	0	0	0	0	0
21	Wind	2,171,003	2,171,003	2,171,003	2,171,003	2,171,003
22	UOG Small Hydro	0	0	0	0	0
23	UOG Solar	9,865	9,865	9,865	9,865	9,865
24	Unbundled RECs	0	0	0	0	0
25	RECs Sales	0	0	0	0	0
26	Total Executed CPUC-Approved RPS Eligible Net Generation	5,766,166	5,765,950	5,765,736	5,763,577	5,699,554
	[Sum of Rows 15 through 25]	-	-	-	-	-
27	Total Executed RPS Eligible Net Generation	6,023,219	6,023,003	6,022,788	6,020,629	5,956,606
	[Row 13 + 26]	-	-	-	-	-

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)⁽⁴⁾		Forecasted RPS Eligible Generation and Sales					
1	Executed But Not CPUC Approved RPS Eligible Contracts	2032	2033	2034	2035	2036	2037
2	Biogas	0	0	0	0	0	0
3	Biomass	0	0	0	0	0	0
4	Geothermal	0	0	0	0	0	0
5	Small Hydro	0	0	0	0	0	0
6	Solar PV	0	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0	0
8	Wind	257,052	257,052	257,052	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0	0	0	0
10	UOG Solar	0	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0	0
12	RECs Sales	0	0	0	0	0	0
13	Total Executed But Not CPUC Approved RPS Eligible Net Generation	257,052	257,052	257,052	257,052	257,052	257,052
-	[Sum of Rows 2 through 12]	-	-	-	-	-	-
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS Eligible Generation and Sales					
14	Executed CPUC Approved RPS Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2032	2033	2034	2035	2036	2037
15	Biogas	32,393	21,671	1,473	0	0	0
16	Biomass	151,760	151,760	151,760	151,760	151,760	151,760
17	Geothermal	0	0	0	0	0	0
18	Small Hydro	5,490	4,889	3,104	3,104	3,104	3,104
19	Solar PV	3,318,276	3,255,065	2,737,771	2,459,695	2,361,379	2,350,058
20	Solar Thermal	0	0	0	0	0	0
21	Wind	2,054,518	1,239,010	437,738	185,889	0	0
22	UOG Small Hydro	0	0	0	0	0	0
23	UOG Solar	9,865	9,865	9,865	9,865	9,865	9,865
24	Unbundled RECs	0	0	0	0	0	0
25	RECs Sales	0	0	0	0	0	0
26	Total Executed CPUC Approved RPS Eligible Net Generation	5,572,301	4,682,259	3,341,710	2,810,313	2,526,108	2,514,787
	[Sum of Rows 15 through 25]	-	-	-	-	-	-
27	Total Executed RPS Eligible Net Generation	5,829,354	4,939,312	3,598,762	3,067,365	2,783,160	2,771,839
	[Row 13 + 26]	-	-	-	-	-	-

<u>Cost Quantification Table 1 (Actual Procurement Net Costs, \$)⁽¹⁾</u>		<u>Actual RPS-Eligible Procurement Net Costs</u>				
<u>1</u>	<u>Executed CPUC-Approved RPS-Eligible Contracts</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>
<u>2</u>	<u>Biogas</u>	<u>\$9,699,583</u>	<u>\$11,805,288</u>	<u>\$12,614,978</u>	<u>\$11,557,951</u>	<u>\$10,586,260</u>
<u>3</u>	<u>Biomass</u>	<u>\$18,888,387</u>	<u>\$18,693,045</u>	<u>\$17,205,462</u>	<u>\$16,965,465</u>	<u>\$12,237,997</u>
<u>4</u>	<u>Geothermal</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>5</u>	<u>Small Hydro</u>	<u>\$357,805</u>	<u>\$345,247</u>	<u>\$467,007</u>	<u>\$947,554</u>	<u>\$1,359,923</u>
<u>6</u>	<u>Solar PV</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>7</u>	<u>Solar Thermal</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>8</u>	<u>Wind</u>	<u>\$22,750</u>	<u>\$5,980,963</u>	<u>\$14,097,259</u>	<u>\$19,779,696</u>	<u>\$22,968,510</u>
<u>9</u>	<u>UOG Small Hydro</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>10</u>	<u>UOG Solar</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>11</u>	<u>Unbundled RECs</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>12</u>	<u>Total CPUC-Approved RPS-Eligible Procurement Net Costs</u>	<u>\$28,968,525</u>	<u>\$36,824,543</u>	<u>\$44,384,706</u>	<u>\$49,250,666</u>	<u>\$47,152,690</u>
-	<u>[Sum of Rows 2 through 11]</u>	-	-	-	-	-
<u>13</u>	<u>Bundled Retail Sales (kWh)</u>	<u>15,043,865,000</u>	<u>15,811,591,000</u>	<u>16,001,516,000</u>	<u>16,846,888,000</u>	<u>17,056,023,000</u>
<u>14</u>	<u>Incremental Rate Impact [Row 12 divided by row 13]</u>	<u>0.19 ¢/kWh</u>	<u>0.23 ¢/kWh</u>	<u>0.28 ¢/kWh</u>	<u>0.29 ¢/kWh</u>	<u>0.28 ¢/kWh</u>

(1) Because the technology type of RECs sold in the past is known, this table shows costs net of revenues for all RPS-eligible procurement.

Cost Quantification Table 1 (Actual Procurement Net Costs, \$) ⁽¹⁾		Actual RPS-Eligible Procurement Net Costs				
1	Executed CPUC-Approved RPS-Eligible Contracts	2008	2009	2010	2011	2012
2	Biogas	\$12,895,604	\$12,750,213	\$13,219,041	\$13,657,174	\$14,588,818
3	Biomass	\$23,121,233	\$23,221,640	\$25,207,547	\$25,591,354	\$29,270,390
4	Geothermal	\$0	\$0	\$20,906,408	\$67,532,423	\$87,210,604
5	Small Hydro	\$1,676,416	\$1,269,662	\$1,143,186	\$866,991	\$1,056,364
6	Solar PV	\$0	\$0	\$0	\$0	\$22,549
7	Solar Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$23,254,999	\$60,900,350	\$54,927,101	\$67,962,777	\$62,704,117
9	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$605,531	\$1,093,718	\$1,722,490	\$2,212,066
11	Unbundled RECs	\$0	\$0	\$0	\$0	\$0
12	Total CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 11]	\$60,948,252	\$98,747,396	\$116,497,002	\$177,333,210	\$197,064,908
13	Bundled Retail Sales (kWh)	17,409,884,000	16,993,872,000	16,282,682,258	16,249,031,381	16,626,720,539
14	Incremental Rate Impact [Row 12 divided by row 13]	0.35 ¢/kWh	0.58 ¢/kWh	0.72 ¢/kWh	1.09 ¢/kWh	1.19 ¢/kWh

Cost Quantification Table 1 (Actual Procurement Net Costs, \$)⁽¹⁾		Actual RPS-Eligible Procurement Net Costs		
1	Executed CPUC-Approved RPS-Eligible Contracts	2013	2014	2015
2	Bio gas	\$11,382,804	\$6,680,945	\$12,063,399
3	Biomass	\$28,519,756	\$8,344,339	-\$4,750,522
4	Geothermal	\$38,286,888	\$5,761,869	\$0
5	Small Hydro	\$1,137,595	\$1,279,527	\$306,568
6	Solar PV	\$86,221,692	\$304,437,880	\$362,976,622
7	Solar Thermal	\$0	\$0	\$0
8	Wind	\$147,375,881	\$182,029,742	\$185,615,615
9	UOG Small Hydro	\$0	\$0	\$0
10	UOG Solar	\$2,260,192	\$2,258,800	\$1,839,149
11	Unbundled RECs	\$0	\$0	\$0
12	Total CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 11]	\$315,184,808	\$510,793,102	\$558,050,830
13	Bundled Retail Sales (kWh)	16,164,015,264	16,467,854,428	16,266,948,555
14	Incremental Rate Impact [Row 12 divided by row 13]	1.95 ¢/kWh	3.10 ¢/kWh	3.43 ¢/kWh

Cost Quantification Table 1 (Actual Procurement Net Costs, \$) ⁽¹⁾		Actual RPS-Eligible Procurement Net Costs		
1	Executed CPUC-Approved RPS-Eligible Contracts	2016	2017	2018
2	Biogas	\$14,829,981		
3	Biomass	\$0		
4	Geothermal	\$0		
5	Small Hydro	\$595,497		
6	Solar PV	\$405,034,433		
7	Solar Thermal	\$0		
8	Wind	\$231,902,873		
9	UOG Small Hydro	\$0		
10	UOG Solar	\$1,358,752		
11	Unbundled RECs	\$0		
12	Total CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 11]	\$653,721,536	\$668,485,633	\$631,899,423
13	Bundled Retail Sales (kWh)	15,653,127,947	15,618,775,138	15,127,152,235
14	Incremental Rate Impact [Row 12 divided by row 13]	4.18 ¢/kWh	4.28 ¢/kWh	4.18 ¢/kWh

<u>Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)⁽²⁾</u>		<u>Forecasted RPS-Eligible Procurement Costs and Revenues</u>		
<u>1</u>	<u>Executed But Not CPUC-Approved RPS-Eligible Contracts</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>2</u>	<u>Biogas</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>3</u>	<u>Biomass</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>4</u>	<u>Geothermal</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>5</u>	<u>Small Hydro</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>6</u>	<u>Solar PV</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>7</u>	<u>Solar Thermal</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>8</u>	<u>Wind</u>	<u>\$0</u>	<u>\$3,535,966</u>	<u>\$14,261,270</u>
<u>9</u>	<u>UOG Small Hydro</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>10</u>	<u>UOG Solar</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>11</u>	<u>Unbundled RECs</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
<u>12</u>	<u>REC Sales</u>	<u>-\$2,053,336</u>	<u>-\$2,340,000</u>	<u>\$0</u>
<u>13</u>	<u>Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs</u>	<u>-\$2,053,336</u>	<u>\$1,195,966</u>	<u>\$14,261,270</u>
-	[Sum of Rows 2 through 12]	-	-	-
<u>14</u>	<u>Bundled Retail Sales (kWh)</u>			
<u>15</u>	<u>Incremental Rate Impact [Row 13 divided by row 14]</u>			
<u>Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)</u>		<u>Forecasted RPS-Eligible Procurement Costs and Revenues</u>		
<u>16</u>	<u>Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>17</u>	<u>Biogas</u>			
<u>18</u>	<u>Biomass</u>			
<u>19</u>	<u>Geothermal</u>			
<u>20</u>	<u>Small Hydro</u>			
<u>21</u>	<u>Solar PV</u>			
<u>22</u>	<u>Solar Thermal</u>			
<u>23</u>	<u>Wind</u>			
<u>24</u>	<u>UOG Small Hydro</u>			
<u>25</u>	<u>UOG Solar</u>			
<u>26</u>	<u>Unbundled RECs</u>			
<u>27</u>	<u>REC Sales</u>			

28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 17 through 27]	<u>\$672,567,945</u>	<u>\$666,366,862</u>	<u>\$677,180,876</u>
29	Bundled Retail Sales (kWh)			
30	Incremental Rate Impact [Row 28 divided by row 29]			
31	Total Incremental Rate Impact [Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]			
(2) Because the technology type of RECs to be sold in the future is unknown, this table shows forecasted revenues from RPS-eligible REC sales as a single line item.				

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$) ⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues				
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2022	2023	2024	2025	2026
2	Biogas	\$0	\$0	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0	\$0	\$0
12	REC Sales	\$0	\$0	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 12]	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
14	Bundled Retail Sales (kWh)		14,122,082,764	14,178,061,579	14,173,206,764	14,094,431,251
15	Incremental Rate Impact [Row 13 divided by row 14]		0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues				
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2022	2023	2024	2025	2026
17	Biogas		\$8,620,465	\$6,823,743	\$6,499,241	\$6,499,241
18	Biomass		\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal		\$0	\$0	\$0	\$0
20	Small Hydro		\$5,411,261	\$5,411,261	\$5,411,261	\$5,411,261
21	Solar PV		\$419,049,649	\$420,788,643	\$422,550,607	\$424,335,874
22	Solar Thermal		\$0	\$0	\$0	\$0
23	Wind		\$219,266,266	\$212,180,187	\$204,310,279	\$193,784,481
24	UOG Small Hydro		\$0	\$0	\$0	\$0
25	UOG Solar		\$2,707,397	\$2,691,433	\$2,697,432	\$2,703,493
26	Unbundled RECs		\$0	\$0	\$0	\$0
27	REC Sales		\$0	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 17 through 27]	\$659,634,262	\$674,437,825	\$667,278,054	\$660,851,607	\$652,117,137
29	Bundled Retail Sales (kWh)		14,122,082,764	14,178,061,579	14,173,206,764	14,094,431,251
30	Incremental Rate Impact [Row 28 divided by row 29]		4.78 ¢/kWh	4.71 ¢/kWh	4.66 ¢/kWh	4.63 ¢/kWh
31	Total Incremental Rate Impact [Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]		4.88 ¢/kWh	4.81 ¢/kWh	4.76 ¢/kWh	4.73 ¢/kWh

