**PUBLIC REDACTED VERSION**

# SAN DIEGO GAS & ELECTRIC COMPANY'S 2006 LONG TERM PROCUREMENT PLAN

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## I. INTRODUCTION

San Diego Gas & Electric Company (SDG&E) filed its original 2006 Long-Term Procurement Plan (2006 LTPP) on December 11, 2006 in Rulemaking (R.) 06-02-013. SDG&E's 2006 LTPP consisted of two volumes and corresponding exhibits. At the hearings in Phase II, Track 2 of R.06-02-013, conducted in June 2007, the volumes and exhibits were marked as follows:

- the public version of Volume I of SDG&E's 2006 LTPP was identified as Exhibit 40 and the confidential version was identified as Exhibit 41-C;
- the public version of Volume II of SDG&E's 2006 LTPP was identified as Exhibit 42; and
- the public version of the Exhibits corresponding to SDG&E's 2006 LTPP was identified as Exhibit 43 and the confidential version identified as Exhibit 44-C.

SDG&E's LTPP is summarized in Appendix B of Decision (D.) 07-12-052, which approved, as modified, SDG&E's 2006 LTPP. So as to generate an updated 2006 LTPP, the Commission mandated that SDG&E make a compliance filing (via a Tier 3 advice letter) to conform its original 2006 LTPP to D.07-12-052. Accordingly, this Advice Letter constitutes SDG&E's conformed 2006 LTPP, and supersedes and replaces all previous short- and long-term procurement plans submitted by SDG&E. After the conformed 2006 LTPP is accepted by the Commission, all updates proposed before the next LTPP filing, currently scheduled for 2010[1/], will be made via the Commission's advice letter process. Advice letter updates will include redlined pages of the conformed 2006 LTPP, as well as clean replacement pages.[2/]

On September 4, 2008, in Resolution E-4189, the Commission approved SDG&E's conformed 2006 LTPP. Since that approval, in D.08-11-008, the Commission ruled on a number of Petitions to Modify D.07-12-052. In doing so, the Commission modified a number of D.07-12-052's mandates. So

1/ R.08-02-007, Scoping Memo at 5-6.
2/ D.07-12-052 at 181.

as to conform SDG&E's approved 2006 LTPP to these modifications, this Advice Letter has been updated, including redlined pages and clean replacement pages.

## II. PROCUREMENT IMPLEMENTATION PLAN

### A. Procurement Processes

#### Description of the Procurement Process from Planning Through Transaction, Execution, and Dispatch

Following is an overview of the process and information flow underlying procurement and least cost economic dispatch decisions at SDG&E. The process is comprised of three stages: Planning, Transactions and Implementation (Dispatch). This description generally applies to procurement within the year. Longer term procurement is accomplished through the establishment of need through the LTPP process (see Section IV) and the process for that procurement is generally through Requests for Offers, which are discussed in Section II A "Markets, Requests for Offers."

SDG&E maintains a planning model, currently ProSym, to obtain a long-term (multi-year) forward view of its resource portfolio parameters, such as the short positions, gas burns and need for resource/infrastructure addition. The functioning of production simulation models is well known to the Commission.

SDG&E plans to meet its load requirement in a least-cost dispatch manner that begins with the planning for must-take renewables, Utility Electric Generation (UEG) and California Department of Water Resource (CDWR) allocated resources, in comparison to SDG&E's customer load. The load that has not been filled by must-take energy is met through a combination of dispatchable units and market purchases. The relative quantities of each are determined through economic dispatch, which compares market prices to variable costs of generation to make the "generate or buy" decision. These forecast purchases can be either "economic net short," where the market purchase is used to displace less efficient generation or "physical net short" where a purchase is made due to a level of committed

resources that is insufficient to meet the forecast load. As part of SDG&E's preparation for the implementation of the Market Redesign and Technology Upgrade program (MRTU) by the CAISO, SDG&E recently discontinued its use of OpSym (a least-cost dispatch model developed by Global Energy Decisions, Inc.) and has replaced this system with Gen Trader (a least-cost dispatch model developed by PCI) to provide guidance on decisions regarding products that are most economic in serving the net short position. Basic inputs into the model include:

- SDG&E portfolio resources, including CDWR contracts, modeled with all constraints and operational parameters;
- gas price forecast;
- electric price forecast;
- constraints on physical delivery of gas or electricity;
- load forecasts; and
- other market data.

The planning model is currently used by SDG&E to create a weekly least cost economic dispatch forecast.[3/] As part of regular procurement operations, the near-term time period of this model will be re-run, updated and refined on a weekly basis to create a two-week least cost economic dispatch and unit commitment outlook, that is used to assist in the preparation of purchase and sales strategies for the following week. Outputs from the model used for decision-making in the transaction stage include:

- forecast usage of dispatchable units;
- forecast gas burns; and
- forecast of economic power purchases.

All modeling assumptions are created in a cooperative effort between buyers and the planning group so that the model is a "living document" that captures the most up-to- date information. Changes in the model inputs can occur as often as daily, and the model will be re-run if significant differences

[3/] SDG&E will also use Gen Manager, another product procured as part of a package from PCI, to assist with MRTU bid optimization when MRTU is implemented by the CAISO.

arise intra-day, creating an updated weekly outlook. It is important to note that actual least-cost economic dispatch may vary, sometimes significantly, from the model output due to the dynamic nature of certain inputs to the model, such as demand and prices, as well as the inability of the model to capture all constraints. Also, it must be recognized that real time dispatch takes into account all events, whereas models only take into account those events known at the time the plan is developed.

SDG&E's weekly planning outlook is distributed and reviewed each week prior to the delivery period of the plan by front, mid and back-office staff. SDG&E regularly meets, to review and discuss the previous weekly outlook compared to actuals to gain an understanding of how the model is behaving and evaluate the need for changes in model parameters so as to continually improve output results.

The transaction stage makes use of two major systems: (1) SDG&E has developed an Energy Trading and Risk Management (ETRM) system, that is currently meeting our needs of quantifying and managing the supply portfolio risk; and (2) a suite of scheduling and settlement systems. SDG&E currently employs a vendor solution (the Sunguard ACES system) for scheduling and a number of vendor solutions for settlements. The following are brief descriptions of the various systems:

*Energy Trading and Risk Management System*

- Deal capture: The terms of executed transactions are input into the system.
- Portfolio Positions: Quantification of the effective positions by contract size and delivery period is tabulated for each of the various gas and electricity contracts within the SDG&E portfolio.
- Risk Metrics: Portfolio risk measurements are calculated for Value at Risk (VaR), VaR to Expiration (VtE), Liquidity, Customer Risk Tolerance (CRT) and option sensitivities.
- Credit: Tracks risk exposures caused by transactions with external counterparties and compares the exposures to credit authorization limits specific to each counterparty as determined by Sempra Utilities' Major Markets Credit & Collections group.

- Price Database: Daily settlement prices for standard electricity and gas products are entered and stored for future retrieval and analysis.

- Reporting: ETRM data is passed to other applications for use in deal capture, Settlements, Risk Management and reporting to various agencies.

*Settlements System*

- Deal capture: The terms of ISO schedules, including bilateral contracts, are captured in ACES for use in checkouts, scheduling and settlements.

- CAISO Scheduling: Physical transactions for delivery are parsed into CAISO templates and submitted at each scheduling deadline.

- Settlements: (1) for SDG&E ISO transactions, SDG&E provides data from its ACES database and ISO settlement files to a settlement solution vendor that analyzes the data and reports on discrepancies from expected ISO settlement numbers and any other anomalies. These exceptions are examined and may become the source of ISO settlement disputes; (2) for CDWR contract ISO settlements, the major CDWR dispatchable contract counterparties employ settlement vendor solutions that examine ISO settlement statements and provide exception reporting, as described above. These reports are provided to SDG&E for verification; (3) for SDG&E bilateral transactions, ACES data is used for creating invoices used in bilateral settlements.

The transaction process flow is as follows. The first step in procurement is establishing, through the planning process, SDG&E's portfolio net short position; only then can planning begin for purchases and sales to meet load requirements based on least-cost dispatch. Decisions are made regarding transactions in spot or forward markets. At this stage, as discussed above, weekly plans are reviewed to assist in making decisions in multiple timeframes, short-term (such as locational swaps) and longer-term (such as use of annual hours of QF curtailments and whether there are adequate resources to meet monthly RA requirements). Buyers examine the available resources in the market e.g., spark spreads, prices in order to make buy versus generate decisions. In addition, the portfolio is examined to develop a sense of where it may be appropriate or necessary to include non-standard deals into SDG&E's resource mix.

After the model run for the following week's procurement outlook has been finalized, and prior to the delivery week, plan data is distributed and reviewed by front, mid and back-office staff. The data reviewed includes outputs from the forecasting model, market conditions and relevant information from sources listed below.

Starting at approximately 5:30 a.m. each day, after ISO RMR dispatches are known, traders begin phone conversations with the market to execute trades, placing orders on Exchanges (e.g., ICE) and through brokers and other means. Executed trades are entered in the ACES system, transmission "tags" are created where necessary and schedules for submission to the CAISO are prepared.

SDG&E uses a wide range of data sources when developing buying and selling decisions, including (1) market prices (both spot and forward) for power and gas; (2) weather (local and nationwide); (3) dispatchability of UEG, (4) DWR contracts and future supply contracts; (5) generation resource conditions in San Diego and the neighboring regions and factors influencing the supply of electricity; (6) demand conditions in San Diego and neighboring regions and factors influencing demand; (7) short-term and long-term planned and unplanned outages of SDG&E UEG and CDWR dispatchable contracts; (8) transmission congestion and curtailment data from the CAISO; (9) forecast of cost of transmission losses based on historical Transmission Meter Multipliers and CAISO real-time price for the corresponding zone and time period; (10) CAISO market operation and settlement provisions and prices for CAISO's different energy and ancillary service markets; (11) forecasts of intra-zonal congestions costs for implementation of the SDG&E mitigation plan adopted in compliance with D.04-07-028; (12) contracts and settlement provisions with CDWR; (13) counter party credit; and (14) risk and trading limits when and if applicable.

Transactions for procurement are made primarily with the goal of purchasing physical energy to fulfill our goal of least cost economic dispatch. A discussion of the need for and use of specific physical power products used frequently by SDG&E is described in more detail in Section II A, "Products." Decisions to buy physical energy in the forward or shorter-term markets are based on continuous examination of needs and market conditions.

SDG&E dispatch activities are generally unrelated to transactions for products related to risk management objectives. Those transactions are described in Section II B, "Risk Management Policy and Strategy" of this LTPP. Transactions for risk management are made primarily with the goal of hedging against price volatility and controlling customer VtE. A Contract for Differences, where one party pays another a fixed cash stream in exchange for a floating cash stream tied to a relevant market index, may allow SDG&E to lock in a price without any power being purchased; that is, the product does not help to fill the short position, but contributes to price risk management. Decision-making regarding these types of transactions is described in the Section II B, "Risk Management Policy and Strategy."

Once transactions are executed, they are added to the portfolio dispatch schedules along with all other existing resources. The relative quantities of purchases and generation dispatch are continuously evaluated up to the hour-ahead market through economic dispatch, which compares market prices to variable costs of generation to make the "generate or buy" decision. SDG&E currently relies on spreadsheets to make this comparison near real-time because use of more complex production cost models is not necessary in this timeframe, since the more complex decisions on unit commitment have already been established. Once Gen Trader is fully integrated, Gen Trader will be

quicker to run and will replace the spreadsheets currently being used. Any residual long or short position is settled in the CAISO imbalance market. The SDG&E procurement process by which it makes use of various markets to transact for various authorized products strives to execute an optimal economic dispatch. However, various constraints exist that place a higher priority on non-economic goals that, in turn, make the actual economics less than optimal compared to a completely unconstrained dispatch. Constraints that result in sub-optimal economic solutions in near real-time dispatch are generally related to reliability considerations and include: (1) Commission guidance to obtain no more than 5% of need in spot markets without justification, (2) Amendment 72 to the ISO Tariff, which requires scheduling of no less than 95% of on-peak load and 75% of off-peak load in the day-ahead market, and (3) D.04-07-028, which ordered the IOUs to account for anticipated intra-zonal congestion when creating schedules and mitigated any forecasted congestion, thereby limiting access to remote markets and resources.

Additionally, the Commission adopted the Standards of Conduct (SOCs) in D.02-10-062, and further modified them in subsequent decisions. The SOCs, as they exist today, are included in this LTPP below:

1. Each utility must conduct all procurement through a competitive process with only arms-length transactions. Transactions involving any self -dealing to the benefit of the utility or an affiliate, directly or indirectly, including transactions involving an unaffiliated third party, are prohibited.

2. Each utility must adopt, actively monitor, and enforce compliance with a comprehensive code of conduct for all employees engaged in the procurement process that: 1) identifies trade secrets and other confidential information; 2) specifies procedures for ensuring that such information retains its trade secret and/or confidential status [e.g., limiting access to such information to individuals with a need to know, limiting locations at which such information may be accessed, etc.]; 3) discusses employee actions that may inadvertently waive or jeopardize trade secret and other privileges; 4) discusses employee or former employee activities that may involve misappropriation of trade secrets or other

confidential information, unlawful solicitation of former clients or customers of the utility, or otherwise constitute unlawful conduct; 5) requires or encourages negotiation of covenants not to compete to the extent such covenants are lawful under the circumstances [e.g., where a business acquires business interests of individuals who subsequently work for the acquiring business, the individuals disposing of their business interests may enter covenants not to compete with their new employer.] All employees with knowledge of its procurement strategies should be required to sign and abide by an agreement to comply with the comprehensive code of conduct and to refrain from disclosing, misappropriating, or utilizing the utility's trade secrets and other confidential information during or subsequent to their employment by the utility."

3. In filing transactions for approval, the utilities shall make no misrepresentation or omission of material facts of which they are, or should be aware.

4. The utilities shall prudently administer all contracts and generation resources and dispatch the energy in a least-cost manner. Our definitions of prudent contract administration and least cost dispatch are the same as our existing standard. Per D.02-12-1074, prudent contract administration includes administration of all contracts within the terms and conditions of those contracts, to include dispatching dispatchable contracts when it is most economical to do so. In administering contracts, the utilities have the responsibility to dispose of economic long power and to purchase economic short power in a manner that minimizes ratepayer costs. Least-cost dispatch refers to a situation in which the most cost-effective mix of total resources is used, thereby minimizing the cost of delivering electric services. PG&E's description of least-cost economic dispatch methodology described in its 1992 "Resource: An encyclopedia of energy utility terms," 2d edition, at pages 152-3 is appropriate with the recognition that a pure economic dispatch of resources may need to be constrained to satisfy operational, physical, legal, regulatory, environmental, and safety considerations. The utility bears the burden of proving compliance with the standard set forth in its plan.

5. The utilities shall not engage in fraud, abuse, negligence, or gross incompetence in negotiating procurement transactions or administering contracts and generation resources.

**Description of the Proposed Procurement Products for Electric and Gas Procurement**

In Table 1 of D.02-10-062, the Commission provided an initial list of authorized products for IOU trading. The table below is SDG&E's update to Table 1 from D.02-10-062, including substantially all of the physical products SDG&E intends to use in its procurement activities. If SDG&E needs to procure

any products not included in this list, it will file an Advice Letter requesting to add specific products. SDG&E will request approval through advice letter filings of new products that arise from changed policies or market developments that are not covered by the above lists. Such products may be necessary to satisfy procurement needs arising from MRTU implementation, new legislation or other requirements such as the emergence of Renewable Energy Credit markets for compliance with the RPS Program.

**Table 1**
**Electric Procurement Products**

| Transaction | Description |
|---|---|
| Real-time Energy | Hour-ahead and intra-day energy. |
| Spot Energy | Day-ahead and intra-day energy. |
| Forward Energy | Intra-month and forward energy and demand side usage reduction. |
| Capacity | Right to purchase energy or load reductions at an incremental energy charge at specified rate if exercised. |
| On-Site Energy or Capacity | Energy or capacity products self-generated on the customer side of the meter. |
| Tolling Agreement | Purchase Agreement for Capacity and Energy products where buyer provides the fuel and seller converts the fuel to energy in return for a pre-established tolling charge and guaranteed heat rate from plant. |
| Peak for Off-Peak Exchange | Trade where x peak MWh < y off-peak MWh. |
| Seasonal Exchange | Trade peak energy in Summer for peak energy in Winter. |
| Electricity Transmission Products | Transmission, transmission rights or locational spreads, arranged through CA ISO and with non-CAISO transmission owners. |
| Ancillary Services | Services include replacement reserve, regulation up, regulation down, spinning-reserve and non-spinning reserve. |
| Firm Transmission Rights (FTRs) and Congestion Revenue Rights (CRRs) | Products that provide insurance and financial protection against the costs of congestion experienced in the transmission system. |
| FTR/CRR Locational and Non-Locational Swaps | Trading of FTRs and CRRs typically with the intent of monetizing value of excess FTRs and/or CRRs. |
| Resource Adequacy Products | Planning reserves to meet Commission Resource Adequacy Requirements (RAR). |

| Table 1<br>Electric Procurement Products | |
|---|---|
| **Transaction** | **Description** |
| Emissions Reduction Credits (ERC's) | Trade to meet environmental compliance for owned generation or new "in-basin" fossil generation. Product is local in nature. |
| SO2 Allowances | Trade to meet environmental compliance for owned generation or new "in-basin" fossil generation. Product is traded/transacted homogenously in the U.S. |
| Resource Adequacy (RA) Import Counting Rights | Trade of ISO intertie capacity used for forecast imports of RA products to be used to meet RA requirements. |
| Physical Gas | Buy or sell physical natural gas on a daily, weekly, monthly, multi-month, annual or multi-year basis at an index or fixed price. |
| Natural Gas Transportation | Contract for purchase of Interstate or Intrastate[4] natural gas pipeline capacity to transport natural gas for a specified term from specified receipt point(s). Deliver at specified delivery point(s) on each day such quantity of natural gas, if any, up to the maximum receipt quantity for each such receipt point and up to the maximum delivery quantity for each delivery point all as specified in the contract, less any requisite fuel and loss reimbursement, not to exceed the physical capacity of such point at a designated rate. The levels of service for natural gas transportation may range from firm down to interruptible. The purchase of natural gas pipeline capacity can be achieved directly with the natural gas pipelines or through capacity release transactions pursuant to the natural gas pipeline's applicable tariff. |
| Capacity Release | The purchase or sale of natural gas pipeline capacity through a party's release of a specific quantity of natural gas pipeline capacity on a specific natural gas pipeline from specified receipt points to specified delivery points, for a designated term and rate, pursuant to the natural gas pipeline's applicable tariff. The release of natural gas pipeline capacity can be on a permanent or temporary basis and such release may contain special provisions. In the case of Canadian pipelines, this activity may be accomplished as an assignment of capacity pursuant to the applicable tariff. |
| Natural Gas Pipeline Imbalance Trading | Allows parties to manage the difference between the scheduled quantity and measured quantity at the receipt and/or delivery points of the natural gas pipeline through purchases or sales of natural gas or by trading imbalance positions pursuant to the natural gas pipeline's applicable tariff. |

[4] In January 2004, California Public Utilities Commission issued the Natural Gas Market Order Instituting Rulemaking(OIR) R.04-01-025) which included establishment of Firm Access Rights(FAR). Phases 1 and 2 of the process addressed the integration of SoCal Gas and SDG&E gas transmission rates, establishment of firm access rights and provision for off-system gas transportation services proposals of SoCal Gas and SDG&E, form of firm access rights, gas pooling service and off-system deliveries to PG&E. The Commission address the Phase 1 in D.06-04-033 and Phase 2 issues in D.06-12-031. SoCal Gas submitted Al 3706 and SDG&E submitted AL 1668 in compliance with D.06-04-033 and D.06-12-031. FAR will provide SDG&E and SoCal Gas customers delivery into our system from the interstate pipeline and delivery supplies off system to PG&E. The FAR Tariff can be accessed on SoCal Gas's website at: http://www.socalgas.com/business/firmaccess/#tariffs.

| Table 1<br>Electric Procurement Products | |
|---|---|
| **Transaction** | **Description** |
| Gas Park and Loan | Natural gas pipeline agrees on an interruptible service level to receive and park natural gas tendered for SDG&E's account at an agreed upon point, up to the maximum quantity specified subject to a mutually agreeable withdrawal schedule at a specific rate, all pursuant to the natural gas pipeline's FERC Gas Tariff or other applicable tariff. Natural gas pipeline agrees on an interruptible service level to loan natural gas to SDG&E at an agreed upon point, up to the maximum loan quantity specified plus any requisite fuel and loss reimbursement subject to a mutually agreeable repayment schedule at a specific rate, all pursuant to the natural gas pipeline's applicable tariff. |
| Gas Storage | Buyer reserves gas storage capacity for a defined price. Capacity Storage procured with defined injection and withdrawal rights. Can be procured either short-term (monthly capacity rights or annual capacity rights up to 3 years) or long-term (annual capacity rights up to 10 years). Storage may have some inherent hedge characteristics as it can mitigate price risk on either short-term (weekly) or long-term (seasonal) basis. |
| Physical Option – Call or Put | Right to purchase (call) or sell (put) energy in the future at pre-set price (price may be pegged to an index). |
| Physical Swap | Over the counter agreement between two parties specifying the exchange of payments based on a given commodity or formula. |
| Financial Option – Call or Put | Right to purchase (call) or sell (put) the future financial energy cashflows at pre-set price (price may be pegged to an index). |
| Financial Swap or Future | Exchange of cash-flows between a floating price index and a fixed negotiated price. |
| Financial Spread | Spread is the difference between two prices, amounts or numbers such as the bid/ask prices in commodity trading. In the futures and options markets, a spread is the simultaneous purchase and sale of two different contracts in the expectation of a favorable change in their relative prices. |
| Financial Spread Option | An option on the price differential between two related instruments or commodities. |
| Credit Insurance Products | Contract to insure against various adverse credit events to reduce Credit Exposure and Credit Risk (e.g., credit default swaps, credit insurance, etc.) |
| Volumetric Insurance Products | Contract to insure against various adverse physical and/or operational events to protect against replacement costs (e.g., business interruption insurance, unit outage insurance, etc.) |

Below is a more detailed discussion of the key products that will be used for managing the physical position of the portfolio in the time between the filing of this LTPP and the next update.

### Reliability Must-Run Energy

In 2008 and possibly in 2009, SDG&E anticipates that it will have RMR Condition 1 and Condition 2 contracts. RMR energy, which is dispatched by the ISO under the RMR contract with the plant owners, is by its nature uneconomic, and is therefore not scheduled as a result of SDG&E's least cost dispatch. SDG&E, which dispatches the units under the tolling arrangements, will choose between the "Contract Path" or "Market Path" options in the RMR contract and decide where to "sink" this energy – either to SDG&E load or to an RMR-pseudo load point. The RMR status of these units after 2009 is unclear.

**Must Offer Energy**

The day-ahead scheduling process at the ISO concludes at 10 a.m.; however, Must Offer Waiver Denials are not addressed by the ISO until after 11 a.m. Thus, SDG&E is often uncertain of the availability of some of its largest units until after day-ahead scheduling has been completed. The result is that SDG&E may chose to shut down certain units rather than carry them during nighttime hours because it is cost-effective to do so. Instead, SDG&E will buy energy to replace the units across the on-peak hours of the next day. However, if the ISO denies the Must Offer waiver request and decides to keep the unit online for system needs, then the unit is available for certain hours during the following day where SDG&E can essentially use this as a peaking unit.

**Spot Energy**

As discussed above, SDG&E will transact in the spot market to balance its load with supply. Spot transactions may also include selling energy back to the market during periods of over-supply or to meet least-cost dispatch obligation when contracts/units are economic to dispatch. Spot transactions are typically executed either day-ahead or in real-time in advance of the delivery period at fixed or indexed prices. Spot transactions are done either through exchanges or directly with counter parties, and may range from firm and non-firm energy supplies to capacity products. The primary objective of spot transactions is to manage the physical supply/load balance at competitive prevailing market prices. While the Commission has provided guidance that IOU spot market transactions should be less than 5% of total load, it has also ordered the IOU's to follow least cost dispatch. The actual quantity of SDG&E spot market transactions will be governed by the least cost dispatch requirement, where SDG&E will purchase all energy that is economic in Day-ahead and Hour Ahead markets.

### Forward Products

SDG&E may procure energy and capacity well in advance of the actual delivery period. As with other physical products discussed in this section, the actual requirement to transact on a forward basis may be due to either managing the portfolio's price risk, filling short positions, or realizing economic value. Forward transactions may be for standard energy blocks or non-standard structured products, depending on portfolio need and the market used to procure the product. It is important to note that, despite its physical position, SDG&E may still elect to make a forward purchase or sale of energy if doing so is in its customers' interest.

### Tolling

Tolling arrangements give the buyer access to generation capacity at a guaranteed gas-to-electricity conversion heat rate. This product could be loosely characterized as a power plant lease. During the course of this plan, SDG&E could find itself in the market as either a buyer or seller of tolling contracts. Tolling agreements are relatively complex structured products that do not trade like standardized products since any tolling arrangement must be customized to the characteristics of the unit underlying the contract. The most likely means of trading a Tolling contract is through an RFO

### Indexed Energy

SDG&E may buy energy and capacity products by use of indexed pricing. In this instance, energy is contracted for on terms that are certain as to quantities and delivery times, but the price "floats" based on an agreed upon index. Such transactions would allow SDG&E to ensure reliability of supply or market, while stripping away pricing terms for consideration in a risk management strategy.

**Heat Rate Call Options**

SDG&E's portfolio may at times be long on physical capacity. One means of monetizing such excess capacity is through the sale of heat rate call options. A heat rate call option is an option that entitles the holder of the option to purchase power at a strike price that is based on an indexed gas price multiplied by the heat rate, and the seller will collect the premium. This tool is a particularly good means of realizing value from units with higher than market heat rates because they represent no intrinsic value, but contain extrinsic value due to the volatility of forward prices.

