Welcome to the SDG&E
May 2013 Request for Offers
Renewable Auction Mechanism (RAM)

SDGE

May 2013 Request for Offers
Renewable Auction Mechanism (RAM)
Pre-Bid Conference

May 29, 2013 | *1pm to 5pm*
Hosted by Web Event Services
Dial–in: ***(866) 793-1340***
Conference ID number is: ***1615314***

Conference Outline

1. Agenda Review and Legal Disclaimer **1:00pm – 1:10pm**	Fernando Valero | Energy Contracts Originator
2. SDG&E and Supplier Diversity **1:10pm - 1:15pm**	Erica Beal | Diverse Business Enterprises Manager
3. RFO Goal, Scope, Evaluation & Process + Q&A Session **1:15pm - 2:30pm**	Fernando Valero | Energy Contracts Originator Barbara Sands | Independent Evaluator Patrick Sheats | Principal Analyst
4. RAM PPA + Q&A Session **2:30pm - 3:30pm**	Fernando Valero | Energy Contracts Originator
5. Transmission & Interconnection + Q&A Session **3:30pm – 5:00 pm**	Ken Parks | Customer Generation Manager Bruno Velosa | Generation Interconnection Team Lead

WDAT & Large/Small Interconnection

2012 CAISO Generator Interconnection

Legal Disclaimers: Anti-Trust Guidelines & Document Conflict

Anti-trust:

All participants in today's meeting shall comply with anti-trust guidelines. These guidelines direct meeting participants to avoid discussions of topics or behavior that would result in anti-competitive behavior, including restraint of trade and conspiracy to create unfair or deceptive business practices or discrimination, allocation of production, imposition of boycotts and exclusive dealing arrangements

Document Conflict:

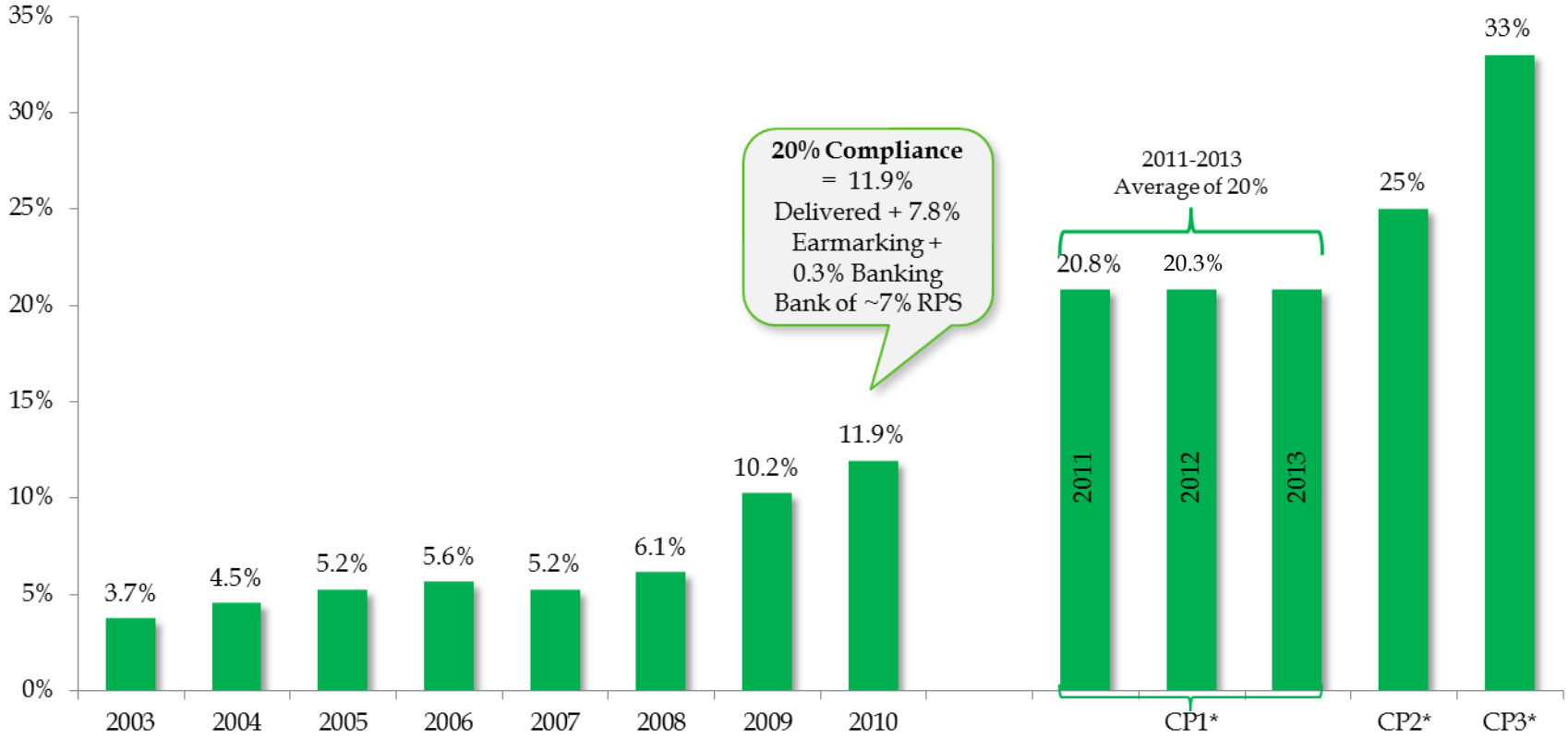
This presentation is intended to be a summary level discussion of the information and requirements established in the November 2012 RAM RFO Materials. To the extent that there are any inconsistencies between the information provided in this presentation and the requirements in the RFO Materials, the RFO Materials shall govern

Welcome & Context

Welcome & SDG&E Values in the Context of the First RAM RFO

- We are delighted to have launched this RFO to continue to bring renewable energy to San Diegans and to help SDG&E meet its RPS targets.
- This is the fourth auction-style RFO issued by SDG&E, but the 13th RFO with a renewables component that SDG&E has launched since 2003. We are committed to meeting the State's RPS goals and to continue to be compliant with RPS regulations.
- SDG&E worked together with the CPUC and other IOUs to develop a successful auction process. We have tried to incorporate lessons learned from the first, second and third RAM RFOs and will continue to watch closely and learn from these solicitations.
- Assessment and selection transparency is paramount to us. Our Independent Evaluator, Barbara Sands, will be involved in every step of the process.

Our Journey and RPS Goals



* Percentages indicate RPS Compliance Requirement

- SDG&E is in compliance with and committed to California's RPS goals
- Since 2012, SDG&E has signed 24 contracts for new and existing renewable resources with over 627 MW expected capacity to be online by 2013-2016

SDG&E and Supplier Diversity

http://www.sempra.com/about/supplier-diversity

Background Diverse Supplier Initiative

General Order (GO) 156

- Adopted by the California Public Utilities Commission in 1986
- Promote greater competition among utility suppliers by expanding the available supplier base and to encourage greater economic opportunity for women, minority, and disabled veteran owned businesses historically left out of utility procurement

Fast Forward to 2011 at SDG&E

- "Advancing supplier diversity is more than just a priority for San Diego Gas & Electric® (SDG&E®); it's become part of our company's DNA." – *Jessie Knight, CEO, SDG&E*
- Supplier diversity goals are part of our compensation goals
- 38% of our procurement dollars going to diverse business enterprises (DBEs)

New GO156 Electric Procurement Reporting Requirements

- Starting in 2011, utilities are required to add separate reporting on electric procurement spending
- During 2012, SDG&E was the first IOU in California to complete electric market wholesale transactions with DBEs
- Electric & Fuel Procurement spend includes DBEs in renewable and conventional markets including today's RAM RFO

Diverse Supplier Certification*

Minority- or woman-owned company

- California Public Utilities Commission (CPUC) Supplier Clearinghouse (free)

Service Disabled Veteran Business

- State of California, General Services Office of Small and Disabled Veteran Business (OSDC)

NMSDC

- Regional affiliates of the National Minority Supplier Development Council (NMSDC)

Others

- Small Business Administration 8(a) (SBA)
- Women Business Enterprise Council (WBEC-WEST)
- State and municipal government agencies

**Certification does not guarantee any business enterprise the right to bid or receive a contract.*

Supplier Diversity Contact Information

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Overview of Schedule, Products, Procurement Targets and Eligibility Requirements

RFO Schedule, aiming to complete PPAs by October 2013

May – Jun. 2013

- RFO issued: May 20, 2013
- Bidders Conference: May 29, 2013, web-conference
- SDG&E begins accepting Bids on: June 3, 2013
- Deadline to Submit Questions: June 6, 2013
- Deadline to Submit Offers: e-mail offers to the RFO inbox by 12 p.m. PST **(noon)** on June 28, 2013

September 2013

- Notification to winning bidders on September 6, 2013
- Bidders' acceptance/withdrawal by September 13, 2013

Sep.-Oct. 2013

- September 16 – October 18; SDG&E notifies next cheapest bidders if projects on the initial shortlist withdraw
- Appreciation letters to unsuccessful bidders sent by October 18, 2013
- PPA execution by October 18, 2013

Expected RAM Results: 47 MWs of Small Scale Renewables

- SDG&E will seek a total of 47 MWs of renewable generation from baseload, peaking and non-peaking products.

Product Type	SDG&E Target Capacity
Baseload (biomass/geothermal)	7 MW
Peaking (Solar)	35 MW
Non-Peaking (Wind)	5 MW
Total	**47 MW**

- Although projects sized between >3-20 MW are eligible, SDG&E's goal is to meet its targeted procurement in each product category. This means that SDG&E's RAM process may result in selection of peaking projects sized at 20 MWs and below, and baseload and non-peaking products sized at 7 and 5 MW and below. SDG&E may procure +/- 20 MW in each product category as long as the total volume procured is at least 20 MW.