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues				
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2027	2028	2029	2030	2031
2	Biogas	\$0	\$0	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0	\$0	\$0
12	REC Sales	\$0	\$0	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 12]	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
14	Bundled Retail Sales (kWh)	13,953,309,623	13,787,595,109	13,788,043,695	13,788,491,199	13,764,704,387
15	Incremental Rate Impact [Row 13 divided by row 14]	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues				
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2027	2028	2029	2030	2031
17	Biogas	\$6,499,241	\$6,499,241	\$6,499,241	\$6,499,241	\$4,795,674
18	Biomass	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal	\$0	\$0	\$0	\$0	\$0
20	Small Hydro	\$5,411,261	\$5,411,261	\$5,411,261	\$5,411,261	\$5,411,261
21	Solar PV	\$426,144,782	\$427,977,676	\$429,834,906	\$431,593,243	\$429,817,160
22	Solar Thermal	\$0	\$0	\$0	\$0	\$0
23	Wind	\$193,324,488	\$193,324,488	\$193,324,488	\$193,324,488	\$193,324,488
24	UOG Small Hydro	\$0	\$0	\$0	\$0	\$0
25	UOG Solar	\$2,704,267	\$2,648,944	\$2,658,097	\$2,667,314	\$2,676,597
26	Unbundled RECs	\$0	\$0	\$0	\$0	\$0
27	REC Sales	\$0	\$0	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 17 through 27]	\$653,466,826	\$655,244,397	\$657,110,779	\$658,878,334	\$655,407,967
29	Bundled Retail Sales (kWh)	13,953,309,623	13,787,595,109	13,788,043,695	13,788,491,199	13,764,704,387
30	Incremental Rate Impact [Row 28 divided by row 29]	4.68 ¢/kWh	4.75 ¢/kWh	4.77 ¢/kWh	4.78 ¢/kWh	4.76 ¢/kWh
31	Total Incremental Rate Impact [Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]	4.79 ¢/kWh	4.86 ¢/kWh	4.87 ¢/kWh	4.88 ¢/kWh	4.87 ¢/kWh

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues			
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2032	2033	2034	2035
2	Biogas	\$0	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0	\$0
12	REC Sales	\$0	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 12]	\$14,261,270	\$14,261,270	\$14,261,270	\$14,261,270
14	Bundled Retail Sales (kWh)	13,765,274,395	13,765,843,002	13,766,410,217	13,766,976,045
15	Incremental Rate Impact [Row 13 divided by row 14]	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues			
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2032	2033	2034	2035
17	Biogas	\$3,628,822	\$2,529,621	\$1,560,738	\$1,560,738
18	Biomass	\$19,382,787	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal	\$0	\$0	\$0	\$0
20	Small Hydro	\$5,411,261	\$4,086,992	\$157,368	\$157,368
21	Solar PV	\$431,752,474	\$424,622,661	\$352,798,967	\$313,774,698
22	Solar Thermal	\$0	\$0	\$0	\$0
23	Wind	\$179,466,426	\$100,705,700	\$47,876,326	\$20,331,043
24	UOG Small Hydro	\$0	\$0	\$0	\$0
25	UOG Solar	\$2,658,605	\$2,625,680	\$2,639,125	\$2,652,387
26	Unbundled RECs	\$0	\$0	\$0	\$0
27	REC Sales	\$0	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 17 through 27]	\$642,300,374	\$553,953,441	\$424,415,311	\$357,859,021
29	Bundled Retail Sales (kWh)	13,765,274,395	13,765,843,002	13,766,410,217	13,766,976,045
30	Incremental Rate Impact [Row 28 divided by row 29]	4.67 ¢/kWh	4.02 ¢/kWh	3.08 ¢/kWh	2.60 ¢/kWh
31	Total Incremental Rate Impact [Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]	4.77 ¢/kWh	4.13 ¢/kWh 26	3.19 ¢/kWh	2.70 ¢/kWh

Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)⁽²⁾		Forecasted RPS-Eligible Procurement Costs and Revenues		
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2036	2037	2038
2	Biogas	\$0	\$0	\$0
3	Biomass	\$0	\$0	\$0
4	Geothermal	\$0	\$0	\$0
5	Small Hydro	\$0	\$0	\$0
6	Solar PV	\$0	\$0	\$0
7	Solar Thermal	\$0	\$0	\$0
8	Wind	\$14,261,270	\$14,261,270	\$14,261,270
9	UOG Small Hydro	\$0	\$0	\$0
10	UOG Solar	\$0	\$0	\$0
11	Unbundled RECs	\$0	\$0	\$0
12	REC Sales	\$0	\$0	\$0
13	Total Executed But Not CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 2 through 12]	\$14,261,270	\$14,261,270	\$14,261,270
14	Bundled Retail Sales (kWh)	13,767,540,495	13,768,103,572	13,770,080,463
15	Incremental Rate Impact [Row 13 divided by row 14]	0.10 ¢/kWh	0.10 ¢/kWh	0.10 ¢/kWh
Cost Quantification Table 2 (Forecasted Costs and Revenues, \$)		Forecasted RPS-Eligible Procurement Costs and Revenues		
16	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FTI/PV Contracts)	2036	2037	2038
17	Biogas	\$1,560,738	\$1,560,738	\$1,560,738
18	Biomass	\$19,382,787	\$19,382,787	\$19,382,787
19	Geothermal	\$0	\$0	\$0
20	Small Hydro	\$157,368	\$157,368	\$157,368
21	Solar PV	\$306,647,152	\$307,019,558	\$267,048,260
22	Solar Thermal	\$0	\$0	\$0
23	Wind	\$0	\$0	\$0
24	UOG Small Hydro	\$0	\$0	\$0
25	UOG Solar	\$2,665,715	\$2,679,111	\$2,692,574
26	Unbundled RECs	\$0	\$0	\$0
27	REC Sales	\$0	\$0	\$0
28	Total Executed CPUC-Approved RPS-Eligible Procurement Net Costs [Sum of Rows 17 through 27]	\$330,413,761	\$330,799,562	\$290,841,728
29	Bundled Retail Sales (kWh)	13,767,540,495	13,768,103,572	13,770,080,463
30	Incremental Rate Impact [Row 28 divided by row 29]	2.40 ¢/kWh	2.40 ¢/kWh	2.11 ¢/kWh
31	Total Incremental Rate Impact [Row 15 + 30; Rounding can cause Row 31 to differ slightly from the sum of Row 15 and 30]	2.50 ¢/kWh	2.51 ¢/kWh	2.22 ¢/kWh

<u>Cost Quantification Table 3 (Actual Net Generation, MWh)⁽³⁾</u>		<u>Actual RPS-Eligible Net Generation</u>				
<u>1</u>	<u>Executed CPUC-Approved RPS-Eligible Contracts</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>
<u>2</u>	<u>Biogas</u>	<u>200,123</u>	<u>212,475</u>	<u>218,223</u>	<u>201,138</u>	<u>171,650</u>
<u>3</u>	<u>Biomass</u>	<u>341,718</u>	<u>337,466</u>	<u>298,945</u>	<u>284,031</u>	<u>217,967</u>
<u>4</u>	<u>Geothermal</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>5</u>	<u>Small Hydro</u>	<u>7,465</u>	<u>13,134</u>	<u>11,700</u>	<u>11,584</u>	<u>21,302</u>
<u>6</u>	<u>Solar PV</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>7</u>	<u>Solar Thermal</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>8</u>	<u>Wind</u>	<u>550</u>	<u>114,778</u>	<u>296,434</u>	<u>402,768</u>	<u>469,859</u>
<u>9</u>	<u>UOG Small Hydro</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>10</u>	<u>UOG Solar</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>11</u>	<u>Unbundled RECs</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>12</u>	<u>Total CPUC-Approved RPS-Eligible Net Generation</u>	<u>549,856</u>	<u>677,852</u>	<u>825,302</u>	<u>899,520</u>	<u>880,777</u>
-	<u>[Sum of Rows 2 through 11]</u>	-	-	-	-	-

(3) Because the technology type of RECs sold in the past is known, this table shows generation net of REC sales for all RPS-eligible procurement.

<u>Cost Quantification Table 3 (Actual Net Generation, MWh)⁽³⁾</u>		<u>Actual RPS-Eligible Net Generation</u>				
<u>1</u>	<u>Executed CPUC-Approved RPS-Eligible Contracts</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
<u>2</u>	<u>Biogas</u>	<u>208,236</u>	<u>205,021</u>	<u>210,067</u>	<u>215,821</u>	<u>224,763</u>
<u>3</u>	<u>Biomass</u>	<u>318,941</u>	<u>341,361</u>	<u>339,899</u>	<u>353,605</u>	<u>477,323</u>
<u>4</u>	<u>Geothermal</u>	<u>0</u>	<u>0</u>	<u>183,000</u>	<u>782,976</u>	<u>1,090,136</u>
<u>5</u>	<u>Small Hydro</u>	<u>30,883</u>	<u>24,439</u>	<u>22,367</u>	<u>16,866</u>	<u>20,560</u>
<u>6</u>	<u>Solar PV</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>200</u>
<u>7</u>	<u>Solar Thermal</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>8</u>	<u>Wind</u>	<u>489,368</u>	<u>1,212,703</u>	<u>1,182,541</u>	<u>2,008,572</u>	<u>1,559,684</u>
<u>9</u>	<u>UOG Small Hydro</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>10</u>	<u>UOG Solar</u>	<u>0</u>	<u>809</u>	<u>1,577</u>	<u>2,364</u>	<u>3,064</u>
<u>11</u>	<u>Unbundled RECs</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>12</u>	<u>Total CPUC-Approved RPS-Eligible Net Generation</u>	<u>1,047,428</u>	<u>1,784,333</u>	<u>1,939,451</u>	<u>3,380,204</u>	<u>3,375,730</u>
-	<u>[Sum of Rows 2 through 11]</u>	-	-	-	-	-

Cost Quantification Table 3 (Actual Net Generation, MWh) ⁽³⁾		Actual RPS-Eligible Net Generation					
1	Executed CPUC-Approved RPS-Eligible Contracts	2013	2014	2015	2016	2017	2018
2	Biogas	141,509	60,196	121,501	174,561	167,951	141,578
3	Biomass	266,027	5,998	186,899	0	159,636	182,246
4	Geothermal	349,835	0	0	0	0	0
5	Small Hydro	21,240	21,122	4,562	10,649	3,562	1,294
6	Solar PV	613,652	2,537,210	2,896,476	3,352,095	3,354,324	2,912,842
7	Solar Thermal	0	0	0	0	0	0
8	Wind	2,438,308	2,642,521	2,519,440	3,218,080	3,235,729	3,229,164
9	UOG Small Hydro	0	0	0	0	0	0
10	UOG Solar	3,161	3,308	2,857	2,188	8,135	10,055
11	Unbundled RECs	0	0	0	0	0	0
12	Total CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 2 through 11]	3,833,732	5,270,355	5,731,735	6,757,573	6,929,337	6,477,179

<u>Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)⁽⁴⁾</u>		<u>Forecasted RPS-Eligible Generation and Sales</u>		
<u>1</u>	<u>Executed But Not CPUC-Approved RPS-Eligible Contracts</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>2</u>	Biogas	<u>0</u>	<u>0</u>	<u>0</u>
<u>3</u>	Biomass	<u>0</u>	<u>0</u>	<u>0</u>
<u>4</u>	Geothermal	<u>0</u>	<u>0</u>	<u>0</u>
<u>5</u>	Small Hydro	<u>0</u>	<u>0</u>	<u>0</u>
<u>6</u>	Solar PV	<u>0</u>	<u>0</u>	<u>0</u>
<u>7</u>	Solar Thermal	<u>0</u>	<u>0</u>	<u>0</u>
<u>8</u>	Wind	<u>0</u>	<u>63,734</u>	<u>257,052</u>
<u>9</u>	UOG Small Hydro	<u>0</u>	<u>0</u>	<u>0</u>
<u>10</u>	UOG Solar	<u>0</u>	<u>0</u>	<u>0</u>
<u>11</u>	Unbundled RECs	<u>0</u>	<u>0</u>	<u>0</u>
<u>12</u>	RECs Sales	<u>(133,334)</u>	<u>(150,000)</u>	<u>0</u>
<u>13</u>	<u>Total Executed But Not CPUC-Approved RPS-Eligible Net Generation</u>	<u>(133,334)</u>	<u>(86,266)</u>	<u>257,052</u>
-	[Sum of Rows 2 through 12]	-	-	-
<u>Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)</u>		<u>Forecasted RPS-Eligible Generation and Sales</u>		
<u>14</u>	<u>Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
<u>15</u>	Biogas	<u>154,835</u>	<u>146,494</u>	<u>158,714</u>
<u>16</u>	Biomass	<u>163,149</u>	<u>163,149</u>	<u>163,149</u>
<u>17</u>	Geothermal	<u>0</u>	<u>0</u>	<u>0</u>
<u>18</u>	Small Hydro	<u>37,059</u>	<u>37,059</u>	<u>37,059</u>
<u>19</u>	Solar PV	<u>3,432,050</u>	<u>3,432,050</u>	<u>3,432,050</u>
<u>20</u>	Solar Thermal	<u>0</u>	<u>0</u>	<u>0</u>
<u>21</u>	Wind	<u>3,052,914</u>	<u>2,876,947</u>	<u>2,876,947</u>
<u>22</u>	UOG Small Hydro	<u>0</u>	<u>0</u>	<u>0</u>
<u>23</u>	UOG Solar	<u>14,391</u>	<u>13,204</u>	<u>12,552</u>
<u>24</u>	Unbundled RECs	<u>0</u>	<u>0</u>	<u>0</u>
<u>25</u>	RECs Sales	<u>(751,501)</u>	<u>(540,750)</u>	<u>0</u>
<u>26</u>	<u>Total Executed CPUC-Approved RPS-Eligible Net Generation</u>	<u>6,102,896</u>	<u>6,128,153</u>	<u>6,680,471</u>
	[Sum of Rows 15 through 25]	-	-	-
<u>27</u>	<u>Total Executed RPS-Eligible Net Generation</u>	<u>5,969,563</u>	<u>6,041,887</u>	<u>6,937,524</u>
	[Row 13 + 26]	-	-	-

(4) Because the technology type of RECs to be sold in the future is unknown, this table shows forecasted RPS-eligible REC sales as a single line item.