**Firm Transmission Rights (FTRs)**

SDG&E's will continue to participate in CAISO auctions for Firm Transmission Rights (FTRs), buying economic transmission hedge protection for delivery of supply resources in its portfolio, until the CAISO MRTU replaces FTRs with Congestion Revenue Rights (CRRs)[5/]. FTRs act as insurance against congestion charges. The price SDG&E will pay in the auction [redacted] the realized benefits (congestion charges versus FTR payments) are uncertain since future congestion is difficult to predict. Purchase of FTRs is a prudent risk management tool whether the net realized benefit is positive or negative.

**Congestion Revenue Rights (CRRs)**

Under the CAISO's MRTU, hedging of exposure to congestion costs will transition from FTRs to Congestion Revenue Rights (CRRs) when the ISO implements MRTU. Each LSE will receive a certain allocation of CRRs and will have the opportunity to compete with all market participants for additional CRRs through an auction.

5/ The CAISO conducted its most recent FTR auction (for the operating period April 2008 through March 2009) on March 11 through 13, 2008.

Subsequent to the filing of this LTPP, SDG&E made advice letter filings at the Commission seeking authority to nominate or procure CRRs. On Oct 18, 2007 in Resolution E-4124, the Commission granted, with criteria for implementation, SDG&E's request[6/] for authority to convert CRRs allocated to it in Tiers 1 and 2 of the CAISO CRR allocation process into long term (10 year) CRRs, in conformance with the rules established in the CAISO tariff. In this approval, the Commission required that such LT CRRs be used for hedging of expected use of the transmission grid and that LT CRRs would not be acquired for speculative purposes.

On December 6, 2007, in Resolution E-4136, the Commission granted, with criteria for implementation, SDG&E's request[7/] for acquisition of CRRs. Authorization conferred in that resolution: (1) allows SDG&E to acquire CRRs through the CAISO tariffed allocation and auction program in volumes as limited by the CAISO tariff and SDG&E's expected grid use, and allows SDG&E to transact in secondary CRR markets; (2) required that SDG&E use CRRs for hedging and not for speculation; (3) required consultation with the PRG and Energy Division prior to nominating CRR quantities, where the nominations are based upon forecast valuation established by SDG&E; and (4) requires reporting of CRR transactions in the Quarterly Compliance reports.

**FTR/CRR Locational Swaps**

Annually, SDG&E has participated in auctions for, and successfully acquired, various FTRs. These purchases are made primarily to protect deliveries of energy supply from SDG&E resources located outside of the SP15 load zone from congestion charges and schedule curtailments.

During periods where some or all of the FTR capacity is not being used for energy deliveries from SDG&E resources (for example during plant maintenance outages or when its is not economic to

6/ AL 1920-E filed August 3, 2007.
7/ AL 1926-E filed September 14, 2007

generate at full load) SDG&E will continue to monetize the value of the FTR by entering into locational swaps between the zones covered by the FTR. Because the price spreads between zones fluctuate over time, SDG&E may actively trade in and out of this spread as the market presents opportunities to improve on the initial value of the FTR hedge. For example, assume the ZP26 energy price is $50/MWh and the SP15 price is $55/MWh, and that SDG&E is scheduling 460 MW from the Sunrise contract across the SP15/ZP26 interface where it owns a 560 MW FTR. SDG&E then purchases an additional 100 MW of ZP26, schedules it across the FTR, and sells the power into SP15 for a $5/MWh customer benefit. If the same period subsequently trades at $50/MWh for ZP26 and $45/MWh for SP15, SDG&E can purchase back the 100 MW of SP15 energy and sell back the 100 MW of ZP26 energy, thereby increasing the initial FTR hedge value to ratepayers from $5/MWh to $10/MWh.

**Non-FTR/CRR Locational Swaps**

SDG&E will have available to it certain resources that are located outside of its service territory and that do not have associated FTRs, such as the Boardman Contract power delivered at COB, the Sunrise power delivered at ZP26 and power from the Yuma cogeneration plant in Yuma, Arizona. Due to the risk of congestion charges and potential curtailments across transmission paths, SDG&E may choose not to import power from these units into SP15, but will sell the power at the delivery point and purchase replacement power in SP15 or another location with less congestion risk. This transaction is a locational swap. However, unlike the example above, SDG&E did not own an FTR that hedged the congestion risk.

**Third-Party Transmission Capacity**

SDG&E will consider purchasing non-CAISO transmission capacity made available by one of a number of the Open Access Same-Time Information Systems (OASIS) in operation in the WECC.

OASIS, as its name implies, is a bulletin board open to many parties, and sells transmission capacity at regulated rates. Such capacity will allow SDG&E to access markets such as the Pacific Northwest during the spring run-off season and the Desert Southwest during certain shoulder and off-peak hours. Transmission may also be needed to garner deliveries under exchange agreements or other structured transactions. SDG&E intends to purchase third-party non-CAISO transmission capacity from time to time on an opportunistic basis, should its analysis show that such transactions will help reduce overall cost of delivered energy for ratepayers.

**Ancillary Services**

Once the operating year begins, reserve considerations shift from planning reserves, which are an RA product, to operating reserves, which are ancillary services. At various times in 2007 and 2008, SDG&E expects to have capacity capable of providing ancillary services. These resources currently include the Palomar, Miramar, and Otay Mesa (see Exhibit II-1). SDG&E will use these resources to self-provide ancillary services, bid them into ISO market, or sell them bilaterally. Any shortage of ancillary services will be made up through purchases from the ISO market, or from bilateral purchases.

Ancillary services needs will be an important consideration in the selection of resources in future procurement. The data shows that, on a forecast basis for the year 2008, SDG&E [redacted]. Actual availability of these services will be completely dependent upon unit commitment. That is, a given unit may be capable of providing operating reserves, however, if it is uneconomic to commit the unit, then SDG&E may be in the market buying operating reserves. Consistent with least-cost dispatch, SDG&E will first self-provide the most valuable reserve requirements and then purchase any remaining ancillary services needs from the ISO.

Regulation up and down capacity values have historically been much more valuable than spin capacity. However, if this trend changes, SDG&E will also change its method of selecting which services to self-provide versus purchase. SDG&E will continuously evaluate the relative effectiveness of self-provision of reserve capacity relative to offering the same capacity into the energy markets. When the expected margins on energy sales are lower than the expected value of any ancillary services, SDG&E would schedule/sell into the ancillary services market. The planned method and quantity of proposed ancillary services purchases are subject to change when the CAISO's MRTU market redesign is implemented.

**Inter-Utility Exchanges (IUEs)**

SDG&E will make use of such exchanges when the appropriate offsetting position with another IOU results in an effective match. Exchanges may be as short-term as intra-day, where one party delivers morning peaking energy and receives back evening peaking energy. Exchanges may also be peak or off-peak, or reach across seasonal differences in net open positions. For longer-term exchanges, pricing [redacted] Additionally, exchanges may be entered into with municipalities, non-California IOUs, merchant generation companies or trading companies to offset short positions with long positions, rather than balancing positions by trading illiquid products and incurring unnecessary transaction costs.

**Counterparty Sleeves**

SDG&E may enter into two-sided trades where the same product is purchased from one counter party and sold to another simultaneously for the purpose of providing credit. Such transactions, known as credit sleeves, have the following two benefits. First, and most importantly, sleeves help SDG&E control its credit exposure to various counterparties. If SDG&E becomes concerned with its level of

financial exposure to Party B, SDG&E may be able to arrange for Party C, who does not have similar credit issues with Party B, to buy from Party B and sell to SDG&E. Thus, Party C acts as a credit sleeve," absorbing SDG&E's exposure to a counterparty with whom it would otherwise be unable to transact. These sleeves, which entail a nominal fee, are useful in expanding the pool of counterparties available to SDG&E.

The second benefit of credit sleeves is modest, yet certain, cost reductions SDG&E may achieve to its supply portfolio. From time to time, SDG&E may be asked to buy from Party B to sell to Party C at a small profit because both parties desire to trade, but due to credit restrictions, cannot do so. SDG&E can act as a credit sleeve if the seller is able to sell to SDG&E and if SDG&E has a credit surplus with the buyer. SDG&E has the ability to sleeve trades and either maintain or even improve its credit exposure with the counterparties. In these cases, credit sleeves would have the positive effect of reducing portfolio cost and potentially mitigating credit exposure to either party.

**Resource Adequacy Products**

In D.04-10-035, the Commission defined Resource Adequacy Requirements (RAR) for all LSEs in California. Under this and subsequent Commission orders, each LSE is required to acquire planning reserves that are at least 15% greater than their peak load forecast, which may be adjusted by the CEC. The adoption of these requirements may necessitate that SDG&E procure resources solely for meeting this RAR planning reserve, as opposed to meeting customer load. SDG&E may find that it needs to execute transactions, as a buyer or a seller, to meet its RAR needs. Such transactions would be for capacity or rights to capacity, and the cost of these would be fully recoverable through SDG&E's ERRA.

**Emissions Reduction Credits (ERCs)**

SDG&E has added both a gas-fired peaking facility and a combined cycle power plant to its portfolio and anticipates adding up to two additional CCGTs and a number of additional peakers during the course of this LTPP period. Some of these units may be utility owned, and so SDG&E would be responsible for environmental compliance. SDG&E may find that it needs ERCs to meet the limits on NOx emissions for dispatch of tolling contracts at units that it does not own. SDG&E may procure these products on the market for use at its generation facilities, or to hold for new "in-basin" fossil generation identified in the long-term resource plan. The market for ERCs is very local in nature and quite illiquid. Such transactions would likely be bilateral, rather than acquired through RFOs or exchanges, and their costs would be recovered through SDG&E's non- fuel generation balancing account (NGBA). Given the limited amount of ERCs available in SDG&E's service territory, it is possible that SDG&E may acquire ERCs that it would hold and book as plant held for future use. The cost of such ERCs would be recovered via Advice Letter or as part of a future general rate case.

**SO2 allowances**

SDG&E possesses SO2 allowances (see Exhibit II-1) and intends to enter into trades for these from time to time in order to make the highest and best use of any allowances that it possess.

**RA Import Counting Rights**

Under the current RA rules, entities are given an allocation of ISO intertie capacity that they may use for forecast (in annual and monthly RA compliance filings) imports of RA products to be used to meet their RA requirement. SDG&E may, during the course of this plan, have a need to either buy more rights than it has been allocated or sell any unused portion of its allocation. Until and if SDG&E

procures energy and/or capacity products across the interties, these rights convey no physical access to transmission; they are simply an accounting right in RA compliance.

Most of the products listed above may not always closely match the needs of the SDG&E portfolio, and the need may arise to pursue structured products through bilateral transactions. As stated in the discussion on Bilateral Contracts, SDG&E would perform analysis to ensure that any product considered is priced competitively relative to its value to the portfolio and against alternate physical energy products.

**Contract Duration Pre-Approval Limits**

In D.07-12-052, the Commission clarified the rules which delineate the applicability of pre-approval limits to SDG&E procured contracts. Those rules are adopted and incorporated into SDG&E's LTPP and are copied below[8/]:

- IOU may execute a contract of under five years without pre-approval for which deliveries end at any point within the 10-year LTPP procurement cycle, provided the procurement complies with a procurement limit methodology (which various parties refer to as a ratable rate, laddering or layering methodology) developed by the IOU and approved by a Commission resolution or decision.
- Absent a Commission-approved procurement limit methodology[9/], an IOU may execute a contract of under five years without pre-approval provided, per existing Energy Division guidance, that the five-year duration clock begins:
  - at the time the contracted resources begin delivery, if delivery begins within one year of contract execution; or
  - at the time of contract execution, if delivery does not begin within one year of contract execution.
- In calculating contract duration, calendar days are used, not days of obligation, days of service under the contract or days of need for the resource.

8/ D.07-12-052, p. 172.

9/ SDG&E may at a future time file more detail on its procurement limit methodology in its LTPP, if required by the Commission in order to be granted authorization for execution of contracts, without pre-approval by the Commission, where the contract is less than five years in duration and for which contract deliveries end in years 6 through 10 within the 10-year LTPP procurement cycle.

**Description of the Proposed Market and or Selection Process for Each Procurement Related Product**

As described herein, SDG&E anticipates that it will utilize four primary mechanisms for purchasing and selling authorized products, bilateral contracts, exchanges, spot markets and competitive bid solicitations (RFOs). Rather than a product-by-product discussion, this section discusses the types of markets which are available for buying various products, some of the key characteristics of each and a list of the products that can be obtained through each. Generally, these mechanisms contain various markets each with their own selection process. For instance, spot markets can be broker markets or formal exchanges such as ICE. The actual quantities transacted through any one of these means is a function of the product availability and pricing.

**Bilateral Contracts**

Due to the non-standard nature of many of SDG&E's short and long positions, it may be difficult to find standard products traded on transparent exchanges that fit all of the needs for economic purchases, sales and load-serving. In certain instances, a non-standard, structured product negotiated with a single counterparty may result in the best product for SDG&E's portfolio. This approach is advantageous over a competitive bid process in terms of time and changing market conditions. Bilateral transactions are characterized by the ability to reach faster agreement on commercial terms, including price, along with potentially more creative and beneficial contract commercial terms achieved through a more flexible negotiating process.

Prior to executing such a structured transaction, SDG&E would compare the economic and operational benefits to its associated premium over dispatching a generation unit and against purchasing a standard energy product valued against the forward prices covering the same period of

delivery, and demonstrate that the product benefited the overall portfolio by reducing net cost or portfolio VtE compared to other products.

An example of the need for such a product is SDG&E's winter "needle peak." [redacted] of time. Operating a base load unit at minimum load to cover the needle peak may be far more costly than buying a structured product that provides the power only when needed. Other proposed uses of bilateral transactions include replacement power for unexpected interruptions of supply and for filling a position too large for the spot market or too irregular in shape to use standard market products.

In D.03-12-062 (pp. 39-40), the Commission placed the following limits on bilateral contracting: (1) for short-term transactions of less than 90 days duration and less than 90 days forward, the IOUs are authorized to continue to use negotiated bilaterals subject to the strong showing standard we adopted in D.02-10-062, as modified by D.03-06-067, and any such negotiated bilateral transactions shall be separately reported in the utilities' quarterly compliance filings; (2) to purchase longer term non-standard products provided they include a statement in quarterly compliance filings to justify the need for a non-standard product in each case; the justification must state why a standard product that could have been purchased through a more open and transparent process was not in the best interest of ratepayers; and (3) for standard products in instances where there are five or fewer counterparties who can supply the product. This authority is limited, however, only to gas storage and pipeline capacity.

### Exchanges

Exchanges can include a broad group of distinct markets such as electronic auctions and electronic trading platforms. Broker markets are the manual equivalent to electronic exchanges in that brokers have access to a wide pool of buyers and sellers and convey this pricing information to all participants, creating the same price transparency as electronic exchanges. In addition to creating price transparency, exchanges and brokers create liquidity in the market by attracting large numbers of buyers and sellers into a single arena. This increased liquidity creates the greater competition amongst participants.

Another common characteristic of exchanges is their "double blind" nature. That is, the buyers and sellers are unknown to each other prior to being matched up by the broker/exchange. This allows for transactions with affiliates to be conducted without raising concerns about undue preferential treatment. Lastly, exchanges tend to deal in standard products. This is the trade-off for increased liquidity; the most successful exchange traded products are those where all products and terms can be standardized. Many highly structured products, such as tolling arrangements for specific power plants or locational swaps for two thinly traded locations, do not have a broad enough market to create standard traded products.

The simplicity of the exchanges/broker markets are part of their appeal. Access to pricing on standard products usually reduces the selection criteria down to a single determinant – price. Exchanges and brokers usually allow participants to be selective about with whom they are matched, while preserving anonymity. For instance, a participant can elect to "turn off" any particular counterparty for any reason such as a lack of established credit terms, and these two participants will not be matched. Voice brokers offer a similar service on a manual basis.

SDG&E sees exchanges as one of the best means of promoting a competitive market price for energy for its customers. Exchanges provide timely and transparent pricing information by essentially reporting, in real time, the best current market prices and volumes available for transaction. The types of products most frequently procured through exchanges/brokers are standard energy products including baseload gas, 6x16 power, financial products and ISO products such as Ancillary Services. Exchange and broker fees are recovered through SDG&E's ERRA. SDG&E intends to use exchanges to trade baseload products for terms ranging from day-ahead to multi-month or longer.

**Spot Markets**

It is appropriate to make responsible use of the spot market as a means to procure a reasonable percentage of the total portfolio based on economic criteria. "Spot markets" are actually more of a category of transactions of many types, executed in different markets, whose common characteristic is the timing of the transaction relative to the delivery period. The Commission has defined spot markets as any trading done in a day-ahead, hour-ahead or real-time period. Spot transactions may be executed either through exchanges, directly with counter parties, or in the ISO markets.

Some participation in the spot market is in the best interest of customers, as it allows SDG&E more flexibility to respond to market conditions, diversify the price exposure of its portfolio, capture opportunities that may be advantageous to the portfolio and contribute to market efficiency. Over-reliance on spot transactions is not in the best interest of customers because it can lead to overworking of ISO systems and personnel, and can expose the portfolio to highly volatile prices. SDG&E will have policies and systems in place to monitor and control this price exposure, taking on a measured risk in exchange for the opportunity to participate in all available markets. SDG&E does not plan, however, to

rely on the spot market for an excessive amount of its energy on an annual basis.

As discussed elsewhere in this LTPP, there is a tension between Commission guidance on the use of spot markets and least-cost dispatch. For example, when prices in the spot or real time markets are advantageous, SDG&E would expect to purchase as much spot energy as practicable in compliance with the Standard of Conduct 4 requirement to conduct a least-cost dispatch. For example, it is possible that a monthly gas cost for a CCGT unit may place this unit on and fully loaded in the weekly resource plan. However, if power prices during the week declined or gas prices increased sufficiently, least cost economic dispatch would dictate that SDG&E buy day-ahead energy and shut down the CCGT. This and similar circumstances could result in the amount of energy purchased from spot market exceeding 5%, but providing lower overall cost.

SDG&E will schedule in accordance with current CAISO Tariff rules that require the use of balanced schedules. Combined with the CAISO Amendment 72 requirement that 95% of load be scheduled in the Day-ahead market, this creates a further constraint on use of spot markets. Therefore, SDG&E does not anticipate intentionally making use of ISO imbalance energy as a significant part of its procurement, although inherent imprecision in the load forecast will push SDG&E into the imbalance market for some portion of energy supply.

This lack of ability to freely transact in spot rather than day-ahead markets has had the unintended consequence of reducing spot market prices due to a large supply of RMR and Must Offer energy and a lack of buyers, paradoxically making the spot market more economically attractive to buyers. The types of transactions which SDG&E will most likely execute in spot markets include economy energy, day-ahead and intraday gas trades as required by SDG&E's gas procurement plan and for

balancing/operational needs and ancillary services. Little to none of the financial/risk management transactions occur in spot markets.

**Competitive Bid Solicitations (Request for Offers)**

The key characteristic of competitive bid solicitations such as RFOs is their objective of bringing together the largest possible number of market participants to make offers to sell, thus promoting liquidity, competition and price discovery. These benefits must be balanced against another characteristic of RFOs, namely that the RFO process is very slow relative to the volatility of market prices and leaves the portfolio exposed until contracts are negotiated and signed. In D.07-12-052, the Commission stresses that it is not in favor of "just in time" resource acquisition and directs IOUs to begin procurement on a timeline that takes into consideration that project development cycles can be up to seven years in length and to "structure their RFOs for authorized resources to coincide with the projected system need on a timeline that ensures system reliability."[10/] Further, RFOs are administratively costly due to the extensive contract negotiations required to cover deal-specific commercial, legal and credit terms, which themselves may add further risk to SDG&E customers. SDG&E regularly evaluates the needs of the portfolio to determine whether RFOs present advantages to the alternative of spot trades, exchange traded products, bilateral transactions or some combination. RFOs' administrative overhead makes them unsuited for shorter term procurement.

SDG&E sees the value of RFOs in long-term procurement where it is procuring highly structured, non-standard products and no transparent pricing exists, or where products may be

[10/] D.07-12-052 p. 102.

standardized, but no exchange exists on which to trade them. Examples of non-standard products are complex tolling arrangements or new capacity additions. Examples of standard products that SDG&E may buy or sell through RFOs include RA capacity. In D.08-11-008, the Commission modified the requirements for use of an Independent Evaluator (IE), such that: (i) SDG&E is required by the Commission to use an IE in the solicitation process for products of greater than two years in duration and (ii) SDG&E must employ an IE wherever an affiliate or utility bidder is present, regardless of contract duration.[11/] The Commission defines when the contract duration clock begins as: (1) at the time the contract resources begin delivery or the product is made available, if delivery or availability of the product occurs within one year of contract execution; or (2) at the time of contract execution, if delivery or availability does not begin within one year of contract execution. Further, to ensure that an IE is retained in all cases where an affiliate or utility may participate in an SDG&E RFO process, the Commission requires that SDG&E address the possibility of affiliate or utility bids by designating at the outset of an RFO whether such bidders are allowed to participate. If SDG&E chooses not to make such a determination up front, SDG&E will either require that all parties that intend to participate in an RFO submit a notice of intent early in the RFO process such that an IE can be retained before bids are received or designate at the outset of the RFO that an IE will be used.

In D.04-12-048, the Commission defined "all-source" RFOs as, "open to all resources (conventional/renewable - turnkeys, buyouts, and PPAs)."[12/] SDG&E interprets this literally as meaning that any resource that can fit the identified need is eligible to participate, but it is important to note that

[11/] D.08-11-008 at page 27 and OP 2.
[12/] D.04-12-048, Ordering Paragraph 26a.

not all resources fit all needs. For instance, a run-of-river hydro project cannot fit a baseload need and a remote project cannot fulfill an in-basin grid reliability need for SDG&E. The Commission recognized this in D.04-12-048: "the IOUs have the flexibility to tailor their RFOs to reflect their specific resource needs."[13/] SDG&E cannot in this document present an all-inclusive list of caveats to the term all-source. However, as a principle, SDG&E will endeavor to be as inclusive as possible so that its customers can choose from the largest possible list of products to meet its procurement needs. Also, SDG&E will identify specifically the products sought in each all-source RFO so that bidders may evaluate for themselves whether or not their product will qualify.

13/ D.04-12-048, p. 141.

SDG&E will create RFOs for filling authorized need. In the event that SDG&E determines it is required to seek a product not authorized in the LTPP, it will make a "showing in advance, through Advice Letter, that unusual or extreme circumstances warrant such an action".[14/]

An RFO is typically composed of the following steps. First, RFO Analysis is done to determine the portfolio need and best products to fill that need given all constraints that exist on procurement, including GHG emissions, RPS goals, intra-zonal congestion, RA requirements, and Grid Reliability. RFOs will generally be all-source, to ensure that ratepayers get the broadest possible selection of supply options. Some instances where SDG&E may limit participation include "set asides" where regulatory/statutory targets created a need to buy certain resources such as renewables, and price is a secondary consideration. Another example may be GHG, where the supply option must be low GHG-emitting in order to meet GHG goals. Grid reliability is another form of set aside where the concerns regarding the pure economics of procurement may be outweighed by an on-system, grid need. Such a grid reliability need may also dictate that the incremental supply be new construction.

Second, creation of the RFO document is a multi-discipline task, utilizing subject matter experts that include procurement, analysis, legal and credit. The draft will include a detailed description of products sought and any requirements which those products must meet, term of products, the minimum or maximum quantities being sought, a description of the data that must be returned with a valid, conforming offer, a draft term sheet that outlines the commercial arrangements that will form an eventual contract with the successful bidder, and the administrative schedule of the solicitation. In the process of creating RFO bid documents, SDG&E will consult with its IE, Procurement Review Group (PRG) and the Commission's Energy Division staff on the type and quantity of products to be solicited;

[14/] D.07-12-052, p. 150.

the evaluation criteria to be used in ranking offers; and any unique considerations in the RFO. In the event that the IE, PRG, or Energy Division Staff have differences of opinion with SDG&E regarding any aspect of the RFO, SDG&E will work with Energy Division staff to resolve such issues prior to release of the RFO.

Third, the RFO is distributed to the market. In order to achieve the RFO goal of maximum liquidity and competition, SDG&E uses the broadest possible distribution list for e-mailing the RFO document directly to potential offerors. This typically starts with the WSPP membership list and is expanded to include past RFO participants, or any party that has shown an interest or is known by SDG&E to be capable of providing the resources sought in the RFO. Information on the status of the RFO and responses to bidder questions are routinely provided as updates to interested participants.

Fourth is the preparation of bid evaluation criteria. In order to ensure equity to all participants, it is important to have a pre-established method for evaluation of offers. Such a methodology will vary in accordance with the nature of the products being solicited. Exhibit II-2 to this LTTP is a sample of the items that will be included in the evaluation criteria. In conformance with D.07-12-052, SDG&E incorporates the following change into its' Evaluation Criteria.

- Viability: SDG&E has incorporated the concept of a viability criterion into its evaluation criteria. Further work will need to be done to refine the use of this important but potentially subjective criterion prior to the finalization of detailed evaluation criteria to be used in the next SDG&E RFO.

SDG&E will work with its IE and PRG in establishing these evaluation criteria on an RFO-by-RFO basis. At the conclusion of the evaluation process, SDG&E will present its shortlist to the PRG, including the rationale for the disposition of every selected and rejected bid.

Additional constraints on the evaluation criteria and selection process include utility ownership and the need for new generation resources versus continued reliance upon existing generation. While SDG&E is open to a variety of contracting options (such as PPA, tolling agreement and turnkey), in this hybrid market its ratepayers are sometimes best served by utility ownership, within the constraints adopted by the Commission as described below.