Summary of Products and Targets

Product	High-level Description	Target Capacity
Baseload	✓Generation resources which produce energy around-the clock technologies run continuously (typically biomass, geothermal and run of river hydro) ✓ratio of off-peak to total annual deliveries between 43% and 53% ✓located within the service territories of SDG&E, PG&E, or SCE	7 MW
Peaking	✓Generation resources whose energy production follows SDG&E's hourly load profile during daytime hours ✓ratio of off-peak to total annual deliveries less than 43% ✓located within the service territories of SDG&E, PG&E, or SCE	35 MW
Non-Peaking	✓Generation resources whose energy production follows SDG&E's off peak hours, usually during the evening hours (typically wind) ✓ratio of off-peak to total annual deliveries greater than 53% ✓located within the service territories of SDG&E, PG&E, or SCE	5 MW

Eligibility Requirements

Resource:

1. Resources must be CEC-certifiable as an eligible renewable resource;
2. Resources must utilize a commercially proven technology;
3. Resources must be new or existing facilities;
   a) an existing facility may participate in RAM without restriction if the existing facility is not currently delivering energy pursuant to an existing contractual agreement with SDG&E, PG&E or SCE, or if such an agreement exists but it is scheduled to terminate within 24 months of the utility's expected date of CPUC approval for the utility's PPA from that RAM auction, as estimated by that utility's RAM Bidding Protocol (i.e., December 23, 2013)
4. Resources must sell its entire output to SDG&E (full buy/sell) or all output in excess of onsite load to SDG&E (excess sales).
5. The project must not sell partial output from a system sized above 20 MW.

Project Capacity:

1. All capacity ratings specified in this RFO must be nameplate capacities for **alternating current ("ac")** generation as provided to the bulk power transmission or distribution system. **Offers that provide direct current ("dc") ratings will be rejected for nonconformance.**
2. Resources must provide a minimum contract size of greater than 3 MW installed capacity

Eligibility Requirements

Location/Site Control:

1. Project must be located within the service territories of SDG&E, PG&E or SCE
2. The Respondent must have, at time of bidding, full site control for the duration of 10, 15 or 20-year power purchase agreement. Site control may be evidenced by documentation of:
   a. direct ownership
   b. a lease
   c. an option to lease or purchase upon PPA approval. The option must be an exclusive option to the Bidder that will last until the completion of the RFO cycle.

Note: If shortlisted, Respondent's site control documents must be: 1) in the name of the same entity that will execute the RAM PPA, or 2) shall have been assigned to such entity by the time Respondent accepts its position on the shortlist.

Eligibility Requirements

Interconnection:

1. Distribution Level Projects

Requirement	Have to have met by: November 19, 2012
Pass Fast Track Screens under Wholesale Distribution Access Tariff Small Generator Interconnection Procedures (WDAT SGIP) or	Must already be in queue
System Impact Study or Facility Study (most recent) under WDAT SGIP (Feasibility Study not sufficient)	Must already be in queue

Note: If shortlisted, Respondent's interconnection documents must be: 1) in the name of the same entity that will execute the RAM PPA, or 2) shall have been assigned to such entity by the time Respondent accepts its position on the shortlist.

Eligibility Requirements

Interconnection:

2. Transmission Level Projects

Requirement	Have to have met by: November 19, 2012
Pass Fast Track Screens under CAISO Generator Interconnection Procedures (GIP) or	Must already be in queue
Phase 1 or Phase II (most recent) Study under CAISO GIP or GIDAP	Must already be in queue

Note: If shortlisted, Respondent's interconnection documents must be: 1) in the name of the same entity that will execute the RAM PPA, or 2) shall have been assigned to such entity by the time Respondent accepts its position on the shortlist.

Eligibility Requirements

Interconnection:

3. Deliverability Studies

    a. Winning FCDS bidders must obtain a FINAL CAISO deliverability study to determine whether upgrades are required for the project to be eligible to provide Resource Adequacy

    b. Must apply for the deliverability study as soon as possible (but not required as part of bid)

Eligibility Requirements

Developer Experience:

1. The Respondent and/or members of the project development team must have experience. Respondents must provide evidence of having completed, or begun construction, of a project using a technology similar to the offered technology, that is at least 1 MW installed capacity.
2. The Respondent will maintain contractual control of the facilities and be responsible for development, land acquisition, permitting, financing and construction for the facilities. Respondents must provide a description of how operational control will be maintained.

Project Start Date:

Offers must provide an anticipated delivery start date that is within 24 months after the expected CPUC RAM PPA Approval date.

Other Incentives Not Permitted:

Respondents shall not have sought Small Generator Incentive Program (SGIP) benefits, California Solar Incentives (CSI) or Net Energy Metering (NEM) Program benefits for the projects being offered and shall not plan to seek or participate in such programs for the entire term of the PPA.

PPA Terms

Term	Description
Deadline for Commercial Operation	Must achieve Commercial Operation within 24 months of CPUC approval. One 6 month extension permitted for certain permitting or interconnection delays, or force majeure
Performance Assurance	Minimum deliveries of: • 140% of expected annual net energy production based on two years of rolling production for as-available non-peaking projects. • 160% of expected annual net energy production based on two years of rolling production for as-available peaking projects. • 90% of expected annual net energy production based on one year of rolling production for baseload projects. Note: no minimum guaranteed energy performance requirement for small hydro
Resource Adequacy/Full Capacity Deliverability Status	Seller must apply for deliverability as soon as possible (but not required as part of bid) if bidder is selecting FCDS pricing. Seller must receive FINAL deliverability studies (e.g. Final Phase II deliverability studies) • Full capacity deliverability status is not a condition precedent to commercial operation • For FCDS projects, the PPA will contain TOD factors that include the value of FCDS. The TOD adjusted price will be reduced by a Deliverability Value until the project achieves FCDS. Once the project achieves FCDS, the Deliverability Value will be added back to the TOD-adjusted price. FCDS projects must achieved FCDS no later than Jan. 1, 2022 • For Energy Only projects, the PPA will contain TOD factors that do not include the value of FCDS.

Other Potential RPS Programs & Solicitations

Feed-In Tariff (FIT)	• **Re-MAT expected to launch in Q3, 2013** • **Standard offer with no RFO; up to 3 MW within SDG&E's service territory; no CPUC approval required**
Annual RPS RFO Solicitation (upcoming 2013 RPS RFO)	• Issued annually in accordance with CPUC approved RPS Procurement Plan • Last RPS RFO issued Dec. 7, 2012. Next RPS RFO TBD.

Overview of Bid Evaluation and Selection

Overview of PA Consulting Group and Barbara Sands

PA Consulting Group (PA) is an independent, employee-owned, global management, systems and technology consulting firm of approximately 2,000 professionals.

PA's energy consulting practice includes more than 120 consultants with in-depth functional expertise and a broad range of experience that includes

- Resource planning
- Transaction advisory services
- Industry restructuring
- ISO and utility operations
- Asset management
- Strategy & risk management

Barbara Sands has over 20 years of experience in the energy industry specializing wholesale electric markets with a specific focus on renewable markets. Her experience includes the following:

- SDG&E Independent Evaluator for the first two RAM RFOs
- Managed the valuation process for numerous renewable and non-renewable power assets
- Provided strategic resource planning and competitive rate design analyses for electric utilities
- Developed electric market modeling tools including renewable specific models
- Certified appraiser with the American Society of Appraisers (ASA)

Role of the Independent Evaluator in the valuation process

The primary role of the Independent Evaluator (IE) is to ensure that SDG&E treats all bidders fairly and equitably and that no technology or counterparty is favored. In particular, the IE is expected to assure that affiliate bids are not favored.

The IE will also ensure that the bid selection process is transparent and is aligned with the RAM requirements.

SDG&E can also call on the IE's advice as to various evaluation issues.

The IE provides advice throughout the RFO process:

- *Prior to RFO process* - Reviews and comments on materials
- *During RFO process* - Reviews SDG&E process, analyzes bid evaluation and selection, assists with questions and issues, and participates in Procurement Review Group meetings
- *Completion of RFO process (SDG&E Advice Letter)* - Prepares IE Report to document process, comment on selected bids, and recommend any suggested changes for future RFO's

Evaluation process for the RAM RFO

Once the bids are received and the relevant data is identified and extracted to a database, the evaluation process for the RAM RFO will consist of the following steps:

1. Place bids into the three defined types of products (a) Baseload, (b) Peaking As-Available, and (c) Non-Peaking As-Available
2. Screen the bids for conformance with the RAM eligibility requirements
3. Establish a Bid Ranking Price (TOD adjusted levelized contract cost plus Deliverability Adder plus Transmission Adder)
4. Select winning bids for projects with the lowest bid ranking price within each product category

Elements of Bid Pricing, LCBF Analysis, and Deliverability

Pricing Options – FCDS or Energy Only

Full Capacity Deliverability Status (FCDS):

1. FCDS projects are capable of providing resource adequacy, and generally have a higher value than energy-only projects.
2. Projects which are located in SDG&E's local area are capable of providing local resource adequacy under CPUC and CAISO resource adequacy programs. Projects outside of SDG&E's local area are capable of providing system resource adequacy, which is less valuable than local resource adequacy.
3. FCDS projects capable of providing local resource adequacy are valued higher than FCDS projects capable of providing system resource adequacy.
4. FCDS must commit to achieve FCDS as close to COD as possible, but no later than the end of 2021.
5. The submitted price will be multiplied by the FCDS TOD factors as shown below for deliveries in each TOD period:

FCDS TIME OF DAY PRICE MULTIPLIERS

Summer On-Pk	Summer Semi-Pk	Summer Off-Pk	Winter On-Pk	Winter Semi-Pk	Winter Off-Pk
2.501	1.342	0.801	1.089	0.947	0.679

Pricing Options – FCDS or Energy Only

Energy-Only Status:

1. All renewable resources are valued based upon their ability to displace other forms of generation. Projects which cannot provide resource adequacy are unable to displace a capacity-related attribute provided by other forms of generation, and may require SDG&E to procure additional resource adequacy to make up for the shortfall.
2. Energy-only projects outside of SDG&E's local area are valued higher than energy-only projects inside of SDG&E's local area.
3. The submitted price will be multiplied by the energy-only TOD factors as shown below for deliveries in each TOD period:

ENERGY-ONLY TIME OF DAY PRICE MULTIPLIERS

Summer On-Pk	Summer Semi-Pk	Summer Off-Pk	Winter On-Pk	Winter Semi-Pk	Winter Off-Pk
1.531	1.181	0.900	1.192	1.078	0.774

Deliverability Calculations – Deliverability Value

Deliverability Value

For FCDS bids, the Deliverability Value will be applied as a discount in the PPA to all TOD-adjusted prices for years prior to achievement of FCDS, but will not be used for bid evaluation.