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh) ⁽⁴⁾		Forecasted RPS-Eligible Generation and Sales				
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2022	2023	2024	2025	2026
2	Biogas	0	0	0	0	0
3	Biomass	0	0	0	0	0
4	Geothermal	0	0	0	0	0
5	Small Hydro	0	0	0	0	0
6	Solar PV	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0
8	Wind	257,052	257,052	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0	0	0
10	UOG Solar	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0
12	RECs Sales	0	0	0	0	0
13	Total Executed But Not CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 2 through 12]	257,052	257,052	257,052	257,052	257,052
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS-Eligible Generation and Sales				
14	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2022	2023	2024	2025	2026
15	Biogas	142,589	80,209	59,860	56,193	56,193
16	Biomass	13,856	151,760	151,760	151,760	151,760
17	Geothermal	0	0	0	0	0
18	Small Hydro	37,059	37,059	37,059	37,059	37,059
19	Solar PV	3,432,050	3,432,050	3,432,050	3,432,050	3,432,050
20	Solar Thermal	0	0	0	0	0
21	Wind	2,876,947	2,874,855	2,562,652	2,331,552	2,159,707
22	UOG Small Hydro	0	0	0	0	0
23	UOG Solar	12,410	12,321	12,275	12,275	12,275
24	Unbundled RECs	0	0	0	0	0
25	RECs Sales	0	0	0	0	0
26	Total Executed CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 15 through 25]	6,514,912	6,588,254	6,255,656	6,020,890	5,849,044
27	Total Executed RPS-Eligible Net Generation [Row 13 + 26]	6,771,965	6,845,306	6,512,709	6,277,942	6,106,097

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh) ⁽⁴⁾		Forecasted RPS-Eligible Generation and Sales				
1	Executed But Not CPUC-Approved RPS-Eligible Contracts	2027	2028	2029	2030	2031
2	Biogas	0	0	0	0	0
3	Biomass	0	0	0	0	0
4	Geothermal	0	0	0	0	0
5	Small Hydro	0	0	0	0	0
6	Solar PV	0	0	0	0	0
7	Solar Thermal	0	0	0	0	0
8	Wind	257,052	257,052	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0	0	0
10	UOG Solar	0	0	0	0	0
11	Unbundled RECs	0	0	0	0	0
12	RECs Sales	0	0	0	0	0
13	Total Executed But Not CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 2 through 12]	257,052	257,052	257,052	257,052	257,052
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS-Eligible Generation and Sales				
14	Executed CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2027	2028	2029	2030	2031
15	Biogas	56,193	56,193	56,193	56,193	41,151
16	Biomass	151,760	151,760	151,760	151,760	151,760
17	Geothermal	0	0	0	0	0
18	Small Hydro	37,059	37,059	37,059	37,059	37,059
19	Solar PV	3,432,050	3,432,050	3,432,050	3,430,142	3,368,957
20	Solar Thermal	0	0	0	0	0
21	Wind	2,155,445	2,155,445	2,155,445	2,155,445	2,155,445
22	UOG Small Hydro	0	0	0	0	0
23	UOG Solar	12,261	12,098	12,098	12,098	12,098
24	Unbundled RECs	0	0	0	0	0
25	RECs Sales	0	0	0	0	0
26	Total Executed CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 15 through 25]	5,844,769	5,844,606	5,844,606	5,842,697	5,766,469
27	Total Executed RPS-Eligible Net Generation [Row 13 + 26]	6,101,821	6,101,658	6,101,658	6,099,749	6,023,522

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)⁽⁴⁾		Forecasted RPS-Eligible Generation and Sales		
1	Executed But Not CPUC- Approved RPS-Eligible Contracts	2032	2033	2034
2	Biogas	0	0	0
3	Biomass	0	0	0
4	Geothermal	0	0	0
5	Small Hydro	0	0	0
6	Solar PV	0	0	0
7	Solar Thermal	0	0	0
8	Wind	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0
10	UOG Solar	0	0	0
11	Unbundled RECs	0	0	0
12	RECs Sales	0	0	0
13	Total Executed But Not CPUC- Approved RPS-Eligible Net Generation [Sum of Rows 2 through 12]	257,052	257,052	257,052
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS-Eligible Generation and Sales		
14	Executed CPUC-Approved RPS- Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2032	2033	2034
15	Biogas	30,687	20,872	12,220
16	Biomass	151,760	151,760	151,760
17	Geothermal	0	0	0
18	Small Hydro	37,059	28,434	2,840
19	Solar PV	3,369,023	3,302,898	2,762,599
20	Solar Thermal	0	0	0
21	Wind	2,035,222	1,209,437	457,140
22	UOG Small Hydro	0	0	0
23	UOG Solar	12,060	11,894	11,871
24	Unbundled RECs	0	0	0
25	RECs Sales	0	0	0
26	Total Executed CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 15 through 25]	5,635,812	4,725,295	3,398,431
27	Total Executed RPS-Eligible Net Generation [Row 13 + 26]	5,892,864	4,982,347	3,655,483

Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)⁽⁴⁾		Forecasted RPS-Eligible Generation and Sales			
1	Executed But Not CPUC- Approved RPS-Eligible Contracts	2035	2036	2036	2038
2	Biogas	0	0	0	0
3	Biomass	0	0	0	0
4	Geothermal	0	0	0	0
5	Small Hydro	0	0	0	0
6	Solar PV	0	0	0	0
7	Solar Thermal	0	0	0	0
8	Wind	257,052	257,052	257,052	257,052
9	UOG Small Hydro	0	0	0	0
10	UOG Solar	0	0	0	0
11	Unbundled RECs	0	0	0	0
12	RECs Sales	0	0	0	0
13	Total Executed But Not CPUC- Approved RPS-Eligible Net Generation [Sum of Rows 2 through 12]	257,052	257,052	257,052	257,052
Cost Quantification Table 4 (Forecasted Generation and Sales, MWh)		Forecasted RPS-Eligible Generation and Sales			
14	Executed CPUC-Approved RPS- Eligible Contracts (Incl. RAM/FIT/PV Contracts)	2035	2036	2036	2038
15	Biogas	12,220	12,220	12,220	12,220
16	Biomass	151,760	151,760	151,760	151,760
17	Geothermal	0	0	0	0
18	Small Hydro	2,840	2,840	2,840	2,840
19	Solar PV	2,468,910	2,370,980	2,370,980	2,041,715
20	Solar Thermal	0	0	0	0
21	Wind	194,128	0	0	0
22	UOG Small Hydro	0	0	0	0
23	UOG Solar	11,871	11,871	11,871	11,871
24	Unbundled RECs	0	0	0	0
25	RECs Sales	0	0	0	0
26	Total Executed CPUC-Approved RPS-Eligible Net Generation [Sum of Rows 15 through 25]	2,841,729	2,549,671	2,549,671	2,220,407
27	Total Executed RPS-Eligible Net Generation [Row 13 + 26]	3,098,782	2,806,724	2,806,724	2,477,459



APPENDIX 43

20182019 SAFETY CONSIDERATIONS

A. RPS Power Purchase Agreements

SDG&E's procurement programs and the safety-related contractual provisions included in the contract for each program are described below. For those contracts that are appendices to this plan, the relevant sections are referenced, for all other contracts, language from the relevant sections is provided. Although the precise wording varies slightly among PPAs related to different programs, each PPA follows the same logic by first defining prudent business practices as those which, given the information available at the time the decision was made, could reasonably be expected to accomplish the desired result consistent with good business practices, reliability and safety. This definition is then referenced throughout the contract. By executing any of the following referenced PPAs, a counterparty agrees to incorporate safety considerations into its decision-making process and operate accordingly.

i. PPA Provisions - Utility Scale RFOs (Long-Term and Short-Term¹ Contracts) and GT RAM²

- Section 1.1: Good Industry Practice
- Section 3.1(f)(ii): Annual Capacity Testing
- Section 3.5(a): General Operation
- Section 3.5(b): CAISO and WECC Standards
- Section 3.5(c): Reliability Standards.
- Section 3.6(a)(i): Testing and Calibration.
- Section 3.7(a): Planned Outages
- Exhibit F, Form of Quarterly Progress Report, Section 9.0: Safety and Health Reports

ii. PPA Provisions – CRE and WATER FiT Programs³

¹ SDG&E's Short-Term PPA is for projects that have already been constructed because it is not likely that a new project would be interested in a term of 5 years or less, as such it does not contain a Milestone Schedule, a Commercial Operations Certificate, or a Form of Quarterly Progress Report.

² D.14-11-042 requires that SDG&E file a short-term RPS PPA and RAM PPA, and D.16-05-006 requires that SDG&E utilize a RAM Rider for its ECR program. These The Short-Term RPS PPA is Appendix 6 within this Plan and SDG&E's most recently approved RAM documents are attached here to as Appendices 7, 11.A and 12.A, respectively can be found in SDG&E AL 3206-E, effective April 28, 2018 at <http://regarchive.sdge.com/tm2/pdf/3206-E.pdf>. All of these documents are based on SDG&E's Long-Term RPS PPA, attached hereto as Appendix 6⁵, as such the safety provisions and associated references are the same.

³ SDG&E's CRE FiT and WATER FiT programs terminated July 24, 2013.

- Section 5.4: The Generating Facility shall be operated with all of Producer's Protective Functions in service and in accordance with Prudent Electrical Practices whenever the Generating Facility is operated in parallel with SDG&E's Distribution System. Any deviation from these requirements may occur only when the Parties have agreed to such deviations in writing.
- Appendix F, Item 32: "Operate," "Operating" or "Operation" means to provide (or the provision of) all the operation, engineering, purchasing, repair, supervision, training, inspection, testing, protection, use, management, improvement, replacement, refurbishment, retirement, and maintenance activities associated with operating the Generating Facility in accordance with Prudent Electrical Practices.
- Appendix F, Item 41: "Prudent Electrical Practices" means those practices, methods and acts that would be implemented and followed by prudent operators of electric energy generating facilities in the Western United States, similar to the Generating Facility, during the relevant time period, which practices, methods and acts, in the exercise of prudent and responsible professional judgment in the light of the facts known at the time the decision was made, could reasonably have been expected to accomplish the desired result consistent with good business practices, reliability and safety.
 - Prudent Electrical Practices shall include, at a minimum, those professionally responsible practices, methods and acts described in the preceding sentence that comply with manufacturers' warranties, restrictions in this Agreement, and the requirements of Governmental Authorities, WECC standards, the ISO and applicable laws.
 - Prudent Electrical Practices shall also include taking reasonable steps to ensure that:
 - Equipment, materials, resources, and supplies, including spare parts inventories, are available to meet the Generating Facility's needs;
 - Sufficient operating personnel are available at all times and are adequately experienced and trained and licensed as necessary

to operate the Generating Facility properly and efficiently, and are capable of responding to reasonably foreseeable emergency conditions at the Generating Facility and emergencies whether caused by events on or off the Site;

- Preventive, routine, and non-routine maintenance and repairs are performed on a basis that ensures reliable, long term and safe operation of the Generating Facility, and are performed by knowledgeable, trained, and experienced personnel utilizing proper equipment and tools;
- Appropriate monitoring and testing are performed to ensure equipment is functioning as designed;
- Equipment is not operated in a reckless manner, in violation of manufacturer's guidelines or in a manner unsafe to workers, the general public, or SDG&E's electric system or contrary to environmental laws, permits or regulations or without regard to defined limitations such as, flood conditions, safety inspection requirements, operating voltage, current, volt ampere reactive (VAR) loading, frequency, rotational speed, polarity, synchronization, and control system limits; and
- Equipment and components designed and manufactured to meet or exceed the standard of durability that is generally used for electric energy generating facilities operating in the Western United States and will function properly over the full range of ambient temperature and weather conditions reasonably expected to occur at the Site and under both normal and emergency conditions.

iii. PPA Provisions – Re-MAT FiT Program, and BioRAM⁴

- Section 6.4: Standard of Care. Seller shall: (a) maintain and operate the Facility and Interconnection Facilities, except facilities installed by Buyer, in

⁴ SDG&E's Re-MAT FiT Program ended June 30, 2016. Note that SDG&E's BioRAM contract is also based on SDG&E's ReMAT PPA.

conformance with all Laws and in accordance with Prudent Electrical Practices; (b) obtain any governmental authorizations and permits required for the construction and operation thereof; and (c) generate, schedule and perform transmission services in compliance with all applicable operating policies, criteria, rules, guidelines and tariffs and Prudent Electrical Practices. Seller shall reimburse Buyer for any and all losses, damages, claims, penalties, or liability Buyer incurs as a result of Seller's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of the Facility throughout the Term of this Agreement.

- Section 6.5.2: Access Rights. Buyer, its authorized agents, employees and inspectors may, on reasonable advance notice under the circumstances, visit the Project during normal business hours for purposes reasonably connected with this Agreement or the exercise of any and all rights secured to Buyer by Law, its tariff schedules, and rules on file with the CPUC. Buyer, its authorized agents, employees and inspectors must (a) at all times adhere to all safety and security procedures as may be required by Seller; and (b) not interfere with the operation of the Project. Buyer shall make reasonable efforts to coordinate its emergency activities with the Safety and Security Departments, if any, of the Project operator. Seller shall keep Buyer advised of current procedures for contacting the Project operator's Safety and Security Departments.
- Appendix A: "Demonstrated Contract Capacity" means the Facility's total rated electric alternating current energy generating capacity which will equal the [lesser of (a) the sum of the Inverter Block Unit Capacity of all Inverter Block Units in the Facility and (b) the continuous output power rating at the expected operating power factor of the step-up transformer that connects the Facility to the Transmission/Distribution Owner's system[for solar photovoltaic technology]] [the total of the manufacturer's nameplate ratings of all installed Wind Turbines, consistent with Prudent Electrical Practices and accepted industry standards, as indicated on the nameplates physically attached to the individual Wind Turbine generators[for wind technology]]

[sum of the Metered Amounts for the Demonstration Hour[all other technologies]], as determined in accordance with Appendix M.