In some instances, grid reliability will dictate that some amount of future contracting must come from newly constructed resources. Clearly, even if no existing plants ever retire, load growth will dictate that some incremental supply resources be new construction. SDG&E evaluates this need and identifies specific quantities in Section III of this LTPP.

In other instances, while it is not imperative that incremental supply come from new resources, economics and long-term goals may dictate that the prudent choice is new construction. The utility must keep long-term goals in mind when making procurement selections. The best choice for incremental supply may well be a new unit with lower CO2 emissions or a renewables unit, rather than a less efficient, aging fossil power plant. This circumstance points out the tension and conflicting guidance that can arise among the State's various procurement policy goals.

The fifth step is contract negotiation. Even if a pro-forma contract is developed for the RFO, the contracting stage can be a time consuming series of negotiations. Contracts represent a collection of agreements on a multitude of risk sharing provisions. Negotiations are an opportunity for both sides to create a balance in the contract terms that captures the issues must important to each side. These

negotiations tailor the contract to the specific counterparty that was a successful bidder – it is impossible for a pro forma contract to account for the preferences of an unknown counterparty. Credit is a good example of one such "deal point" to be negotiated, as it is one of the many risks that are governed by language in the contract. SDG&E may choose to lower credit requirements as a tradeoff for some other risk mitigation in the contracting process. This makes credit requirements fluid and difficult to standardize, as discussed in the credit section of this LTPP. This negotiating stage makes the RFO process somewhat similar to bilateral contracting; however the negotiations cannot move the original transactions too far from the product that was bid on by all other RFO respondents. This is one area where IE oversight is useful.

In conformance with D.07-12-052, SDG&E will "publicly reveal the names of winning bidders, a description of the product and the contract term, within 90 days of when the IOU files an application with the Commission for approval of the contract" [15/]

Other steps or processes enter into the conduct of RFOs from time to time. In conducting RFBs, where SDG&E is selling to the market, SDG&E may employ a reserve price. Such a price would be designed to ensure that ratepayers do not experience a significant loss in the market. For instance, if an RFB receives only a single response, and that bid is for a penny, the ratepayers are protected if the RFB is designed with a reserve price that is set closer to market value of the product. In such case, the RFB would fail due to a lack of bids at or above the reserve price and SDG&E could hold onto the product it seeks to sell and launch a redesigned RFB, or devise another means of attracting more buyers closer to the expected market value. The value of the reserve price would be reviewed with the IE and the PRG.

[15/] D.07-12-052 p. 269.

The Commission has also established when procurement contracts must be filed for pre-approval. In general, contracts with duration five years or longer must be submitted to the Commission for pre-approval (D.04-012-048, as further clarified in D.07-12-052). Therefore, in making its decisions regarding whether a procurement contract must be filed with the Commission for prior-approval SDG&E will use the guidelines as established in D.07-12-052 (p. 171) as described previously in this Plan.

**Utility Owned Generation (UOG) and Participation in Competitive Solicitations.**

One of the keys to the success of a competitive solicitation (RFO) is robust competition. Therefore, inclusion of the maximum number of bidders is essential. Consistent with the processes outlined in D.07-12-052, SDG&E will continue to use UOG as one of its available procurement tools. In discussing UOG in the context of renewables, the Commission "recognizes that utility-owned generation from renewable energy sources can potentially put a downward pressure on increasing renewable prices."[16/] SDG&E agrees. The same reasoning applies to conventional resources as well within the restrictions on UOG participation in RFOs created by the Commission in D.07-12-052. In constructing its competitive solicitations (RFOs) when seeking newly constructed resources to fill an authorized need, SDG&E will adhere to the RFO process enhancements discussed above, as well as Commission guidance on the allowable participation of UOG in conventional projects as outlined in D.07-12-052.

16/ D.07-12-052 at page 79

Specifically, SDG&E will apply the following limits in its RFOs:

- SDG&E will not bid straight utility self-build projects into its RFOs. This prohibition does not extend to bids by utility affiliates to build and sell to the utility under a PPA. We continue to support this option and appreciate the Commission's willingness to investigate the proper evaluation criteria that would be useful in comparing such a bid with an IPP offer so as to allow utility self-build bids in the future;

- SDG&E will not solicit products that require transfer of an asset at the end of a long-term contract;

- SDG&E may seek PSA (also known as Build-Own-Transfer or Turnkey) offers in its RFO, where the utility would be seeking a merchant developer to build a new plant that the utility would own upon commercial operations (COD); and

- Under appropriate circumstances, SDG&E may seek a competitive bid for an Engineering, Procurement and Construction (EPC) contract that will choose among the best power plant construction firms to find a project that will be owned throughout development and operations by the utility, but managed and constructed under a fixed price contract with an EPC contractor. As stated in D.08-11-008, the purpose of allowing EPC bids is in no way intended to provide the IOUs with a broad loophole that allows for what are essentially direct utility build projects. The purpose is simply to acknowledge that certain extraordinary circumstances that are unpredictable in advance may necessitate utility ownership of generation at a particular site. While extraordinary circumstances are by definition difficult to identify a priori, the Commission's intention is to set a high bar for an "appropriate circumstance" for an IOU to circumvent the potential for private ownership by soliciting EPC bids. Simply owning land on which generation could be built or requesting EPC bids in general in an RFO as an alternative to PSAs and PPAs does not satisfy this requirement.

**Code of Conduct.**

Prior to conducting any RFO where SDG&E seeks a UOG project, SDG&E will work with its IE, PRG and the Commission's Energy Division staff to create a Code of Conduct per D.07-12-052, that will provide the checks-and-balances necessary to ensure that a utility ownership proposal will not be given preferential treatment or access to competitors bid information or other proprietary information that would benefit a utility bid over outside bidders. Such a Code of Conduct is only useful where the utility is actually preparing and tendering a bid into a utility-run RFO or for an EPC or PSA project.

**Utility Ownership Proposals Outside of a Competitive Solicitation.**

The Commission recognizes that there are instances where Utility proposals for ownership of new generation resources, arising outside of a competitive solicitation, is warranted and in the best interest of ratepayers. SDG&E will evaluate its plans for meeting its authorized need in the context of the following important exceptions to competitive procurement.[17/]

- Market Power Mitigation: The IOU must make a strong showing that as a result of some attribute of the desired resource, a private owner would have the ability to exert significant influence over the price of its development or of the price and quantity of its output (energy, capacity or ancillary services).

- Preferred Resources: While we continue to rely on markets to deliver efficiently priced products for ratepayers, we see no reason to limit our options and intend to continue to deploy all resources available to us, including utility development and ownership, to meet California's vital environmental policy objectives.

- Expansion of Existing Facilities: Per D.08-11-008, "expansion of Existing Facilities" ceases to be a unique exception which would serve as a vehicle for utility ownership outside of a competitive solicitation. However, as this decision notes, the Commission did "not preclude the expansion of existing facilities for UOG projects approved via one of the remaining four exceptions to the competitive RFO requirement."[18]

- Unique Opportunity: An attractively priced resource resulting from a settlement or bankruptcy proceeding (we anticipate that these opportunities will diminish over time).

- Reliability: Resources needed to meet specific, unique reliability issues (particularly under circumstances in which it becomes evident that reliability may be compromised.

- if new resources are not developed, and the only means of developing new resources in sufficient time is via UOG).

17/ D.07-12-052 at page 211
18/ D.08-11-008 at page 23.

In each of these cases, the burden is on SDG&E to demonstrate in its application why it invoked one (or more) of the exceptions listed above rather than procuring through an RFO.

Ratemaking for UOG projects discussed above will be handled on a case-by-case basis with proposals made in each individual application. The former cap on recovery of costs of UOG projects, established in D.04-12-048, is removed.

**Other Markets and Processes**

SDG&E also utilizes Instant Messenger Internet communications to canvass the market to find pricing for a particular product. In this "market," SDG&E contacts various counterparties simultaneously and inquires about buying or selling a particular product. One advantage of this method of RFO transactions is that SDG&E can target a few counterparties that it knows trades in a relatively illiquid product that is not found on other exchanges. Similar to more formal RFOs or exchanges, this creates price transparency for the product sought. SDG&E uses this as an additional option for short-term procurement and to create a market benchmark when entering into bilateral transactions. Because this form of transaction is not "double blind," and will not involve an IE given the speed at which this is conducted, SDG&E will not transact with affiliates through this means.

For longer-term transactions of greater than three months, the Commission's preferred methodology for utility procurement is through RFOs, however for certain shorter-term deals, it may be impractical to use an RFO process for purchases where ratepayer benefits exist. IOUs are offered resources through many avenues, some of which are not able to be anticipated but which should not necessarily be ignored as a consequence and in order to achieve the best results for customers. In instances where purchases are made outside of an RFO process, SDG&E will either file the resulting

transaction with the Commission for pre-approval or thoroughly document the transaction and include it in its compliance filings in ERRA or the Quarterly Report.

**Procurement Positions:** The focus of this LTPP is documentation of the upfront standards that form the guidelines for utility procurement. In Exhibit II-1, SDG&E presents forecast long/short positions for capacity, energy, environmental attributes (ERCs, SO2 allowances and renewables energy) and Resource Adequacy. These short positions are the objective in future SDG&E procurement efforts that will be undertaken in accordance with the upfront guidelines found in this plan.

The positions that are graphically displayed are a procurement view of the data contained in this plan discussed in Section III. For instance, the plan contains all resources needed to meet load in the planning view of the future portfolio. Included are "generic" (yet to be purchased) resources that represent short positions that must be procured. These resources will be acquired using the processes, organization, markets and products that form this procurement plan. Financial positions, discussed in Section II B are found in Exhibit II-3 and physical gas positions, discussed in Section II C are found in Exhibit II-4.

**Description of Least-Cost Best Fit Analysis**

Least-cost best fit analysis is the analytical portion of the selection process for a candidate product for procurement where the objective function of the evaluation is to find the product that best matches portfolio requirements such as meeting the physical and RA needs, minimizing the overall portfolio GHG profile and doing so at the lowest cost to ratepayers from amongst the candidate products. Least-cost best fit is not a "one size fits all," standardized evaluation process.[19/]

[19/] The Commission seems to recognize this at pg 140 of D.04-12-048, "It is expected that the Commission will revisit the least-cost best fit methodology, integrating "lessons learned" from future all-source open RFOs."

While some general principles remain the same, the analysis to be performed on each potential transaction will need to be tailored to the circumstances. A sample of SDG&E's least-cost best fit framework is attached as Exhibit II-3. SDG&E will review the specific least-cost best fit analysis for each RFO with its PRG and IE prior to receiving bids in any transaction for analysis.

In general, all least-cost best fit processes will:

- Analyze the candidate product(s) to ensure that the transaction is lower cost than other alternatives known to be available when added to SDG&E's portfolio.

- Apply constraints such as meeting target goals/set asides in various programs and honoring recognition of physical constraints.

- Long-term RFOs for capacity and energy will tend to rely on models such as PROSYM and the Capacity Expansion Model to perform a rigorous analysis of a multitude of non-standard attributes from differing types of resources and the impacts on the entire portfolio of supply resources. For instance, in an all-source RFO, a LCBF may need to evaluate the trade-offs within the economics of the total portfolio from products that are as different as conventional peaking (capacity with little energy) and wind (as-available renewable energy with discounted RA capacity).

- Long-term financials – while the need for hedging is developed using models of positions, analysis of the transactions to be executed is a relatively simple exercise of comparison to market benchmarks. This is because these products tend to be standard and readily compared to one another. Trade-offs between various standard products in these hedge transactions is somewhat subjective in that there are many possible answers to achieve the varied objectives. These trade-offs are analyzed upfront when formulating a risk strategy that is reviewed with the PRG and becomes part of the approved procurement plan. This reasoning behind SDG&E's risk strategy is presented in Section II B "Risk Management Policy and Strategy – Current Risk Management Practices." Benchmarks for use in this least-cost best fit analysis are typically published indices, live screen or broker quotes.

- Short-term, low-liquidity products – included in this group, where short-term is loosely defined as real-time to one quarter, are transactions such as swaps, daily exchanges, monthly resource adequacy products, intra day gas volumes, and bilaterals energy transactions. Given the short time to delivery, formal RFOs are impractical for creating price discovery. In performing a least-cost best fit analysis of these transactions, SDG&E will rely upon the information most useful in evaluating the specific type of resource sought. For instance, intraday gas offers may be evaluated by consulting a trading screen or by canvassing the market over the telephone. Non-standard energy transactions (such as a few hours of super peaking energy) may be evaluated using Instant Messenger RFO (where

some liquidity for the product exists) or by creating a proprietary market curve using a public index modified with internal estimations of the relative value of certain hours energy. Resource Adequacy bids/offers may be evaluated against known trades of a similar type or regulatory benchmarks. Other non-standard products may be analyzed using bespoke, spreadsheet applications designed to value the product characteristics sought and evaluate the impact of the product on the portfolio. Any of these evaluations methods will be documented and can be evaluated in the ERRA compliance review of transactions.

**Description of the Use of the Loading Order in Procurement**

The Loading Order was adopted in the Energy Action Plan and various decisions issued by the Commission. The Energy Action Plan II states as follows:

> The loading order identifies energy efficiency and demand response as the State's preferred means of meeting growing energy needs. After cost-effective efficiency and demand response, we rely on renewable sources of power and distributed generation, such as combined heat and power applications. To the extent efficiency, demand response, renewable resources, and distributed generation are unable to satisfy increasing energy and capacity needs, we support clean and efficient fossil-fired generation.[20/]

The Commission stated in D.04-12-048 that each IOU should take the following steps regarding the loading order: (1) procure the maximum amount of cost-effective EE and demand-side resources, as determined in the subject-area proceedings; and (2) for further resource needs, procure the maximum cost-effective amount of renewable generation resources via all-source RFOs and be prepared to justify selection of fossil over renewable resources.[21/] It should also be noted that the utilities carry out energy efficiency and demand response for their entire service areas, including both bundled and direct access customers. Because these programs are evaluated in other proceedings, cost-effective levels of these programs are often determined prior to the procurement organization's determination of the remaining need for bundled customers.

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[20/] 2005 EAP II, p. 2.
[21/] D.04-12-048, p. 42.

The Commission also stated that "renewable bids are to be favored in the all-source solicitation process to the extent that they provide the desired electricity product and are cost-competitive in light of our greenhouse gas policies."[22/] The Commission has made it clear that cost-effectiveness is to be considered when making procurement decisions on loading order resources. SDG&E intends to conduct procurement, taking the loading order into account in the following manner.

First, as pointed out in the decision, SDG&E treats loading order goals as floors, not caps, on any type of loading order resource. As mentioned, SDG&E will continue to treat loading order resources as a set aside until Commission goals are met for each type of resource. That is, the cost-effectiveness test will be relaxed for any resource until SDG&E has met the Commission target for that resource. After meeting Commission targets for a particular resource, new procurement of that resource will be selected only if the resource passes the least cost best fit evaluation in competition with all other resources in all-source solicitations.

**Current/Upcoming RFOs**

For this 2006 LTPP, SDGE continues to require expedited decisions from various agencies on the projects in order for capacity to be online for 2008/09. Again, given the large need identified in 2010-2012, it is prudent to advance some of this need to 2008/09 so that (1) acceleration will enhance grid reliability at minimal cost to ratepayers (carrying costs only); (2) SDG&E is not presented with an excessive amount of contracting and construction in the later years to be completed all at once; and (3) SDG&E avoids "just in time" resource additions that leave no room for failure or delay in these very complex development projects.

22/ D.04-12-048, p. 80.

**Requests for Bids/Offers for Local and System RA**

During the course of this plan, SDG&E forecasts that [redacted]. (See the discussion in Section II A, "Procurement Process, Procurement Positions" and related Exhibits for more detail.) In an effort to secure the required resources, or to monetize any long positions it may hold, SDG&E will periodically issue Requests for Bids/Offers to sell/buy RA capacity. Currently, the market for Local RA is only annual, since Commission rules require full compliance in the year-ahead RA compliance filing and does not allow for monthly true-ups. However, the market for System RA is both year-ahead and monthly. SDG&E may choose to transact some of these volumes bilaterally if it feels that it has established adequate price transparency in the market for the product being bought or sold.

**Price Forecasting**

The Commission has granted IOUs procurement authority that extends 10 years into the future. For any contract longer than five years, SDG&E must file with the Commission for pre-approval. In that filing, it will present its valuation, including a discussion of prices used in that analysis. Price forecasting for procurement within the first five years of that authority is accomplished using the following general rules.

[redacted]

[redacted]

[redacted] Of course, caution must be applied when making use of any forecast.

**Description of "Ratable Rates"**

Similar to the approach to financial hedging (described below in Section II B, "Risk Management Policy and Strategy"), SDG&E does not employ a proscriptive, formulaic method that requires specific quantities of physical procurement to be undertaken at specific times. SDG&E believes that the development/addition of long-term resources is difficult to reduce to a formula. These transactions require much planning and negotiating and the milestones in development of these additions contain elements whose timing is often outside of the utility's ability to control. Formulas for when to conduct such transactions are impossible to construct with certainty and would require constant revision.

Notwithstanding the foregoing, the frequency with which a utility conducts RFOs can be described as a rough form of "ratable rate." Identified need is filled through these RFOs – these may be sized to conduct all procurement in a single RFO, or spread out over time – both for averaging of market prices as well as managing workload.

In the shorter term transactions in energy markets, a "ratable rate" is somewhat achieved by the nature of the SDG&E short position, which is spread across every day of the year. If SDG&E fills these needs in any manner other than all at once, it will have achieved something like a "ratable rate."

**Description of SDG&E's Consultation Process with Its Independent Review Groups**

The Commission has set up two important layers of independent review to monitor utility procurement and provide feedback prior on the many decisions being made in utility procurement. The two groups are an IE to work with SDG&E in the design and implantation of its RFOs, and the PRG. SDG&E, and its ratepayers, have derived much benefit from its interactions with these groups and being able to discuss procurement decisions and activities ex-ante rather than after the fact through litigation at the Commission.

**The Independent Evaluator Requirement**

In D.04-12-048, the Commission ordered the use of an IE for RFOs that included "affiliates, IOU-built, or IOU-turnkey bidders."[23/] Further, in D.06-10-019, Finding of Fact 19, Conclusion of Law 19 and Ordering Paragraph 19, the IOUs were ordered to utilize an IE in the conduct of any renewables negotiations that involved renewables procurement from an affiliate. In D.07-12-052, the Commission further defined the parameters for how IOUs are to utilize IEs.

In D.08-11-008, the Commission modified its requirements related to use of and IE and ordered: (i) that IEs be utilized for all RFOs seeking products of greater than two years in duration and (ii) that IEs continue to be utilized for all solicitations that involve affiliate transactions or utility-owned or utility-turnkey bids regardless of length of the product sought. The Commission defines when the contract duration clock begins as: (1) at the time the contract resources begin delivery or the product is made available, if delivery or availability of the product occurs within one year of contract execution; or (2) at the time of contract execution, if delivery or availability does not begin within one year of contract execution. Further, to ensure that an

[23/] D.04-12-048, Ordering Paragraph 26i.

IE is retained in such cases, SDG&E will address the possibility of affiliate or utility bids by designating at the outset of an RFO whether such bidders are allowed to participate. If SDG&E does not wish to make such a determination up front, SDG&E will either require that all parties that intend to participate in an RFO submit a notice of intent early in the RFO process such that an IE can be retained before bids are received, or designate at the outset of the RFO that an IE will be used.

With respect to IE selection, SDG&E selected its second IE through an RFO process whereby potential candidates presented their credentials and proposals. Eventually, responses to the RFO were reduced to the top two candidates who were presented to the PRG, which had an opportunity to ask questions of the IE candidates. SDG&E made the final selection in consultation with the PRG. The second IE was then chosen to perform the IE function in the 2007/08/09 all-source RFO. Given the IE's demonstrated competence, SDG&E chose to expand the scope of work for its second IE to include work on the 2006 Renewables RFO, the 2008 Peaking RFO and a 2007 RFB for RA. The second IE chose to recuse himself prior to SDG&E issuing the 2010-2012 RFO, due to a self-identified, potential conflict with another client. SDG&E then hired its third IE to complete the IE work for that RFO and has leveraged their recently gained familiarity with the SDG&E portfolio by continuing to use this IE in subsequent procurement activity.

While SDG&E feels that it already has a pool of three qualified IEs, it will work with its PRG during 2008 to validate those parties as qualified IEs and potentially identify other IEs to add to its pool. The Commission has adopted a very detailed process for SDG&E to follow in creating the pool of IE candidates and SDG&E adopts and incorporates this process into its LTPP. The process found in

D.07-12-052 at page 137 is as follows:

1. The IOU shall develop a list of prospective IEs via industry contacts, literature searches, PRG recommendations and similar methods, solicit information from the prospective IEs and circulate the list of candidates and their "resumes" to the PRG and ED staff for feedback;

2. The IOU should rely on the guidance regarding IE expertise and qualifications provided in D.04-12-048. However, these qualifications should represent the minimum necessary for an IE to be effective, and the IOU and the PRG should include any additional relevant information that it has gained through its experiences implementing the IE requirements;

3. The IOU and PRG shall interview a subset of prospective candidates that the IOU, its PRG and ED staff deem most suitable for the role (IOUs should arrange for the PRG to conduct interviews with candidate IEs in isolation from the contracting IOU);

4. The PRG shall coordinate the development and submittal to the IOU its recommendations on each prospective candidate (including the general consensus and any opposition to the consensus). The IOU shall submit a written list of qualified IEs to ED to add to the IOU's pool. The list must contain the recommendations of the PRG that were submitted to the IOU. ED will evaluate the proposed IE's competencies based on the guidelines in D.04-12-048 as well as evaluating the IEs independence including any conflicts of interest. ED shall give final approval for inclusion of an IE in the IE pool by letter to the submitting IOU;

5. Beyond the development of the initial IE pool, additional IE's may be added to the pool by following the same procedures listed above;

6. An IE may remain in the IE pool for two years, after which he/she must go through a reevaluation process based upon the inclusion criteria to assure continued compliance. The reevaluation process will involve additional reviews of the IE candidate by the PRG, IOU and ED staff, including additional interviews, if necessary; and

   The IOUs shall develop a pro forma contract to be used each time it contracts with an IE. If deviations from the pro forma are necessary, the modifications must be fully supported by ED staff when the IOU seeks final approval of the contract. This pro forma contract shall be submitted as part of the next LTPP filing and will be subject to Commission approval.

As part of the selection process, working with the PRG and Energy Division staff, SDG&E will develop comprehensive conflict of interest disclosure requirements for the IE. Also, SDG&E will report to it's PRG, with regard to each RFO, the "the name and information of the IE for each IOU, the type of procurement solicitation the IE was used for and the amount of money involved in the procurement solicitation".[24/]

With respect to the role of the IE, SDG&E's IE is used to verify that the RFO process is carried out in a manner that is fair to all bidders, is not otherwise biased for or against any individual bidder, and is consistent with the process prepared prior to the receipt of bids. The IE reviews application of the evaluation criteria and analysis methodology used by SDG&E. The IE is brought into the RFO process early such that the goals, needs and objectives of the RFO are reviewed with the IE. Drafts of the RFO documents are reviewed by the IE prior to public release. SDG&E reviews and takes appropriate action on any comments or concerns expressed by the IE.

Similar to the development of the public RFO documents, SDG&E works with its IE to create criteria for reviewing and ultimately selecting from RFO offers received. In SDG&E's experience, the IE provides value beyond checking the evaluation criteria to ensure that it contains no undue biases for or against any particular product or bidder; the IE has been a useful third party, independent reviewer of documents that helps to ensure the best possible process at each stage and under the particular circumstances. The IE uses its expertise to check that evaluation criteria are properly applied and that models used to evaluate bids correctly reflect and incorporate the evaluation criteria. At all stages of the RFO process, the IE is made available to SDG&E's PRG and to Energy Division staff to answer questions, or express concerns.

[24/] D.07-12-052, p. 140.

Lastly, with respect to the IE report, it will follow the IE Report Template developed by Energy Division "through a public process which will allow for public comments and workshops, if needed," as directed by the Commission.[25] IE reports associated with solicitations of less than five years shall be filed with the Quarterly Transaction Reports.

**Consultation with PRG**

The Commission established the PRG in D.02-08-071 "[i]n order to ensure that interim procurement contracts entered into by the utilities are subject to sufficient and expedited review and pre-approval."[26] The PRG, which is comprised of non-market participants and is subject to a nondisclosure agreement, has continued to provide value to utility procurement beyond the interim period addressed in the order, and the PRG has been made a more permanent part of the procurement process. In D.02-12-074, each utility was ordered to consult with its PRG for creation of a hedge strategy for Q1 2004,[27] to meet with its PRG upon reaching certain trigger thresholds to discuss the need to file new plan updates, and SDG&E was ordered to work with its PRG to establish "what magnitude is appropriate for a benefit/cost ratio and how it should be calculated." Further, in D.04-01-050, the Commission established an ongoing requirement that each IOU "meet and confer with its PRG on a quarterly basis."[28]

SDG&E consults with its PRG to ensure that its PRG is kept current on the procurement activities of SDG&E. The PRG consultations allow for important exchanges of information that allow SDG&E to understand the concerns of this group of industry experts and allow this group of potential

[25] D.07-12-052, p. 141.
[26] D.02-08-071, p. 24.
[27] D.02-12-074, Ordering Paragraph 5, Ordering Paragraph 9 and Ordering Paragraph 11.
[28] D.04-01-050, Conclusion of Law 42.

interveners to have a voice at the early stages of procurement rather than being restricted solely to intervening in the procurement filings of SDG&E. SDG&E supports continuation of the PRG indefinitely. However, a recent Commission proposed decision on the definition of "non-market participant" may potentially affect the composition of the PRG and could have a negative impact on the group's effectiveness.

In compliance with D.07-12-052, SDG&E adopts the following enhancements to its PRG process.