1. FCDS Bidders will have a Deliverability Value calculated for each submitted bid.
2. The Deliverability Value shall be computed by
    1. Setting the bid's appropriate Market Price Referent (MPR) value,
    2. Computing expected TOD-adjusted payments at the MPR price using the FCDS TOD multipliers and the project's delivery profile,
    3. Computing expected TOD-adjusted payments at the MPR price using the energy-only TOD multipliers and the project's delivery profile,
    4. Finding the present values of payment streams at the MPR price in each TOD period using both the FCDS and energy-only TOD multipliers,
    5. Subtracting the present values of the energy-only TOD payment streams from the present values of the FCDS TOD payment streams,
    6. Setting any negative differences to zero,
    7. Adding up all remaining differences to find a total value of deliverability,
    8. Dividing by the present value of energy deliveries to produce a Full Deliverability Value in $/MWh,
    9. Multiplying by 60% to produce a system Deliverability Value if the project can only provide system RA instead of local RA to SDG&E.

Sample Deliverability Value Calculation

The tables below provide an illustrative example of how the calculations described above would be applied to a bid for a 5 MW solar project with a term of 10 years that is expected to provide RA.

Calendar Year	Net Output Capacity (MW)	Estimated Annual Delivery over 12 months (MWh)	Capacity Factor
2013	5	10,731	24.50%
2014	5	10,731	24.50%
2015	5	10,731	24.50%
2016	5	10,731	24.50%
2017	5	10,731	24.50%
2018	5	10,731	24.50%
2019	5	10,731	24.50%
2020	5	10,731	24.50%
2021	5	10,731	24.50%
2022	5	10,731	24.50%

ANNUAL PROFILE OF DELIVERIES

(% OF ANNUAL GENERATION IN EACH TOD PERIOD)

	Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
Annual Profile	13.93%	10.67%	9.88%	19.22%	28.27%	18.03%

Sample Deliverability Value Calculation – Step 1

The 2011 MPR values (as approved by the Commission in Resolution E-4442) in $/MWh:

Contract COD is 2013

Contract term is 10 years

Operation Date	Contract Term (years) 5	6	7	8	9	10	15	20
2012	$69.31	$71.01	$72.59	$74.09	$75.51	$76.89	$83.53	$89.56
2013	$74.07	$75.55	$76.98	$78.37	$79.72	$81.04	$87.76	$93.76
2014	$77.63	$79.07	$80.48	$81.85	$83.21	$84.54	$91.50	$97.55
2015	$80.96	$82.39	$83.81	$85.20	$86.57	$88.04	$95.19	$101.32
2016	$84.14	$85.60	$87.05	$88.47	$90.01	$91.56	$98.83	$105.09
2017	$87.04	$88.53	$90.01	$91.62	$93.25	$94.88	$102.22	$108.59
2018	$90.00	$91.53	$93.23	$94.94	$96.65	$98.31	$105.70	$112.18
2019	$93.04	$94.83	$96.64	$98.44	$100.18	$101.85	$109.27	$115.86
2020	$96.44	$98.35	$100.25	$102.08	$103.82	$105.50	$112.96	$119.65
2021	$100.10	$102.11	$104.02	$105.84	$107.58	$109.16	$116.75	$123.53
2022	$104.04	$106.04	$107.93	$109.72	$111.34	$112.99	$120.66	$127.52
2023	$108.16	$110.11	$111.95	$113.59	$115.28	$116.91	$124.68	$131.60

In this example, the base MPR value to be used will be $81.04/MWh.

Sample Deliverability Value Calculation – Steps 2 and 3

Expected Annual Deliveries and TOD-adjusted MPR values

FCDS:

	Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
Expected GWh	1.49	1.15	1.06	2.06	3.03	1.93
MPR $/MWh	$81.04	$81.04	$81.04	$81.04	$81.04	$81.04
TOD Multiplier	2.501	1.342	0.801	1.089	0.947	0.679
TOD Price	$202.69	$108.76	$81.75	$88.26	$76.75	$55.03
FCDS Payment Stream ($mil)	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**

Energy Only:

	Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
Expected GWh	1.49	1.15	1.06	2.06	3.03	1.93
MPR $/MWh	$81.04	$81.04	$81.04	$81.04	$81.04	$81.04
TOD Multiplier	1.531	1.181	0.900	1.192	1.078	0.774
TOD Price	$124.08	$95.71	$72.94	$96.60	$87.36	$62.73
Energy-Only Payment Stream ($mil)	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**

Sample Deliverability Value Calculation – Step 4

FCDS:

CONTRACT YEAR	Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
1	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**
2	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**
3	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**
4	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**
5	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**
6	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**
7	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**
8	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**
9	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**
10	**$0.30**	**$0.12**	**$0.07**	**$0.18**	**$0.23**	**$0.11**
TOTAL FCDS PAYMENT STREAM	**$3.03**	**$1.25**	**$0.69**	**$1.82**	**$2.33**	**$1.06**
PV OF FCDS PAYMENT STREAM	**$2.16**	**$0.89**	**$0.49**	**$1.30**	**$1.66**	**$0.76**

Energy-Only:

CONTRACT YEAR	Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
1	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**
2	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**
3	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**
4	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**
5	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**
6	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**
7	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**
8	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**
9	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**
10	**$0.19**	**$0.11**	**$0.08**	**$0.20**	**$0.26**	**$0.12**
TOTAL ENERGY ONLY PAYMENT STREAMS	**$1.85**	**$1.10**	**$0.77**	**$1.99**	**$2.65**	**$1.21**
PV OF ENERGY ONLY PAYMENT STREAMS	**$1.33**	**$0.78**	**$0.55**	**$1.42**	**$1.89**	**$0.87**

Sample Deliverability Value Calculation – Steps 5 through 9

	Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
PV of FCDS Payment Streams ($ mil)	**$2.16**	**$0.89**	**$0.49**	**$1.30**	**$1.66**	**$0.76**
PV of Energy Only Payment Streams ($ mil)	**$1.33**	**$0.78**	**$0.55**	**$1.42**	**$1.89**	**$0.87**
PV Difference ($ mil)	$0.84	$0.11	-$0.06	-$0.12	-$0.23	-$0.11
FCDS Payment Premiums ($ mil)	$0.84	$0.11	$0.00	$0.00	$0.00	$0.00

Total FCDS Payment Premium	$0.95	mil
Present Value of total MWhs over project term	0.08	mil MWh
Deliverability Value	**$12.34**	**per MWh**

For this example, the Full Deliverability Value for projects located in SDG&E's local area would be $12.34/MWh.

If this project was not located within SDG&E's local area, a system Deliverability Value would be calculated by multiplying $12.34/MWh by 60%, which would be $7.41/MWh.

If a project bid with FCDS cannot achieve FCDS by the beginning of contract deliveries, the Deliverability Value will be subtracted from each TOD-adjusted contract price until FCDS is achieved.

Deliverability Adder

Deliverability Adder
The Deliverability Adder will be applied only to the Bid Ranking Price in the RFO evaluation process and will not be used for contract pricing.

1. All bidders will have a Deliverability Adder calculated for each submitted bid.
2. The Deliverability Adder shall be computed by the following:
    1. **For FCDS projects in SDG&E's local area**, the deliveries shall be assumed to provide full deliverability value to SDG&E. The Deliverability Adder shall be zero and will add nothing further to the project's Bid Ranking Price.
    2. **For energy-only projects in SDG&E's local area**, the deliveries will be assumed to provide no deliverability value to SDG&E. The project will not defer any costs of resource adequacy, deliverability, or other capacity-related attributes which SDG&E must obtain for compliance with CPUC and CAISO resource adequacy programs. A Deliverability Adder equal to 100% of the Deliverability Value will be assessed.
    3. **For energy-only projects outside of SDG&E's local area**, the deliveries will be assumed to provide no deliverability value to SDG&E. Since such a project could only provide system resource adequacy instead of local resource adequacy, only the proportional value of system resource adequacy will be used as a Deliverability Adder, which shall be 60% of the Deliverability Value.
    4. **For FCDS projects outside of SDG&E's local area**, deliveries shall be assumed to provide system resource adequacy to SDG&E. In this case, the project will not defer any costs of local resource adequacy but will defer costs of system resource adequacy, which are generally 60% of the cost of local resource adequacy. Such a project will be assessed a Deliverability Adder equal to (100%-60%=40%) of the Deliverability Value of the project.

Sample Deliverability Adder Calculation

For the example shown previously, the Full Deliverability Value in SDG&E's local area would be $12.34/MWh. If this project were not located within SDG&E's local area, a system Deliverability Value would be calculated by multiplying $12.34/MWh by 60%, which would be $7.41/MWh.

If the sample project was in SDG&E's local area, but bid in as energy-only, the full Deliverability Adder of $12.34/MWh would be added to the Bid Ranking Price. If the sample project was outside of SDG&E's local area, the system Deliverability Adder (equal to 60% of the Deliverability Value) of $7.41/MWh would be added to the Bid Ranking Price.

If the sample project was outside of SDG&E's local area but bid as an FCDS project, the adder would be 40% of the Deliverability Value, or $4.94/MWh, which would be added to the Bid Ranking Price. FCDS bids in SDG&E's local area would receive a zero Deliverability Adder.

DELIVERABILITY SAMPLE TABLE

INTERCONNECTION TYPE	IN SDG&E AREA	IN CALIFORNIA ISO; OUTSIDE SDG&E AREA
FCDS	Deliverability Adder = 0	Deliverability Adder = 40% of Deliverability Value = $4.94/MWh
ENERGY-ONLY	Deliverability Adder = 100% of Deliverability Value = $12.34/MWh	Deliverability Adder = 60% of Deliverability Value = $7.41/MWh

Transmission Adder Calculation

Transmission Adder

1. Transmission costs from a project's latest transmission study will be used to calculate a transmission adder that will be applied to the project's Bid Ranking Price.
2. Only transmission costs that are reimbursable to the bidder will be used to compute the transmission adder. Amounts paid by the bidder for distribution interconnections and transmission-level upgrades that are not reimbursed will not be used in calculating the transmission adder.
3. In all cases, the reimbursable costs shown in the transmission studies submitted by the bidder will be used for adder computation.
4. Bids for projects that share an interconnection with other projects must clearly state the allocation of transmission costs to the project. If no such statement is made, SDG&E will assume that the full amount of transmission costs stated in the project's interconnection study will be allocated 100% to the project being bid.

Transmission studies are performed with precise parameters regarding project size and performance characteristics, and such studies are time consuming and expensive to perform. Bidders should be aware that projects bid into the RAM RFO that share an interconnection with other projects that are not bid into the RFO, or projects that are not shortlisted in the RFO, may be rejected.