- Appendix A: “Inverter Block Unit Capacity” means, with respect to each Inverter Block Unit, the total rated electric alternating current energy generating capacity of such Inverter Block Unit, determined as the lesser of:
 - (a) The manufacturer’s output rating of the Current Inverter included in such Inverter Block Unit, consistent with Prudent Electrical Practices and accepted industry standards, as indicated on the nameplate physically attached to such Current Inverter; (b) The sum of the manufacturer’s nameplate ratings of all Photovoltaic Modules included in such Inverter Block Unit, consistent with Prudent Electrical Practices and accepted industry standards, as indicated on the nameplates physically attached to such individual Photovoltaic Modules;
- Appendix A: “Prudent Electrical Practices” means those practices, methods and acts that would be implemented and followed by prudent operators of electric energy generating facilities in the Western United States, similar to the Facility, during the relevant time period, which practices, methods and acts, in the exercise of prudent and responsible professional judgment in the light of the facts known at the time the decision was made, could reasonably have been expected to accomplish the desired result consistent with good business practices, reliability and safety. Prudent Electrical Practices shall include, at a minimum, those professionally responsible practices, methods and acts described in the preceding sentence that comply with manufacturers’ warranties, restrictions in this Agreement, and the requirements of Governmental Authorities, WECC standards, the CAISO and Laws. Prudent Electrical Practices also includes taking reasonable steps to ensure that:
 - (a) Equipment, materials, resources, and supplies, including spare parts inventories, are available to meet the Facility’s needs;
 - (b) Sufficient operating personnel are available at all times and are adequately experienced and trained and licensed as necessary to operate the Facility properly and efficiently, and are capable of

responding to reasonably foreseeable emergency conditions at the Facility and Emergencies whether caused by events on or off the Site;

- (c) Preventive, routine, and non-routine maintenance and repairs are performed on a basis that ensures reliable, long term and safe operation of the Facility, and are performed by knowledgeable, trained, and experienced personnel utilizing proper equipment and tools;
- (d) Appropriate monitoring and testing are performed to ensure equipment is functioning as designed;
- (e) Equipment is not operated in a reckless manner, in violation of manufacturer's guidelines or in a manner unsafe to workers, the general public, or the Transmission/Distribution Owner's electric system or contrary to environmental laws, permits or regulations or without regard to defined limitations such as, flood conditions, safety inspection requirements, operating voltage, current, volt ampere reactive (VAR) loading, frequency, rotational speed, polarity, synchronization, and control system limits; and
- (f) Equipment and components are designed and manufactured to meet or exceed the standard of durability that is generally used for electric energy generating facilities operating in the Western United States and will function properly over the full range of ambient temperature and weather conditions reasonably expected to occur at the Site and under both normal and emergency conditions.

iv. PPA Provisions – BioMAT FiT Program⁵

- Section 5.4: Standard of Care. Seller shall: (a) maintain and operate the Facility and Interconnection Facilities, except facilities installed by Buyer, in conformance with all Laws and in accordance with Prudent Electrical Practices; (b) obtain any governmental authorizations and permits required for the construction and operation thereof; and (c) generate, schedule and perform transmission services in compliance with all applicable operating policies,

⁵ SDG&E's BioMAT FiT Program began February 1, 2016.

criteria, rules, guidelines and tariffs and Prudent Electrical Practices. Seller shall reimburse Buyer for any and all losses, damages, claims, penalties, or liability Buyer incurs as a result of Seller's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of the Facility throughout the Term of this Agreement.

- Section 5.5.2: Access Rights. Buyer, its authorized agents, employees and inspectors may, on reasonable advance notice under the circumstances, visit the Project during normal business hours for purposes reasonably connected with this Agreement or the exercise of any and all rights secured to Buyer by Law, its tariff schedules, and rules on file with the CPUC. Buyer, its authorized agents, employees and inspectors must (a) at all times adhere to all safety and security procedures as may be required by Seller; and (b) not interfere with the operation of the Project. Buyer shall make reasonable efforts to coordinate its emergency activities with the Safety and Security Departments, if any, of the Project operator. Seller shall keep Buyer advised of current procedures for contacting the Project operator's Safety and Security Departments.
- Section 5.17: Safety Plan. Seller shall provide to Buyer, prior to commencement of any construction activities on the Site, a report from an independent engineer (acceptable to both Buyer and Seller) certifying that Seller has a written plan for the safe construction and operation of the Facility in accordance with Prudent Electrical Practices.
- Appendix A: "Demonstrated Contract Capacity" means the Facility's total rated electric alternating current energy generating capacity which will equal the sum of the metered amounts for the Demonstration Hour, as determined in accordance with Appendix J.
- Appendix A: "Prudent Electrical Practices" means those practices, methods and acts that would be implemented and followed by prudent operators of electric energy generating facilities in the Western United States, similar to the Facility, during the relevant time period, which practices, methods and acts, in the exercise of prudent and responsible professional judgment in the

light of the facts known at the time the decision was made, could reasonably have been expected to accomplish the desired result consistent with good business practices, reliability and safety. Prudent Electrical Practices shall include, at a minimum, those professionally responsible practices, methods and acts described in the preceding sentence that comply with manufacturers' warranties, restrictions in this Agreement, and the requirements of Governmental Authorities, WECC standards, the CAISO and Laws. Prudent Electrical Practices also includes taking reasonable steps to ensure that:

- (a) Equipment, materials, resources, and supplies, including spare parts inventories, are available to meet the Facility's needs;
- (b) Sufficient operating personnel are available at all times and are adequately experienced and trained and licensed as necessary to operate the Facility properly and efficiently, and are capable of responding to reasonably foreseeable emergency conditions at the Facility and Emergencies whether caused by events on or off the Site;
- (c) Preventive, routine, and non-routine maintenance and repairs are performed on a basis that ensures reliable, long term and safe operation of the Facility, and are performed by knowledgeable, trained, and experienced personnel utilizing proper equipment and tools;
- (d) Appropriate monitoring and testing are performed to ensure equipment is functioning as designed;
- (e) Equipment is not operated in a reckless manner, in violation of manufacturer's guidelines or in a manner unsafe to workers, the general public, or the Transmission/Distribution Owner's electric system or contrary to environmental laws, permits or regulations or without regard to defined limitations such as, flood conditions, safety inspection requirements, operating voltage, current, volt ampere reactive (VAR) loading, frequency, rotational speed, polarity, synchronization, and control system limits; and

- (f) Equipment and components are designed and manufactured to meet or exceed the standard of durability that is generally used for electric energy generating facilities operating in the Western United States and will function properly over the full range of ambient temperature and weather conditions reasonably expected to occur at the Site and under both normal and emergency conditions.

B. Renewable Utility-Owned Generation Projects

SDG&E requires all contractors working on the construction of new UOG facilities to observe the following safety-related procedures:

i. Safety Requirements

- The Contractor must comply with all applicable federal, state, regional, municipal, and local laws, ordinances, rules, codes, regulations, and executive orders, including all laws, ordinances, rules, codes, regulations, and executive orders applicable to health and safety, SDG&E's Class 1 Contractor Safety Manual, and all contract terms as set forth in the contract entered into with the Company, and must ensure that all employees and subcontractors working on Contractor's behalf meet or exceed these same requirements. If there is a conflict between SDG&E's Class 1 Contractor Safety Manual, the contract entered into with the Company, or applicable H&S Laws, the more specific standard applies.
- The Contractor must enroll in and maintain compliance with SDG&E's Contractor safety program.
- The Contractor must establish, implement, and maintain a complete site-specific safety program. The Contractor must submit electronic and written copies of this program to SDG&E for review.
- The safety program must include a full-time, on-site Safety Manager at the start of the project and sufficient, qualified support staff for the duration of on-site work. This safety program must follow the applicable laws, ordinances, regulations, and standards for such programs and must include: code of safe practices, fire protection plan, spill prevention plan, worker environmental awareness training, emergency situations response plan and procedures, and

hazardous material control and training. The plan must be coordinated with SDG&E's and local authorities as required.

- The safety program must include sections addressing site environmental protection and a personal protective equipment.
- Safety and Health Orientation:
 - Each new employee (including subcontractors and vendors) must receive a thorough safety and health orientation from the Contractor that gives the employee the basic information about the Contractor's safety program, Federal or State OSHA (the most stringent in any case), and other applicable safety rules and regulations. The Contractor must provide additional safety instructions during the scope of the normal daily activities for the performance of hazardous or unfamiliar tasks.
- Supervisor's Safety Orientation
 - The Contractor must familiarize all supervisory personnel with the Contractor's safety and health responsibilities by conducting a safety and health orientation with each supervisor. Supervisors must be trained in CPR and First Aid.
- Weekly Toolbox and Daily Safety Meetings
 - The Contractor must conduct weekly toolbox meetings, open to SDG&E's representatives, to provide all on-site employees with up-to-date safety and health information. Daily task safety analysis for each planned activity must be performed to help the employees prepare for the hazards associated with each assigned task.
- General Safety Requirements:
 - Barricades: The Contractor must erect and maintain all barricades used to protect personnel from hazardous work operations as required by Federal or State OSHA, whichever is applicable.
 - Safety Signs: The Contractor must post any signs or posters that may be needed to advise employees of unsafe areas or conditions as required by Federal or State OSHA, whichever is applicable.

- Scaffolds: The Contractor must erect all scaffolds in conformance with applicable Federal or State OSHA standards and maintain a method of communication that daily scaffolding erection inspection has been performed and that the scaffolding is ready for use.
- Floor and Roof Openings: The Contractor must barricade or cover all floor and roof openings to protect employees from falls as required by Federal or State OSHA.
- Lock Out and Tag Out: The Contractor must provide an approved procedure for lock out and tag out, including all lock tags, of all applicable equipment.
- The Contractor must identify in writing a qualified safety representative to administer the Contractor's safety program. All vendor-supplied service organizations must each be required to implement a safety program appropriate for the Work being performed and in compliance with the Contractor's safety program. The Contractor is responsible for all subcontractor compliance with the its safety program.
- Loss Prevention Requirements:
 - Implementation of an approved safety program
 - Provision of a safe workplace for all employees
 - Implementation of a fire prevention program in accordance with NFPA 241: Standard for Safeguarding Construction, Alteration, and Demolition Operations
 - Prevention of equipment operation unless the equipment is safe to operate, all protective equipment is in place, and the operators are properly trained and licensed or certified for the particular equipment being operated
 - Identified hazards are addressed/mitigated
 - Implementation of regular safety meetings and training
 - Adherence to all applicable Federal or State OSHA, DOT, and other applicable safety requirements

- Occupational Health
 - The Contractor must take all reasonable steps and precautions to protect the health of their employees and other site personnel. The Contractor must conduct occupational health monitoring and sampling as required by Federal or State OSHA, whichever is applicable, to determine the levels of exposure of its employees to hazardous or toxic substances or environmental conditions. Copies of employee sampling results must be provided to SDG&E upon request.
- Fire Protection and Prevention
 - The Contractor must provide fire extinguishers that are adequate for potential fire hazards present during construction, and must provide instruction regarding the proper use of such equipment to all employees. Only carbon dioxide (CO₂) fire extinguishers may be used within proximity of the inverters, transformers, switchgear, and communications enclosures to avoid damage to this equipment.
 - The Contractor must ensure the material it proposes to use at the site conforms to appropriate standards for flame-resistance or fireproof characteristics or is adequately protected from fire danger. Specific materials in this category include coatings, plastic-covering materials, construction lumber, scaffold plans, paper, boxes, and crating materials. Flammables, such as fuels and solvents, must be stored in appropriate containers. Fire blankets must be used to protect personnel and permanent project equipment/installations when necessary.
- Crane Safety and Material Handling
 - The Contractor must comply with all rules, regulations, and standards associated with crane safety and material handling. No equipment or machinery intended for material or personnel handling is allowed on site without having written proof of a current inspection, insurance, and crane operator certification. All equipment inspection reports must be renewed prior to expiration. All crane equipment must have an inspection checklist signed off by the operator at the beginning of each

shift to ensure that any crane used is in safe operating condition. Equipment must have functioning horns of sufficient volume to provide warnings when required. When applicable, crane lift plan(s) will be submitted in advance for SDG&E's review.

ii. Safety Inspections and Reporting

- Inspections
 - The Contractor must conduct weekly safety inspections of all work areas and operations in accordance with the Contractor's safety program. The Contractor must cooperate with any general safety inspections conducted by SDG&E.
 - The Contractor must maintain an inspection program for review of safety compliance for the Contractor's equipment, including power tools, electrical cords, rigging equipment, safety equipment, etc.
- Accident and Incident Reporting
 - The Contractor must immediately notify SDG&E's Project Manager of all project-related incidents, as required by SDG&E's Class 1 Contractor Safety Manual.
 - The Contractor must analyze any accident or incident (including "near misses") and provide an independent report of the cause and results of the accident or incident to SDG&E, as required by SDG&E's Class 1 Contractor Safety Manual. The Contractor safety program must identify and implement all necessary corrective action to prevent future occurrence of a similar incident.
 - Contractor must immediately notify Owner of any governmental agency (OSHA, Fire Dept., Health Dept., etc.) complaint and inspection of the project.
- Recordkeeping
 - The Contractor must maintain all records required by federal and state agencies that pertain to work-related injuries or illness.
- Security

- The Contractor is responsible for providing site security as necessary during construction.



APPENDIX 98

20182019 LEAST-COST BEST-FIT (“LCBF”)

SDG&E's RPS RFO Evaluation Methodology

Below is the assessment methodology and process to be taken by SDG&E and the Independent Evaluator (“IE”) to ensure that the bid selection process is transparent and does not favor any technology or counterparty, and is aligned with SDG&E’s compliance requirements. Although SDG&E has worked diligently with its IE to develop this methodology, this document may require adjustment before issuing of the RFO in order to account for potential market, regulatory, and/or business context changes.

1. Receive all bids prior to the closing date at Noon Pacific Standard Time:

- a. Bids will be uploaded to the PowerAdvocate® website for any RPS RFO event, to which the IE will have access.
- b. By Noon on the day after closing, SDG&E will accept bids that, because of technical difficulties, could not be uploaded to the PowerAdvocate® website. The IE makes the call of “no more bids.”

2. After the day after closing, organize bid data:

- a. The IE and SDG&E will compare folder structures and file sizes to ensure the bid population of the IE is identical to the bid population to be analyzed by the SDG&E RFO team. To the extent the folders do not match, a reconciliation effort begins until folders match.
- b. The relevant data of all bids is exported into a data table for analysis.