- In order to more effectively coordinate and communicate with its PRG, SDG&E has established a web based calendar.[29/] This calendar will contain only public information as follows : (1) a schedule of upcoming meetings; (2) RFO milestone dates; and (3) to address the suggestion of the Transparency Working Group as adopted by the Commission: (a) the date, time and duration of each PRG meeting, (b) the organizations participating in the PRG meeting and the individuals representing each organization; and (c) a list of items discussed, which list will contain only public information (this Transparency Working Group information will also be provided to the LTPP proceeding's current and future service list).

- A commitment to circulate an agenda and meeting materials to PRG members a minimum of 48 hours in advance of a PRG meeting, unless there are unusual, extenuating circumstances.

- Circulation of confidential meeting summaries to PRG members. These summaries will contain "a list of attending PRG members, including the organizations represented, a summary of topics presented and discussed, and a list of information requested or offered to be supplied after the meeting, (and identify the requesting party)".[30/]

29/ This calendar can be found at http://sdge.com/regulatory/prg/calendar.shtml

30/ D.07-12-052 p. 124.

**CAM PRG**

In D.06-07-029, the Commission developed a procurement process whereby IOUs may be required,[31/] or elect, to procure new supply capacity that will be beneficial to all transmission customers of the utility (bundled customers as well as Direct Access). The recovery of costs related to such procurement will be divided amongst bundled and Direct Access customers, creating a unique Cost Allocation Mechanism (CAM). Therefore, the Commission has ordered that representatives of Direct Access customers, who have no role in SDG&E's PRG, should have the ability to be represented when these procurement decisions are being made and be given a PRG-like role in such procurement decisions. The guidelines, rules and requirements that govern this CAM PRG, and which SDG&E must follow, are outlined in D.07-12-052, Appendix D. SDG&E adopts and incorporates these CAM guidelines into its LTPP (they are copied from Appendix D below).

**Objective:**

Development and use of a separate advisory group by the utilities when considering procurement using the "all benefiting customers" cost allocation mechanism (CAM) approved in D.06-07-029 or a successor CAM that would allocate costs to both bundled and non-bundled customers.

**Rationale for Separate Advisory Group:**

The PRGs were established as advisory groups for the utilities' bundled procurement process. With the CAM, certain customers, including bundled customers and customers supplied by direct access (DA) suppliers and by community choice aggregators (CCAs), will now be required to pay part of the costs of utility procurement for certain new generation projects that are procured to ensure system reliability. The current PRGs do not include any individuals who solely represent end-use

31/ D.06-07-029 did not order SDG&E to conduct any CAM-type procurement.

customers served by DA providers or by CCAs. A separate advisory group, the "CAM Group," should be established to represent *all* customers paying the costs of procurement when a utility is engaged in procurement activities where the costs may be allocated using the CAM. The CAM Group will include bundled customer representatives, as well as DA, CCA, and other non-bundled customers' representatives, as described in more detail below.

**When Use of the Separate Advisory Group is Required:**

The utility will use the CAM Group as its advisory group when procuring new generation resources and recovering the costs associated with these resources through the CAM. When the utility specifies that it will procure new generation resources and recover the costs associated with these resources solely from bundled utility customers, the PRG will continue to serve as the utility's advisory group.

**Triggering the Separate Advisory Group:**

The utility will use the CAM Group whenever it is engaging in procurement where the costs may be recovered using the CAM. The utility will notify the Energy Division and the participants of the CAM Group at the time of its decision to begin such procurement. If the utility is undecided at the time it begins its procurement process, the utility will employ the CAM Group for all associated advisory group meetings until such time as it decides to restrict procurement solely to meet its bundled customers' needs.

**Activities of Separate Advisory Group:**

The CAM Group will operate identically to the PRG, except that it will only review and consult on procurement activities for which costs may be recovered using the CAM. The CAM group will not convene during the planning (*i.e.*, the load and system net-short forecasting) process for meeting

bundled utility customers' needs. The CAM Group will convene at least seven days prior to a utility's issuance to the marketplace of the RFO solicitation for which costs may be recovered using the CAM.

**Access to Information:**

The CAM Group participants will have access to the same types and quality of information as do PRG participants, except that the scope of the procurement review will be limited to that for which costs may be recovered using the CAM (*i.e.*, CAM Group participants are not entitled to receive information that is related to bundled-service procurement, except that PRG participants may request such information through the PRG process). The CAM Group participants will have the same right to request and receive additional information from the utilities as do PRG participants for bundled procurement-related activities.

**Meetings of Separate Advisory Group:**

The meetings and conference calls of the CAM Group will solely address procurement using or potentially using the CAM. Meetings of the PRGs addressing procurement for bundled utility customers may be held immediately before or after the meetings of the CAM Group or at any other time. Unlike the PRG, the utilities will not be obligated to conduct quarterly face-to-face meetings with the CAM group.

**Requirements of CAM Group Members:**

Participation in the CAM Group – The current PRG participants will be participants of the CAM Group, if they so choose, subject to their execution of a Non-Disclosure Agreement ("NDA") for the CAM Group. Commission personnel may participate in a utility's CAM Group under the same conditions that they participate in the utility's PRG. A reasonable number of non-wholesale market representatives that are end-use DA, CCA, and other non-bundled customers, as well as non-

wholesale market participant groups whose representation includes such customers, shall be allowed to participate in each utility's CAM Group.

Intervenor Compensation – PRG participants should continue to be eligible to obtain intervenor compensation for their participation in the CAM Group under the same conditions that the Commission's rules govern such compensation for PRG participation. Non-PRG participants who are authorized to receive intervenor compensation shall qualify for such compensation for their activities in the CAM Group pursuant to the Commission's rules that govern such compensation.

Qualities of Non-PRG Participants – Each non-PRG participant in the CAM Group will either be an end-use customer or an individual hired to represent end-use customers' interests, and shall not be a wholesale market participant or represent a wholesale market participant. For example, the representative for DA customers could be a non-wholesale market participant end-use customer who has accounts supplied through DA service. The CCA representative could be a non-wholesale market participant resident of the community that has implemented a CCA. Alternatively, the non-PRG CAM Group participants could be consultants or attorneys for groups that represent DA end-use customers, CCAs, or other non-bundled customers in whole or in part in proceedings before the Commission, provided that the representatives execute and comply with the CAM Group NDA.

Obligations of non-PRG Members – The non-PRG participants of the CAM Group are obligated to sign the same NDA that is signed by the PRG participants, except that it will be modified only as necessary to reflect the new organization of customer interests in the CAM Group. Subsequent changes to the PRG and CAM Group NDAs shall be done in a consistent manner, except as necessary to delineate the composition of each advisory group.

Disputes – Disputes regarding the appropriateness of an entity (or its representatives) participating in the CAM Group shall be submitted to the Commission for resolution.

Effective Period – Each utility shall be required to establish its CAM Group for solicitations of new generation projects subject to the CAM in advance of the commencement of such procurement activity. However, utilities shall be permitted to continue to utilize their existing PRG process in lieu of the CAM Group process to conclude existing, on-going CAM procurement activity, provided that the utilities shall make final contract selection decisions within 60 days of a final decision in Track 2 of the 2006 Long-Term Procurement Plan Proceeding (R.06-02-013).

**Description of Barriers to Contracting**

In Section II B, SDG&E discusses credit issues related to long-term contracting.

## B. Risk Management Policy and Strategy

This section of the LTPP contains four parts:

- Current Risk Management Practices - a description of SDG&E's hedge plan, including hedging targets
- Portfolio Risk Assessment- a discussion of forecast SDG&E risk positions
- Security Requirements - a discussion of collateral and credit requirements and limits
- Customer Risk Tolerance and VaR-to-Expiration

**Current Risk Management Practices – SDG&E's Hedge Plan, Including Hedging Targets**

In D.04-12-048, the Commission granted an extension of procurement authorization to SDG&E, specifically authorizing the utility to procure and execute transactions on a rolling 10-year basis. In granting this authority, the Commission placed a pre-approval restriction on transaction with a term greater than five years (D.04-12-048, p. 108). This restriction was again re-affirmed in D.07-12-052.

As part of this LTPP Compliance Filing, SDG&E presents its risk and hedge strategies for years one through five (short-term) and longer-term (years six through ten).

**5- Year Short-term Procurement Plan and Hedging Strategy**

**Overview**

SDG&E's previously approved procurement plans outlined a hedge strategy that included managing risk and implementing a hedge plan on a calendar year basis. D.07-12-052 directed that SDG&E modify its 5 year procurement plan to manage and report on near-term risk utilizing a rolling 12 month metric. Here, SDG&E provides the details of its 5 year risk strategy going forward to comply with the Commission's objectives. This revised and updated strategy includes hedging objectives and targets that, when approved, would become the upfront guidelines envisioned in AB57 that will guide SDG&E's future actions when hedging.

SDG&E will continue to follow an "incremental and over time" hedging program over a 5 year horizon in an attempt to layer on hedges so as to reduce overall portfolio risk. SDG&E will manage hedges in calendar year 2 on a volumetric basis in the same manner as it has been layering on hedges in years 3 through 5. These changes are further described below. SDG&E will continue to actively manage risk during the first rolling 12 months of the 5 year plan using measures as described below.

SDG&E will implement its hedge strategy using the list of authorized products approved by the Commission and discussed in the LTPP in Section II A "Products." A more complete description of this current CRT-based hedge strategy is contained in Section II B under "Customer Risk Tolerance." "Incremental and over time" is similar in concept to what SDG&E understands is meant by "ratable rate," with the important distinction that SDG&E's approach does not rely solely upon a formula to

define volumes and times of execution. Rather, SDG&E intends to take small positions through time to build into rates an average of market prices through time where timing and volumes transacted are informed decisions, guided by the CRT and VtE metrics. To assure compliance, SDG&E will measure the annual hedge percentages daily from the 1st business day through the last business day of each calendar year, will review the overall hedge percentages compared to the annual hedge percentage targets and will increase its hedge percentages over time on a notional basis.

**First Rolling 12 Months and Year 1**

SDG&E has revised its risk assessment and CPUC reporting metrics to utilize a 125% of CRT and VtE on a 95% confidence level.. For purposes of this document, VtE will be considered to be calculated at the 95th percentile if not specifically delineated as something other than VtE (95%). The purpose of this VtE metric at the 95th percentile is to estimate the 1 in 20 adverse outcome for portfolio cost over a rolling 12 month period. SDG&E will calculate risk using the Commission's preferred metric of 125% CRT – VtE (95%), on a rolling 12 month basis, and use this for reporting purposes. In the event that at any time the VtE (95%) value exceeds 125% of CRT for the current rolling 12 month period, SDG&E will call a special meeting of its PRG to review the causes of the high volatility, review the pre-existing hedge positions and discuss and decide whether new hedges are needed to bring 125% CRT - VtE (95%) back within the allowed threshold. Depending upon the level to which the primary metric has fallen below zero and how quickly SDG&E can arrange for a meeting with the PRG, SDG&E may decide that it must act immediately and hedge more aggressively to further reduce its open position, even before it can brief the PRG. SDG&E will continue to review its hedge positions with the PRG at least quarterly. SDG&E will actively manage risk during the rolling 12-month period and incrementally hedge to maintain an overall hedge position with a goal of maintaining positive values for

CRT – VtE(95%). SDG&E will report and manage the rolling 12 months using the CPUC prescribed metric of 125% CRT-VtE(95%) as described above.

In addition, SDG&E will also utilize a second metric, [redacted] to provide additional information to assist SDG&E in its hedge decisions during the period covering the first calendar year.

This 2nd metric is intended to be used by SDG&E for the following reasons:

- SDG&E interprets the intent of the CRT concept to be tied to potential increases in procurement costs that customers are willing to absorb over a certain time frame and;
- SDG&E interprets the time frame for projecting next year calendar CRT costs as being consistent with the annual ERRA forecasting, tracking and monitoring process, which, for SDG&E, is currently October 1 of each year. .

In order to more closely align this metric with SDG&E's annual forecast of procurement expenses, SDG&E will set its metric for the next calendar year, [redacted] SDG&E will calculate and set its CRT and its baseline of forecasted costs (BL) for each month of the following calendar year. For each business day from then until the roll-off of the next calendar year, [redacted] The baseline of forecasted costs will equal the Current Forecasted Costs on the day that the baseline is set. For each business day afterwards, the Current Forecasted Costs will fluctuate based on changes in the composition of the portfolio and hedges as well as changes in market prices. [redacted]

[redacted]

In addition, the VtE(95%) used in the second metric formula [redacted]

The following examples are provided for a scenario of rising forecasted costs and are for illustrative purposes only as the numbers are not actuals but are generally indicative of the overall SDG&E portfolio:

Assumptions

CRT = [redacted] for the following calendar year

BL = [redacted] or next business day thereafter

Example 1:

Current Forecasted Costs (Jan-Dec 08) = [redacted] on Dec 15th of the previous year (2007)

Fixed Forecast Costs = [redacted]

Therefore, On Dec 15th, 2007: RCRT = CRT (for Jan-Dec08) plus BL (for Jan-Dec08, [redacted] less the total procurement costs for Jan-Dec08 as forecast on Dec 15th, 2007.

RCRT [redacted]

Example 2:

Current Forecast Costs for the remainder of the forecast year [redacted]

Fixed Forecast Cost [redacted]

Therefore, on [redacted] RCRT = [redacted]

[redacted], RCRT [redacted]

As such, [redacted], SDG&E will review it's overall hedge position and market condition and may increase its hedges as deemed appropriate. SDG&E may, after considering its overall hedge position and market conditions, further increase its hedges as necessary in an attempt to mitigate the falling metric position(s) and re-establish a positive hedge metrics.

While SDG&E has historically found that maintaining an overall average annual hedge position of [redacted], has been sufficient to maintain

positive metrics under typical market conditions, these percentages are not meant as a restriction on hedge positions. SDG&E's overall hedge strategy will continually be reviewed and periodically updated as necessary during the year, and SDG&E's actual hedge positions may differ (either up or down) from the "target hedge" strategy, as market conditions dictate. In addition, SDG&E will continue to review its hedge positions and strategies with the PRG at least quarterly.

**Year 2**

D.07-12-052 did not address nor recommend a preference for any hedge strategy for Year 2 in SDG&E's plan. SDG&E's previous plan required that SDG&E actively manage risk for both Years 1 and 2. However, since the Commission has directed SDG&E to manage risk for the initial time horizon of the plan on a rolling 12 month basis, SDG&E determined that it is most consistent with its overall plan strategy to manage calendar Year 2 on a volumetric basis using an average annual hedge target. This is consistent with how SDG&E has managed Years 3 through 5, while recognizing that each month of Year 2 will also actively be managed as each month of Year 2 "rolls" into the rolling 12 month period through out the year.

For Year 2, SDG&E will adopt an [redacted] of its total portfolio by adding fixed priced contracts, financial hedges or a combination of both. SDG&E will continually review its hedge position internally and decide whether additional financial hedging is necessary (this could occur even if SDG&E is at the high end of its range for Year 2), keeping in mind the goal of being able to maintain a positive metric as each of the months of Year 2 becomes part of the 12-month rolling period. As such SDG&E may, after reviewing the CRT – VtE(95%) results and its hedge position for Year 2, adjust its overall hedge position, if its actual hedge vs. target percentages is below the upper hedge target percentage. As with the strategy used for calendar years 3 through 5,

as described below, the Year 2 period will move each year on a calendar year basis.

**Intermediate Term – For Years 3 through 5 of the Rolling 5 Year Plan**

SDG&E does not propose any significant revisions to its intermediate timeframe strategy. For Years 3, 4 and 5 SDG&E undertakes more passive risk management than for the rolling 12 month period, for the reasons discussed below, where it takes positions without regard to market price signals but rather with an objective of maintaining a certain percentage of portfolio hedge positions. SDG&E will undertake hedges so that each year it fixes or caps the price of an [redacted] of ratepayer open positions in each of Years 3, 4 and 5 within certain bounds.[32/] Please refer to the graphic example shown as Exhibit II-3 "Graphic Example of Short and Intermediate Hedge Strategy."

As an example, in 2008, Year 5 of the hedging plan will be 2012. SDG&E would hedge, through a combination of products, [redacted] of the open position for that year. In 2009, Year 4 of the plan will be 2012 and SDG&E would hedge an [redacted] of the 2012 open positions. In 2010, Year 3 of the plan will be 2012 and SDG&E will [redacted] of 2012's open positions. In 2010, Year 2 of the plan will be 2012. By this point in time, SDG&E would have [redacted] of the open positions for that year, on top of any fixed price positions resulting from existing long-term resources contracts, such as SONGS, QF contracts or renewables. Since Year 2 will also now be hedged volumetrically (measured on a delta basis), the strategy utilized for calendar years 3 through 5 will now flow into year 2 to form a consistent, hedge-over-time strategy for management of portfolio risk.

Exhibit II-3 "Forecast Hedging Activity" is another example illustrating the layering effect of the [redacted] hedging activity per year as the rolling five year plan progresses. Also illustrated in this graphic are

[32/] Due to the progressive nature of this plan, SDG&E uses a relativistic terminology to refer to calendar years. The first rolling 12-month period refers to the current month and next 11 months, while Year 2 refers to calendar Year 2. Year 2 will overlap the first rolling 12-month period as the rolling 12-month period moves. Therefore, if today is a date in 2008, a reference to Year 2 is 2009 and Year 3 would mean the calendar year 2010, and so on. When the first month of the rolling 12-month period reaches January 2009, then Year 2 will become 2010, Year 3 -2011 and so on.

the annual hedge goals, discussed immediately below, on fixed price positions and the impact these goals could have, causing hedging to be less [redacted] a year where the goal is reached and finally a forecast of possible sources of some of the forecast hedging.

The hedging plan outlined above is further constrained by two limits established here as a part of this plan. First, SDG&E does not believe that it is prudent [redacted] of ratepayer risk five years forward. To do so would preclude ratepayers from realizing the benefit from any future fall in market prices if hedging was accomplished through fixed price instruments, and ignore the risk of load uncertainty created by possible resumption of DA or CCA, either of which could lead to potential stranded hedging costs. Therefore, SDG&E here establishes targets for how much of its total portfolio it will hedge in years 2, 3, 4 and 5 of the rolling five-year plan. Notwithstanding other elements of this plan, SDG&E will not undertake further hedges under this rolling 5 year procurement plan:

- If in Year 3, if the total portfolio hedged has reached [redacted]
- If in Year 4, if the total portfolio hedged has reached [redacted]
- If in Year 5, if the total portfolio hedged has reached [redacted]

Second, collateral requirements necessary to implement the hedging contained in this plan can be significant and potentially impact company finances. In Part 3 of this Section II B, "Collateral," SDG&E describes these collateral/liquidity requirements, calculates the amount of collateral that may be required and sets a limit on how much collateral SDG&E is prepared to make available to implement this plan. Once this collateral limit is reached, SDG&E will cease further hedging activities, seek additional borrowing authority from the Commission to allow resumption of further hedge activity, and may reverse some hedges, if required, to stay within established collateral limits.

SDG&E will use a variety of products and instruments to meet the goal of hedging [redacted] incremental positions in Years 3, 4 and 5, all of which are authorized in Table 1 "Authorized

Procurement Products" in D.02-10-062, or have been/will be approved by separate application. One of the most likely means of meeting the [redacted] incremental annual hedge targets is hedging of SDG&E's net open position through execution of [redacted] These contracts are incremental to the current portfolio, and as they are added they eliminate the exposure to market prices for the volume transacted. A second likely means is hedging through [redacted]. Other means include financial or physical [redacted][33] The forecast volumes of each of these instruments can be seen in Exhibit II-3 "Forecast Hedging Activity." Any shortfall in meeting the targeted forecast hedges in any individual category in this table will be made up through the use of a combination of other instruments, most likely financial gas instruments, as these are relatively liquid through the five year term discussed here.

In each plan year, SDG&E will seek to hedge an additional volume equal [redacted] of the total portfolio regardless of previous year's hedging, up to the limits described below. Because of the "lumpiness" of resource additions, it is possible in some years that SDG&E may add a fixed price contract that [redacted] of the total portfolio for Plan years 3, 4 and 5. If that happens, in the next year SDG&E would still add an [redacted] to hedge positions in each year, subject to the limits described elsewhere. Additionally, there may be instances in which adding the prescribed incremental volume of hedges equal [redacted] in one or more of years 3, 4 or 5, may still leave SDG&E below the

33/ SDG&E will revise this strategy when the Commission officially adopts a new SRAC methodology and new basis point for calculation of SRAC prices for SDG&E.

capped levels for hedging. Given that the planning horizon in these instances is still a number of years out in the future, it may or may not be appropriate to increase the volume of financial hedges. As such, SDG&E will periodically throughout each year review its annual hedge levels, factoring in annual 5% incremental hedges. Should the overall portfolio hedge level(s) for any of the Years 3 through 5 remain 5% or more below the yearly cap level, SDG&E will review the potential for additional increases to overall hedge volumes, based on the potential for additional fixed priced contracts not originally included in its analysis for the year(s) in question.[34/] If after taking into account the potential for additional fixed-priced resource additions, the annual hedge level is still 5% or more below the yearly cap level, SDG&E may take action to incrementally hedge above the 5% annual level to bring the annual hedge position more in line with the capped hedge target. This is appropriate if SDG&E determines that leaving the hedge levels as they otherwise exist could cause SDG&E to not meet its hedge targets in subsequent years of its plan.

In summary, the strategy used in years 2, 3, 4 and 5 relies on [redacted]. This hedging strategy results in ratepayers acquiring a portfolio that has a weighted blend of market prices transacted at various points in time, rather than one where all positions are fixed at the same point in time in the hope that markets will move in their favor. This strategy of hedging incrementally and over time is similar to SDG&E's understanding of the "ratable rate" plan of other utilities. Hedging plans are regularly reviewed with SDG&E's PRG, although this review may take place after some hedging has occurred if market price movements dictate that execution proceed on a timeframe faster than a PRG meeting can be arranged.

[34/] This could happen for several reasons: a fixed priced contract may be in the process of being negotiated but is not yet finalized; a Fixed priced contract may have been executed but not yet approved by the Commission. In these instances SDG&E would evaluate the need to add the contract into the model and re-evaluate whether additional hedging was warranted or appropriate at that time.

In addition, SDG&E also reports a rolling 60 month CRT –VtE (95%) to the Commission, but will not modify its 5 –year hedging strategy based on the values contained in this report.

This approach is appropriate because sufficient time remains for SDG&E to analyze, discuss and modify its hedge plan as needed with the PRG and Energy Division without reacting defensively to adverse changes in forward market prices. That is, if prices for years 3-5 rise, there are still three to five years for the market to correct prior to SDG&E being compelled to fill these short positions to serve load. Similarly, if prices were to rise in Year 2, SDG&E would be able to evaluate whether to hedge more aggressively towards the top end of the overall annual hedge target prior to when the individual month would "roll" into the 12 month rolling period. SDG&E's view is that over-hedging long-term positions in reaction to short-term price signals is ill-advised.

**Long-term (Years 6 Through 10)**

In SDG&E's filed 2006 LTPP, the effective fixed price hedging target for years 6-10 is no lower than [redacted]. These hedge levels are currently assured through the fixed price positions inherent in the portfolio's legacy contracts such as SONGS, QFs and renewables and, as such, SDG&E has no plans to financially hedge a greater percentage through OTC or exchange-based derivatives. SDG&E will adopt reporting triggers at the following levels: Years 6-8: [redacted] Years 9-10: [redacted]. These calculations for Years 6-10 are to be performed no later than the last business day of each year. If the hedged portion of the portfolio falls below these levels, SDG&E will consult with its PRG and notify the Commission of any planned actions through an update to this LTPP. Some limited amount of passive hedging will occur naturally as a consequence of the addition of certain fixed-price supply additions to the portfolio, [redacted].

In addition to the foregoing, the scope of the active hedging horizon has been limited to five years in this LTPP for of the following reasons:

- The Commission's requirement that any transactions longer than 5 years be submitted for separate approval essentially places a limitation on trading authority for transactions such that any hedge for years 6-10 would require going to the Commission for pre-approval. SDG&E considers the notification at certain hedge levels followed by a plan update, as outlined above, is consistent with this restriction.

- Reduced liquidity in the market beyond five years, which makes transaction execution more difficult, increases bid/ask spreads and makes price discovery less robust.

- SDG&E's resources for the next five years are largely specifically identified. This allows for accurate calculation of the volume of SDG&E's Net Open Positions for electricity and gas. Beyond five years, the SDG&E Long-term Resource Plan currently relies on some generic, yet-to-be contracted-for resources. The uncertainties surrounding these future resources make calculation of the Net Open Positions much less certain for these years.

**Portfolio Risk Assessment – a Discussion of Forecast SDG&E Risk Positions, Risk Management Products and Selection Criteria**

Although SDG&E's hedging plan is limited to a rolling, calendar 5 years as discussed above), SDG&E here presents risk positions for the full 10 years of the LTPP for illustrative purposes. These numbers show how risk positions trend and change in futures years and how positions accumulate over time and serve as background to support potential future collateral requirements discussed further in Part 3, "Collateral," below.

SDG&E uses the analysis presented in Section III to create a chart of forecast unhedged positions (see Exhibit II-3 "Customer Market Price Risk Positions (gwh)"). From the chart, it can be seen that the [redacted]. While SDG&E has [redacted], which fulfills RA requirement, the [redacted]

[redacted], and therefore at risk to future market price movements.

Exhibit II-3 "Customer Market Price Risk Positions (%)" presents SDG&E's expected portfolio from the perspective of market price risk. In each year, the area of the bar chart which is white, represents the percentage of the portfolio energy that is already hedged and no longer exposed to market price fluctuations.

These hedged volumes are primarily made up by legacy portfolio fixed price contracts such as SONGS, Boardman, Yuma Cogeneration and renewables contracts, CDWR fixed price contracts allocated to SDG&E, and existing hedges. Any portion of a given year's bar chart that is presented in color represents the unhedged percentage of energy in the portfolio; that is, those volumes that could be impacted by changes in market prices.