Overview of Bidding Protocols

Required Forms

1) Project Description Form – *Submit one per project.*

2) Pricing Form (Baseload, Peak or Off-Peak)– *Respondents may submit one Energy-Only option and one FCDS option per project.*

3) Site Control Documentation

4) Copy of completed interconnection agreement, completed System Impact Study, a Phase I interconnection study, or results from the WDAT or CAISO Fast Track process

PPA: Bids that are shortlisted will receive from SDG&E a form RAM PPA (which is available on SDG&E's RAM RFO Website) that is redlined to reflect the relevant provisions that are applicable to the proposed project as indicated by Respondent in their Project Description Form. Bidders do not have to submit a red-lined PPA with their Bid.

The Project Description Form must be in Word or Word-compatible format (not in PDF). The Pricing Forms must be in Excel or Excel-compatible format (not in PDF). The copy of completed interconnection agreement, interconnection study and site control documentation must be in PDF format.

The Bid Form

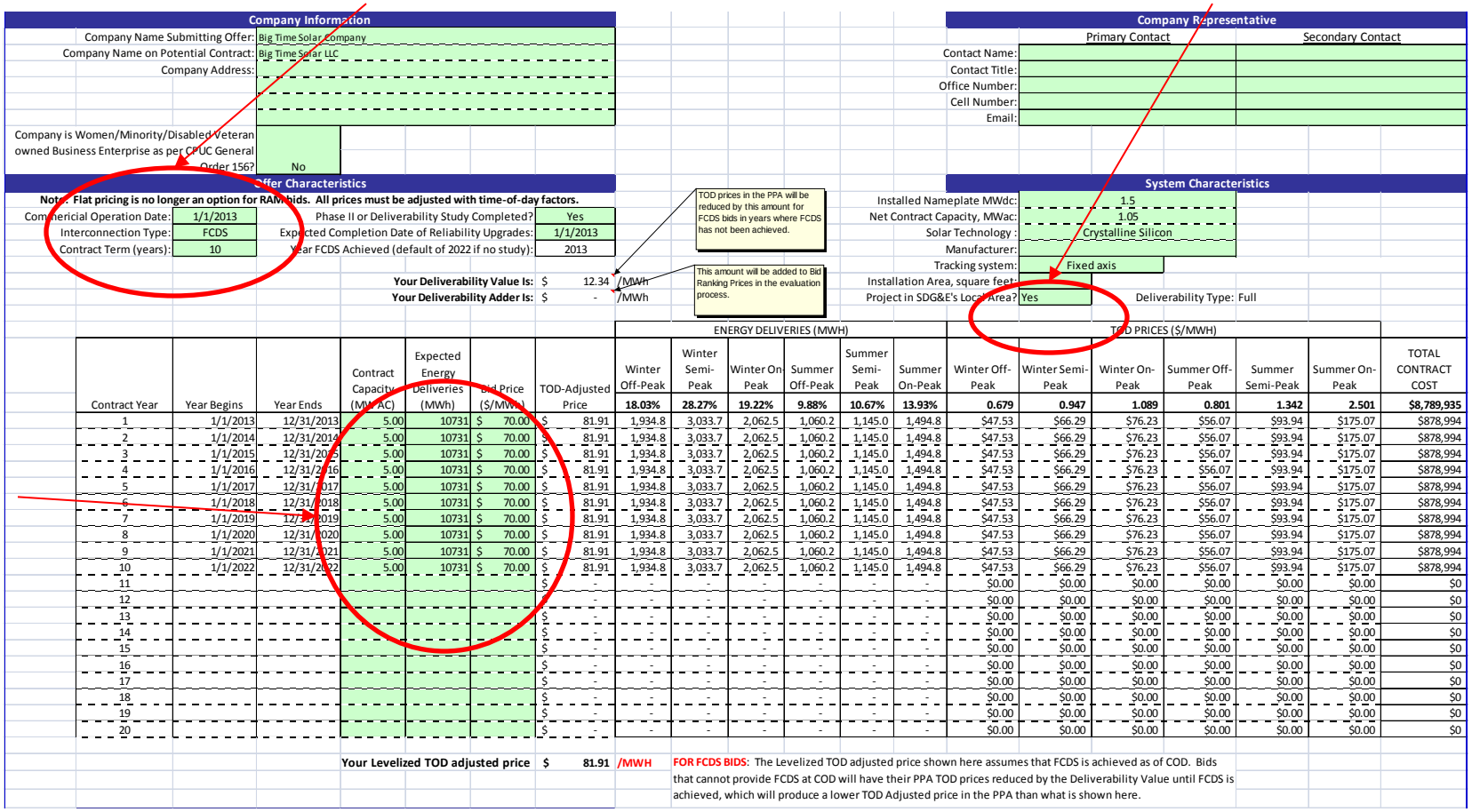
Bid Form Input Areas shown in light green.

Please do not input text in areas where numbers are expected to be used.

COD, contract term, and pricing type (FCDS or Energy Only)

In or Out of SDG&E's area

AC Contract Capacity, MWh expected deliveries, and bid price in $/MWh



Company Information

Company Name Submitting Offer:	Big Time Solar Company
Company Name on Potential Contract:	Big Time Solar LLC
Company Address:	
Company is Women/Minority/Disabled Veteran owned Business Enterprise as per CPUC General Order 156?	No

Company Representative

	Primary Contact	Secondary Contact
Contact Name:		
Contact Title:		
Office Number:		
Cell Number:		
Email:		

Offer Characteristics

Note: Flat pricing is no longer an option for RAM bids. All prices must be adjusted with time-of-day factors.

Commercial Operation Date:	1/1/2013	Phase II or Deliverability Study Completed?	Yes
Interconnection Type:	FCDS	Expected Completion Date of Reliability Upgrades:	1/1/2013
Contract Term (years):	10	Year FCDS Achieved (default of 2022 if no study):	2013

TOD prices in the PPA will be reduced by this amount for FCDS bids in years where FCDS has not been achieved.

This amount will be added to Bid Ranking Prices in the evaluation process.

Your Deliverability Value Is: $ 12.34 /MWh

Your Deliverability Adder Is: $ - /MWh

System Characteristics

Installed Nameplate MWdc:	1.5
Net Contract Capacity, MWac:	1.05
Solar Technology :	Crystalline Silicon
Manufacturer:	
Tracking system:	Fixed axis
Installation Area, square feet:	
Project in SDG&E's Local Area?	Yes

Deliverability Type: Full

							ENERGY DELIVERIES (MWH)						TOD PRICES ($/MWH)						
Contract Year	Year Begins	Year Ends	Contract Capacity (MW AC)	Expected Energy Deliveries (MWh)	Bid Price ($/MWh)	TOD-Adjusted Price	Winter Off-Peak	Winter Semi-Peak	Winter On-Peak	Summer Off-Peak	Summer Semi-Peak	Summer On-Peak	Winter Off-Peak	Winter Semi-Peak	Winter On-Peak	Summer Off-Peak	Summer Semi-Peak	Summer On-Peak	TOTAL CONTRACT COST
							18.03%	28.27%	19.22%	9.88%	10.67%	13.93%	0.679	0.947	1.089	0.801	1.342	2.501	$8,789,935
1	1/1/2013	12/31/2013	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
2	1/1/2014	12/31/2014	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
3	1/1/2015	12/31/2015	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
4	1/1/2016	12/31/2016	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
5	1/1/2017	12/31/2017	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
6	1/1/2018	12/31/2018	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
7	1/1/2019	12/31/2019	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
8	1/1/2020	12/31/2020	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
9	1/1/2021	12/31/2021	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
10	1/1/2022	12/31/2022	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
11						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
12						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
13						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
14						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
15						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
16						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
17						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
18						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
19						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
20						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0

Your Levelized TOD adjusted price $ 81.91 /MWH

FOR FCDS BIDS: The Levelized TOD adjusted price shown here assumes that FCDS is achieved as of COD. Bids that cannot provide FCDS at COD will have their PPA TOD prices reduced by the Deliverability Value until FCDS is achieved, which will produce a lower TOD Adjusted price in the PPA than what is shown here.

The Bid Form (Continued)

For Solar Projects, include:

- DC Nameplate Capacity
- AC Nameplate Capacity
- Type of Solar Technology (crystalline, thin film, etc)
- Panel Manufacturer, Tracking Type, Installation Area

For Non-Solar Projects, include:

- AC Nameplate Capacity,
- Installation Area
- Mark all others as N/A

Company Information

Company Name Submitting Offer:	Big Time Solar Company
Company Name on Potential Contract:	Big Time Solar LLC
Company Address:	
Company is Women/Minority/Disabled Veteran owned Business Enterprise as per CPUC General Order 156?	No

Company Representative

	Primary Contact	Secondary Contact
Contact Name:		
Contact Title:		
Office Number:		
Cell Number:		
Email:		

Offer Characteristics

Note: Flat pricing is no longer an option for RAM bids. All prices must be adjusted with time-of-day factors.

Commericial Operation Date:	1/1/2013	Phase II or Deliverability Study Completed?	Yes
Interconnection Type:	FCDS	Expected Completion Date of Reliability Upgrades:	1/1/2013
Contract Term (years):	10	Year FCDS Achieved (default of 2022 if no study):	2013

Your Deliverability Value Is: $ 12.34 /MWh
Your Deliverability Adder Is: $ - /MWh

TOD prices in the PPA will be reduced by this amount for FCDS bids in years where FCDS has not been achieved.

This amount will be added to Bid Ranking Prices in the evaluation process.