3. Initial Bid Assessment & Completeness Check:

- a. A snapshot of the key statistics of the bids is produced for presentation to the PRG. These statistics will not include prices; at this stage of the process, bids have not been

checked for conformance vis-à-vis the RFO requirements. Bids are reviewed for completeness and certain eligibility requirements.

4. Bid Evaluation:

a. **Determine Congestion Cost:** SDG&E will conduct a marginal analysis to determine the difference in locational pricing between the project's point of delivery and SDG&E's default load aggregation point ("DLAP"). SDG&E and the IE will add the relevant Congestion Charges to the Bids once derived or obtained from SDG&E Transmission.

i. In the event that a congestion study is required, SDG&E and the IE will jointly prepare the relevant data needed for the SDG&E Transmission Planning team to calculate Congestion Costs. This process will group together, on a no-name basis, the relevant data of bids (mainly anticipated generation and energy delivery profile) by interconnection points. The SDG&E evaluation team or IE will then forward this information to SDG&E's Transmission Planning team.

ii. Transmission Planning will run studies to determine hourly congestion costs associated with each of the proposed offer groups and provide results to SDG&E's evaluation team and the IE.

b. **Determine Transmission Cost:** For offers for new projects or projects proposing to increase the size of existing facilities, SDG&E performs an initial analysis of costs for transmission network upgrades or additions that are to be directly reimbursed to the bidder using the relevant transmission network upgrade cost studies submitted with the bids. Offers without transmission upgrade cost studies will be rejected as non-

conforming (unless the offer includes acceptable proof of an existing interconnection arrangement).

- i. The total reimbursable transmission upgrade cost specified in the project's transmission studies will be divided by the number of years in which the utility will reimburse the network transmission costs to the bidder to produce an annual transmission upgrade cost.
- ii. The present value of the annual transmission upgrade costs will be divided by the present value of the estimated energy deliveries during the contract period to produce the Transmission Cost Charge.
- iii. SDG&E and the IE will add the relevant Transmission Cost Charges to the Bids once they are determined from the transmission cost studies submitted with the Bids and confirmed by both SDG&E and the IE after mutual agreement.

c. Calculate the Energy Benefit: The Energy Benefit is calculated based on forecasted electricity prices for each contract year, ~~adjusted by SDG&E's hourly energy weighting factors.~~

d. Calculate the Ancillary Services Benefit: The Ancillary Services ("A/S") Benefit is calculated based on a 2-year historical ratio of A/S prices to energy prices. This ratio is applied to the forecasted electricity price for each A/S type: Spin, Non-Spin, Regulation Up and Regulation Down, for each month to determine the forecasted A/S prices. The forecasted A/S prices are multiplied by the product of the available A/S capacity for each of the A/S types and the expected commitment percentage to determine the A/S Benefit. The expected commitment percentage is a 2-year

historical ratio of A/S capacity offered versus A/S awarded in the CAISO Day-Ahead Market for each of the A/S types.

- e. **Calculate the Capacity Benefit:** Capacity Benefit will be calculated as a percentage of Capacity Value as described below. Capacity Value is based on the estimated Net Qualifying Capacity (“NQC”) ratio for each technology multiplied by SDG&E’s forecasted capacity price. NQC will be calculated using both the existing exceedance methodology and the effective load carrying capacity methodology (“ELCC”).

For projects located in SDG&E’s service territory connecting to transmission or distribution facilities at a point that is electrically west of the ECO or Suncrest substations (“Local Area Projects”) bidding as fully deliverable:¹

$$\text{Capacity Benefit} = 100 \% \text{ of Capacity Value}$$

For projects that are in the greater Imperial Valley (“IV”) area as defined by the CAISO,² meaning those projects connecting to transmission or distribution facilities at a point that is at, or electrically east of, the ECO or Suncrest substations bidding as fully deliverable³ and for projects other than Local Area Projects or IV Area Projects that still qualify for Resource Adequacy pursuant to the CAISO Tariff (“System Area Projects”) bidding as fully deliverable:

$$\text{Capacity Benefit} = \text{Capacity Value} \times 33.59\%$$

¹ Projects connecting at the ECO or Boulevard Substation are considered to be IV Area Projects for these purposes.

² Please refer to the CAISO’s 2014 Local Capacity Technical Analysis, Final Report and Study Results, April 30, 2013.

³ Projects connected to the Imperial Valley, Drew, Ocotillo, ECO or Boulevard Substations are considered to be IV Area Projects for these purposes.

For all energy-only projects, or projects interconnected to non-California Balancing Authorities unable to provide resource adequacy benefits to SDG&E that are specific to the project being bid to SDG&E:

Capacity Benefit = 0

Resource adequacy substitutions will not be granted any non-zero Capacity Benefit projects under SDG&E's RPS bid process.

f. Calculate the Renewable Integration Cost Adder:⁴ The integration cost adder will be calculated using the adopted interim valuation methodology. This methodology calculates two components for the cost of integration:

1. Variable integration cost
2. Fixed integration cost – the cost to SDG&E of procuring additional flexible and non-flexible RA over the contract period. This is a product of (a) and (b) below:
 - a. The monthly increase (or decrease) in flexible capacity requirement due to the increment of wind or solar being considered for the solicitation. Calculated based on the overall system flexible capacity requirement and then applies the percentage contribution from wind and solar.
 - b. The forecasted monthly flexible RA price.

⁴ SDG&E's valuation process does not lead to double-counting of the Integration Cost adder. The creation of SDG&E's price forecasts does not use the Integration Cost adder as an input. The Integration Cost adder is applied in the LCBF process during the NMV calculation, as a separate component that differentiates variable renewable energy resources from each other and other resource types. The calculated energy benefit attributed to renewable resources in the NMV calculation is the same with or without an Integration Cost adder, which is added later in the valuation process.

g. Calculate Net Market Value: For bundled product purchase offers, convert Bid prices into the Net Market Value (NMV) prices as follows:

For bundled products NMV = (Energy Benefit + Ancillary Services Benefits + Capacity Benefits) – (Levelized Contract Cost + Transmission Cost + Congestion Cost) – (Integration Cost Adder)

For unbundled RECs: the negative unbundled REC price measured in \$/MWh

5. Develop ~~Short List~~: Shortlist:

SDG&E determines its RPS Compliance Period 3 and 4 Renewable Net Short (“RNS”) as described in its RPS Plan and ranks all the Bids by LCBF price until SDG&E has met its need. The ~~Short List~~shortlist ranking enables SDG&E to determine which offers are most attractive based on an NMV price.

Offers with deliveries outside the acceptable RPS delivery windows will be considered non-conforming, unless SDG&E’s need assessment has changed materially between the time of issuance of this RPS Plan and the determination of the shortlist.

5.6. Final ~~Short Lists~~: Shortlists:

- a. The highest ranking bids are subjected to a detailed conformance screen before being added to the shortlist.⁵ To the extent offers are not conforming, SDG&E will likely discard (given the high number of anticipated offers) the bid.
- b. Qualitative Factors: SDG&E may review the qualitative factors of offers of similar cost,⁶ including: (in no particular order)

⁵ Conformance check will start earlier if possible.

⁶ The term “similar cost” is used to indicate expected indifference by the PRG and CPUC as to the cost of one offer or another. The PRG will have access to SDG&E’s evaluation and the quantitative and qualitative components of those offers prior to SDG&E’s recommendation filing to the CPUC.

- Project Viability⁷
- Local reliability
- Benefits to Disadvantaged Communities: Disadvantaged Communities (DAC) are those identified as Environmental Justice (EJ) communities through California’s Environmental Protection Agency’s CalEnviroScreen 2.0. Offer documents must include any environmental or economic benefits that the proposed project would provide to EJ communities with high poverty or unemployment rates, and/or high emission levels of toxic air contaminants.
- Resource diversity
- Environmental stewardship
- Rate Impacts
- Workforce Development Assessment: Offer documents must include projected California employment growth during construction and operation, including: number of hires; duration of hire; and indication of whether the bidder has entered into Project Labor Agreements or Maintenance Labor Agreements in California for the proposed project.

c. SDG&E and the IE will then develop the preliminary ~~Final Short Lists~~final shortlists that includes congestion costs and transmission cost study results. Qualitative factors may impact the ~~Final Shortlist~~final shortlist.

⁷ SDG&E considers project viability as a qualitative factor and relies on the Energy Division’s Project Viability Calculator. For projects that SDG&E rejects due to low viability scores, SDG&E rescues the projects to affirm the bidder did not unfairly score itself too low. For projects that SDG&E shortlists, SDG&E rescues the project to affirm that the bidder did not unfairly score itself too high. Projects below a certain viability threshold will not be considered for the shortlist.

- d. The preliminary ~~Final Shortlist~~final shortlist is prepared and shared with the PRG during the next viable meeting.
- e. After discussion with the PRG and the Energy Division, SDG&E will determine the final shortlist.



APPENDIX 109

20182019 RPS SALES REQUEST FOR PROPOSALS (“RFP”)



SAN DIEGO GAS AND ELECTRIC COMPANY
ELECTRIC AND GAS PROCUREMENT DEPARTMENT
8315 CENTURY PARK COURT, CP21D
SAN DIEGO, CA 92123

~~2018~~

2019

**REQUEST FOR PROPOSAL
FOR THE SALE OF
RENEWABLE ENERGY
PRODUCTS**

ISSUED

□

OFFERS DUE

□

RFP WEBSITE



EMAIL QUESTIONS/COMMENTS TO
RECSaleRFP@semprautilities.com

TABLE OF CONTENTS

Table of Contents	2
1.0 Scope of Request.....	3
2.0 RFP Website and Communications.....	6
3.0 RFP Schedule.....	8
Pre-Bid Conferences	8
4.0 RFP Response Instructions.....	9
5.0 RPS Program Parameters	11
California RPS Program	11
RPS Eligibility Criteria.....	12
Procurement Review Group.....	12
Independent Evaluator.....	12
6.0 SDG&E Background	13
7.0 Products & Eligibility Requirements	14
8.0 Evaluation Criteria and shortlisting	15
Quantitative Evaluation.....	15
Qualitative Evaluation	15
Adherence to Terms and Conditions.....	15
Bid Conformance Evaluation.....	15
9.0 Rejection of Offers	17
10.0 Confidentiality	17
11.0 Credit Terms and Conditions	19
12.0 CPUC Approval.....	19

1.0 SCOPE OF REQUEST

As authorized by D.19-02-007XX-XX-XXX, San Diego Gas & Electric Company (“SDG&E”) is issuing this Request for Proposal (“RFP”) seeking proposals from third parties (“Respondents”) who are interested in purchasing products from eligible renewable resources under contract with SDG&E (“Resources”). By responding, Respondents are bound by the terms and conditions of this RFP. Products are derived from Resources that meet the California Renewables Portfolio Standard (“RPS”) eligibility criteria set forth by the California Energy Commission (“CEC”) (See Section 5.0 for additional information on RPS Program Parameters). This RFP solicits bids from financial institutions, energy service providers, utilities, municipal utilities, industrial end users, wholesale power marketers, and any other entity that would have a need to purchase bundled energy and RECs or unbundled RECs.

Table 1 – Acceptable Product Types

Product Types:	Bundled Energy and Unbundled RECs
Minimum Term:	1 month
Maximum Term:	5 years (60 months)
Delivery Window:	Start no earlier than X, End no later than X+60 months ¹
Point of Delivery:	Point of Interconnection of the Project to the CAISO Grid or WREGIS Account
Min Volume:	No Min

A. Definition of Products

SDG&E is required to serve its customers with 33% of retail sales from renewable resources by December 31, 2020, with reasonable progress made in 2017-2019 (“Compliance Period” or “CP” 3). Following CP3, the renewable procurement requirements are: (a) 44% of retail sales by December 31, 2024, with reasonable progress made in 2021-2023 (CP4); (b) 52% of retail sales by December 31, 2027, with reasonable progress made in 2025-2026 (CP5); (c) 60% of retail sales by December 31, 2030, with reasonable progress made in 2028-2029 (CP6); and (d) 60% of retail sales for all subsequent CPs.

SDG&E must meet these goals by procuring renewable resources that meet the requirements of the products outlined in Public Utilities Code 399.16(b). A summary of two eligible product types is provided below:

(Public Utilities Code 399.16(b)(1)(A-B)): Bundled Energy Products

¹ Respondent to propose dates for purchase, start date can be in 2019 or a subsequent year (See “Delivery Period” in RFP WSP Agreement).

- Must have first point of interconnection (“POI”) with a California Balancing Authority (“CBA”); **or**
- Must have first POI with distribution facilities used to serve end users within a CBA; **or**
- Must be scheduled from the eligible renewable resource (“ERR”) into a CBA without substituting electricity from another source²; **or**
- Have an agreement to dynamically transfer electricity to a CBA.

(Public Utilities Code 399.16(b)(3): Unbundled Renewable Energy Credits (“RECs”))

- ERR products, or any fraction of the electricity generated, **including unbundled RECs**, that do not qualify under 399.16(b)(1-2).

The table below provides a high level overview of product types being offered in this RFP. A more detailed discussion of RFP eligibility requirements is provided in Section 7.0 “Products & Eligibility Requirements.” SDG&E will also consider annual bids for less than the full compliance period, and bids for projects beyond Compliance Period 3.

Table 2 – Product Types by Compliance Period

	Compliance Period 2: January 1, 2014- December 31, 2016	Compliance Period 3: January 1, 2017- December 31, 2020	Compliance Period 4: January 1, 2021 Forward	
Bundled Energy Product	N/A	Volume As Bid	Volume As Bid	
Unbundled RECs		Volume As Bid	Volume As Bid	Volume As Bid

SDG&E is not selling Resource Adequacy (“RA”) with any of these transactions. The final portfolio sale will be shaped as specified by the seller in the bid form. Offered resources may be:

- 1) Re-powered or existing facilities;
- 2) New facilities;
- 3) New facilities that are scheduled to come online during the years specified in this RFP; and/or
- 4) Other facilities.