Each color represents the forecast means by which these open positions are expected to be filled. The green portion of the bar chart represents open positions that are expected to be filled by renewables contracts as SDG&E moves toward meeting its goal of having 20% of its portfolio needs met through renewable resources by 2010. [redacted]

The yellow portion of each year's bar chart represents volumes forecast to be filled by energy from QFs. Under Standard Offer contracts, these resources are paid at a rate equal to the short run avoided cost (SRAC) of the utility. That price is currently indexed to Malin first-of-the-month gas prices and "floats" with that price. Fixing prices to such an index creates risk if market prices rise. [redacted] Fixing of these prices can be accomplished through two methods.

First, SDG&E may enter into contract negotiations with the QFs to convert their contract payment from SRAC to a fixed price. Similar arrangements have been reached in the past for five year fixed price deals, but these have expired. Similar new arrangements are not expected until a decision in the Avoided Cost proceeding is finalized. [redacted] These instruments are discussed in the section titled "Risk Management Products," below.

The light blue portion of each year's bar chart represents volumes of energy expected to be met through generation from CDWR contracts with tolling provisions. As discussed further in Section II C, "Fuel Supply Procurement Strategy," the CDWR has [redacted]. Forward hedging of CDWR gas volumes therefore works toward meeting the stated goals of CDWR as well as increasing the hedged positions of SDG&E ratepayers.

The dark blue portion of the bar chart represents the gas forecast to be consumed in SDG&E owned or contracted units as SDG&E undertakes least cost dispatch of its combined portfolio of CDWR and SDG&E resources. Further details on gas procurement for these units are described below in Section II C "Fuel Supply Procurement Strategy" of this plan. Any forecast gas volumes that are unhedged are at risk through exposure to rising market prices. SDG&E plans to hedge some portion of this consistent with the risk strategy outlined in this section, including limits on collateral required to undertake gas hedging.

The red portion of each year's bar chart represents SDG&E's market purchases, or "Net Open Positions." This is the volume of electric market purchases that SDG&E forecasts that it will make as

part of its economic dispatch. This volume will fluctuate through time in an inverse relationship to the SDG&E and CDWR gas volumes as a function of the relative changes in gas and electric market prices (the market heat rate), and also with changes to demand, and the availability of must-take and dispatchable resources. Forward financial hedging of this portion of the open position is difficult due to a lack of suitable instruments; it may be simpler to buy the physical positions forward at a fixed price.

In addition to price risk, the Commission has previously directed SDG&E to address additional procurement risks:

> *Supplier Diversification* – As seen in the various charts of SDG&E positions contained in this LTPP, the SDG&E short positions average [redacted] in the first half of the plan. Of the remaining portion to be filled, SDG&E has plans that represent diversity of supply with resources expected to be drawn from electric market, gas markets, renewable suppliers and contract resources. SDG&E will adopt supplier diversity as one non-price aspect to be considered in procurement decisions when filling the short positions. SDG&E will also strive to evaluate all options to diversify, from use of Diverse Business Enterprises for procurement, to diversification of development risk through division of renewable procurement among a large number of projects and fuel types, to analysis of locational procurement of energy to limit over reliance on any single source.
>
> *Liquidity Risk* – To the extent that portfolio VtE remains below the CRT, transacting for energy supplies will be spread using the "incremental and over time" approach to hedging adopted in this plan. That approach reduces timing risk that would arise if all hedging were done at one point in time. Notwithstanding the need to pay attention to timing risk, a high volume of procurement or hedging activity could be appropriate in a short time period to defensively protect the portfolio should volatility (and thereby VtE) or prices show signs of increasing. Since market conditions will inevitably change as we move through the period covered by this Plan, risk strategies and measures, including timing of transactions, will also need to be constantly updated to reflect current market conditions. Timing in SDG&E's plan is governed largely by changes in the CRT risk metric.
>
> *Transaction Risk* – Given the uncertain state of today's electric market and many of its participants, it is possible that there may not be sufficient market liquidity to execute the procurement plan at the time and in the manner proposed by SDG&E. Some of the transaction risk may be mitigated by spreading out transactions over time, using a variety of products to achieve a desired position (for example, financial versus physical), and having trading and credit agreements established with enough counter parties such

that SDG&E is not precluded from certain transactions that are being offered to other participants.

**Risk Management Products**

In Section II A, SDG&E discussed many of the physical products that it expects will play a large role in procurement activities. In this section, SDG&E presents a similar discussion of Risk Management Products. All of these products are included in SDG&E's list of authorized trading products.

SDG&E anticipates that risk management products used in the implementation of this plan will be transacted primarily through exchanges and brokers, trades directly with counterparties, and bilaterally negotiated structured contracts. Risk management products will include those listed earlier in Table 1 (Electric Procurement Products) and any other products listed in this LTPP. Because of the importance of timeliness in managing risk, a formal solicitation process will most likely not be utilized. Except in circumstances where time does not allow, SDG&E will meet and confer with its PRG and propose its strategy to the group prior to taking action.

Executing risk management transactions may require SDG&E to incur administrative and management costs directly associated with the transactions. These costs could include, among other items, expenses for providing credit collateral to counter-parties and brokerage fees as well as the cost of the financial hedges themselves. SDG&E expects that the administrative costs associated with energy and portfolio risk management transactions associated with the UEG contracts and the cost of the products themselves will be reimbursed by booking these costs into the ERRA. The CDWR would directly bear the cost of gas hedges associated with allocated CDWR dispatchable contracts. These costs would continue to flow through to the IOU's through a CDWR revenue requirement proceeding.

**Electricity Exposure**

Generally, SDG&E will procure purchased power requirements in the spot and forward markets to spread out timing risk and to best match purchases with forecasted needs and attractiveness of pricing. Additionally, SDG&E may enter into accelerated forward transactions to control the financial exposure of the portfolio when portfolio VtE increases relative to CRT or to maintain certain hedge percentages as specified by this Plan. This activity may include hedges related to anticipated excess energy sales with the goal of protecting the portfolio from excessively low sales prices or locking in future margins. All of the transactions types below may be either physical or financial contracts, although with electricity, a lack of financial instruments makes physical fixed price transactions an attractive hedge instrument.

**Bilateral structured contracts**: Due to the non-standard profile of the Net Open Position of SDG&E's electric and gas portfolios, SDG&E may negotiate and enter into a structured supply or sales contract to manage the net open positions. These may be financial or physical.

**Fixed-price forward trades for power**: A forward trade of standard blocks, e.g., Q3 6x16 or 6x8, 7x24 may be the best hedge of the Net Open Position despite the imperfect match between the product and actual shape of the Net Open Position. Standard products have several advantages over structured contracts including greater market depth, efficiency in transacting, and price transparency. Forward trades can also be expanded to include non-standard products such as super-peak or fixed-shape energy should product offering and liquidity increase. Also, SDG&E may execute forward trades of non-SP15 delivery products such as NP15 or Palo Verde as a proxy. The benefit to this strategy is access to additional market depth should SP15 become illiquid, provided that these markets are reasonably correlated with SP15.

**Exchange of risk exposure**: Market risk is dynamic and differs by time of year and type of exposure. For example, spot month volatility is generally higher than back month volatility and summer volatility is higher than shoulder month volatility. Also, certain products, such as super-peak, are likely to have higher volatility risk as well as higher liquidity risk than a standard on-peak product. Exchanging risk from one part of the portfolio to another may be used to adjust risk to the desired level, time period or product type. These differing volatilities may also contribute to formation of specific hedge plans. For instance, if SDG&E's plan calls for hedging 1,000,000 MWhs of power, it may concentrate these volumes into time periods with high volatility, as doing so would lead to a relatively greater decrease of overall risk for the same volume by simply moving the purchase to a higher volatility month.

**Tolling capacity purchase:** Another physical form of a spread option that deserves separate discussion is the common gas-to-power tolling structure. The primary benefit of a tolling deal, where the buyer, in this case, SDG&E, supplies physical or financial gas to the seller for conversion to power, is that it effectively converts a portion of the portfolio's risk from electricity to natural gas for those tolling deals below the forward market heat rates and up to the amount of forecasted SDG&E load. This conversion could be beneficial due to greater market depth and a larger number of counterparties in the natural gas market, thereby improving transaction and risk management capability.

**NYMEX gas futures, options and gas basis swaps:** Because of the limited liquidity available in the electricity markets, SDG&E may utilize financial gas products as a cross-commodity hedge to manage its price exposure to electricity prices. Such hedges involving gas products would be analyzed prior to transaction to confirm that price correlations between gas and power prices warranted the effectiveness of hedging power price risk.

**Gas Price Exposure:** When risk attributable to the short gas position increases, SDG&E may, acting either on its own behalf for UEG gas positions or as agent for CDWR positions, enter into longer-term gas transactions to control the financial exposure created by the heat-rate dispatchable units/contracts of the combined CDWR/UEG gas portfolio. Products and tools to manage gas price risk may include the following.

- *Bilateral structured contracts*: As with bilateral power transactions, these contracts can be structured to closely match the product with the profile of the risk to be managed. In pursuing structured contracts, the decision to transact will depend on comparing the benefit of an accurate hedge to the additional cost of the customization. Structured gas contracts may also be either physically or financially settled.

- *Fixed-price futures, forwards and swaps*: Standard products (e.g., baseload delivery, futures or swaps) may be the best hedge of the short gas position despite the imperfect match between the flat delivery schedule and actual gas usage. Several advantages to standard products over structured contracts include market depth, efficiency in transacting and price transparency. Forward trades can also be expanded to include non-standard products such as non-uniform flow gas to better match peak production, should product offering and liquidity increase. Trades may be executed for gas delivered to either the Southern California Border and/or the Southern California CityGate (SoCal CityGate), Wheeler Ridge and Daggett, and Opal to cover the gas short associated with the CDWR and UEG power plant locations. Further, alternate delivery points such as Malin, Aeco, and San Juan may be traded for the purpose of increasing liquidity if correlations allow, hedging gas price exposure imbedded in UEG contracts with QFs and covering new positions that may result from additional contracts indexed to new delivery points for gas.

- *Physical and financial options*: SDG&E anticipates the use of options as an important risk management tool for both gas and power. In addition to call options, combinations and various forms of potential option solutions for managing risk may be employed such as collars, straddles, or floors.

- *Swing-swaps*: A specific type of contract-for-difference, which effectively converts gas pricing from a fixed monthly price to a daily price. In a swing swap, which is a balance of the month product for up to one month in duration, CDWR/SDG&E would pay the counterparty a fixed or monthly index price, and the counterparty would pay CDWR/SDG&E the daily index price. The price differences may be used to offset exposure to daily gas prices and protect the buyer from daily swing gas price volatility. Swing swaps may be a better fit than physical baseload gas if daily gas requirements are forecast to be highly variable due to unit outages or seasonal patterns. Swing-swaps are required to extend the protection offered by forward

financial gas hedges into the actual month of delivery, as financial hedges typically expire just prior to the commencement of the delivery month.

- *Basis Swaps*: Basis swaps are similar to a contract for differences that offers protection for the difference in pricing at one point versus another. This would allow SDG&E to use very liquid NYMEX swaps and futures, which trade for gas priced at Henry Hub in Louisiana, to hedge physical positions with delivery in California.

**Risk Management Product Selection Considerations**

SDG&E's broad risk management strategy is to manage forecasted acquisition costs within VtE for the first rolling 12-months and to hedge positions volumetrically, measured on a delta basis, for month 13 through the end of year 5. To accomplish this objective, SDG&E will need to transact some combination of physical and financial energy products that reduce exposure of the portfolio to market price volatility. SDG&E will be responsible for managing the energy price risk within the framework of the tools and procedures contained in this LTPP. However, meeting the objectives and targets of the risk strategy can be accomplished through various different instruments or combination of instruments. In the following pages, SDG&E discusses some of the considerations for selection of different types of hedging instruments and the trade-offs that are made when selecting one product over another.

SDG&E will use the authorized hedge products as approved in this LTPP to manage risk. The selection of a particular product will take into account several factors, including how well the hedge fits the target risk for VtE reduction or increase of hedge percentage, hedge cost relative to hedge effectiveness, and product liquidity given complexity and urgency of need. In addition, the ability to transact depends on the availability of sufficient credit and collateral under CDWR's and SDG&E's physical and financial trading agreements with counterparties including NYMEX and over-the-counter (OTC) brokerage accounts.

Since January 2003, SDG&E has used a combination of NYMEX natural gas options and futures, OTC natural gas swaps and options, and fixed-price physical gas to manage price risk for CDWR and UEG open gas positions. These products can be categorized into two types: options and fixed price derivatives (futures, forwards and swaps). SDG&E anticipates that these products will continue to be important risk management tools utilized under this LTPP. The decision to use one product over another is a function of the following primary considerations: physical need, market availability, and relative value.

*Physical Need* – Prior to entering each month, SDG&E plans to physically procure [redacted] of forecast gas requirements by purchasing baseload gas at either fixed-price or monthly index. There are two primary benefits of buying baseload gas -- securing physical deliveries needed throughout the month and avoiding unnecessary exposure to potentially extreme intra-month price fluctuations. Another use for baseload gas is managing CDWR or SDG&E's imbalance accounts associated with generation units. SDG&E may from time to time draft SoCal Gas or Kern River pipeline, creating a negative imbalance account, if burns exceed forecast or if spot prices are higher than forward prices. SDG&E may also need to borrow gas from PG&E Hub services to help balance the Sunrise account. In either of these cases, fixed-price forward gas may then be purchased ahead of time to lock in the cost of re-supplying gas to the imbalance accounts.

In lieu of, or in addition to, physical baseload gas purchases, swing swaps may be used for financial protection during certain months. For example, during a typical spring run-off hydroelectric generation depresses electricity prices and allows SDG&E to largely displace gas-fired generation for a short period of time. For such months, swing swaps would protect the portfolio against price spikes in the daily market, but not obligate SDG&E to over-buy physical deliveries.

*Relative Value* – Another consideration in the selection of risk management products is the relative value between options and fixed price derivatives. Relative value between options and fixed price derivatives can be interpreted as the opportunity costs associated with locking in the fixed price position and foregoing the chance to capture savings when market prices fall. This consideration is most relevant when hedging the Henry Hub component of future gas price risk where both options and fixed price derivatives can readily satisfy the hedging requirement.

Deciding on the appropriate product is a trade off between various attributes that each possesses. In addition, pricing relationships such as put-call parity suggest that no obvious arbitrage opportunities should exist between options. A table describing the qualitative advantages and disadvantages of purchasing call options and/or purchasing fixed price derivatives is presented below:

| | **Call Options** | **Fixed-Price Derivatives** |
|---|---|---|
| Advantages | • No margining requirements<br>• Financial loss is limited to premium payment<br>• Financial protection for price increases if above the strike price<br>• No opportunity cost: customers benefit when market drops | • No up-front premium payments<br>• One for one financial protection for price increases above the purchase price<br>• Higher liquidity than options implies lower transaction costs |
| Disadvantages | • Premium payment can vary based on desired strike, time to expiration, and market conditions for price levels, volatility and interest rates.<br>• Financial protection is typically less than one for one even for price movements above the strike price.<br>• Lower liquidity than forwards implies higher transaction cost<br>• No financial protection unless prices increase above the strike price.<br>• Up front premium payment required. | • Marginable derivatives require cash outlays for price movements below the purchase price<br>• One for one financial loss for price decreases below the purchase price |

Prior to using options, other information should be reviewed to ensure that options are the preferred risk management tool for each hedging decision. This other information includes impact of market factors such as liquidity, expected price volatility, underlying price trends, time to expiration, and impact on VtE reduction. These are described separately below, and illustrate the non-deterministic and fluid nature of executing trades when managing risk.

*Market Liquidity*: Options are less liquid than fixed price derivatives, in part due to the large number of options strikes available on each futures contract. At times, especially during periods of volatile price moves, the quantity and the desired option strike may not be available or its price inflated for higher implied volatility relative to other option strikes. In these situations, given high price volatility, SDG&E may opt to use fixed price derivatives rather than options to ensure that the hedge is established quickly and without paying a premium.

At times, using the optimal hedge product may not be possible due to insufficient market liquidity. An example where market liquidity dictates the selection of the hedge product is in managing basis exposure between NYMEX priced at Henry Hub and the delivery points for CDWR gas. While options on NYMEX gas futures are liquid and transparent, locational options on the SoCal Border and the SoCal CityGate (it this becomes a traded NYMEX product), and Opal gas are less so. These options are not available via an exchange such as NYMEX, and must be procured via bilateral negotiation or through an OTC broker, assuming these counter-parties are even willing to offer a competitive price. [redacted] A more cost effective way to protect the portfolio from basis risk may be to lock in some portion of the open basis position with basis swaps, which can be more competitively priced due to greater liquidity.

*Price Volatility*: In addition to potentially reducing liquidity for options, high implied price volatility increases the premiums for a given option chain on a futures contract. This relationship is based on the fact that the likelihood of any given option expiring in the money is higher with higher price volatility, and is captured mathematically in standard option pricing models such as Black-Scholes. When the market has priced implied volatility in the option premium that is high compared to actual historical volatility, it may be to the ratepayers' benefit to lock in a fixed price using fixed price derivatives, rather than pay the option premium that presumes a continued state of high price volatility.

*Opportunity Costs*: Opportunity cost represents the risk of loss on hedges due to adverse market movements for those hedge products. However, to the extent that the SDG&E portfolio is less than 100 percent hedged, these opportunity costs will be countered with a certain amount of decreased acquisition costs attributable to the Net Open Position. Based on the current and projected amount of exchange and OTC hedges, net decreases to acquisition costs typically lead to lower overall consumer rates even when factoring in the potential for opportunity costs.

*Margin Risk*: Concerns of SDG&E default are raised when transactions change invalue and prices fall prior to settlement and the counterparties are "in-the-money." For marginable securities, contract terms typically provide for SDG&E to make a margin call which requires posting of additional margin (collateral). Margin risk would normally be interpreted as the risk of negative cash flow to support potential margin calls associated with unrealized mark-to-market losses. Even when some limited value of mark-to-market losses may be covered under negotiated credit lines, credit rating agencies do require certain companies to hold financial resources to cover these losses as well as the risk of further loss under a stress scenario. So, even if cash is not released to cover a margin call the margin risk will almost always have a financial impact. This is true unless the risk of collateralization is

fully eliminated under the contract. Although not specifically required to by the credit rating agencies, SDG&E has adopted the Standard and Poor's (S&P) liquidity methodology to manage its liquidity utilization and risk for marginable transactions within its approved liquidity allocation.

*Underlying Price Trends*: Unlike certain options, if the gas market experiences an upward price trend, then fixed price derivatives would have been a better risk management tool because they avoid the up-front premium and cover risk immediately on a one-to-one basis with price movement. However, it is impossible to reliably predict the price direction of the market, and as such, SDG&E enters into fixed price derivatives or options to manage overall rate volatility, lower VtE, maintain certain hedge percentage or insurance levels or to finance overall hedging strategies.

*Time to Expiration*: Option premiums increase as the time to expiration increases because a longer-life option has a greater probability of settling in-the-money. Therefore, an option that is out-of-the-money may still be priced at a high premium if significant time remains prior to expiration. In certain instances, it may be more reasonable to purchase fixed price derivatives rather than to pay for the option "time value".

*Impact on VtE Reduction*: When hedging is performed to reduce portfolio *VtE*, and even when incrementally hedging over time, the impact of the hedge transaction on the portfolio *VtE* becomes an important consideration. While out-of-the money options remain a likely product choice, they do not reduce *VtE* as effectively as outright fixed price products for the same notional volume. The direct price protection provided by the out-of-the-money option comes into play when the underlying contract price exceeds the strike price of the option. However, unlike fixed price derivatives, certain options are the only risk management tool to offset non-linear portfolio exposures to volatility (vega), time to expiration (theta) and rate of price-change risk (gamma). However, these risks are typically much less than the

overall risk to small direct changes in commodity price levels. Thus, depending on the urgency of reducing *VtE* , fixed price derivatives may be a more efficient and cost- effective risk management product for the portfolio at the time.

**Security Requirements (Collateral and Credit)**

The purpose of this section is to present the collateral and credit risk management practices of SDG&E's Electric Procurement operations. The buying and selling of energy commodity products necessitates multiple transaction types with external counterparties. The types of contracts will be covered in more detail, but they will always allow for either certain levels of unsecured credit exposure and/or contain provisions for credit security. Contracts with security provisions (e.g. cash, letters of credit, etc.) often require SDG&E to post collateral and maintain adequate liquidity capacity to cover potential collateral requirements. There are working capital costs associated with collateral to maintain these transactions over time. Contracts that allow for unsecured credit exposure require less (or no) working capital and less direct cost to manage collateral requirements. However, over time, if these transactions become positive to SDG&E, they create an indirect cost of credit risk due to an expectation of loss from potential non-performance or non-payment. An event of default, non-performance or non-payment can lead to an actual cost for this credit risk. Both collateral and credit risk are covered in more detail below.

**Collateral and Credit-Related Responsibilities**

Management and oversight of the credit and collateral requirements of SDG&E procurement operations are the responsibility of the following groups:

*Front Office:*

- Conducts trading within the credit limits established by the Credit Department.
- Works to maximize use of available credit by diversifying procurement amongst parties.

- Executes credit risk mitigation strategies when deemed appropriate.

*Credit Department:*

- Reviews, assigns and monitors the credit limit for each of SDG&E's counterparties.
- Calculates the credit limit per counterparty by establishing an unsecured credit line, based upon their review of its counterparty's or its guarantor's creditworthiness, net of collateral on hand.
- Notifies E&GP department of changes in credit limits.
- Ensures that adequate levels of collateral, letters of credit, parent company guarantees or margining agreements are in place where it considers them necessary to support the established credit limits.

*Energy Risk:*

- Calculates credit exposure by counterparty, including MtM active trade and contractual agreements that can result in exposure to credit risk.
- Compares each counterparty's credit exposure to its established credit limit to determine available credit.
- Reports available credit levels by counterparty to the front office and provides this data to the credit department for their review.

*Settlements & Systems:*

- Reconciles and processes collateral postings/margin calls.

*Sempra Energy Utilities Risk Management (SEU-RM):*

- Recommends, reviews and assesses the quantitative methodologies for calculation of credit exposure and potential and actual credit risk.
- Quantifies the peak expected credit risk for use by SDG&E when negotiating the credit provisions for all fixed-price contracts, where terms exceed one year and are not covered under a Master Agreement (e.g., ISDA and EEI) that contains margining or like provisions.

**Collateral Requirements:** In this LTPP, SDG&E is proposing to take fixed-price positions (hedge open positions) up to five years forward to implement its risk strategy. There are at least three implications to this strategy: (1) hedging five years forward, which involves an increase in transaction volumes from previous procurement plans; (2) a five-year forward position covers periods where

SDG&E's share of open positions, relative to CDWR's nearly exclusive role in hedging from 2003 through 2005, are significantly larger; and (3) given the increased holding period for positions there is a potential for greater divergence between the transaction price and market prices through time. These three factors combine to create a much larger potential need for SDG&E to hold or post collateral. In this section, SDG&E explains the liquidity requirement for collateral, calculates the likely collateral exposure, discusses transactions that create needs for collateral as well as those that have reduced collateral requirements; and most importantly, establishes its liquidity limit and explains the need for that limit and establishes what SDG&E will do to comply with it.

**Daily Margin:** Fixed price derivatives give rise to MtM price exposure. Once a price is agreed to in a transaction, any subsequent increase in market prices creates an unrealized gain for the buyer and a corresponding unrealized loss for the seller (because the seller could have sold at the new higher prices, but for the previously transacted deal). The party that carries an unrealized MtM loss in such transactions may be asked to post collateral to ensure against a default consisting of failure to deliver or receive the physical commodity or failure to provide settlement payment on a financial contract. Under such a default condition, the party that was carrying the unrealized MtM gain would lose any such gain by having to replace the lost transaction in the unfavorably priced market. In order to cover such potential losses, collateral is usually required to be posted as cash or letter of credit or other cash equivalents with a counterparty or to the custodial account of SDG&E's exchange clearing broker as margin to cover MtM losses. SDG&E's collateral requirements are typically triggered when, after buying at a fixed price, the market price moves downward creating an MtM loss on its contract. The seller of that contract may require SDG&E to post collateral in the amount of the calculated credit exposure to ensure performance under the contract.

**Initial Margin**: In addition to on-going margin calls that may be required as a result of MtM calculations of fixed-price positions, an exchange may require that initial margin be posted at the outset of undertaking these positions. For NYMEX transactions, the exchange sets the required initial margin based primarily on the price volatility of the contracts traded, so that it has assurance that losses against a client's positions incurred prior to satisfaction of a subsequent margin call are recoverable to some extent. The following website lists initial margin amounts for natural gas futures: http://www.nymex.com/NG_marg.aspx.

When SDG&E transacts using NYMEX it must maintain adequate margin in the account as the value of the account (based on all the NYMEX transactions held by SDG&E) fluctuates with market prices. If the margin in the account is reduced below the maintenance margin (a separate level of margin typically around 90% of the initial margin), SDG&E will receive a margin call requiring the injection of sufficient funds so that the margin is returned to the initial margin level.

**Liquidity Requirements**: S&P's rating agency has developed a standardized financial liquidity requirements test for certain companies using marginable derivatives or like products that contain any of a variety of contractual terms that could result in an obligation to post collateral. The potential to post collateral can create a cash requirement on the company. These collective contracts and positions that generate a potential demand for liquidity according to the S&P methodology will be called "liquidity demanding" contracts and positions. S&P's objective in this test is to ensure that companies engaging in such transactions maintain sufficient liquidity on hand (the capacity to meet cash obligations) to ensure the continuing viability of the corporate entity; this has a direct bearing on the credit rating S&P issues for energy companies.