System Characteristics

Installed Nameplate MWdc:	1.5
Net Contract Capacity, MWac:	1.05
Solar Technology :	Crystalline Silicon
Manufacturer:	
Tracking system:	Fixed axis
Installation Area, square feet:	
Project in SDG&E's Local Area?	Yes

Deliverability Type: Full

							ENERGY DELIVERIES (MWH)						TOD PRICES ($/MWH)						
Contract Year	Year Begins	Year Ends	Contract Capacity (MW AC)	Expected Energy Deliveries (MWh)	Bid Price ($/MWh)	TOD-Adjusted Price	Winter Off-Peak	Winter Semi-Peak	Winter On-Peak	Summer Off-Peak	Summer Semi-Peak	Summer On-Peak	Winter Off-Peak	Winter Semi-Peak	Winter On-Peak	Summer Off-Peak	Summer Semi-Peak	Summer On-Peak	TOTAL CONTRACT COST
							18.03%	**28.27%**	**19.22%**	**9.88%**	**10.67%**	**13.93%**	**0.679**	**0.947**	**1.089**	**0.801**	**1.342**	**2.501**	**$8,789,935**
1	1/1/2013	12/31/2013	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
2	1/1/2014	12/31/2014	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
3	1/1/2015	12/31/2015	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
4	1/1/2016	12/31/2016	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
5	1/1/2017	12/31/2017	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
6	1/1/2018	12/31/2018	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
7	1/1/2019	12/31/2019	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
8	1/1/2020	12/31/2020	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
9	1/1/2021	12/31/2021	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
10	1/1/2022	12/31/2022	5.00	10731	$ 70.00	$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	$47.53	$66.29	$76.23	$56.07	$93.94	$175.07	$878,994
11						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
12						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
13						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
14						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
15						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
16						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
17						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
18						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
19						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0
20						$ -	-	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0

Don't Forget About the Connection! (below the pricing table)

- If in SDG&E's territory, use descriptions from the interactive interconnection map at http://sdge.com/builderservices/dgmap/
- In Queue Position Number, specify which queue you are in (CAISO or the host utility's WDAT)
- For the question regarding interconnection cost, please specify ***only the non-reimbursable costs that are already accounted for in your bid price***

Electrical Interconnection		
	Interconnection Point	
	Interconnection Voltage Level	
	Interconnection Status	
	Queue Position Number (if assigned)	
	How much in non-reimbursable interconnection cost is assumed in your bid price?	

Delivery Profile

These cells should contain **capacity factors** (expected hourly generation divided by maximum capacity) for each individual hour. Capacity factors should be between 0% and 100%.

Delivery Profile — **Request for Offers** — **2011 RAM Solicitation**

Instructions:

Populate the table with expected hourly capacity factor of your project during the indicated time periods.
- Assume project is at 100% completion of all phases.
- Disregard any degradation over time.

				EXPECTED NET CAPACITY FACTOR (%)											
				WINTER						SUMMER				WINTER	
Weekday	Hour Beginning	Hour of Day	Hour of Week	January	February	March	April	May	June	July	August	September	October	November	December
Monday	12:00 AM	1	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	1:00 AM	2	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	2:00 AM	3	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	3:00 AM	4	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	4:00 AM	5	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	5:00 AM	6	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	6:00 AM	7	7	0%	1%	4%	4%	18%	24%	16%	5%	0%	0%	2%	0%
Monday	7:00 AM	8	8	16%	26%	31%	40%	54%	62%	50%	41%	32%	17%	27%	19%
Monday	8:00 AM	9	9	45%	55%	63%	78%	87%	90%	79%	76%	69%	50%	57%	50%
Monday	9:00 AM	10	10	58%	61%	81%	91%	93%	95%	89%	84%	83%	73%	64%	61%
Monday	10:00 AM	11	11	58%	59%	83%	91%	95%	96%	90%	87%	85%	75%	61%	56%
Monday	11:00 AM	12	12	58%	59%	85%	92%	94%	96%	92%	88%	85%	72%	62%	54%
Monday	12:00 PM	13	13	58%	61%	83%	88%	93%	96%	87%	88%	84%	73%	64%	56%
Monday	1:00 PM	14	14	61%	63%	85%	90%	95%	95%	89%	83%	83%	73%	66%	58%
Monday	2:00 PM	15	15	60%	62%	82%	90%	94%	94%	92%	82%	87%	74%	66%	55%
Monday	3:00 PM	16	16	45%	57%	78%	84%	89%	92%	89%	78%	85%	68%	45%	33%
Monday	4:00 PM	17	17	3%	26%	58%	74%	85%	87%	87%	78%	69%	53%	9%	0%
Monday	5:00 PM	18	18	0%	0%	30%	52%	66%	76%	71%	61%	42%	8%	1%	0%
Monday	6:00 PM	19	19	0%	0%	4%	8%	34%	46%	40%	20%	2%	0%	0%	0%
Monday	7:00 PM	20	20	0%	0%	0%	0%	0%	5%	3%	0%	0%	0%	0%	0%
Monday	8:00 PM	21	21	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	9:00 PM	22	22	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	10:00 PM	23	23	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	11:00 PM	24	24	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Delivery Profile (Continued)

These numbers below the Delivery Profile compute the distribution of the project's energy deliveries in each TOD period over a typical year.

Total MWhs in Typical Week:	**32**	**37**	**54**	**62**	**70**	**74**	**68**	**61**	**56**	**45**	**37**	**31**
Total MWhs in Month:	**143**	**148**	**238**	**264**	**309**	**316**	**301**	**270**	**242**	**197**	**157**	**137**
% of annual delivery in month:	5%	5%	9%	10%	11%	12%	11%	10%	9%	7%	6%	5%
Winter Off-Peak	**1.50%**	**1.56%**	**2.50%**	**2.78%**	**3.25%**	**3.32%**					**1.65%**	**1.44%**
Winter Semi-Peak	**2.37%**	**2.37%**	**3.50%**	**3.80%**	**4.35%**	**4.41%**					**2.65%**	**2.41%**
Winter On-Peak	**1.38%**	**1.53%**	**2.75%**	**3.14%**	**3.77%**	**3.90%**					**1.47%**	**1.19%**
Summer Off-Peak							**3.17%**	**2.84%**	**2.54%**	**2.07%**		
Summer Semi-Peak							**2.66%**	**2.39%**	**2.12%**	**1.75%**		
Summer On-Peak							**5.26%**	**4.71%**	**4.23%**	**3.43%**		

	Winter Off-Peak	Winter Semi-Peak	Winter On-Peak	Summer Off-Peak	Summer Semi-Peak	Summer On-Peak
Annual TOD Breakdown:	**17.99%**	**25.86%**	**19.12%**	**10.62%**	**8.92%**	**17.63%**

Typical Profiles:						
Solar Photovoltaic	18.50%	27.67%	18.58%	10.07%	7.01%	18.17%
Solar Thermal	18.25%	24.62%	19.67%	10.89%	10.05%	16.51%

Mistakes on forms that can cause rejection of a bid

- **Entering prices in cents/kWh and deliveries in kWh instead of $/MWh and MWh**
- **Critical information missing (such as project location)**
- **Bidding DC capacity and energy instead of AC capacity and energy**
- **Adding or renaming worksheets**
- **Making the utility fill out your bid form**

Q&A Session (I)

Please submit your questions by

June 6, 2013
to
RAMSolicitation@semprautilities.com

Program Updates
and
RAM PPA

Program Updates to RAM IV

CPUC Resolution E-4582

Subject of Change	Revision to RAM
Addition of RAM V	• 2/3 of the IOU's approved remaining RAM capacity allocation will be procured in RAM IV • 1/3 of the IOU's approved remaining RAM capacity allocation will be procured in RAM V (to be closed no later than June 27, 2014).

Product	2011 RAM I	2012 RAM II	2012 RAM III	2013 RAM IV	2014 RAM V	**Total**
Baseload	0	9.5	0	7	3.5	20
Peaking As-Available	15	18.4	27	35	16.9	112.3
Non-Peaking-As Available	0	0	14.7	5	3	22.7
Total (MW)	**15**	**27.9**	**41.7**	**47**	**23.4**	**155**

Optionality in the PPA

"Outage Notification Form" means the completed document from Seller notifying Buyer of an outage of the Project in a form reasonably acceptable to Buyer. 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.]

[For an intermittent As-Available Product only: "Participating Intermittent Resource Program" or "PIRP" 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.]

"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 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 ***[insert name].***

If the project produces an intermittent As-Available Product, then these provisions remain. If the project does not (e.g. baseload), these provisions should be deleted or deleted and replaced with "Reserved".

PPA RAM III (continued)

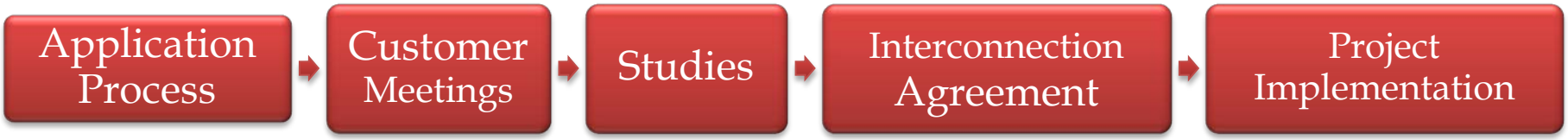
Optionality in the PPA

(a) Seller's Obligations. Prior to the CP Satisfaction Date, Seller shall (i) use commercially reasonable efforts to pursue satisfaction of the Condition Precedent set forth in Section 2.3(a), [***Delete for existing Project in operation for which CPUC Approval is all that is needed for effectiveness of the Agreement*** (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, reporting completion of such Milestones, and delivering Remedial Action Plans in respect of missed Milestones as more fully described therein, (iv) deliver the Semiannual Progress Report in accordance with Section 3.9(a),] and (v) otherwise comply with its obligations, covenants, representations, and warranties under Articles 7-13. Upon an Event of Default of Seller 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

If the project is an existing project, then delete provisions (ii) to (iv).

Wholesale Distribution Open Access Tariff (WDAT) Small Generator Interconnection Process

Wholesale Distribution Open : Access Tariff - Interconnection Process



Distribution Interconnections

- Wholesale Distribution Open Access Tariff (WDAT) is managed by SDG&E's Customer Generation group under the Transmission & Distribution Engineering Department
- SDG&E's distribution voltage is defined as facilities operating at 12.47 kVll or below
- All Applications must be submitted to SDG&E's Customer Generation group
- Pursuant to SDG&E's WDAT Attachment D – Small Generator Interconnection Procedures (SGIP)

Application Package

Distribution Interconnection Application Package

- **Complete Interconnection Request**
- **Site Control Evidence**
- **Site Plan Diagram**
- **Single Line Diagram**
- **Invoice sent to Interconnection Customer (IC)***

Application Location - http://sdge.com/wdat

Interconnectionn Package

Email to:
WDATSGIPAPPLICATIONS@semprautilities.com
Or mail to:

Customer Generation – CP52F
San Diego Gas & Electric
8316 Century Park Court
San Diego, CA 92123-1582

Processing Fee*

Customer Payment Services – CP61C
San Diego Gas & Electric
PO Box 129831
San Diego, CA 92112-9831

Application Process Timeline: (Fast Track & Study Process)

Process Milestone	Duration	Responsible Party
Submit Application	Clock Starts	Interconnection Customer (IC)
Application Deemed Complete or Provide Notice of Additional Items	10 BD	SDG&E
Provide Additional Items or Requests Extension	Additional 10 BD	Interconnection Customer (IC)
Deem Application Complete or Withdraw Application		SDG&E

Sec 4.1
Reasonable Efforts
The Distribution Provider shall make reasonable efforts to meet all time frames provided in these procedures unless the Distribution Provider and the Interconnection Customer agree to a different schedule. If the Distribution Provider cannot meet a deadline provided herein, it shall notify the Interconnection Customer, explain the reason for the failure to meet the deadline, and provide an estimated time by which it will complete the applicable interconnection procedure in the process.