² If using another source to provide real-time ancillary services required to maintain an hourly or sub-hourly import schedule into a CBA is permitted, but only the fraction generated by the ERR will count as a bundled energy product.

B. Transaction Documents

a) Bundled Energy Products

Respondents bidding on bundled energy products must mark up a Western Systems Power Pool (“WSPP”) Agreement. Any resulting agreement shall be subject to CPUC approval. Additional respondent criteria are described in Section 7.0 “Products & Eligibility Requirements.”

b) Unbundled REC Agreements

Respondents bidding on unbundled RECs products must mark up SDG&E’s WSPP Agreement. Any resulting agreement shall be subject to CPUC approval. Additional eligibility requirements are described in Section 7.0 “Products & Eligibility Requirements.”

2.0 RFP WEBSITE AND COMMUNICATIONS

The RFP and all subsequent revisions and documents are available for download from the RFP Website []. Potential Respondents are responsible for monitoring the RFP Website for subsequent updates, notices and postings.

~~The RFP website contains RFP forms and documents, RFP Schedule, and a Question and Answer forum.~~

Offers for the 2018 RPS REC Sale RFP must be submitted through the PowerAdvocate® website. Offerors intending to submit an Offer but who do not yet have an existing account with PowerAdvocate® must first register to create a username/password to receive access to the event. See below for instructions to log in/register:

Logging In

You access the PowerAdvocate platform via a web browser.

To log in

1. Open a web browser and go to www.poweradvocate.com.

PowerAdvocate functions in most web browsers; however, using browsers other than Internet Explorer (IE) version 6 or higher may cause certain functionality to work unexpectedly. Should you encounter problems, PowerAdvocate support may be unable to provide assistance until the issue has been replicated in a supported version of Internet Explorer.

2. Click **Login**.

The Login page appears; you may wish to bookmark it for quick access.

3. Enter your account **User Name** and **Password**.

Both are case-sensitive.

If you do not have an account, go to poweradvocate.com and click the **Registration** link at the top of the page. If you have an account but do not remember your user information, click **Forgot User Name** or **Forgot Password** and they will be emailed to you.

4. Click **Login**.

First-time users must register as a **Supplier** using the instructions above and the Referral information below to access the RFP event:

Referral Information

Are you registering for a specific Event: * Yes
 No, I would simply like to register.

Who referred you to this Event: *

Name of that individual's company: *

Name or description of the Event: *

[Users with an existing PowerAdvocate® account may request access to the event by searing open RFPS or by using the link below:](#)

[Public Registration Link: \[\]](#)

All questions or other communications regarding this RFP must be submitted via email to RECsaleRFP@semprautilities.com by the ~~DEADLINE TO SUBMIT QUESTIONS~~ as specified in ~~Section 3.0 RFP Schedule: []~~ and **MUST** cc [\[\]](#). SDG&E will not accept questions or comments in any other form, except at the bidder's Conference. [Question submitted after the deadline as specified in the RFP Schedule will only be answered at the sole discretion of SDG&E or the IE. All questions and their answers will be posted publicly on this website anonymously soon after receipt. We cannot respond directly to or confidentially to any questions.](#)

3.0 RFP SCHEDULE

The following schedule and deadlines apply to this RFP. SDG&E reserves the right to revise this schedule at any time and in SDG&E's sole discretion. Respondents are responsible for accessing the RFP Website for updated schedules and possible amendments to the RFP or the solicitation process.

NO.	ITEM	APPROX. DATE
1.	RFP Issued	[]
2.	Pre-Bid Conference (Webinar)	[]
3.	DEADLINE TO SUBMIT QUESTIONS Question submittal cut-off date. Answers to all questions will be posted on the website no later than 3 business days following question submittal cutoff date	[]
4.	CLOSING DATE: Offers must be emailed to and received by the RFP email inbox no later than NOON (Pacific Standard Time).	[]
5.	SDG&E notifies the CPUC (Executive Director) that the RFP has closed.	[]
6.	SDG&E notifies shortlisted Bidder(s).	[]
7.	Letter due from shortlisted Bidders indicating: a. Withdrawal from SDG&E's solicitation; OR b. Acceptance of the shortlisted position and binding price confirmation.	[]
8.	SDG&E submits FINAL list of shortlisted Bidders to Commission and PRG.	[]
9.	SDG&E issues appreciation notices to unsuccessful Bidders.	[]
10.	SDG&E commences with Transaction Document negotiations.	[]
11.	SDG&E submits Tier 1 or Tier 3 Advice Letter(s) with agreements for Commission approval.	[]

PRE-BID CONFERENCES

SDG&E will host one pre-bid webinar conference on []. While encouraged, participation in the pre-bid conference is NOT mandatory to submit an offer. Please monitor the RFP Website periodically. The venue and time of the pre-bid conference will be posted as soon as arrangements are finalized.

Any party interested in attending this pre-bid conference and/or webinar should email the following information to RECSaleRFP@semprautilities.com. Please limit your participation to two representatives per organization.

- Company name

- Attendees' names, titles and contact information

4.0 RFP RESPONSE INSTRUCTIONS

Forms are available on the RFP Website. The failure to provide the listed information may result in the bids being deemed non-conforming and may disqualify the proposal from further consideration.

Required Forms for Bundled Energy Product Offers:

- 1) Participation Summary [and Bid Form](#)
- ~~2) Bid Form~~
- ~~3)2) Credit Application~~
- ~~4)3) Transaction Document – Respondents shall populate and redline the Transaction Agreement.~~

Required Forms for Unbundled REC Offers:

- 1) Participation Summary [and REC Bid Form](#)
- ~~2) REC Bid Form~~
- ~~3)2) Credit Application~~
- ~~4) Model REC Agreement~~
- ~~5)3) The Participation Summary and redlines to the Transaction Document must To be in Word or Word-compatible format (not in PDF). The Pricing Form must be in Excel or Excel-compatible format (not in PDF). The Credit Application must be submitted in Word or Word-Compatible format (or in PDF), provided by SDG&E at time of shortlisting.~~

Submissions containing unsolicited materials, ~~submissions in ZIP archives or other compressed formats~~, or submissions of individual [bidOffer](#) documents in file formats other than the formats of the original [bidOffer](#) forms, will be rejected. This RFP is an electronic only Solicitation; Respondents need not submit paper documents, ~~or~~ [nor](#) e-binders.

~~Any party interested in submitting an offer must submit the offer via electronic mail (email) to RECSaleRFP@semprautilities.com, which is the RPS RFP inbox, and attach all required forms and bid materials to the email. All offers must be emailed no later than 12:00 p.m. (i.e. Noon), Pacific Time, on the CLOSING DATE (see RFP Schedule). The Subject line of the email should be as follows: Bid Submission for SDG&E's 2018 Request for Proposal for sale Eligible Renewable Resources. A reply email from the RPS RFP inbox will be sent to the email address submitting the offer to confirm receipt of the offer.~~

~~If Respondents encounter technical difficulties with emailing, they should provide evidence of such difficulties (e.g. a screen shot of the error message) and email the bid again to the RPS RFP inbox by 1:00 p.m., Pacific Time, on the Closing Date. If the Respondent encounters further technical difficulties with the RPS RFP inbox, they should provide evidence of such difficulties (e.g. a screen shot of the error message or a sent email notice with a time stamp before 1:00 p.m. on the Closing Date) and submit a hard copy and a CD of the bid package to SDG&E and the Independent Evaluator at the addresses below by close of business on the day following the Closing Date.~~

~~San Diego Gas & Electric Company
Electric and Fuel Procurement Department
Attn: 2018 Request For Proposal for
Renewable Energy Products
8315 Century Park Court, CP21D
San Diego, CA 92123-1593~~

~~Independent Evaluator (IE)
To Be Determined~~

All offer materials submitted in accordance with the above Response Instructions shall be subject to the confidentiality provisions of Section ~~44~~10 “Confidentiality” of this RFP.

SDG&E will review and may utilize all information, if any, submitted by a Respondent that is not specifically requested as a part of any forms. During all stages of the RFP process, SDG&E reserves the right to request additional information from individual Respondents or to request any Respondent to submit supplemental materials in fulfillment of the content requirements of this RFP or to meet additional information needs. SDG&E also reserves the unilateral right to waive any technical or format requirements contained in the RFP.

~~All bids shall be valid and binding.~~

~~SDG&E will not reimburse respondents for their expenses under any circumstances, regardless of whether the RFP process proceeds to a successful conclusion or is abandoned by SDG&E in its sole discretion.~~ ALL BIDS SHOULD BE VALID AND BINDING FOR THE DURATION OF THE RFP.

SDG&E WILL NOT REIMBURSE RESPONDENTS FOR THEIR EXPENSES UNDER ANY CIRCUMSTANCES, REGARDLESS OF WHETHER THE RFP PROCESS PROCEEDS TO A SUCCESSFUL CONCLUSION OR IS ABANDONED BY SDG&E IN ITS SOLE DISCRETION.

5.0 RPS PROGRAM PARAMETERS

CALIFORNIA RPS PROGRAM

California's Renewable Portfolio Standard ("RPS") Program was adopted in 2002 and is codified at Public Utility Code sec 399.11, *et seq.*³ In adopting the RPS legislation, the Legislature specifically found and declared that increasing California's reliance on renewable energy resources promotes the purpose of and may accomplish each of the following:

- Increase the diversity, reliability, public health and environmental benefits of the energy mix
- Promote stable electricity prices
- Protect public health and improve environmental quality
- Stimulate sustainable economic development and create new employment opportunities
- Reduce reliance on imported fuels
- Ameliorate air quality problems
- Improve public health by reducing the burning of fossil fuels

Current law requires all California load-serving entities ("LSEs") to procure renewable energy in the amount of 33% of retail sales by 2020⁴. Unlike the prior annual RPS program, the 33% regime sets increasing targets for three multi-year Compliance Periods ("CPs"). The targets are set at 20% by the end of CP1 (2011-2013), 25% at the end of CP2 (2014-2016), and 33% by the end of CP3 (2017-2020). Following CP3, the renewable procurement requirements are: (a) 44% of retail sales by December 31, 2024, with reasonable progress made in 2021-2023 ("CP4"); (b) 52% of retail sales by December 31, 2027, with reasonable progress made in 2025-2026 ("CP5"); (c) 60% of retail sales by December 31, 2030, with reasonable progress made in 2028-2029 ("CP6"); and (d) 60% of retail sales for all subsequent CPs.⁵ The CPUC issued its first decision implementing the RPS Program, D.03-06-071 on June 19, 2003. This decision established certain basic RPS Program parameters. The CPUC has subsequently issued several additional RPS-related decisions in rulemaking proceeding R.04-04-026, and successor proceedings R.06-02-012, R.06-05-027, R.08-08-009, R.11-05-005, and R.15-02-020. SDG&E will comply with all CPUC decisions governing RPS procurement. These decisions are publicly available on the CPUC's website at <http://www.cpuc.ca.gov/PUC/energy/Renewables/decisions.htm>.

This RFP is being conducted in compliance with relevant statutory and regulatory directives. Requirements set forth within the law and all directives shall be incorporated herein by reference. A full text of the law and the above-mentioned CPUC decisions can be downloaded from the CPUC

³ See, Senate Bill (SB) 1078 (Stats. 2002 Ch. 516), as amended by SB 107, (Stats. 2006, Ch. 464).

⁴ See, Senate Bill (SB) 2 (1x) (Simitian), stats. 2011, ch. 1

⁵ [On September 10, 2018, SB 100, which sets new RPS targets for the final year of each CP and changes the 2030 RPS target to 60%, was signed into law by Governor Brown.](#)

website. Respondents are encouraged to review all RPS-related, CPUC issued directives available on the same Internet websites and are responsible for understanding and abiding by all RPS provisions.

RPS ELIGIBILITY CRITERIA

Resources being offered in this solicitation are certifiable as an “eligible renewable resource” by the CEC. Eligibility criteria are set forth by the CEC in its Renewable Portfolio Standard Eligibility Guidebook, which can be downloaded from the CEC's website at <http://www.energy.ca.gov/renewables/documents/index.html>. Respondents are encouraged to review all RPS-related, CEC issued directives available on the same Internet website and are responsible for understanding and abiding by all RPS provisions. All requirements set forth within the CEC's guidebooks and all RPS-related documents shall be incorporated herein by reference.

PROCUREMENT REVIEW GROUP

The Procurement Review Group (“PRG”), a CPUC-endorsed entity, is composed of non-market participants such as ratepayers’ advocacy groups, state energy commissions, power authorities, utility-related labor unions and other non-commercial, energy-related special interest groups. CPUC Decision D.03-06-071 established the role of the PRG. The PRG is charged with overseeing the IOU’s procurement process, reviewing procedural fairness, examining overall procurement prudence and providing feedback during all stages. From RFP language development to offer evaluation to contract negotiation, IOUs brief the PRG on a periodic basis during the entire process.

Respondents are hereby notified that revealing confidential offer information to the PRG is required during PRG briefings in accordance with Section 11 (“Confidentiality”). Each Respondent must clearly identify, as part of its offer, what type of information it considers to be confidential.

INDEPENDENT EVALUATOR

The CPUC requires each IOU to use an Independent Evaluator to separately evaluate and report on the IOU’s entire solicitation, evaluation, and selection process for this solicitation. This will serve as an independent review of SDG&E’s implementation of the RFP process and final selections. The Independent Evaluator shall make periodic presentations regarding its findings to the IOU, and the IOU’s PRG including the CPUC Energy Division staff. The intent is to preserve the independence of the Independent Evaluator by ensuring free and unfettered communication between the Independent Evaluator and the CPUC as well as an open, fair, and transparent process that the Independent Evaluator can affirm.

SDG&E is committed to ensuring an open and transparent solicitation, and to providing a fair, reasonable and competitive process.