Although not currently required by S&P, SDG&E has internally adopted S&P's liquidity calculation methodology in order to manage its working capital requirements within the liquidity limit set per this plan. SDG&E tracks this "Liquidity Utilization" against the liquidity limit. In addition, we calculate a 10-day VaR on marginable derivatives to assess the statistical possibility of exceeding the authorized liquidity limit.

"Liquidity Utilization" is defined as the sum of:

1. unrealized mark-to-market of marginable transactions; and
2. the greater of an upward or downward shock of NYMEX natural gas prices of 15% for fist year forward and 20% for later years, with natural gas basis fixed and with full netting across positions.

One function of the S&P methodology is that the total liquidity requirements should always exceed the actual collateral that may be required to be posted at any given time. The S&P calculated "Liquidity Utilization" using the S&P methodology will be the binding requirement on this plan, since it includes both the unrealized MtM component as well as the 15% and 20% "stress test" reserve requirement. The liquidity utilization is the metric used to track against the liquidity limit. The 10-day VaR on marginable transactions is purely an internal management tool used to potentially provide early warning on the possibility of exceeding the liquidity limit.

**Products that Contribute to the Need for Collateral**: These products would include all those that contain any contract provisions that may require SDG&E to make a cash or similar payment as a function of the contract's market value in advance of settlement. The contractual terms are typically standardized and reflected in Master Agreements, such as ISDA, EEI, NAESB, and WSPP. SDG&E's various contracts contain a variety of such provisions, ranging from active margining (see Exchanged

Cleared Products below) on one extreme to a limited requirement to post collateral should SDG&E receive a credit downgrade.

**Exchange Cleared Products**: Products transacted on exchanges, such as NYMEX, often rely on a clearinghouse to guarantee settlement. Use of these products requires parties to meet active margining obligations, including initial margin, maintenance margin and margin calls, as described above, on a day-to-day basis in some cases. The NYMEX futures and options products will always require active margining.

Basis swaps transacted through NYMEX Clearport are also cleared by the NYMEX clearinghouse and create active margining requirements similar to futures. Additionally, many over-the-counter (OTC) products can be cleared though NYMEX or other clearinghouses if both counterparties so elect. When cash or other acceptable forms of margin are posted to the exchange broker's custodial account S&P recognizes these funds as contributing towards satisfying the liquidity requirement.

**ICE Traded Products:** Financial transactions executed through ICE are cleared through the London Clearinghouse. The margining process for these transactions is similar to that for exchange cleared products. Physical transactions on ICE can be cleared or traded bilaterally through WSPP Master Purchase and Sale Agreements. Physical clearing typically requires 100% of the contract value to be held in escrow through the delivery period. A new entry into the clearing process for ICE physical transactions is North American Energy Credit and Clearing Corporation (NECC). NECC provides for multi-lateral clearing for physical transactions on ICE with a potential for significant reductions in working capital requirements.

**Other OTC "Liquidity Demanding" Products:** Most forward gas and electricity products, both physical and financial, such as fixed-price physical gas, fixed price swaps, OTC basis swaps and

options, contain contractual provisions for securing or collateralizing each counterparty's positions. These are often referred to as credit or security provisions. Because of SDG&E's investment grade credit rating, [redacted] It is these provisions that lead to S&P's insistence that sufficient liquidity be maintained for all such "liquidity demanding" contracts, even when secured by substantial unsecured credit lines. These various OTC products are not *expected* to result in calls for collateral and the associated demand on cash; however, under adverse market conditions or after an SDG&E credit downgrade the actual cash demands associated with most OTC contracts could be significant.

**Size of Requirements for Liquidity Associated with Plan:** In Exhibit II–3 "Collateral Limit/Liquidity Requirements," SDG&E calculates the potential liquidity requirements associated with the volumes of hedges that are forecast to be undertaken by SDG&E (as defined in Exhibit II–3 "Forecast Hedging Activity"). Specifically, it is those hedges that are required to meet the volume targets outlined in the risk strategy contained in this LTPP, beyond the hedges which are not expected to require collateral posting by SDG&E, [redacted].

For calculating an expected liquidity exposure, it is assumed that all remaining SDG&E hedge volumes are transacted using standard, liquidity demanding products. The calculation is conducted by taking the volumes of forecast hedges from each year and calculating the cumulative hedge position held by SDG&E as of each year going forward. The value of these cumulative positions is analyzed in a Value-at-Risk to Expiration (VtE) framework to identify the greatest expected unrealized MtM loss at a 95% confidence interval (the MtM VaR).

The value associated with the S&P standardized stress test (based on a 15-20% adverse price movement) is then added to the MtM VaR, resulting in the maximum expected S&P liquidity requirement at a 95% confidence intervals for forward years as shown in Exhibit II-3 "Collateral Limit/Liquidity Requirements." While the actual collateral requirements will depend upon the actual volumes of liquidity-demanding transactions used by SDG&E as well as actual market prices, it can be seen that there is a forecast long-term need for some base level of collateral / liquidity to support the hedging outlined in this plan.

**SDG&E's Established Liquidity Limit**: Approval of this plan will include the explicit limit on the amount of financial resources for executing this long-term hedging plan. SDG&E is proposing to set its liquidity limit at [redacted] recognition of 1) the size of the anticipated liquidity requirements, 2) market conditions, 3) the expectation to complete the identified hedging using a combination of products or instruments including those that do not require collateral, and 4) the impact of raising cash or cash equivalents to be used for collateral [redacted] which is based upon the hedging volumes and instruments currently forecast to be used to implement this plan. The actual liquidity needs will vary with movements in forward market prices and the types of hedge instruments utilized under this plan.

Setting a limit on working capital requirements for liquidity is consistent with AB57 stated goal of assuring creditworthiness. At any time during the term of this plan, if SDG&E reaches or appears likely to reach its authorized and approved liquidity limit, SDG&E will take the following actions:

- Temporarily cease any further hedging activity that gives rise to additional liquidity requirements.
- Evaluate its current overall hedge position and portfolio and unwind hedges as needed to move its liquidity requirements below the authorized and approved limit.
- Meet with its internal management to evaluate its liquidity position, current hedge position and overall market conditions and determine whether SDG&E should apply to the Commission for additional borrowing authority to be used for the purpose of meeting these margin/collateral requirements so that it may resume execution of the hedge plan or continue to manage its hedge positions and portfolio within the authorized and approved limit.
- Inform the PRG of its liquidity position and intended actions.
- Update this plan to outline further actions as necessary.

**Operation of the Liquidity Limit**: Implementation of the liquidity limit adopted in this LTPP has numerous consequences. When a hedge transaction settles out of the money the loss value will be realized and recovered through ERRA. This is true whether the hedge transaction is closed normally at or near expiration or is otherwise unwound well in advance of expiration. When the hedge transaction expires normally the loss is expected to be negatively correlated with the underlying commodity costs. In other words, hedging losses are expected to be accompanied by corresponding gains (a fall in energy prices) in the contract month, and vice versa. However, if an out-of-the-money hedge transaction is unwound in advance of expiration SDG&E may be incurring a loss that is not necessarily negatively correlated with the underlying commodity costs at the time of the consumption. In this situation, the losses that are recovered through ERRA may not have a corresponding offset by gains in commodity prices. This loss of fixed price, and the need to settle in cash, and collect in rates, a loss from a future year hedge in the current year will not have been forecast in the ERRA proceeding for the year and therefore may contribute to an unexpected rate trigger.

Another consequence of unwinding hedges is the decrease in the hedged position, and corresponding increase in the unhedged position. Should SDG&E subsequently choose to replace the

hedge in order to return to the anticipated hedge percentages outlined in this plan, it may be executed at a market price that is above the market price received in unwinding the original hedge.

**Products that Do Not Contribute to the Need for Collateral**: SDG&E has identified certain products that could limit the total need for collateral and are potentially necessary to fully implement this plan, given the size of the liquidity limit relative to the requirements for collateral if all of the hedging contemplated in this plan was done with liquidity demanding products. The following, non-exhaustive list, highlights some of the products that do not contribute to the need for collateral and are likely to be used by SDG&E in hedging of risk positions. It should be noted that, while SDG&E has a preference for these types of products (due to the lack of margining provisions), use of these products may be somewhat limited either by their higher costs, limited availability or increased exposure to credit risk.

[redacted]

[redacted]

*Structured bilateral contracts with negotiated credit provisions*. When a significant hedge transaction is executed bilaterally, both parties may agree in negotiations on specific credit provisions covering that transaction. Credit negotiations may result in a wide range of collateral reduction solutions. The most straightforward method is for each party to assign an unsecured collateral threshold (dollar amount) to the other based on the creditworthiness of the parties, where each party is exempt from posting collateral if its losses are below this threshold. This approach reduces the expected demand on cash, but does not alleviate the liquidity requirement because these unsecured credit lines are usually subject to credit rating downgrade triggers. An alternative is for SDG&E to pay a premium in return for more favorable collateral provisions, where such a premium would be fully recoverable through rates.

Certain counterparties have indicated that collateral requirements could be capped, or even completely eliminated, given a sufficient price premium to the hedge product purchased, while SDG&E would still maintain its right to call on collateral from the counterparty. Bilaterally negotiated hedge transactions could be a likely solution to meeting SDG&E's hedge requirements given the potential that

funds to support margin calls may be limited. SDG&E has negotiated unilateral margining provisions with at least one counterparty and will continue to seek opportunities to negotiate special credit provisions where possible to enable it to execute this plan within the liquidity limit. SDG&E intends to make use of this type of resource to execute on this hedge plan while working within the liquidity limit. However, the premium charged for this product will need to be considered against the alternative of further borrowing to satisfy margin requirements.

*Options*. SDG&E frequently uses options to hedge its electric portfolio. The buyer of OTC options typically must pay an up-front, agreed-upon premium for the product. The premium is the extent of the buyer's performance obligation and there are no further margin requirements. Meanwhile, the option seller does have continued performance liability if the option sold becomes more valuable on a MtM basis. SDG&E may act as an outright buyer of options (call options to cap price exposure act as a stop loss, or put options to restore ratepayer benefit associated with fixed-price purchases in a falling market) to reduce VtE or manage to volumetric hedge percentage targets (measured on a delta basis). SDG&E may also act as a seller of options to reduce overall hedging costs, reduce VtE or manage to volumetric hedge percentage targets (measured on a delta basis). As seller, SDG&E would have the obligation to post margin if the option sold gained in value. However, such requirements would often be less than for a fixed-price contract because of the delta effect of option valuation. Options are a viable product for conducting hedging within the established collateral limits, however they tend to be relatively more expensive than other, fixed-price transactions due to the time value of the options over the term of a five-year hedge plan.

*CDWR Long-Term Hedging of its Gas Positions*. Prior to SDG&E's last STPP, CDWR suggested that SDG&E, in its role as agent for CDWR, arrange for hedges for a longer term for gas

associated with dispatchable CDWR tolling agreements that SDG&E has been allocated for operational purposes. CDWR is concerned with minimizing volatility associated with its revenue requirement; large amounts of unhedged gas can create fluctuations in its costs. While this goal is similar to SDG&E's goals in hedging, it is not identical. SDG&E has a portfolio that is currently [redacted] The amount of hedging done to satisfy SDG&E's goals will not necessarily be sufficient to meet CDWR's goal of revenue requirement stability. After discussion with CDWR, parties have agreed that SDG&E, in accordance with this LTPP, will [redacted] with volumes of each party being hedged proportionately.

For example, suppose that the total gas requirement in 2008 is forecast at 80bcf and suppose further that the volumes associated with SDG&E-owned resources represented 20bcf (25%) of this forecast and the remainder was associated with CDWR owned resources (75%). If SDG&E's plan called for 40bcf of this gas to be hedged, then such hedges would be done in proportion to each party's anticipated gas burn; that is, SDG&E would hedge 10bcf (25%) and would arrange that DWR hedge the other 30bcf (75%). Any such hedges carried out by CDWR, as arranged by SDG&E, would be done in CDWR's name using their financial resources, thus placing the liquidity requirements on CDWR. It is possible that CDWR, in order to achieve a higher level of hedging of its portfolio than that which would result from SDG&E's proportional arrangements, could request that SDG&E prioritize the CDWR hedges ahead of SDG&E hedge volumes. Hedging done by CDWR will place all margining requirements on that agency, rather than SDG&E.

**Credit Requirements:** SDG&E's procurement operations are exposed to the risk of loss attributable to the failure of a counterparty or customer to honor its contractual obligations, including the obligation to cash settle on a timely basis. Counterparty credit exposure is equal to the sum of all

money due (billed or delivered and unbilled) plus the replacement cost of the MtM contract value if positive. Credit risk is defined as the cumulative potential non-payment and non-performance of counterparties on contracts to receive and pay for or deliver energy products and derivatives. This risk is a function of the credit exposure, the counterparty's probability of default, and the proportion of this value that would be recovered in an event of default. It is critical to recognize and accept that the existence of credit risk, which can sometimes be significant, is a by-product of utility procurement activity.

**Recovery of Credit-Related Costs:** It is recognized that in the event of a counterparty default, actual credit losses could be greater than amounts recoverable through credit risk mitigation strategies. All costs associated with credit default will be recovered through ERRA where either SDG&E is seller and energy or services have been delivered but remain unpaid or where SDG&E is buyer or seller and undelivered energy or services are repurchased or sold at a loss. In addition, all costs associated with procurement activities aimed at mitigating credit risk (such as purchasing credit insurance and/or credit default swaps) will be recovered through ERRA. SDG&E's approach for managing credit risk is provided in more detail in the sections below.

**Calculation of Unsecured Credit Lines:** The following is a description of the standards and methods used for the establishment of limits on unsecured credit lines that may be extended to counterparties. The Credit Department will review counterparty creditworthiness and assign internal ratings. These ratings govern the amount of the unsecured credit line that will be made available to a counterparty [redacted] The criteria used to assign ratings and establish limits for counterparties may include the following:

- Counterparty's last three audited financial statements

- Counterparty's latest annual report and SEC 10K filing (if applicable)
- Organizational chart showing parent and subsidiaries
- First hand and general knowledge or experience with the company
- Last month's or last quarter's internally prepared financial statements if this time period is not included in the most recent audited statements (if available)
- Agency public credit rating (if available)
- Personal visits to customer offices and facilities and with key company contacts
- Information services: Reuters; Bloomberg; Moody's; S & P; Dow Jones; Lexis-Nexis
- News articles
- Other information as necessary to conduct credit analysis

**Contractual Credit Provisions:** Below are brief descriptions of the credit terms of various standard contracts used in procurement.

*Physical Energy Master Agreements*: For short-term physical energy transactions, SDG&E uses standardized master agreements, including, among others, the North American Energy Standards Board (NAESB) a bi-lateral form for natural gas transactions and the Western Systems Power Pool (WSPP) a multi-lateral agreement for power transactions. Typically these agreements contain provisions for liquidated damages to cover cases of counterparty default. Counterparties may negotiate collateral arrangements in support of transactions under these agreements; however, margining is generally not a feature of these agreements. As a result, SDG&E limits fixed-price transactions, or other physical product types that may give rise to significant credit exposures as a result of market price movements contracted under these agreements to terms of several months.

*ISDA Master Agreements*: For OTC financial transactions (i.e., derivatives), such as swaps and options, SDG&E generally utilizes the International Swaps and Derivatives Association (ISDA) Master

Agreement, including the various cover letters and schedules used to tailor the terms. When an ISDA has not been fully negotiated and executed SDG&E may use a "long form confirmation" for each transaction. The long form confirmation contains many of the provisions in an ISDA, but may be easier to negotiate quickly because it won't necessarily apply to follow-on transactions.

Like physical energy master agreements, ISDAs contain liquidated damages provisions. However, the ISDAs also provide for margining. Margining provisions allow one counterparty to request new collateral based upon a formulaic approach to determining the exposure above the unsecured credit line. Besides providing the mechanics for how two parties calculate amounts and issue requests for collateral, the ISDA makes delay or refusal to comply with a margin call in event of default, thus triggering liquidated damages. This structure allows SDG&E to limit the liquidated damages to roughly the unsecured credit line plus any additional amounts associated with market movement during the time it takes to exercise these contractual rights and replace the transactions with another counterparty. As such, when transacting under a contract with margining provisions, SDG&E expects that exposures in excess of the unsecured credit line can be quickly collateralized.

*Cleared Transactions*: The use of clearing can dramatically reduce credit risk. For transactions with a commodity futures exchange, such as NYMEX futures and options, the exchange clearinghouse acts as counterparty to every transaction while maintaining adequate margin monies from all clearing members, and through each clearing member for each trading party such as SDG&E. Beyond the equity value that is maintained by SDG&E's clearing broker (UBS) as margin, SDG&E is able to withdraw funds from its futures account as its futures contracts increase in value. In addition to NYMEX futures and options other products can also be cleared through the exchange, such as basis swaps transacted through Clearport, thus providing all of the credit backing of the exchange to an OTC

product. Several common derivative products that are only available as OTC transactions, such as fixed price swaps, can also be cleared if the particular product is available through the clearinghouse and both counterparties elect to do so. In such a case the counterparty is effectively replaced by the clearinghouse. Because of this, SDG&E does not consider exposure to NYMEX or any other such clearinghouse/exchange as a credit risk.

*Long-Term Renewable Energy PPAs*: Generally, SDG&E's renewable power purchase agreements (PPAs) involve buying power under long-term, fixed-price contracts. The relatively new field of renewable power projects has been characterized by counterparties that (1) are unrated, poorly rated, or may not have audited financials available; (2) have limited resources to fully collateralize the potential credit risks; and (3) would find it difficult or impossible to secure financing if margining provisions were included in the PPA to collateralize potential credit exposures. While this is changing, SDG&E recognizes that to meet the RPS goals established by the Commission, it must transact with the available counterparties.

In this context, [redacted]. SDG&E has established standards for how much collateral must be secured in support of renewable PPAs, including project development security and default security, [redacted] based on the creditworthiness of the counterparty and the likelihood that actual exposures may exceed that level during some period over the lifetime of the contract [redacted] Both the project development security and the default security can be secured with a cash deposit, letter of credit or surety bond, but can also be met with an unsecured credit line if the counterparty or its guarantor is evaluated to be

sufficiently creditworthy.

The project development security applies to new generation development projects and represents performance assurance. The amount is calculated as twice the estimated energy amount (MWh) multiplied by a value not lower than $5/MWh, and is held during the construction phase until the commencement of deliveries. It is used to secure potential daily delay damages and a portion of other default-related exposure. This collateral is returned to the counterparty, net of any delay damages, upon commercial operation.

The default security applies to the commercial operation period of new renewable PPAs. The seller provides default security prior to the commencement of commercial operation or expected deliveries, which is then used to secure a portion of the potential losses associated with a contract default. The default security amount is calculated as twice the estimated energy amount (MWh) multiplied by a value not to exceed $15/MWh and is held throughout commercial operations. This collateral is returned to the counterparty, net of any default related damages retained, at the end of the contract.

*Other Long-Term Contracts*: As with its pursuit of renewable PPAs, SDG&E faces several procurement objectives that make it possible for [redacted] for certain counterparties. These types of contracts may include capacity or resource adequacy contracts, tolling agreements or heat-rate options, or other fixed-price energy PPAs, among others. This is also true even if SDG&E were to grant unsecured credit at a level that would normally be granted to short-term physical counterparties or derivatives counterparties based on their creditworthiness. [redacted]

[redacted] In these cases, the counterparty's potential credit risk will be factored into the least-cost best-fit analysis when comparing against other counterparties (see credit risk monitoring and mitigation, below). However, [redacted] usually because of the product's complexity and inability for counterparties to agree on a valuation method, and possibly because of the transaction's longer term, which would require transparent, publicly available market pricing data for forward periods that do not currently exist.

Because some contracts have five, 10- or even 20-year terms, the peak potential exposure that may be calculated prior to contract execution will often represent an amount that [redacted]. SDG&E will seek to minimize the potential for this unsecured credit exposure, and during contract negotiations will use the calculated potential credit risk as a reference point. [redacted]

*CDWR Contracts*: SDG&E expects that CDWR will continue to monitor and manage overall credit risk associated with their contracts. SDG&E does not have access to CDWR collateral or credit

limit information, which is expected to continue to be the case considering that often these arrangements are managed by CDWR across multiple utilities.

**Measurement:** Credit exposure (including the effects of netting and set-off provisions where applicable) will be defined and measured as the following:

| | |
|---|---|
| Credit Exposure = | MTM Gain/Loss + A/R Balance – A/P Balance + Un-invoiced |
| MTM Gain/Loss = | Any payments that would be due from (if positive) or to (if negative) the counterparty if all contracts were marked to market and settled for cash immediately |
| A/R Balance = | Account receivables balance |
| A/P Balance = | Account payable balance |
| Un-invoiced = | Value of delivered but un-invoiced commodity, including cash prepayments or cash that is under the control of the counterparty |

Credit risk is defined as the cumulative potential non-payment and non-performance of counterparties on contracts to buy or deliver energy products and derivatives. At any point in time, credit risk is a function of the recoverable credit exposure and the counterparty's probability of default. Actual credit risk shall be calculated as follows:

- Credit exposure less collateral on hand, multiplied by
- Estimated probability of default (PD) of the counterparty, multiplied by
- Estimated loss given default (LGD).

Potential credit risk shall be calculated as follows:

- Peak potential credit exposure, multiplied by
- Estimated probability of default (PD) of the counterparty, multiplied by
- Estimated loss given default (LGD).

Peak potential credit exposure can be calculated as follows:

- VaR to Expiration (VtE) or Weighted Average Durational VaR at the 95% Confidence Interval.[35/]

Probabilities of Default (PD) and Losses Given Default (LGD) are determined for each counterparty based on external credit analysis sources or the pricing of unsecured debt. When unsecured debt pricing or external source data is unavailable to determine PD and LGD, SDG&E will seek to utilize the current average for non-investment grade companies, limited to the applicable industry if possible. Potential credit risk will be calculated prior to contract execution [redacted] for all fixed-price contracts for terms exceeding one year and not covered under a Master Agreement (e.g., ISDA and EEI), which contains appropriate margining provisions. Actual credit risk will be calculated on a quarterly basis to monitor the cumulative undiversified credit risk of all fixed-price portfolio contracts and instruments.

Taken together with the unsecured credit exposure from all positions, the total actual credit risk for the electric procurement portfolio represents the estimated expected cost to the customers for bearing the unsecured credit risk as of the time of measurement. Although this is an estimated expected cost based on PD and LGD, actual losses associated with counterparty default can be greater than the current credit risk.

35/ In some cases, there may be valuable attributes to the proposed transaction (such as capacity or RA) that may not have adequate pricing data to calculate VaR. In these cases, the standardized financial attributes (such as fixed price energy or heat rate call option) can be valued and assessed for peak potential credit exposure separately from the more specialized attributes. These specialized attributes may require more subjective analysis to determine a reasonable potential replacement cost under stressed conditions that is based on information at hand (such as other bids in an RFO, known available local resources, assumptions for capital costs, etc.). With regard to existing asset-related contracts, in many cases the loss stemming from a contractual default or bankruptcy would take the form of a renegotiated contract on the same asset at a higher cost. Otherwise, replacement may potentially take the form of an entirely different product type providing the same specialized attribute.

**Credit Risk Monitoring and Mitigation Strategy:** SDG&E will seek to contract using clearing, margining provisions or other contractual terms, where possible, in order to minimize unsecured credit exposure.[36/] Other contract terms that can be considered primary credit risk mitigation tools are netting and set-off provisions.

For short-term physical energy commodity transactions or otherwise where margining provisions are in place, SDG&E will work to maintain the unsecured credit exposure below the limits set by the credit department based on the counterparty's creditworthiness analysis. For these transactions, SDG&E's intent is to limit credit exposure to an amount lower than the assigned credit limit. When conditions warrant, the front office can look for opportunities to directly offset the exposure under the netting and set-off provisions of the agreements with other procurement transactions. If necessary, the front office can also work with the Credit Department to increase the credit limit by either (1) reviewing the counterparty's creditworthiness to determine whether the unsecured credit line might be increased or (2) seeking to secure an increase in collateral or parent guaranty.

For all other transactions, as described above, SDG&E's intent is to negotiate an acceptable amount of secured collateral and other potential contractual security provisions, while keeping in consideration other necessary business objectives, as part of its least-cost best fit analysis. Where margining provisions cannot be applied, peak potential credit exposure and potential credit risk will be estimated in advance and used as a reference point for negotiating the best practical security provisions. In some cases, other contract terms can be used to increase collateral as the counterparty's credit rating falls or as the credit exposure increases. In those cases where SDG&E is

[redacted]

36/ Use of clearing and margining provisions creates a demand on financial liquidity. Use of these products is limited by the liquidity limits established in this LTPP.

[redacted] As an example, levels of potential credit risk associated with various counterparties will impact how each counterparty scores in RFO evaluations by adding the potential credit risk to the total expected delivered cost in the least-cost best fit analysis.

In the event that the contract contains no provisions for margining or adjusting collateral requirements over time, it is understood that at some periods of time, credit exposure can exceed the amount of collateral on hand, thus resulting in a certain amount of actual credit risk. SDG&E will periodically calculate and monitor the total credit exposure and actual credit risk for the portfolio as well as the largest concentration (%) share of credit exposure and actual credit risk held by the top several counterparties. Defining credit risk as a function of exposure, probability of default and loss given default allows the related metrics to highlight either increasing exposure or falling ratings in a common framework Monitoring credit risk in this manner will allow SDG&E to communicate its expectations regarding potential costs associated with defaults, thereby reducing the surprise associated with such events. Tracking these metrics over time will also provide valuable information that may be used to assess the potential efficacy of other credit risk mitigation tools.