Fast Track & Study Process

Fast Track – approximately 6 months

- **Generator Project does not exceed 2MW**
- **Must Pass Fast Track Screens under Section 2**
- **$500 non-refundable processing fee + supplemental fees**
- **Small Generator Interconnection Agreement (SGIA)**

Study Process – approximately 18 months

- **Generator Project; Failed Fast Track or ≤20MW**
- **Follow Section 3 Study Process**
- **$1,000 Deposit + study fees**
- **Small Generator Interconnection Agreement (SGIA)**

Study Process & Scoping Meeting

Scoping Meeting

- **Allows Face to Face Interactions with IC and SDG&E**
- **Review the Project**
  - **IC provides high level project overview**
  - **SDG&E Distribution Planning provides feedback, system information, suggests any alternatives**
- **Agree on a Point of Interconnection (POI) and generator size**
- **Review CAISO Metering & Telemetering requirements**
- **Determine Next Steps**
  - **Feasibility Study**
  - **System Impact Study**
  - **Facilities Study**
  - **Small Generator Interconnection Agreement**

Study Process

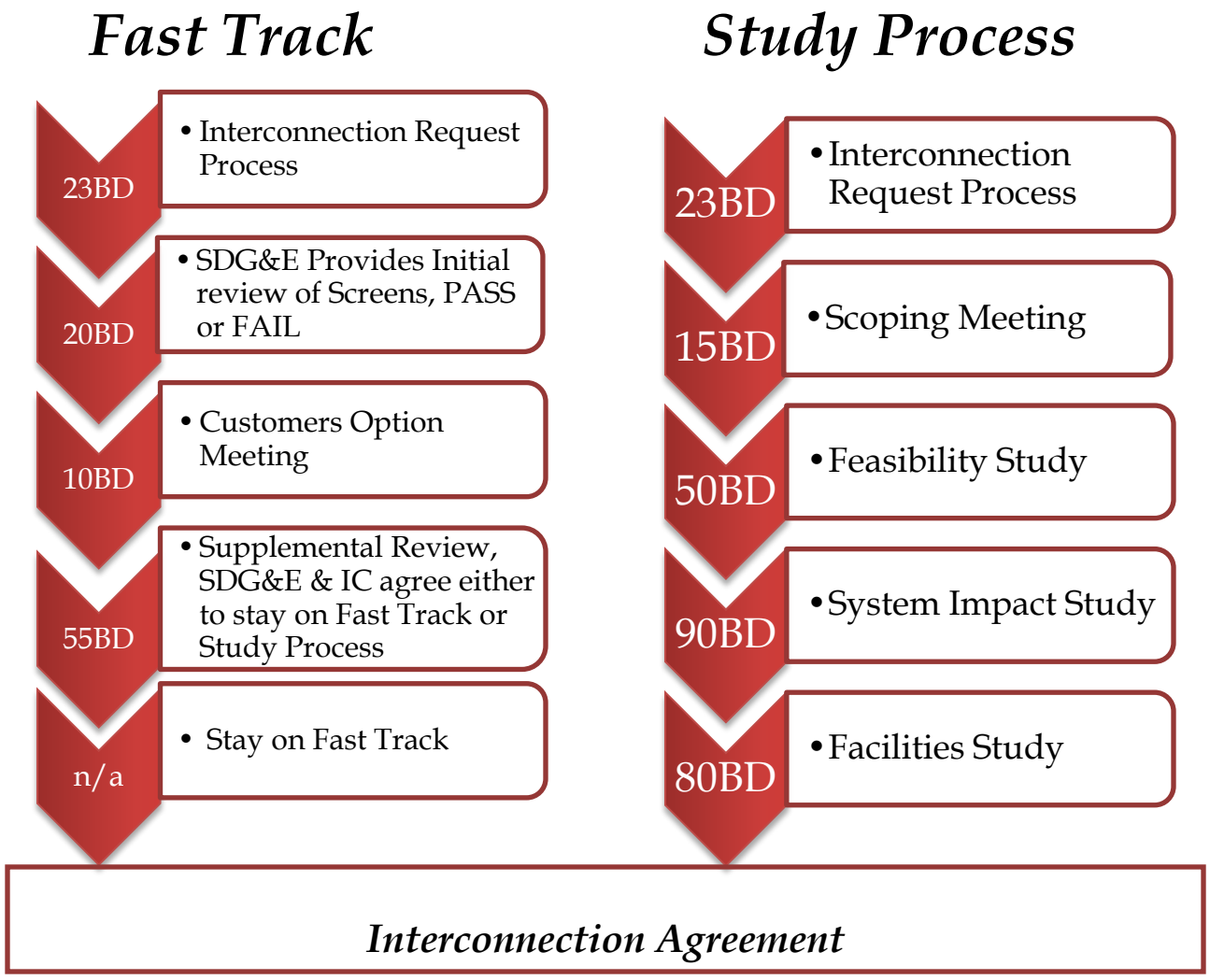
Study	Timing	Study Procedures	Study Deposit
Feasibility Study	50 BD	• **Steady State Analyses** • **Initial Interconnection Cost estimates**	$10,000
System Impact Study	90 BD	• **Dynamic Analyses** • **Updated Interconnection Cost estimates**	$25,000
Facilities Study	110 BD	• **Electrical switching configuration** • **Cost of equipment, engineering, procurement and construction work** • **Time required to complete construction and interconnect** • **Final Interconnection Cost estimates**	$25,000

Small Generator Interconnection Agreement (SGIA)

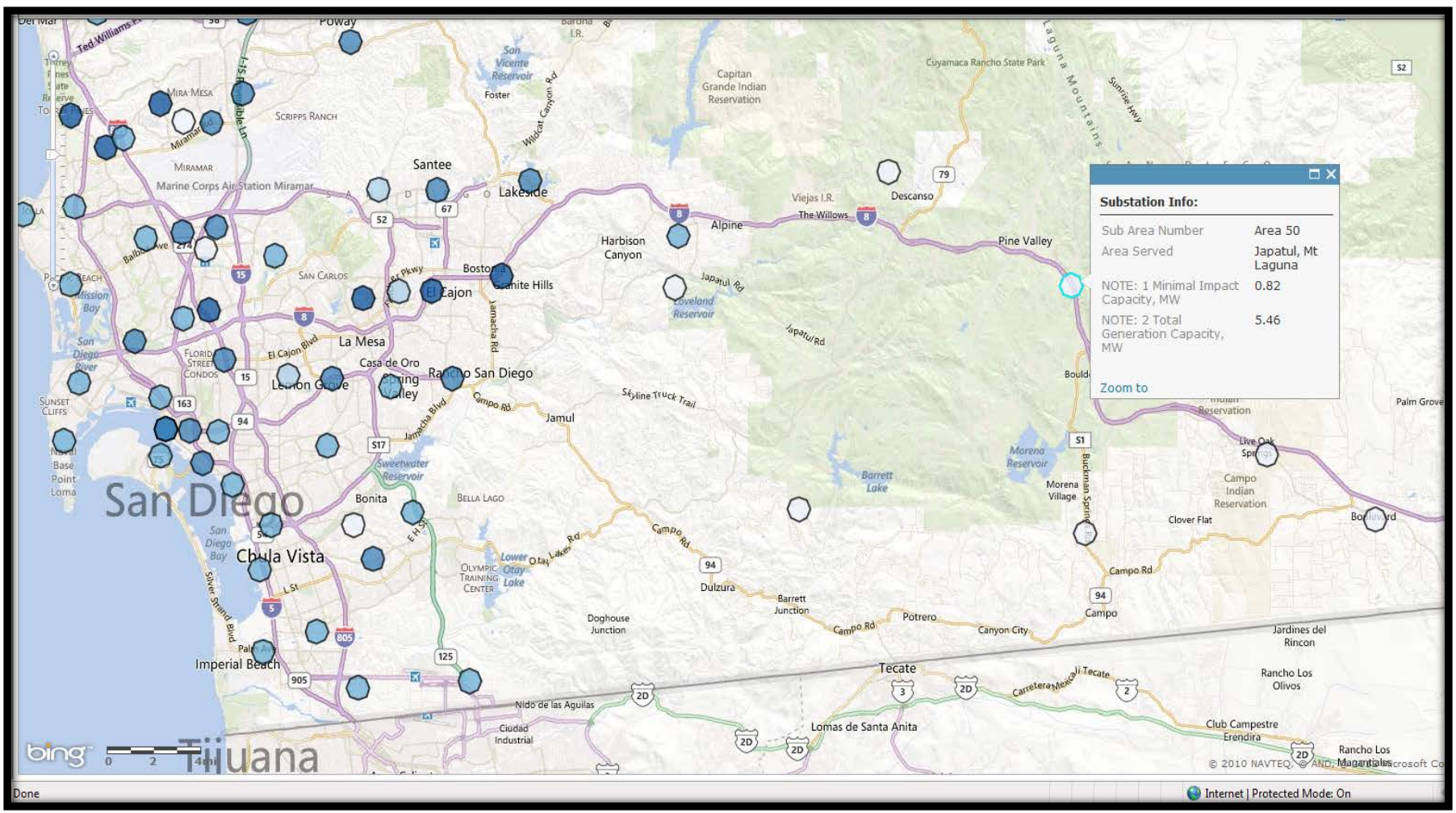
SGIA – Small Generator Interconnection Agreement, ≤20MW

Process	Duration	Responsible Party
Following the Facilities Study	5 BD	SDG&E
IC returns SGIA or Requests Extension: • SGIA not returned within 30BD, SGIA Deemed Withdrawn • SGIA Executed or Request to file unexecuted SGIA with FERC	30 BD	Interconnection Customer (IC)
		SDG&E
		SDG&E & IC