6.0 SDG&E BACKGROUND

SDG&E provides electricity to 3.46 million consumers. It delivers the electricity through 1.4 million meters in San Diego County and an adjacent portion of southern Orange County. SDG&E also delivers natural gas through 855,873,000 meters in San Diego County and transports electricity and natural gas for others. ~~The electric customer base comprises 89% residential and 11% commercial and industrial customers.~~

SDG&E's electric transmission network is comprised of 430,140 substations with 884,938 miles of 69-kV, 265,256 miles of 138-kV, 349,564 miles of 230-kV, and 215,249 miles of 500-kV transmission lines. Local ("on system") generating resources include the ~~Encina plant (connected)~~ Carlsbad Energy Center (~~interconnected~~ into SDG&E's grid at 138 kV and 230 kV), the Palomar Energy Center (~~connected~~ interconnected at 230kV), the Otay Mesa Energy Center (~~interconnected~~ at 230kV), the Pio Pico Energy Center (~~interconnected~~ at 230kV), and a number of combustion turbine facilities located around the service area (~~connected~~ interconnected at 69 kV). The majority of imported resources are received from the east via the Miguel Substation as the delivery point for power flow on the Southwest Power Link and Sunrise, which are SDG&E's 500-kV transmission lines that ~~run from~~ traverse Arizona ~~to~~ into San Diego along the U.S./Mexico border, and from the north via the San Onofre 230-kV switchyard.

The figure below shows a simplified diagram of existing SDG&E's service area, which encompasses an area of 4,100 square-miles and spans 2 counties and 25 communities.



For a map California IOU service territories please visit:

http://www.energy.ca.gov/maps/serviceareas/electric_service_areas.html

7.0 PRODUCTS & ELIGIBILITY REQUIREMENTS

A. Compliance Periods.

In this RFP, SDG&E intends to offer bundled and unbundled RECs for the periods defined in Table 2 of this document. Such products are defined below.

I. Bundled Energy Products

- a. Term: 5 years or less
- b. Pricing: Index Price plus Green Attributes Price \$/MWh
- c. Volume: To be bid in

II. Unbundled REC Products

- a. Term: 5 years or less
- b. Pricing: Bid REC price expressed in \$/MWh
- c. Volume: To be bid in

Eligibility Requirements

1. WREGIS Account; and
2. Credit Capability (See Section 12.0 “Credit Terms and Conditions”).

8.0 EVALUATION CRITERIA AND SHORTLISTING

All incoming Bids will be assessed for conformance to the RFP requirements. Respondents shall conform to the minimum eligibility criteria in order to be considered, please see RFP Response Instructions.

SDG&E will utilize all the information provided in the required forms and narratives to evaluate all Bids. Respondents are responsible for the accuracy of all information provided in response to this RFP.

SDG&E will periodically brief the members of the PRG during the various stages of evaluation. Upon completion of SDG&E's evaluation process, SDG&E will brief the PRG members regarding SDG&E's recommendations for its shortlist. Based upon the comments and recommendations received from the PRG, SDG&E may modify the preliminary list of shortlisted bids.

QUANTITATIVE EVALUATION

SDG&E evaluates and ranks bids based on the pricing, volume and term information provided by the Bidders. SDG&E's analysis evaluates both quantitative and qualitative aspects of each bid to estimate its value to SDG&E's customers and its relative value in comparison to other Offers. SDG&E considers the value of selling surplus Renewable Energy as compared to the potential value of using surplus such Renewable Energy to defer future RPS purchases to meet RPS compliance targets through banking. The quantitative valuation of an Offer takes into account SDG&E's RPS position and any opportunity costs associated with each transaction. A bid that minimizes overall cost to SDG&E's customers and satisfies all volumetric and timing constraints will be selected. The Offer will be shortlisted if it fulfills the quantitative and qualitative criteria and SDG&E decides to move forward to close a transaction.

QUALITATIVE EVALUATION

Qualitative factors and benefits may be used to determine advancement onto the shortlist or evaluate tie-breakers, if any.

ADHERENCE TO TERMS AND CONDITIONS

Respondents may not make material modification to the supplied Transaction Documents. SDG&E will review modifications of any terms and conditions proposed in the Offer and consider the materiality of these changes. Material changes will result in disqualification.

BID CONFORMANCE EVALUATION

In addition to the elements described above, SDG&E may also reject a Bid if:

1. SDG&E uncovers evidence of market manipulation in the bid preparation and Offer process;

2. The Respondent does not provide adequate evidence it meets minimum participation criteria;
3. If there is a question as to whether the bids meet minimum eligibility criteria;
4. If the Respondent cannot fulfill the terms and conditions of the supplied Transaction Documents;
5. If the Respondent is unable to comply with RFP timing and other solicitation requirements; and/or
6. Respondent in SDG&E's sole judgment may not be able to provide or maintain the level of security of the transaction.

9.0 REJECTION OF OFFERS

WHILE SDG&E IS MINDFUL OF THE BENEFITS OF THIS RFP, IT MAKES NO GUARANTEE THAT A CONTRACT AWARD SHALL RESULT FROM THIS RFP EVEN AFTER A BID HAS BEEN SHORTLISTED. IN ADDITION, SDG&E NOTES THAT SHORTLISTING A BID DOES NOT CONSTITUTE SDG&E ACCEPTANCE OF ALL REDLINED CHANGES TO THE REQUIRED TRANSACTION AGREEMENT. SDG&E RESERVES THE RIGHT AT ANY TIME, AT ITS SOLE DISCRETION, TO ABANDON THIS RFP PROCESS, TO CHANGE THE BASIS FOR EVALUATION OF BIDS, TO TERMINATE FURTHER PARTICIPATION IN THIS PROCESS BY ANY PARTY, TO ACCEPT ANY BID OR TO ENTER INTO ANY DEFINITIVE AGREEMENT, TO EVALUATE THE QUALIFICATIONS OF ANY RESPONDENT OR THE TERMS AND CONDITIONS OF ANY BID, OR TO REJECT ANY OR ALL BIDS, ALL WITHOUT NOTICE AND WITHOUT ASSIGNING ANY REASONS AND WITHOUT LIABILITY OF SEMPRA ENERGY, SDG&E, OR ANY OF THEIR SUBSIDIARIES, AFFILIATES, OR REPRESENTATIVES TO ANY RESPONDENT. SDG&E SHALL HAVE NO OBLIGATION TO CONSIDER ANY BID.

10.0 CONFIDENTIALITY

EXCEPT AS STATED BELOW OR WITH THE PRIOR WRITTEN CONSENT OF SDG&E, RESPONDENTS MAY NOT DISCLOSE (OTHER THAN BY ATTENDANCE ALONE AT ANY MEETING TO WHICH MORE THAN ONE RESPONDENT IS INVITED BY SDG&E) TO ANY OTHER RESPONDENT OR POTENTIAL RESPONDENT THEIR PARTICIPATION IN THIS RFP, AND RESPONDENTS MAY NOT DISCLOSE, COLLABORATE ON, OR DISCUSS WITH ANY OTHER RESPONDENT, OFFER STRATEGIES OR THE SUBSTANCE OF OFFERS, INCLUDING WITHOUT LIMITATION THE PRICE OR ANY OTHER TERMS OR CONDITIONS OF ANY INDICATIVE OR FINAL OFFER. RESPONDENT MAY DISCLOSE THEIR PARTICIPATION IN THIS RFP, THEIR OFFER INFORMATION, AND THE NEGOTIATION PROCESS, TO THE CPUC, ITS STAFF, THE PRG AND THE IE UNDER APPROPRIATE CONFIDENTIALITY PROTECTIONS.

SDG&E WILL USE THE HIGHER OF THE SAME STANDARD OF CARE IT USES WITH RESPECT TO ITS OWN PROPRIETARY OR CONFIDENTIAL INFORMATION OR A REASONABLE STANDARD OF CARE TO PREVENT DISCLOSURE OR UNAUTHORIZED USE OF RESPONDENT'S CONFIDENTIAL AND PROPRIETARY INFORMATION THAT IS LABELED AS "PROPRIETARY AND CONFIDENTIAL" ON THE OFFER PAGE ON WHICH THE PROPRIETARY INFORMATION APPEARS ("CONFIDENTIAL INFORMATION"). RESPONDENT SHALL SUMMARIZE ELEMENTS OF THE OFFER(S) IT DEEMS CONFIDENTIAL. THE SUMMARY MUST CLEARLY IDENTIFY WHETHER PRICE, PROJECT NAME, LOCATION, SIZE, TERM OF DELIVERY AND TECHNOLOGY

TYPE (EITHER COLLECTIVELY OR INDIVIDUALLY) ARE TO BE CONSIDERED CONFIDENTIAL INFORMATION. CONFIDENTIAL INFORMATION MAY BE MADE AVAILABLE ON A “NEED TO KNOW” BASIS TO SDG&E’S DIRECTORS, OFFICERS, EMPLOYEES, CONTRACTORS, CONSULTANTS, THE INDEPENDENT EVALUATOR, AGENTS AND ADVISORS (“REPRESENTATIVES”) FOR THE PURPOSE OF EVALUATING RESPONDENT’S OFFER, BUT SUCH REPRESENTATIVES SHALL BE REQUIRED TO OBSERVE THE SAME CARE WITH RESPECT TO DISCLOSURE AS SDG&E.

NOTWITHSTANDING THE FOREGOING, SDG&E MAY DISCLOSE ANY OF THE CONFIDENTIAL INFORMATION TO COMPLY WITH ANY LAW, RULE, OR REGULATION OR ANY ORDER, DECREE, SUBPOENA OR RULING OR OTHER SIMILAR PROCESS OF ANY COURT, SECURITIES EXCHANGE, CONTROL AREA OPERATOR, GOVERNMENTAL AGENCY OR GOVERNMENTAL OR REGULATORY AUTHORITY AT ANY TIME EVEN IN THE ABSENCE OF A PROTECTIVE ORDER, CONFIDENTIALITY AGREEMENT OR NON-DISCLOSURE AGREEMENT, AS THE CASE MAY BE, WITHOUT NOTIFICATION TO THE RESPONDENT AND WITHOUT LIABILITY OR ANY RESPONSIBILITY OF SDG&E TO THE RESPONDENT.

IT IS EXPRESSLY CONTEMPLATED THAT MATERIALS SUBMITTED BY A RESPONDENT IN CONNECTION WITH THIS RFP WILL BE PROVIDED TO THE CPUC, ITS STAFF, THE CEC, ITS STAFF, AND THE PRG. SDG&E WILL SEEK CONFIDENTIAL TREATMENT PURSUANT TO CPUC DECISION NUMBER 06-06-066 AND ITS SUCCESSIVE DECISIONS, PUBLIC UTILITIES CODE SECTION 583 AND GENERAL ORDER 66-D OF THE CPUC, WITH RESPECT TO ANY RESPONDENT CONFIDENTIAL INFORMATION SUBMITTED BY SDG&E TO THE CPUC FOR THE PURPOSES OF OBTAINING REGULATORY APPROVAL. SDG&E WILL ALSO SEEK CONFIDENTIALITY PROTECTION FROM THE CEC FOR RESPONDENT’S CONFIDENTIAL INFORMATION AND WILL SEEK CONFIDENTIALITY AND/OR NON-DISCLOSURE AGREEMENTS WITH THE PRG. SDG&E CANNOT, HOWEVER, ENSURE THAT THE CPUC OR CEC WILL AFFORD CONFIDENTIAL TREATMENT TO A RESPONDENT’S CONFIDENTIAL INFORMATION OR THAT CONFIDENTIALITY AGREEMENTS OR ORDERS WILL BE OBTAINED FROM AND/OR HONORED BY THE PRG, CEC, OR CPUC.

SDG&E, ITS REPRESENTATIVES, SEMPRRA ENERGY, AND ANY OF THEIR SUBSIDIARIES DISCLAIM ANY AND ALL LIABILITY TO A RESPONDENT FOR DAMAGES OF ANY KIND RESULTING FROM DISCLOSURE OF ANY OF RESPONDENT’S INFORMATION.

11.0 CREDIT TERMS AND CONDITIONS

SDG&E has the unilateral right to evaluate and determine the credit-worthiness of the Respondent relative to this RFP. The Respondent is required to complete, execute and submit the RFP credit application as part of its offer. The application requests financial and other relevant information needed to demonstrate creditworthiness. Respondents may download the application from the RFP Website.

Winning Respondents will be required to comply with the Credit and, Collateral and Service Warrantee/Guarantee requirements set forth in the Transaction Agreement. The amount of such requirements will be determined by SDG&E at the time of shortlisting and will be based on product, deliveries, price, and term, among other variables. For clarity, bidders should not include credit costs within their bid price (note: respondents are required to provide information regarding the added cost of collateral per [insert amount] increment to satisfy the initial collateral requirement if SDG&E decides not to extend unsecured credit – this information will be gathered via the credit application form. These costs will be considered as discussed in the quantitative evaluation section within this document).

12.0 CPUC APPROVAL

SDG&E shall submit all signed agreements to the CPUC for approval. CPUC approval that is final and non-appealable will be required as a condition precedent to the ~~effectiveness~~effective date of any contract resulting from this RFP. Deliveries under any contract will not start prior to CPUC approval.



APPENDIX 109.C

20182019 RPS SALES OFFER FORM

Renewable Products Offer Form (RPS REC Sale RFP)



General Instructions

Form Field Key:

Free Form Field
Pull Down Menu

Instructions:

- Follow instructions as they appear in each fields' comments or pop-up messages
- Complete ALL fields. Enter N/A if the question is not applicable. Don't put units in the cells, just the raw numbers. (i.e. 10, not 10 MWh)
- Fill out all fields in the units requested
- Do not add, change, or move any cells, rows, columns or worksheets in the workbook
- Confidential Information should be entered in Red Font
- Limit and focus the discussion of the free form fields
- Submit One Offer Form per offer variation
- There is no limit on the number of Forms that can be submitted. Therefore, respondents are encouraged, but not required, to submit additional offers for our consideration, such as bids with different tenors and escalators

Company Information

Company Name Submitting Offer:	
Company Name on Potential Contract:	
Company Address:	
Company City:	
Company State:	
Company Zip:	
Company Country:	
Is the company Women/Minority/Disabled Veteran owned Business Enterprise as per CPUC General Order 156?	
How did the company hear of the RFD? (SDG&E website, SDG&E email, Colleague, Other (please elaborate))	
Does the Developer have the appropriate experience?	