SDG&E's standard approach to mitigating credit risk revolves around minimizing exposure, including credit-weighted selection of counterparty and product, negotiating advantageous terms in the contract, and securing collateral. Although SDG&E is authorized to use credit default swaps and credit insurance, both of which involve transferring credit risk to a third party, most of the credit risk in the electric procurement portfolio is expected to come from less standard transactions, such as fixed-price,

asset-based energy, tolling agreements, and other long-term contracts. Because of this, SDG&E expects the use of these credit risk transferring instruments to be less effective (a poor hedge against the real underlying risk), uneconomic (prohibitively expensive) or unavailable (for unrated counterparties or non-standard products). While use of credit risk transferring products are not an active part of SDG&E's credit risk mitigation toolbox, the appearance of unusually high credit risk levels or new information about the availability of such products could prompt a new assessment. The cost of such products, if used, would be recovered in ERRA.

The search for other credit mitigation tools is leading the market to develop mechanisms for dealing with these issues, such as new ways to apply clearing services to a broader array of energy transactions. One such potential energy commodity clearinghouse is the North American Energy Credit and Clearing Corp. (NECC), which focuses on standard physical gas and power commodity transactions traded through ICE. SDG&E anticipates potential participation in these types of clearinghouses, with the expectation that doing so should reduce overall credit costs, effectively provide access to a greater pool of counterparties and therefore increase market liquidity. The costs associated with participating will be recovered through ERRA.

**Customer Risk Tolerance and VaR-to-Expiration**

In D.02-12-074, Confidential Appendix C, Section III, the Commission set the Customer Risk Tolerance for SDG&E equal [redacted] of retail customer sales. SDG&E uses this measure as a guide to manage customer risk in the rolling 12-month risk management strategy.

### VaR-to-Expiration (VtE)

### VtE Methodology

SDG&E uses the term VtE synonymously with TeVaR (Terminal VaR). TeVaR presumes that all positions are held to expiration. Value at Risk refers to the statistical dollar amount that can be lost on the net open position of a portfolio over a specific time horizon and with a given confidence interval. TeVaR accounts for the increasing potential distribution of prices as time passes, as well as the expiration of the positions in the portfolio with the passage of time. The result is the estimation of loss, at the specified confidence level, assuming that the portfolio remains constant over time until all positions within it have expired.

For many risk management purposes, VaR is calculated over a one-day time horizon using a 95% confidence level. While a number of methods to calculate VaR exist, one standard is:

> VaR(for a specified time horizon) = Net Open Position Value * Volatility * Confidence Interval Factor * Square Root time, where:
>
> Net Open Position value is the value of the portfolio expressed in dollars over the specified time horizon;
>
> Volatility is the annualized volatility of the portfolio divided by the square root of one year as specified in units of the desired time horizon (i.e., square-root of 252 days to reflect one business day VaR);
>
> Confidence Interval Factor refers to the number of standard deviations in the analysis (for example: the number of standard deviations is 1.645 for a confidence interval of 95%); and
>
> Time horizon refers to the holding period of the VaR calculation in units of business (or trading) days.

The one-day VaR at the 95% confidence interval is appropriate for liquid trading portfolios with risk that may be actively managed, or traded away. This is not the current situation faced by SDG&E's ratepayers, whose risk profile is that of being "short" gas and power over long periods of time. In this

circumstance, the short-term VaR measure described above is not appropriate. Instead, a VaR measure that measures risk over a much longer time horizon is needed. TeVaR is a methodology for specifically calculating the risk over a longer time horizon of a portfolio of individual positions with different tenors. The expiration of portions of the portfolio can drastically change the portfolio's risk profile. In most cases, expiration will tend to decrease the total remaining risk. SDG&E uses VtE as an approximation to TeVaR for calculating this longer term risk, based on the following assumptions:

First, it is technically impossible to generate a TeVaR model which can be back-tested for TeVaRs of one year or greater. As such, SDG&E is not in a position to statistically certify the reasonability of any true 1-year TeVaR model. However, there are numerous off-the-shelf models which are commonly utilized in the energy industry to calculate 1-Day VaR using historic, analytic or Monte Carlo methodologies. These models are fairly straight-forward to back-test for 1-Day VaR.

Second, it is a common industry practice to assume that, for normal distributions of prices, longer term VaR of the average net open position of a portfolio increases in relation to the square root of time (as measured in trading days). It is a stretch to assume that prices are distributed normally above the 95% confidence interval. As such, SDG&E calculates the VtE of the average net open position of its portfolio by scaling up the 1-Day VaR by the square root of the average business day time to expiration weighted by the shape of the net open positions.

SDG&E utilizes a publicly available Excel-based model utilizing a vendor software solution (FEA's VaR Works) for calculation of VtE that utilizes dynamic portfolio valuation.. It takes as inputs market information, commodity forward curves, forward volatility curves, intra-commodity correlation, inter-commodity correlation, position information and position volume. The market information is used to create price simulations that have the appropriate joint distributions.

The FEA VaR Works model supports the calculation of analytic, historical and Monte Carlo VaR, as well as stress testing, component VaR and back-testing. Technical features and specifications of FEA VaR Works are available at www.fea.com. SDG&E currently utilizes the Analytic VtE as the official metric for reporting purposes and portfolio management. To implement VtE with FEA, the only change necessary to convert from one- or ten-day VaR is to set the time horizon equal to the volumetric weighted average time to expiration (or duration) of the portfolio.

In general, VtE tends to be the largest when there are the greatest amount of open positions, , when time to expiration is longest, thus statistically allowing for large price movements prior to expiration of positions, or when market volatility increases. Volatility is a significant driver in the calculation of VtE because statistically prices are likely to make greater changes during periods of high volatility. Additionally, high market prices and low correlations between commodities and locations are drivers that can lead to higher VtE's.

In a standing Master Data Request adopted in D.02-10-062, SDG&E also provides briefing packages provided to "the ultimate decision maker" by including in this report a copy of monthly briefing packages provided to SDG&E management. In these packages, SDG&E regularly reports updated measures of risk such as VtE, Net Open Positions, forward prices and sensitivities and CRT.

D.02-12-074 requires that SDG&E meet with its PRG on a not-less-than-quarterly basis. At these PRG meetings, SDG&E provides updates on positions and risk to PRG members, which includes Energy Division staff. While this is not a formal submittal of portfolio risk assessment to the Commission, it is an opportunity for Commission staff to engage in interactive review of SDG&E customer risk positions. These presentations are included in the Quarterly Transaction Reports. D.03-

12-062 required SDG&E to submit monthly risk reports to the Commission. A sample of this report is included in Exhibit II-3 "Sample Monthly Risk Report."

### C. Fuel Supply Procurement Strategy

In D.07-12-052, while the Commission did not adopt any new elements for SDG&E's Gas Supply Plans, it did recognize the need for SDG&E to continue with purchasing of gas for both SDG&E owned/contracted units and the CDWR units that are allocated to SDG&E for operation administration. The Commission thus authorizes SDG&E to undertake such gas transactions based upon authority as previously granted in 2004 LTPP, 2005 Short Term Procurement Plans and the last approved SDG&E Gas Supply Plan for CDWR Tolling Agreements. As can be seen in Exhibit II-1 "Portfolio Capacity Positions," in the near-term SDG&E will have [redacted] the dispatchable resources at its disposal. These resources include SDG&E-owned facilities, SDG&E-contracted tolling agreements and CDWR dispatchable contracts allocated to SDG&E. As outlined below, SDG&E will procure gas for an integrated CDWR and UEG portfolio, as required by Standard of Conduct #4.

The combined SDG&E and CDWR generation fuel portfolio of gas contracts and purchases will be maintained as a separate and distinct portfolio from SDG&E's portfolio of gas contracts and purchases to serve its core gas customers. When SDG&E is acting as Fuel Supplier under an approved Gas Supply Plan as limited agent for CDWR, all purchases of physical gas for the CDWR gas contracts will be made by the SDG&E personnel whose responsibilities also include procurement for the non-core SDG&E gas portfolio; i.e., UEG fuel needs. Such CDWR purchases will be made within the authority granted to SDG&E by CDWR as defined in the Operating Agreement and CDWR Fuels

Protocols.

If SDG&E does not act as Fuel Supplier for CDWR gas portfolio needs, then the default Fuel Supplier (the CDWR contract counterparty) will procure physical gas under the Gas Supply Plan. In financial transactions (hedges), SDG&E personnel will make recommendations to CDWR, who will then execute the transaction through their broker, as CDWR has not authorized SDG&E to execute such transactions. CDWR also retains the ability, in its Operating Agreement Fuels Protocol, to making hedging decisions independent of SDG&E recommendations. Immediately below, SDG&E describes the units for which it supplies the gas volumes (combined UEG and CDWR portfolios) are shown in Exhibit II–4.

**SDG&E-Owned Generation Units**

Palomar - 560mw combined cycle plant in SDG&E service territory. With a heat rate that is low relative to market, SDG&E expects intermediate to baseload operations under its dispatch. While the unit should run predominantly based upon economics, it is still subject to ISO dispatch under MOO, RCST and RUC. Gas is supplied under the SDG&E EG tariff. Gas positions are marked to SoCal Border Index and/or the SoCal CityGate Index prices.

Miramar - 45mw peaker in SDG&E service territory. Gas is supplied under the SDG&E EG tariff. Gas positions are marked to SoCal Border Index and/or the SoCal CityGate Index prices.

Unknown Resource - In the LTPP, SDG&E identifies various gaps in future years that will be filled through future RFOs. Without presuming the outcome of those future RFOs, SDG&E has designated, for the purposing of planning and evaluating risk and GHG positions, a certain volume of this gap to be filled through gas fired generation. The gas positions associated with these generic

resources are presented in Exhibit II-4. When SDG&E gains greater clarity into the actual type of resources that will fill this future need, it will update its plan accordingly.

**SDG&E-Controlled Units (Tolling Agreements)**

SDG&E expects to execute tolling agreements in the near-term as a result of its 2007/08/09 RFO. Given the relatively high heat rates in these agreements, SDG&E expects that they will run at low capacity factors for the purpose of serving bundled customer needs. These units might also be subject to ISO dispatch through RA, Must Offer and RMR for 2007. Any such power will be sold at wholesale by SDG&E when economic to do so.

SDG&E has a 10 year tolling arrangement with a put/call option with the Otay Mesa generation facility to be built in the SDG&E service territory and expected to achieve commercial operations in May, 2009. This plant will be a relatively low heat rate combined cycle facility. As such, it is expected to operate as an intermediate to baseload facility based upon economics, however, it is still subject to ISO dispatch under MOO, RCST and RUC.

**CDWR Units**

SDG&E has been allocated operational administration of some of the CDWR contracts, and some of those are tolling contracts that include an option for CDWR to provide gas for generation. SDG&E and CDWR have defined the relationship that exists between the parties involved in gas transactions in the Operating Agreement approved by the Commission on April 3, 2003 in D.03-04-029.

According to D.03-04-029, SDG&E evaluates the Gas Supply Plans of the generators (CDWR counterparties) and, in its own Gas Supply Plan, recommends to CDWR that either SDG&E assumes the role of Fuel Supplier and/or Fuel Manager, or that the default Fuel Supplier/Manager assume these functions. The Fuel Supplier/Manager performs the functions needed to procure and deliver to the

generators the necessary quantities of physical gas. Management of price risk associated with that gas is a separate function addressed in this LTPP (see Section II B "Risk Management Policy and Strategy") as part of an overall risk strategy designed to manage the total cost to SDG&E's customers. In its initial Gas Supply Plan filing (Advice Letter 1489-E, filed on April 17, 2003), SDG&E made the elections for provision of Fuel Supplier and Fuel Manager services as outlined under each contract below.

Sunrise is a combined cycle plant located in CAISO zone ZP26. Its heat rate makes this unit one of the least cost generators in the ISO system. As such, SDG&E expects Sunrise to operate as an intermediate to base load plant. Because of stringent balancing requirements on the Kern River pipeline, the source of most Sunrise gas, this unit is not subject to ISO dispatch under MOO. SDG&E has acted as both Fuel Supplier and Fuel Manager for Sunrise during recent years, and expects to continue as such during the remaining life of the contract. The Sunrise contract expires on June 30, 2012.

CalPeak operates three peaking units in the SDG&E service territory. The heat rates of these units makes them relatively expensive units to operate compared to the market in the majority of hours throughout the year. Therefore, they are expected to operate in a peaking mode, making only a small contribution to SDG&E energy needs. SDG&E has acted as the Fuel Supplier, but not the Fuel Manager, for Calpeak in recent years, and expects to continue as such during the term of this contract. The Calpeak units are currently subject to RA, Must Offer and RMR dispatch by the ISO; SDG&E does not expect these units to have RMR contracts past 2007. Calpeak retains the right to operate the units if not reserved by SDG&E, and when so doing, CalPeak is responsible for providing fuel. The CalPeak contracts expire in the fourth quarter of 2011.

SDG&E has financial exposure to gas in certain instances where it has no physical position. Qualifying Facilities are paid the utility's Short Run Avoided Cost (SRAC). That payment formula is indexed to Malin gas prices. While SDG&E does not actually provide gas to these units, the indexation of payments for the electric off-take of QFs creates a financial exposure at Malin, equal to a volume proportional to the electric QF off-take. SDG&E may choose to hedge this gas position with financial products in conjunction with hedging of other UEG physical gas positions as part of the risk strategy described elsewhere in this LTPP. These financial gas exposures are quantified in Exhibit II-3 "Customer Market Price Risk Positions (gwh)."

A similar financial exposure would exist if CDWR chose one of its contract counterparties to be the Fuel Supplier of physical gas for a contract – SDG&E would still have exposure to the price associated with this third party supply and would make efforts to hedge that exposure consistent with its risk strategy.

Production cost simulation runs have produced expected dispatch, on an hourly basis, for the years covered by this LTPP (2007-2016) as part of the development of the Preferred Plan described in Section IV of this LTPP. These forward curves, when compared one to the other, create an implied forward market heat rate. The production costing software basically compares the known heat rate of the generation resources against this implied market heat rate to determine when each unit is economic to run. Each hour's run is summed to give a monthly gas burn, by unit, for the plan term.

In Exhibit II-4, SDG&E presents these two different views of expected gas usage on a monthly basis for the first two years of the plan, and on an aggregate annual basis for the remaining years. This chart presents volumes for CDWR units and UEG units. For each of these two views, SDG&E presents

estimates of gas portfolio costs. This cost estimate is obtained by multiplying the expected volumes by the forward gas price used for the production simulation run.

"Forecast Gas Burn for Serving Bundled Customers" represents the volume of gas expected to be burned to serve bundled customer load needs only. As explained in the risk strategy, this calculation is important in the way in which SDG&E views risk exposure and implements hedge plans.

"Total Forecast Gas Burn" represents the sum of gas required for bundled customer needs plus gas used to make forecast economic wholesale sales. Not included in these volumes are gas requirements for any ISO dispatch, such as uneconomic dispatch under RMR, RA or Must Offer or RA; these volumes are not easily forecast by SDG&E.

"Financial Gas Position" represents the physical volumes forecast for serving bundled customer load plus financial positions associated with QFs paid at SRAC minus any existing hedges that cap a portion of the total position. For the purposes of preparing this table, SDG&E uses a convention that recognizes capped positions (such as positions covered by NYMEX call options) as hedged, rather than a "delta" position that would only consider such positions as a partial hedge. These quantities are presented in Exhibit II-3 "Customer Market Price Risk Positions (gwh)."

Natural Gas Procurement

Procurement methods and markets for gas are the same as those for electricity as discussed above in Section II A "Procurement Processes."

Products

The primary physical products that SDG&E intends to trade in procuring gas for electric generation include the following items. Financial instruments are discussed in Section II B "Portfolio Risk Assessment, Risk Management Products."

Baseload gas – For each month, SDG&E plans to baseload [redacted] of gas requirements for generation which serves SDG&E customer load at prevailing prices, given liquidity and credit constraints, consistent with its baseload strategy for DWR gas requirements. SDG&E may purchase additional baseload gas supply to lock in generation cost associated with a forward sale. The price for baseload gas will typically be fixed-price or based on index pricing. While SDG&E's practice has been to purchase baseload gas month-to-month, multi-month contracts may also be used to reduce the exposure to bid-week volatility and liquidity constraints. The [redacted] level assures that the major portion of gas to be used to serve bundled customers remains hedged after financial hedges expire, a few days prior to the delivery month.

Intra-month (swing) gas – SDG&E expects to procure the balance of its UEG physical gas requirements throughout the month in the spot market at prevailing prices. This procurement may be constrained at times by liquidity and credit.

Transportation services – SDG&E will incur intra-state transportation charges to transport gas supply between various points, such as from SoCalGas border points, SoCalGas storage or SoCal Hub receipt points to the UEG units. These costs will be based on prevailing tariff rates. SDG&E may also explore and procure long-term interstate transportation capacity to access producing basins if it supports its gas procurement objectives. Transportation and storage are discussed below.

Operational transactions – SDG&E may incur operational costs associated with managing gas supply and balances to respond to late notice dispatch, forced curtailment of the units, OFO notices and other operational issues. These costs include, among other things, park and loan transactions, interruptible transportation, storage capacity, imbalance trades, late cycle purchases and sales, OFO

and other imbalance-related charges and credit sleeves. Such costs may be either explicit or bundled in the commodity price.

Park and Loan Services – Park and Loan services allow SDG&E the flexibility of storing gas on its system for later use (Parking) or taking gas off of its system (Loaning) in order to avoid purchasing spot-gas at high prices. SDG&E will utilize this "balancing service" at times when SDG&E may find itself out of balance on the pipeline (different pipelines will have different allowances for balancing) so as to avoid any balancing fees or penalties. In addition, SDG&E may use this service to take advantage of short-term price swings on the open market.

Brokerage services – SDG&E anticipates using voice brokers and electronic exchanges for much of its procurement and hedging activity. Fees charged for these brokerage services will be submitted for recovery under the ERRA.

Sleeve Fees – When transacting in the market, it is sometimes economic to transact with a party that does not have a contractual relationship with either the CDWR or SDG&E. In these instances, it is possible to use an intermediary, a third party that can transact with both DWR/SDG&E and the party of interest. This third party charges a “sleeve fee” for performing this transaction. SDG&E will not engage in any such transactions with affiliated, unregulated companies.

In addition to transacting outright for the products and services listed above, SDG&E may also combine certain purchases for cost-effectiveness or transactional efficiency reasons. For example, SDG&E may include hedge products in its physical baseload purchases to supplement financial hedges. One such combination could be purchasing baseload gas on a forward basis, where the price is based on the bid-week index price that is capped at a predetermined strike price. Such a transaction is a combination of a baseload purchase and a financial call option, and may be a better procurement solution than an outright financial call option that expires prior to the delivery month.

The following section describes some of the strategies/procedures used by SDG&E in meeting the gas requirements of the combined CDWR/UEG portfolio:

Sunrise is dispatched extensively to serve load and make limited sales because of its low generation cost. Physical gas transactions for the Sunrise contract were made to accomplish procurement of fuel for Sunrise generation, management of imbalances on the Kern River pipeline and

monetizing of excess capacity on that pipeline that included delivery of Rockies gas to CDWR/UEG generation gas requirements in the SoCalGas service territory.

For the Sunrise plant, SDG&E plans to purchase during bid-week each month approximately 90% of the plant's forecast requirements consistent with its procurement strategy described in the Gas Supply Plan and the risk strategy of this LTPP. SDG&E will buy [redacted] due to the high load factor of the plant and to protect against price volatility provided by expiring forward hedge transactions. The purchases made for Sunrise may not always be at Opal. SDG&E will buy gas at whatever location(s) can be delivered to Sunrise most economically. For instance, SDG&E has in the past purchased gas at Goshen (downstream of Opal), which would often trade at a premium to Opal, but was still a better value due to savings from transportation on various segments of the Kern River pipeline.

With regard to management of imbalances, on Kern River**, t**he Kern pipeline has relatively stringent balancing requirements. The Sunrise plant's daily imbalance should not exceed approximately 10,000 MMBtu without specific authorization from the pipeline operator. The Sunrise plant's cumulative gas imbalance cannot exceed approximately 50,000 MMBtu. SDG&E trades additional day-ahead gas and even intra-day gas transactions to manage Sunrise's gas balancing requirements on the Kern River pipeline.

The Sunrise contract includes rights to 85,000 MMBtu/day of firm Kern River capacity through the term of the CDWR – Sunrise power purchase agreement. The first priority for this capacity is to supply gas to the Sunrise plant. SDG&E will primarily source baseload gas from the Opal market and deliverer this gas to Sunrise using the Kern River capacity. However, the cost of supplying gas from

Opal will be compared on a daily basis to the cost of buying gas delivered at the plant to determine if variable transportation cost savings could be realized.

SDG&E also will consider opportunities to extract value from the Kern River pipeline capacity. These opportunities included selling gas to alternate delivery points such as Wheeler Ridge or Kramer Junction or delivering into SoCal Border and/or CityGate to meet other CDWR/UEG requirements or to bank the gas against a SoCal imbalance account associated with SDG&E the burn account for Palomar when the SoCal – Opal spread exceeds the variable cost of transport. If SDG&E does not need the capacity, SDG&E will consider selling the unused pipeline capacity.

Moving gas from Rockies to SoCal and capturing any arbitrage opportunity, as described above, is an effective means of monetizing excess Kern River pipeline capacity. Without firm delivery to the SoCal system, however, transportation might be interrupted. The Sunrise contract originally included 85,000 MMBtu/day of firm Kern River pipeline capacity with firm receipt at Opal and firm delivery at the Sunrise meter. Because there are no delivery constraints to Sunrise, CDWR changed the primary delivery point from the Sunrise plant to Wheeler Ridge and Kramer Junction, as recommended by SDG&E. These new primary delivery points increase the ability to move Kern River gas onto the SoCal system without compromising deliveries to the Sunrise power plant. Having firm delivery at Wheeler Ridge and Kramer Junction allows SDG&E to more effectively monetize excess capacity.

There are least cost dispatch considerations at Sunrise. The interrelated nature of the Kern River pipeline capacity and the ZP26 – SP15 FTR to the actual Sunrise unit creates a number of least cost economic decision making opportunities that SDG&E plans to pursue. The pipeline and transmission capacity allows SDG&E to essentially convert low-cost gas in the Rockies to power delivered in SP15 along firm paths throughout. However, to capture the synergistic value of the three

assets (Kern River capacity, Sunrise plant and ZP26-SP15 FTR), each one must continuously be optimized against its own market alternatives and not passively operated to simply convert Rockies gas to SP15 power. Benefits of this strategy are best illustrated by example in the table below. This table shows the primary scenarios (although not a complete list) that allow SDG&E to reduce the cost of delivered power. SDG&E plans to pursue these typical cost reduction strategies to the extent available given liquidity, credit risk and other limitations.

| Scenario | Opal Gas Price | Whlr Ridge Gas Price | Sunrise Gen'tion Cost | ZP26 Price | SP15 Price | Optimal Use of Assets |
|---|---|---|---|---|---|---|
| 1 – Base Case | $2.00 | $4.00 | $28 | $40 | $45 | Buy Opal gas<br>Flow gas on Kern River capacity<br>Generate Sunrise<br>Flow power to SP15 on FTR |
| 2 – Strand FTR Capacity | $2.00 | $4.00 | $28 | $40 | $35 | Buy Opal gas<br>Flow gas on Kern River<br>Generate Sunrise<br>Sell Sunrise gen in ZP26<br>Do NOT flow on FTR capacity<br>Purchase SP15 |
| 3 – Strand Sunrise Capacity | $2.00 | $4.00 | $28 | $25 | $35 | Buy Opal gas<br>Flow gas on Kern River<br>Sell gas at Wheeler Ridge<br>Do NOT generate Sunrise<br>Purchase ZP26<br>Flow power to SP15 on FTR |
| 4 – Strand FTR and Sunrise Capacity | $2.00 | $4.00 | $28 | $25 | $20 | Buy Opal gas<br>Flow gas on Kern River<br>Sell gas at Wheeler Ridge<br>Do NOT generate Sunrise<br>Do NOT flow on FTR capacity<br>Purchase SP15 |
| 5 – Strand Kern River Capacity | $5.00 | $4.00 | $28 | $40 | $45 | Do NOT buy Opal gas<br>Do NOT flow on Kern River<br>Buy Wheeler Ridge gas<br>Generate Sunrise<br>Flow power to SP15 on FTR |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 – Strand Kern River and FTR Capacity | $5.00 | $4.00 | $28 | $40 | $35 | Do NOT buy Opal gas<br>Do NOT flow on Kern River<br>Buy Wheeler Ridge gas<br>Generate Sunrise<br>Sell Sunrise gen in ZP26<br>Do NOT flow on FTR capacity<br>Purchase SP15 |
| 7 – Strand Kern River and Sunrise Capacity | $5.00 | $4.00 | $28 | $25 | $35 | Do NOT buy Opal gas<br>Do NOT flow on Kern River<br>Do NOT generate Sunrise<br>Purchase ZP26<br>Flow power to SP15 on FTR |
| 8 – Strand Kern River, Sunrise and FTR Capacity | $5.00 | $4.00 | $28 | $25 | $20 | Do NOT buy Opal gas<br>Do NOT flow on Kern River<br>Do NOT generate Sunrise<br>Do NOT flow on FTR capacity<br>Purchase SP15 |

Miramar Generating Facility – SDG&E owns this facility, and is therefore responsible for the management of all associated gas transactions. SDG&E purchases the gas in its own name as needed to meet the requirements of this peaking generation facility. The generation may be to meet load, or be dispatched by the ISO for RMR, ancillary services and/or Must Offer purposes. Due to Miramar's role as a peaking resource with infrequent and often unpredictable dispatches, gas is usually purchased either in the daily market or after actual dispatch has occurred, to fill any imbalance.

Palomar Energy Center – SDG&E, as owner and operator of Palomar, is responsible for the management of all associated gas transactions, buying in its own name for plant fuel needs. Consistent with the SDG&E gas portfolio strategy, and as is the practice for gas procurement for baseload CDWR dispatchable units, SDG&E will generally procure during bid week each month [redacted] of its anticipated needs forecasted by the FEA model.