Flow Charts & Timing

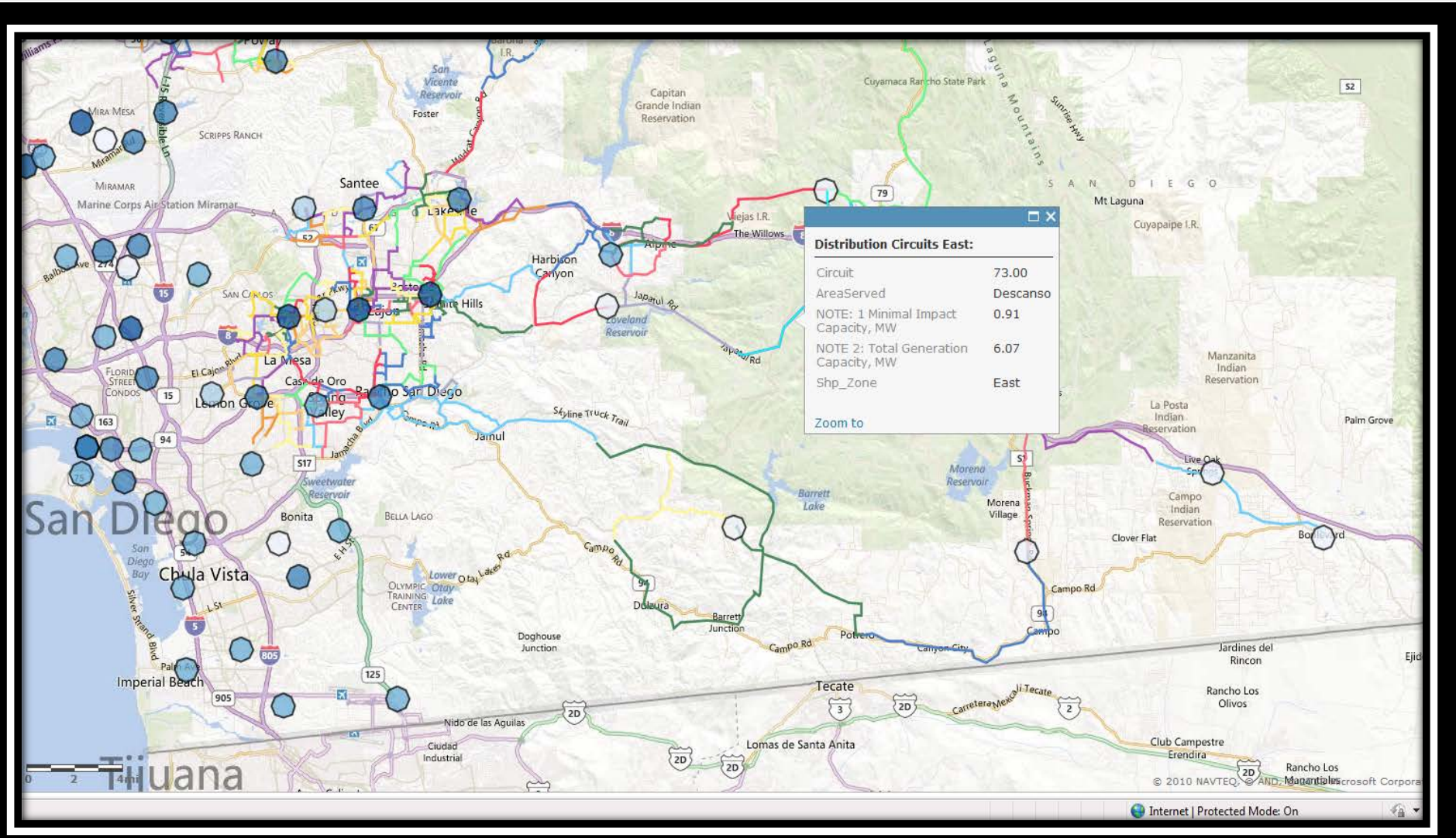


Distribution Generation Interactive Map - Substation



Registration form: http://sdge.com/builderservices/dgmap/

Distribution Generation Interactive Map - Circuit



Registration form: http://sdge.com/builderservices/dgmap/

Contact Information

Ken Parks
San Diego Gas & Electric
8316 Century Park Court, CP52F
San Diego, CA 92123
Office: (858) 636-5581
KParks@semprautilities.com
sdge.com/wdat

2013 CAISO Generator Interconnection & Deliverability Allocation Procedures

Bruno Velosa | Transmission Planning Team Lead

Generation Interconnections to SDG&E

Interconnection to SDG&E's Transmission System

- 2010 CAISO merged Large Generator Interconnection Procedures (LGIP) and Small Generator Interconnection Procedures (SGIP) into one process, **Generator Interconnection Procedures (GIP)** - in response to mounting issues due to the high number of small projects Interconnection Requests through SGIP.
  - Large Projects > 20MW (2 Studies)
  - Small Projects < or = 20MW (2 Studies)

- 2012 CAISO Transmission Planning Process (TPP) - Generator Interconnection Procedures (GIP) Integration (resulted in the new Generation Interconnection Procedures: GIDAP)

CAISO Generator Interconnection and Deliverability Allocation Procedures

Interconnection to SDG&E transmission system is governed by the CAISO's FERC approved Tariff:

- **CAISO Tariff Appendix Y (GIP tariff) applies to interconnection requests through Cluster 4**

http://www.caiso.com/Documents/TariffAppendixY_Nov5_2012.pdf

- **CAISO Tariff Appendix DD (GIDAP tariff) applies to interconnection requests starting with Cluster 5**
  http://www.caiso.com/Documents/TariffAppendixDD_Nov5_2012.pdf
- **Cluster Windows:** Cluster 6, April 1st to April 30th 2013 and Cluster 7, April 1st to April 30th , 2014.

GIDAP PROCESS

- **Interconnection Request (IR)**
- **Scoping Meeting**
- **Project Grouping**
- **Phase I Interconnection Study**
- **Phase II Interconnection Study**
- **Posting of Financial Security**

❖ **Large/Small Generator Interconnection Agreements (LGIA/SGIA)**

Cluster Study Windows and IR

During the Cluster Study Windows, Interconnection Customers (ICs) must submit a completed **Interconnection Request** (IR) and provide evidence to demonstrate **Site Exclusivity** (or an additional $250K for Large/$100K for Small deposit in lieu of Site Exclusivity)

A completed IR includes:

- IR form
- Point of Interconnection (POI)
- Technical Data (Attachment A, Appendix 1)
- Voltage Level
- Study Deposit - $50,000 plus $1,000 per MW ($250K max.)
- IC elects deliverability:
  - Full Capacity (FC) – Delivery Network Upgrades for deliverability built, if needed, required to qualify for Resource Adequacy (RA) in PPA
  - Partial Deliverability for ___% of electrical output
  - Energy Only (EO) - No Delivery Network Upgrades for deliverability built, not qualified for RA

NOTE: *Through Cluster 4, Costs for Deliverability Network Upgrades (DNUs) are shared by all projects in a cluster study group choosing FC. For Cluster 5 under the CAISO Tariff Appendix DD, will address high cost & large scope DNUs through the TPP.*

Scoping Meeting and Project Grouping

- CAISO to schedule Scoping Meeting within 5 Business Days of the IR being deemed complete
- Scoping Meetings must be completed within 60 days of the close of the Cluster Study Window
- Face to Face project review with SDG&E and CAISO
- Sets the stage for development of the Phase I Study Agreement
- IC must designate Phase I Point of Interconnection (POI) within 3 Business Days of the Scoping Meeting
- CAISO tenders Phase I Study Agreement including study plan to IC within 10 Business Days of POI designation.
- IC to execute the Phase I Study Agreement within 30 days

After the Scoping Meetings, at the CAISO's option and in coordination with SDG&E, an IR may be studied individually or in a group study based on their interconnection points and shared transmission needs.

Definitions

- *The NU are classified into local and area based on distribution of generators in the 5 % DFAX circle.*
  - **Determines contribution of generator to the flow on a line**
  - **PSSE MUST Program**

3 Network Upgrade Types for Generation Projects

- *Area Delivery Network Upgrades (ADNU)*
  - **NU needed to support deliverability of generators spread over a large area – one or more Competitive Renewable Energy Zones (CREZ's)**
  - **Expensive LDNUs driven by large amount of generation (exceeding base portfolio MW in the entire CREZ) are reclassified as ADNUs**
- *Local Delivery Network Upgrades (LDNU)*
  - **NU needed to support deliverability of generators spread over a local area**
  - **NU specific to generators in a concentrated area as the NU**
- *Reliability Network Upgrades*
  - **Specific to generation project**
  - **Required to address a problem that cannot be managed through market congestion management**

Phase I Interconnection Study

- Commences July 1st each year – Completed and Final Phase I Study report issued by year-end
- SDG&E - Reliability Network Upgrade (RNU) studies (a short circuit, stability, and power flow analysis, including off-peak analysis)
- CAISO - Delivery Network Upgrade (DNU) studies (an On-Peak and Off-Peak (for information only) Deliverability Assessment for FC projects, required to receive Resource Adequacy (RA) qualification for PPA)
- Preliminary identification of the Interconnection Facilities and Network Upgrades required for each IR - Assess the POI and potential alternatives
- Establish max. cost responsibility for RNU, Local Delivery Network Upgrades (LDNU), and Interconnection Facilities
- Phase I Study Results Meeting - within 30 Days of study completion
- Within 5 B-Days of Results Meeting, IC may submit to CAISO desired modifications to the IR, including: decrease in the electrical output of proposed project, modify technical parameters of facility, and/or modify the interconnection configuration.

Phase I Interconnection Study

- GIDAP Phase I results provide each project with cost cap for its RNU and LDNU
  - *Retains GIP provisions on security postings*
  - *LDNU cash reimbursement to align with TP deliverability allocation*
- **Phase I does not cap project exposure to ADNU costs**

Between Phase I and Phase II Interconnection Studies

- To continue to Phase II, IC must elect either Option (A) or Option (B)

- **Option (A)**
  - *Project requires TP deliverability to continue to commercial operation*
  - *Project posts security for RNU and LDNU*

- **Option (B)**
  - *Project is willing & able to pay for all Network Upgrades without cash reimbursement by ratepayers*
  - *Project posts security for RNU, LDNU, and ADNU*
  - *ADNU security posting equals $/MW cost rate determined in Phase I Study, times project MW deliverability*
  - *ADNU no cash reimbursement, treated as merchant transmission, eligible for Congestion Revenue Rights (CRRs)*

Phase II Interconnection Study

- Commences May 1st each year – Completed and Final Phase II Study
- Updates analyses performed in the Phase I studies to account for changes, i.e. changes to IRs, withdrawal of Irs, as applicable
- Identifies final Network Upgrades (RNU, LDNU, ADNU) needed to physically interconnect the Generating Facilities and assigns responsibility for financing the identified final Network Upgrades
- Identifies ADNU cost estimates, but not cost caps for Option (B) projects
- Identifies final POI and SDG&E's and IC's Interconnection Facilities and provides cost estimate of the final SDG&E's and IC's Interconnection Facilities
- Phase II Study Results Meeting within 30 Days following Study completion. CAISO, SDG&E, and the IC discuss the Phase II Interconnection Study report, including selection of the final COD.