Company Representative

	Primary Contact	Secondary Contact
Contact Name:		
Contact Title:		
Office Number:		
Cell Number:		
Email:		
Is the Respondent an affiliate of SDG&E?		
Does the Respondent have one or more contracts with SDG&E?		

Corporate Profile and Experience

Describe your corporate background and organizational structure for the project. Please submit a complete organizational chart with all affiliates and parents.	
You must list all companies who participated in putting together this offer and who helped prepare documents.	

Product Information	
Product Type:	
Point of Delivery:	

Comments / Other Information
Is there additional relevant information necessary for SDG&E to evaluate the merits of the proposal?

Quantitative Description

Please determine whether delivery term will be monthly OR annually. Provide Bid Quantity and Bid Price in the schedule below.

Annually		
Date	Bid Quantity (MWhs or RECs)	Index Price + Green Attributes Price (\$/MWh)
<u>Nov-2018</u>		
<u>Nov-2019</u>		
<u>Nov-2020</u>		
<u>Nov-2021</u>		
<u>Nov-2022</u>		
<u>Nov-2023</u>		
<u>Nov-2024</u>		
<u>Nov-2025</u>		
<u>Nov-2026</u>		
<u>Nov-2027</u>		
<u>Oct-2028</u>		

Monthly		
Date	Bid Quantity (MWhs or RECs)	Index Price + Green Attributes Price (\$/MWh)
<u>Nov-2018</u>		
<u>Dec-2018</u>		
<u>Jan-2019</u>		
<u>Feb-2019</u>		
<u>Mar-2019</u>		
<u>Apr-2019</u>		
<u>May-2019</u>		
<u>Jun-2019</u>		
<u>Jul-2019</u>		
<u>Aug-2019</u>		
<u>Sep-2019</u>		
<u>Oct-2019</u>		
<u>Nov-2019</u>		
<u>Dec-2019</u>		
<u>Jan-2020</u>		
<u>Feb-2020</u>		
<u>Mar-2020</u>		
<u>Apr-2020</u>		
<u>May-2020</u>		
<u>Jun-2020</u>		
<u>Jul-2020</u>		
<u>Aug-2020</u>		
<u>Sep-2020</u>		
<u>Oct-2020</u>		
<u>Nov-2020</u>		
<u>Dec-2020</u>		
<u>Jan-2021</u>		
<u>Feb-2021</u>		
<u>Mar-2021</u>		
<u>Apr-2021</u>		
<u>May-2021</u>		

<u>Jun-2021</u>		
<u>Jul-2021</u>		
<u>Aug-2021</u>		
<u>Sep-2021</u>		
<u>Oct-2021</u>		
<u>Nov-2021</u>		
<u>Dec-2021</u>		
<u>Jan-2022</u>		
<u>Feb-2022</u>		
<u>Mar-2022</u>		
<u>Apr-2022</u>		
<u>May-2022</u>		
<u>Jun-2022</u>		
<u>Jul-2022</u>		
<u>Aug-2022</u>		
<u>Sep-2022</u>		
<u>Oct-2022</u>		
<u>Nov-2022</u>		
<u>Dec-2022</u>		
<u>Jan-2023</u>		
<u>Feb-2023</u>		
<u>Mar-2023</u>		
<u>Apr-2023</u>		
<u>May-2023</u>		
<u>Jun-2023</u>		
<u>Jul-2023</u>		
<u>Aug-2023</u>		
<u>Sep-2023</u>		
<u>Oct-2023</u>		
<u>Nov-2023</u>		
<u>Dec-2023</u>		
<u>Jan-2024</u>		
<u>Feb-2024</u>		

<u>Mar-2024</u>		
<u>Apr-2024</u>		
<u>May-2024</u>		
<u>Jun-2024</u>		
<u>Jul-2024</u>		
<u>Aug-2024</u>		
<u>Sep-2024</u>		
<u>Oct-2024</u>		
<u>Nov-2024</u>		
<u>Dec-2024</u>		
<u>Jan-2025</u>		
<u>Feb-2025</u>		
<u>Mar-2025</u>		
<u>Apr-2025</u>		
<u>May-2025</u>		
<u>Jun-2025</u>		
<u>Jul-2025</u>		
<u>Aug-2025</u>		
<u>Sep-2025</u>		
<u>Oct-2025</u>		
<u>Nov-2025</u>		
<u>Dec-2025</u>		
<u>Jan-2026</u>		
<u>Feb-2026</u>		
<u>Mar-2026</u>		
<u>Apr-2026</u>		
<u>May-2026</u>		
<u>Jun-2026</u>		
<u>Jul-2026</u>		
<u>Aug-2026</u>		
<u>Sep-2026</u>		
<u>Oct-2026</u>		
<u>Nov-2026</u>		

<u>Dec-2026</u>		
<u>Jan-2027</u>		
<u>Feb-2027</u>		
<u>Mar-2027</u>		
<u>Apr-2027</u>		
<u>May-2027</u>		
<u>Jun-2027</u>		
<u>Jul-2027</u>		
<u>Aug-2027</u>		
<u>Sep-2027</u>		
<u>Oct-2027</u>		
<u>Nov-2027</u>		
<u>Dec-2027</u>		
<u>Jan-2028</u>		
<u>Feb-2028</u>		
<u>Mar-2028</u>		
<u>Apr-2028</u>		
<u>May-2028</u>		
<u>Jun-2028</u>		
<u>Jul-2028</u>		
<u>Aug-2028</u>		
<u>Sep-2028</u>		
<u>Oct-2028</u>		

Note: Tables below are illustrative and start/stop months are subject to change based on the timing in which SDG&E launches a solicitation.

Annually		
Date	Bid Quantity (MWhs or RECs)	Index Price + Premium (\$/MWh)
<u>Nov-2019</u>		
<u>Nov-2020</u>		
<u>Nov-2021</u>		
<u>Nov-2022</u>		
<u>Nov-2023</u>		
<u>Nov-2024</u>		

Monthly		
Date	Bid Quantity (MWhs or RECs)	Index Price + Premium (\$/MWh)
<u>Jun-2019</u>		
<u>Jul-2019</u>		
<u>Aug-2019</u>		
<u>Sep-2019</u>		
<u>Oct-2019</u>		
<u>Nov-2019</u>		
<u>Dec-2019</u>		
<u>Jan-2020</u>		
<u>Feb-2020</u>		
<u>Mar-2020</u>		
<u>Apr-2020</u>		
<u>May-2020</u>		
<u>Jun-2020</u>		
<u>Jul-2020</u>		
<u>Aug-2020</u>		
<u>Sep-2020</u>		
<u>Oct-2020</u>		
<u>Nov-2020</u>		
<u>Dec-2020</u>		
<u>Jan-2021</u>		
<u>Feb-2021</u>		
<u>Mar-2021</u>		
<u>Apr-2021</u>		
<u>May-2021</u>		

<u>Jun-2021</u>		
<u>Jul-2021</u>		
<u>Aug-2021</u>		
<u>Sep-2021</u>		
<u>Oct-2021</u>		
<u>Nov-2021</u>		
<u>Dec-2021</u>		
<u>Jan-2022</u>		
<u>Feb-2022</u>		
<u>Mar-2022</u>		
<u>Apr-2022</u>		
<u>May-2022</u>		
<u>Jun-2022</u>		
<u>Jul-2022</u>		
<u>Aug-2022</u>		
<u>Sep-2022</u>		
<u>Oct-2022</u>		
<u>Nov-2022</u>		
<u>Dec-2022</u>		
<u>Jan-2023</u>		
<u>Feb-2023</u>		
<u>Mar-2023</u>		
<u>Apr-2023</u>		
<u>May-2023</u>		
<u>Jun-2023</u>		
<u>Jul-2023</u>		
<u>Aug-2023</u>		
<u>Sep-2023</u>		
<u>Oct-2023</u>		
<u>Nov-2023</u>		
<u>Dec-2023</u>		
<u>Jan-2024</u>		
<u>Feb-2024</u>		
<u>Mar-2024</u>		
<u>Apr-2024</u>		
<u>May-2024</u>		
<u>Jun-2024</u>		
<u>Jul-2024</u>		
<u>Aug-2024</u>		
<u>Sep-2024</u>		
<u>Oct-2024</u>		
<u>Nov-2024</u>		



APPENDIX 109.D

20182019 FRAMEWORK FOR ASSESSING POTENTIAL RPS SALES

SDG&E's Framework for Assessing Potential RPS Sales

SDG&E's ~~2018~~2019 RPS Plan addresses the potential sale of ~~excess~~ renewable generation, stating that SDG&E will address opportunities as they arise, and SDG&E will bank or sell based on whether such a sale is beneficial for its customers.¹ SDG&E has previously been directed by the Commission to include a Sales RFP, PPA, and Framework (attached hereto as Appendices ~~10~~, ~~109~~, ~~9~~.A, and ~~109~~.D) if its RPS Plan contemplates selling eligible renewable energy products.² SDG&E has modified these documents as described in Appendix ~~5~~4, and has also included an additional PPA and its offer form (attached hereto as Appendices ~~109~~.B and ~~109~~.C).

I. Products

SDG&E could sell bundled energy and renewable attributes or unbundled Renewable Energy Credits (RECs) from its portfolio. For buyers interested in bundled energy products, SDG&E could sell bundled energy products not generated prior to the effective date of the resale contract (that is, generated on a go-forward basis).³ For buyers interested in unbundled REC products, SDG&E could sell unbundled RECs from any contract within its portfolio.⁴

II. Criteria

SDG&E will consider both quantitative and qualitative criteria when determining whether to bank or sell excess renewable generation. As a threshold matter, if the results of this analysis indicate that a sales scenario would provide the greatest value to customers, then a sale may be pursued. If the banking vs. sales analysis indicates that banking provides the greatest customer value, then the excess generation will likely be banked.

- **Quantitative Criteria**

¹ See Section ~~H.A.4~~ of Attachment A.

² 2016 ACR, p. 13.

³ D.11-12-052, pp. 37, 52.

⁴ D.11-12-052, pp. 36, 56.

- Banking vs. Sales Analysis: As described in more detail under Section H.B4 in Attachment A, SDG&E will consider the time value of revenues from the potential sale, and the potential replacement cost when evaluating potential sales opportunities.
- Impact on Rates: Another consideration is the magnitude of the impact a potential sale will have on customer bills.

- **Qualitative Criteria**

- RPS Position: SDG&E will consider any change in the point at which it may need to procure to fill a future need as a result of either selling or banking ~~excess~~ renewable generation.
- Market Liquidity: It is important to SDG&E that the market for renewable products remains liquid so that sales and purchases on behalf of customers can be made at competitive prices. As one of the three largest retail sellers in the State, SDG&E also has one of the three largest RPS portfolios in the State, and therefore it must consider possible impacts on the market of any potential sales volumes.
- Accounting Rules: SDG&E will consider the potential accounting impacts of selling ~~excess~~ renewable generation. Such impacts may include a scenario in which both the sales contract and the underlying contract(s) supplying the energy for the sales contract are marked to market value in each reporting period in accordance with generally accepted accounting principles. Due to market volatility, the mark to market adjustment may create volatility in SDG&E's financial statements.
- Impact on GHG Reduction Goals and IRP Targets: With the passage of SB 350, the State is moving toward a more holistic planning process with the goal of reducing GHG emissions through a suite of tools, one of which is the RPS program.⁵ As described under Section I2 of Attachment A, SDG&E has taken a strong leadership position with respect to the State's RPS targets, and in doing so has inherently advanced the goals of the IRP. Although the IRP framework is still under development, the impact of any potential sale as it relates to SDG&E's progress towards IRP goals will be incorporated into SDG&E's analysis as appropriate.

⁵ See Section H.C4 of Attachment A.

- Uncertainty: SDG&E's analysis involves assumptions regarding future market pricing and structure, regulatory framework, and legislative goals many years into the future. While SDG&E believes its assumptions to be reasonable, it acknowledges that markets change over time and the future is not predictable; therefore, this risk must be considered when evaluating any potential sale.

Additionally, SDG&E, along with all other public utilities, is required by law to seek and receive authorization from the Commission to sell assets valued above five million dollars that are useful in its services to the public.⁶ In other words, SDG&E's quantitative and qualitative evaluation must determine that the ~~excess~~ generation being sold through the potential resale contract is in fact not needed by customers.⁷

III. Buyers

Potential buyers could contract with SDG&E under various scenarios. One scenario would be by responding to a Sales RFP that SDG&E may issue. As mentioned above, SDG&E's ~~2018~~2019 Plan includes a Sales RFP that SDG&E may choose to issue, and if so, it would receive and evaluate purchase proposals from the market. Another scenario would be through a bilateral transaction. In this scenario, a counterparty may approach SDG&E with an unsolicited proposal, or may be approached by SDG&E. Section ~~H.B.4~~ of Attachment A describes the potential benefits of a bilateral transaction, which is a valuable tool for both purchases and sales due to its flexibility in addressing situations that involve timing constraints and/or complex terms.

IV. Pricing

The overarching goal of SDG&E's sales framework is to identify the best possible outcome for its customers. Given the host of considerations listed above, particularly the intrinsic market uncertainty, establishing either an absolute price target or floor at this juncture would be premature. As with SDG&E's past Commission-approved sales transactions, the appropriate price thresholds of any potential sales opportunity will be dependent upon the results

⁶ Section 851.

⁷ For example, see Commission Resolution E-4741.

of SDG&E's quantitative and qualitative evaluation at the time of the transaction, and its reasonableness will be determined by the Commission as it acts on SDG&E's advice letter requesting approval of the transaction.