Note: CAISO shall coordinate the Phase I and Phase II Interconnection Studies with SDG&E and any Affected System Operators

Application of Posting Requirements for NUs to (A)& (B) Projects

	Network Upgrades *•ADNU, LDNU, RNU for B projects* *•LDNU and RNU for A projects*		
Project Size	**First Posting (Due 90 days after phase I study complete)**	**Second Posting (Due 180 days after phase II study complete)**	**Third Posting (Due at start of construction)**
20 MW or less	Lesser of • 15% of phase I study estimated network upgrade costs • $20,000 per MW (but not less than the lesser of $50,000, or the estimated cost of network upgrades)	Lesser of • $ I million • 30% of lower of phase I or phase II study estimated network upgrade costs (but not less than the lesser of $100,000, or the estimated cost of the network upgrades)	100% of lower of phase I or phase II study estimated network upgrade costs
Greater than 20MW	Lesser of • $7.5 million • 15% of Phase I estimated network upgrade costs • $20,000 per MW (but not less than the lesser of $50,000, or the estimated cost of network upgrades)	Lesser of • $15 million • 30% of lower of phase I or phase II study estimated network upgrade costs (but not less than the lesser of $500,000, or the estimated cost of the network upgrades)	100% of lower of phase I or phase II study estimated network upgrade costs

Generator Interconnection Agreements (LGIA & SGIA)

- Three-party agreement between the CAISO, SDG&E, and IC
- SDG&E to provide Draft GIA to IC within 30 Days of final Phase II Study report
- IC written comments/indication of no comments to the SDG&E and CAISO due within 30 Days of receipt of the Draft GIA
- Negotiations to be completed and GIA executed within ~120 Days following completion of Phase II Interconnection Study report.
- SDG&E and CAISO provide final GIA to IC within 15 Business Days after completion of GIA negotiation process.

Reimbursement of LDNU postings

- *All projects are reimbursed for RNU costs up to $60,000 per MW of installed capacity after commercial operation.*
- *Option (A) and (B) projects allocated TP deliverability receive full reimbursement of LDNU postings after commercial operation.*
- *Option (A) projects not allocated TP deliverability that remain in queue as energy only are reimbursed for first LDNU posting.*
- *Option (B) projects not allocated TP deliverability are not eligible for reimbursement of LDNU or ADNU costs*

Allocation of TP deliverability after GIDAP Phase II

- ***Step 1: Determine how much TP deliverability to reserve for prior queued projects***
  - *Based on criteria measuring near-term viability of prior queued projects*
  - *If TP deliverability is fully consumed by above, none is available for the new cluster*

- ***Step 2: Allocate available TP deliverability to current cluster and "parked" previous cluster (A) projects***
  - *Eligible projects must meet two minimum threshold criteria related to permitting and project financing:*
    - *Applied for government permit/approval for construction of generating facility*
    - *On an active short-list for an LSE's request for offer*

Allocation of TP deliverability when (A) and (B) MW meeting threshold criteria exceeds amount available

- ***Calculate a numerical score for each eligible project and allocate TP deliverability to highest scoring projects***
- ***Three categories of development milestones***
  - *Permitting status*
  - *Project financing status*
  - *Land acquisition*
- ***"Borderline" project (last project where remaining available TP deliverability is less than project's capacity)***
  - *Project may accept available TP deliverability, then choose*
    - *Partial deliverability, or*
    - *Reduce physical capacity to amount allocated*

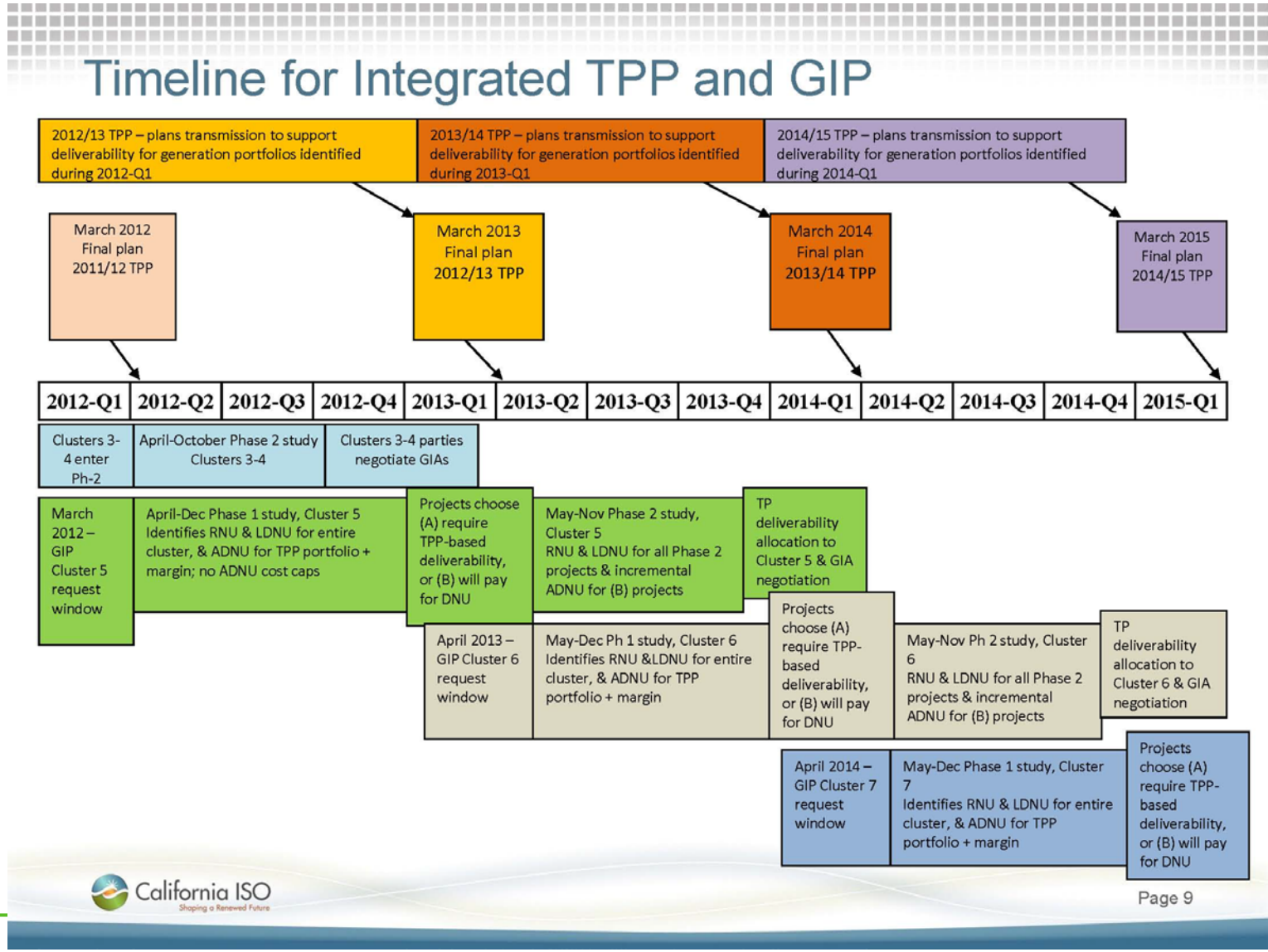
After the allocation process – Option (A) projects

- ***An Option (A) project that does not obtain TP deliverability in the current cluster allocation may either:***
  - *Execute an Energy Only (EO) GIA, or*
  - *Defer execution of EO GIA and "park" for one cycle, or*
  - *Withdraw from the queue*
- ***If it parks and does not obtain TP deliverability in the next cluster's allocation, it must either***
  - *Withdraw from the queue, or*
  - *Go forward as an EO project and meet all requirements associated with an EO GIA.*
- ***If it withdraws, it is eligible for partial refund of first posting, based on failure to be allocated deliverability***
  - *Refund eligibility will extend to 18 months after phase II*

After the allocation process – Option (B) projects

- ***IF an Option (B) project is not allocated TP deliverability in the current cluster allocation period, it must either***
  - *Execute a GIA agreeing to pay for needed ADNU and LDNU without cash reimbursement, or*
  - *Withdraw from the queue*
- ***IF the Option (B) project withdraws, it will be eligible for partial refund of first security posting if its Phase II ADNU cost estimate exceeds Phase I by lesser of 20% or $20 million***
  - *Must withdraw no later than 180 days after phase II results to be eligible for partial refund*
- ***An Option (A) or (B) project allocated TP deliverability must meet annual retention criteria or lose the allocation***
  - *Loss of allocation does not terminate GIA: project may amend GIA to continue as Energy Only*

Timeline for Integrated TPP and GIP



Generation Interconnection Information

SDG&E Interconnection Website: *http://www.sdge.com/generation-interconnections/overview-generation-interconnections*

- Download and review SDG&E Interconnection Handbook
- Links to CAISO interconnection queue, tariffs and websites
- Links to SDG&E interconnection queue, tariffs and websites
- Link to NERC/WECC Reliability Standards
- Links to Process Summaries
- Link to SDG&E Self Generation Technologies site

CAISO Generation Interconnection Process Contact:

- Lead Interconnection Specialist : Judy Brown (916) 608-7062

  JBrown@caiso.com

SDG&E Contacts:

- Generation Interconnection Team Lead: Bruno Velosa (858) 654-8293 BVelosa@semprautilities.com
- Generation Interconnection Project Manager: Marlene Mishler (858) 654-8640 MMishler@semprautilities.com
- Energy Administrator: Khoang Ngo (858) 637-7905 KNgo@semprautilities.com

Q&A Session (II)

Please submit your questions by

June 6, 2013
to
RAMSolicitation@semprautilities.com