SDG&E considers the various cost recovery mechanisms in its gas procurement strategy. Gas burns may be incurred for a number of reasons, such as dispatch by SDG&E to meet bundled customer load, or dispatch by the ISO under Must Offer, RMR, RCST or RA. However, each type of dispatch

presents a different gas cost recovery mechanism. Gas for dispatch by SDG&E to serve bundled customer load represents costs that will be recovered from ratepayers through ERRA and thus are part of the CRT risk management strategy. Gas for generation of power to be sold at wholesale is recovered through the sale to a counterparty. This gas may be hedged forward to lock in a margin at the time of sale or, for spot sales, it may not be hedged at all, since the correlation of gas and power prices assures that the spot electric sale will cover the gas cost to produce the electricity, given the economics of the spark spread. Gas costs for must-offer energy are covered by a CAISO payment to the generator based upon Minimum Load Cost Compensation, which uses daily gas price indices. Payment of gas costs for must-offer and RMR energy is based on daily gas indices, therefore SDG&E buys the gas requirement on a day-to-day basis to match actual gas cost to the payment stream from CAISO, forming a "back-to-back" transaction. Gas costs for supplemental energy dispatch are also covered by a CAISO payment to the generator, and SDG&E accounts for the daily gas price in its supplemental energy bids. Gas costs for generation actually scheduled to load is included in either the CDWR revenue requirement or SDG&E's ERRA for recovery from SDG&E bundled customers.

In contrast to the above revenue-matching strategy for CAISO-reimbursed gas costs, SDG&E procures gas for load-serving generation with the objectives of least-cost dispatch and managing gas costs through its CRT-based risk management strategy, as described in this LTPP Section II B.

Regarding affiliate transactions in gas procurement, SDG&E may conduct transactions over the ICE, which could result in anonymous transactions with its regulated or non-utility affiliates. Such anonymous transactions with regulated affiliates are authorized by Resolution E-3838 and other Commission decisions, and such transactions with non-utility affiliates are specifically authorized in D.03-06-076 and elsewhere. CDWR has also executed a contract for capacity products with

SoCalGas, which would allow SDG&E to engage in hub transactions, park-and-loan transactions, and short-term storage transactions with SoCalGas.

CDWR Gas

As stated elsewhere in this plan, SDG&E is required to operate both the CDWR and UEG gas portfolios as a single integrated gas position. The arrangements that govern the SDG&E management of CDWR gas activities are described in two different documents, the Operating Agreement between SDG&E and CDWR, Exhibit B, "Fuel Management Protocols," and the CDWR Fuels Protocols.

In 2002, SDG&E received an Operating Order that outlined the manner in which SDG&E would undertake operational administration of the CDWR contracts allocated to it for this purpose. In 2003, that Operating Order was converted to an Operating Agreement between CDWR and SDG&E which was filed at the Commission. Exhibit B to that Agreement is the "Fuels Management Protocol" that defines the contractual roles and responsibilities of the parties.

Gas Supply Plans

D. 03-04-029, as modified by D.04-10-035, approved an Operating Agreement between SDG&E and the Department of Water Resources (DWR), that among other responsibilities, requires SDG&E to prepare a semi-annual Gas Supply Plan, which is subject to Commission approval. In each plan, SDG&E evaluates default Gas Supply Plans submitted by the generators in each DWR tolling contract. SDG&E then presents its recommendation to approve the current six-month default plan or SDG&E's alternate Plan. The most recent approved Gas Supply Plans was filed as Advice letter 1917-E (approved September 19, 2007) and covered the period October 1, 2007 through March 31, 2008. The latest Gas Supply Plan was filed on February 1, 2008 for the period April 1, 2008 through September 30, 2008 and is still pending Commission Approval.

In D. 07-12-052, the Commission directed SDG&E as follows:

> "We also authorize the IOUs to update their gas supply and hedge plans for their DWR portfolios (for SCE, this includes its ratable rate schedule) annually, instead of twice a year. But because DWR has not participated in this proceeding or agreed to this change, we cannot enforce the change for the IOUs' DWR portfolios at this time. If and when DWR agrees to this change, the IOUs should notify the Commission by Advice Letter."

SDG&E and CDWR have discussed and agreed to modify the frequency of filing of the Gas Supply Plans from semi-annually to annually and have signed a letter agreement to that effect. SDG&E will soon file an advice letter seeking Commission approval to modify the frequency of Gas Supply Plans filing to an annual filing.

Interaction with UEG Portfolio

Beginning in June 2005, SDG&E resumed procurement of gas for its own resources. Miramar is directly owned by SDG&E and as of April 2006, SDG&E began procuring gas for the Palomar Energy Center also. Both plants are highly efficient and are also expected to meet RMR needs in the SDG&E service territory. SDG&E anticipates that at some point gas needs for its own facilities will overtake the needs for gas at CDWR dispatchable units in the SDG&E portfolio, based on forecast economic dispatch of the combined CDWR/SDG&E portfolio of resources and the reduction of CDWR resources as the CDWR contract terms end over time.

Regardless of relative volumes, SDG&E has designed a business process for dealing with gas requirements for itself and CDWR using the same personnel and system requirements for each. The following briefly describes how this single, integrated portfolio is operated to maximize synergies, while maintaining enough separation to allow for accurate accounting and invoice processing.

- Positions (gas volumes) - The portfolio will be one integrated gas book with underlying gas positions tracked by physical demand at each plant. The various positions are:
  - SoCal CityGate: this includes all generation within SoCal (Calpeak Units, Miramar, Palomar, units SDG&E contracts with, up to 250 MW of new peaking (expected in 2008) and Otay Mesa (expected in 2009));
  - SoCal Border: this includes various receipt points from interstate pipelines aggregated at one average price.
  - Rockies: this position includes all gas required for Sunrise, or gas used to monetize excess capacity of the DWR transportation on KRT or Line 1903; and
  - Other positions as necessary, such as storage positions or hub positions.

Commercial Arrangements – SDG&E will divide the procurement transaction and hedging volumes between CDWR and SDG&E based upon each entity's relative share of forecast gas demand. This proportional buying of gas ensures that each entity bears an appropriate amount of the financial burden of transactions, such as cash flow, margining or collateral expenses.

All gas costs, whether CDWR or SDG&E, are eventually borne by SDG&E ratepayers. Gas purchased for SDG&E plants is recovered from ratepayers through the SDG&E ERRA account. Gas purchased as agent for CDWR is recovered through the CDWR revenue requirement. Under the Commission adopted DWR revenue requirement cost allocation, all variable costs "follow contract" so that there is no possibility of inadvertently shifting costs from SDG&E ratepayers to the ratepayers of another IOU.

Similar procurement and hedging strategies will be employed for both portfolios, which should result in the cost of gas on a per MMBtu basis being roughly the same. However, as discussed above,

all gas costs are eventually recovered from SDG&E ratepayers, so any small differences in cost that may arise through timing of transactions is irrelevant.

CDWR and SDG&E will continue discussions to arrange for a NAESB contract to be put in place to allow for gas to be transacted between SDG&E electric fuels position and the CDWR tolling contract position. This contract is necessary so that the two positions can be operated as a single portfolio with gas flowing between the two based upon total portfolio economics and operational need, so that ratepayers fully realize the synergy of the larger, integrated single portfolio. To date, CDWR and SDG&E have been unable to conclude these contract negotiations. At this time, SDG&E executes any required inter-company transactions through use of a sleeve, usually at some nominal cost.

Personnel – The same set of personnel will be used to transact and schedule gas for the total gas demand of the integrated portfolio. As described elsewhere, these staff will be working alternately as SDG&E employees and as limited agents for CDWR. The SDG&E personnel dedicated to this effort are part of the electric procurement group, and transact gas solely for use as electric fuel. This group is separate from the SDG&E personnel transacting for SDG&E's core gas customer needs.

Systems - Forecasting systems currently in place will be able to forecast gas demand for individual plants and "roll up" these volumes into locational positions described above or into a single total gas demand number. Transactional systems will be able to track and report on gas deals in a similar manner by owner (CDWR or SDG&E), plant or location. Since CDWR remains financially responsible for all gas transacted for use in CDWR contract units, settlements systems will continue to process CDWR gas invoices separately from SDG&E gas invoices. For instance, when looking at future gas needs of the combined UEG/DWR portfolio of resources, the forecast may be for 90,000MMBtu/day. If the model forecasts that this gas will be burned 50,000MMBtu at Sunrise and 40,000MMBtu at Palomar, then when buying this gas in the forward market, 5/9 would be purchased as

limited agent in the DWR account, and 4/9 would be purchased in SDG&E's name. In this manner, the actual dollars associated with procurement and other costs (such as credit or margining) are shared proportionally. Similarly, when hedging these forecast gas burns, hedge transactions would be split 5/9 DWR and 4/9 UEG as closely as practicable.

Suppose SDG&E purchases 50,000 MMBtu/day baseload gas for the DWR book and 40,000 MMBtu/day for the UEG book. These volumes [redacted] of the forecast burn for the portfolio. SDG&E then purchases additional swing gas (20,000 MMBtu for each book) to closely match gas supplies to requirements for each unit based on the day-ahead burn forecast. During the flow day, the Sunrise unit (a DWR unit) experiences an unplanned outage after only burning 40,000 MMBtu, which leaves 40,000 MMBtu unburned for Sunrise and, due to stringent balancing requirements on Kern River pipeline, SDG&E is forced to move the gas off the pipe.

Assuming the outage occurs about noon, SDG&E identifies the following options for managing this imbalance situation: (1) pay PG&E to park the gas temporarily; (2) sell the gas in the late-cycle market at a discount; or (3) flow the gas into SDG&E's UEG book at a SoCal Border delivery point. Because of balancing provisions in the SDG&E gas transportation tariff that apply to the UEG units, SDG&E may be able to accommodate this surplus gas by 'purchasing' the gas from the DWR book at the daily index price to maintain neutrality against market prices, with no other costs charged to DWR. This transaction would be entered into the UEG settlements system as if it were any other gas transaction. The gas would be used by the UEG units, and the cost of this gas (at the index price) would be recovered through the ERRA.

Example 1 shows how the combination of the two gas portfolios can increase the flexibility in managing gas in response to operational issues; the same flexibility can be applied to imbalance

trades. In the example above, SDG&E purchased 40,000 MMBtu/day baseload gas for the UEG book. Within the month, the UEG book has purchased additional daily gas and accepted excess gas from the DWR book to reduce DWR's cost of managing the surplus gas. Now assume that gas requirements for the UEG units fall below forecast due to low loads or favorably priced replacement energy. This situation may cause the imbalance position of the UEG book to exceed the nominal 10% limit for the month and force SDG&E to make an imbalance gas trade for the excess amount.

If the DWR book is well within its 10% tolerance on the SoCal Gas system, SDG&E would prefer to transfer the imbalance from the UEG book into the DWR book if this action avoids selling the imbalance gas at a discounted price to a third party. The DWR book could then hold the imbalance quantity until it used it for generation by the DWR units. This transaction would be entered into the DWR settlements system as if it were any other gas transaction; the gas would be used by the DWR units and the cost of this gas (at the index price) would be recovered through the Revenue Requirements mechanism.

Natural Gas Hedging

Risk management and hedging of the overall portfolio is discussed in more detail in Section II B of this LTPP, "Risk Management Policy and Strategy." Natural gas is viewed as a means of accomplishing portfolio hedge goals outlined in the risk strategy section of the plan. Gas is particularly useful to SDG&E for hedging purposes because [redacted] SDG&E has significant gas-fired capacity either owned or under contract, yet it has [redacted] The overall portfolio is, [redacted] hedged through electric fixed price supply. See Section II, Part B "Portfolio Risk Assessment" for more detail. The gas market is a very liquid market that offers financial products for use in mitigating risk for

many years forward. [redacted]. This allows for direct hedging for portfolio risk mitigation rather than cross-commodity hedges or hedges in less liquid instruments.

Volumes of gas hedging and instruments chosen will be dictated by the CRT risk strategy to control the cost of serving bundled customers (for Years 1 and 2) or the incremental hedge targets established for Years 3, 4 and 5. Financial products, including contracts for differences and financial call options, do not alter the physical position of the portfolio, but do affect the portfolio's financial position relative to the index that is traded. Financial products are an important element to the price risk management strategy and are discussed in more detail in Section II B "Current Risk Management Practices."

At this time, SDG&E is unable to directly execute certain financial transactions related to gas in its role as limited agent for CDWR because the power of attorney necessary from CDWR has not been granted. Any gas-related financial transactions arranged by SDG&E as limited agent will be made for the purpose of reducing price risk associated with physical gas positions (the net short gas position), and will not result in increasing risk associated with gas or in an increase in the size of the short position. These restraints are in accordance with CDWR's direction in the Fuels Protocol. In other words, hedging of gas is similar to buying an insurance product and is not speculative trading. Along with managing the price of gas commodity, SDG&E may also enter into basis hedges to protect the differential between the price point where gas is hedged (typically Henry Hub for NYMEX contracts) and the price point of delivery (SoCal Border and/or SoCal CityGate).

**Other Products/Other Fuels**

**Nuclear Fuel**

The fuel requirements for the San Onofre Nuclear Generating Station (SONGS) are provided by SCE. SDG&E pays SCE for 20% of the fuel procured and recovers these costs through ERRA as fuel is burned.

**Residual Fuel Oil and Distillate**

Any such fuel required for provision of the Dual Fuel or Black Start capabilities that SDG&E contracts with will be provided by the plant owners, and SDG&E will reimburse for the quantities consumed at their replacement cost. These costs will be recovered as an ERRA expense as part of these tolling agreements.

**Storage and Transportation**

**Summary**

SDG&E procures natural gas supplies for certain state-assigned electric power contracts and for its own generation load and reliability requirements by the Palomar Energy Center and Miramar Energy Facility, including delivery to the SoCalGas pipeline system. This study represents part of a continuing market assessment and evaluation of the potential reliability and economic need for long-term commitment to firm interstate gas pipeline delivery and to firm gas storage capacity. Given the excess pipeline capacity added since the 2000-01 California border price spike and the unlikelihood that such an event would occur under current regulatory oversight and with the introduction of liquefied natural gas (LNG) supplies to the California market, as well as the market price projections from various supply basins which reflect this assessment, [redacted] Additionally, with projected continuing high seasonal gas price spreads and

the associated premiums charged for firm market-based storage inventory available through SoCalGas,

[redacted]

**Gas Pipeline Capacity**

SDG&E manages a limited amount of firm interstate pipeline capacity on the Kern River Transmission (Kern) and El Paso Natural Gas (El Paso) systems as part of its DWR gas supply delivery responsibilities and procures the majority of its additional gas requirements at the California border at spot market prices each month. [redacted]

Reliability, in terms of the assurance of gas delivery to the SoCalGas system as required, does not appear to be at risk according to the 2005 CEC Natural Gas Assessment Update. Additionally, the latest California Gas Report projections for Southern California indicate that is notable excess supply delivery to this market (looking at both cold and average demand) and that this excess will expand even more significantly due to LNG availability and a reduced electric generation gas demand. Pipeline capacity was significantly increased since the border price spike, and construction is now focused on take-away from supply basins to eastern markets for the most part. Current excess capacity is the equivalent of the entire southern El Paso system. [redacted]

[redacted] Monthly gas prices originating from NYMEX data for the SoCal border and nearest gas basins (San Juan, Permian, and Opal), along with the maximum tariff rates posted on connecting pipeline websites (El Paso, Transwestern, and Kern River), are available to be used to evaluate delivered costs to the border over the long term outlook. Additionally, consultant services such as CERA and PIRA provide gas price projections based also on critical analysis of market fundamentals and for various scenarios of future events and changes. While the prices do vary seasonally, annual average delivered costs from these forecasts to date [redacted]. Availability of Kern River capacity is also questionable since posted capacity bids are for a full 15 years and secondary market offers are not likely to give up near-term cost advantages. El Paso capacity is currently being offered for short-term commitments, reducing the risk of longer-term price uncertainty. [redacted]

**Gas Storage Capacity**

Firm storage inventory, injection and withdrawal rights may be obtained through SoCalGas for annual terms effective each April 1. Long-term storage is defined as annual capacity rights for up to 10 years. SDG&E defines Short-term storage as either monthly capacity rights or annual capacity rights for up to 3 years. Since the availability and price for firm storage service will not be known until bidding commences prior to that time, an estimate can be made of these costs by calculating the expected premium (or price mark-up) to the projected summer/winter price spread from historical data trends for the SoCalGas Transaction-Based Storage bids since 2000. For each storage cycle, these seasonal

price spreads at the time of bidding are compared to the price determined for the current year's TBS reservation and variable expenses. The market-clearing price of this firm storage bid consists of the seasonal price spread and variable storage cost plus a premium that includes an extrinsic value for market risk and utilization of firm storage rights to generate a price advantage through continuous cycling and trading. The greater the expected volatility and risk, the more the storage is worth to participants willing and able to manage storage for these purposes. [redacted]

[redacted]

## III. LONG-TERM PROCUREMENT RESOURCE PLAN 2007-2016

### A. Introduction to Resource Planning and Planning Approach

The objective of SDG&E's long-term planning process is to provide reliable electric supply to customers at the lowest possible cost, while simultaneously meeting the State's preferred loading order for resources and reducing the GHG emissions associated with the portfolio. In order to accomplish these goals, the long-term plan addresses both demand- and supply-side resources and makes recommendations for a balance of each of these resource types. SDG&E's LTPP adds resources in the order of the state's priorities ("loading order"), as follows: energy efficiency (EE); demand response (DR); renewable power; distributed generation (DG); and clean and efficient fossil-fired generation.

As envisioned in various Commission orders, SDG&E's resource plan serves as an "umbrella," incorporating and consolidating inputs from other proceedings and, in some cases, necessarily making assumptions about the outcomes of proceedings currently underway. For example, energy savings and demand reductions from the energy efficiency programs are based on the Commission's adopted targets. Thus, this proceeding uses those adopted figures. However, the capacity added in plan for these higher priority resources is not a maximum. SDG&E will continue to pursue cost effective amounts even if they exceed the amount in the plan.

### B. Load Forecast

The service area energy and peak demand forecasts used in SDG&E's LTPP reflect the CEC's final 2007 IEPR forecast and the underlying assumptions (e.g., self-served load, capacity from the California Solar Initiative and energy efficiency) are equivalent to those used in the adopted CEC forecast. According to the CEC's forecast, load growth is forecasted to grow at approximately 1%

annually after energy efficiency and self served load. The CEC's forecast is then split between bundled load and direct access load. SDG&E's forecasted bundled load percentage is based on 2008 LCR.

## C. Supply Forecast for Existing or Planned Resources

This LTPP is based on the following assumptions regarding existing and planned resources. Existing or planned resources include energy efficiency and demand response programs (discussed in Sections III.B and III.C) and self-generation/distributed generation (discussed in Section III.E). Details on the availability, operating characteristics, locational attributes, delivery point, product type (unit or Firm LD) and fuel type for supply-side resources are included in Table III-1.

*Purchased Power Contracts:*

- SDG&E's existing contracts with QFs continue for their current term. SDG&E only has one supply side contract with a QF that is set to expire during the ten-year planning horizon. The individual contracts are listed in Table III-1.[37/]
- SDG&E's existing purchased power contracts with Portland General Electric (PGE), NRG and Dynegy will continue for their term.
- Existing DWR contracts that are allocated to customers in San Diego's service area will remain allocated to these customers and will run through their current term without any modification.
- The Otay Mesa PPA approved by the Commission in D.06-09-021 will begin deliveries on May 1, 2009.
- The Lake Hodges Pumped Storage project comes into service in March 2009.
- The contracts for new peaking units to be built at Margarita and Orange Grove will result in new units in the service area.[38/]

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37/ A small number of SDG&E's renewable suppliers are on QF contracts. For this table, they are listed in the renewable section.

38/ However, since D.07-12-052 defined SDG&E's approved need without considering these projects,, the need tables do not include this capacity.

*Utility-Owned Generation:*

- The Miramar Energy Facility I will be operational for the entire planning period.
- The Palomar Energy Center will be operational for the entire planning period.
- The El Dorado Power Plant will be operational for the entire planning period after SDG&E takes ownership in 2011.
- SDG&E's share of San Onofre Nuclear Generating Station (SONGS) will remain in service for the entire planning period.

*Renewable Power:*

- The signed, existing contracts for renewable power will remain in service for the planning period according to their current contract terms. The plan assumes the contracts currently awaiting Commission approval will be approved. These include bio-fuel, wind, pipeline hydro, geothermal and solar resources. More detail on renewable power is included in Table III-1 and Section IV.D.

The characteristics of the existing and committed resources are shown in Table III-1 below.

**Table III-1**

**Existing and Committed Resources**

| Resource (RA Name) | Avail-ability | Operating Characteristics | Locational Attributes | Delivery Pt. | Unit or Firm LD | Fuel Type |
|---|---|---|---|---|---|---|
| **URG-** | | | | | | |
| Palomar | Full year | Dispatchable | System and Local | SP-15 | Unit | Natural Gas |
| El Dorado | Full year | Dispatchable | System | SP-15 | Unit | Natural Gas |
| Miramar | Full year | Dispatchable | System and Local | SP-15 | Unit | Natural Gas |
| SONGS | Full year | Must-take | System and Local | SP-15 | Unit | Nuclear |
| **QFs-** | | | | | | |
| Goalline | Full year | Must-take | System and Local | SP-15 | Unit | Natural Gas |
| Naval St. | Full year | Must-take | System and Local | SP-15 | Unit | Natural Gas |
| No. Island | Full year | Must-take | System and Local | SP-15 | Unit | Natural Gas |
| NTC | Full year | Must-take | System and Local | SP-15 | Unit | Natural Gas |

| Resource (RA Name) | Avail-ability | Operating Characteristics | Locational Attributes | Delivery Pt. | Unit or Firm LD | Fuel Type |
|---|---|---|---|---|---|---|
| Kelco | Full year | Must-take | System and Local | SP-15 | Unit | Natural Gas |
| NTC Steam Turbine | Full year | Must-take | System and Local | SP-15 | Unit | Natural Gas |
| Yuma Cogen. | Full year | Must-take | System | N. Gila | Unit | Natural Gas |
| **DWR-** | | | | | | |
| Cal Peak- Border | Full year | Dispatchable | System and Local | SP-15 | Unit | Gas |
| Cal Peak- El Cajon | Full year | Dispatchable | System and Local | SP-15 | Unit | Gas |
| Cal Peak- Enterprise | Full year | Dispatchable | System and Local | SP-15 | Unit | Gas |
| Sunrise | Full year | Dispatchable | System | SP-15 | Unit | Gas |
| Whitewater Energy Corp- Cabazon | Full year | Intermittent | System | SP-15 | Unit | Wind |
| Whitewater Energy Corp- Whitewater Hill | Full year | Intermittent | System | SP-15 | Unit | Wind |
| Bear Product B | Full year | Must-take – 6 x 16 | System | SP-15 | Firm LD | N/A |
| Bear Product C | Full year | Must-take – 6 x 16 | System | SP-15 | Firm LD | N/A |
| **Purchase-** | | | | | | |
| PGE | Full year | Must-take | System | COB | Unit | Coal |
| Otay Mesa | Full year | Dispatchable | System and Local | SP-15 | Unit | Gas |
| Hodges Pump Storage | Limited | Dispatchable | System and Local | SP-15 | Unit | Hydro |
| NRG (Encina) | | Dispatchable | System and Local | SP-15 | Unit | Gas |
| Dynegy (South Bay) | | Dispatchable | System and Local | SP-15 | Unit | Gas |
| Margarita | Full year | Dispatchable | System and Local | SP-15 | Unit | Natural Gas |
| Orange Grove | Full year | Dispatchable | System and Local | SP-15 | Unit | Natural Gas |
| **Renewables-** | | | | | | |
| Alvarado Hydro Facility | Full year | Must-take | System and Local | SP-15 | Unit | Hydro |
| Badger Filtration Plant | Full year | Must-take | System and Local | SP-15 | Unit | Hydro |
| City of SD MWD (Pt. Loma STP) | Full year | Must-take | System and Local | SP-15 | Unit | Bio-Gas/ Hydro/ Diesel |

| Resource (RA Name) | Avail-ability | Operating Characteristics | Locational Attributes | Delivery Pt. | Unit or Firm LD | Fuel Type |
|---|---|---|---|---|---|---|
| GRS Sycamore | Full year | Must-take | System and Local | SP-15 | Unit | Bio- Gas |
| Kumeyaay | Full year | Intermittent | System and Local | SP-15 | Unit | Wind |
| Miramar Hydro Facility | Full year | Must-take | System and Local | SP-15 | Unit | Hydro |
| MM Prima Deshecha Energy LLC | Full year | Must-take | System and Local | SP-15 | Unit | Bio-Gas |
| MM San Diego LLC (Miramar Landfill) | Full year | Must-take | System and Local | SP-15 | Unit | Bio-Gas |
| MM San Diego LLC (North City) | Full year | Must-take | System and Local | SP-15 | Unit | Bio-Gas |
| Olivenhain Municipal Water District | Full year | Must-take | System and Local | SP-15 | Unit | Hydro |
| Otay Landfill I | Full year | Must-take | System and Local | SP-15 | Unit | Bio-Gas |
| Otay Landfill II | Full year | Must-take | System and Local | SP-15 | Unit | Bio-Gas |
| San Francisco Peak Hydro Plant | Full year | Must-take | System and Local | SP-15 | Unit | Hydro |
| San Marcos Landfill | Full year | Must-take | System and Local | SP-15 | Unit | Bio-Gas |
| SDCWA-Penasquitos | Full year | Must-take | System and Local | SP-15 | Unit | Hydro |
| Sycamore Landfill | Full year | Must-take | System and Local | SP-15 | Unit | Bio-Gas |
| Bullmoose | Full year | Must-take | System and Local | SP-15 | Unit | Bio-mass |
| Bear Valley Hydro | Full year | Must-take | System and Local | SP-15 | Unit | Hydro |
| Covanta Otay 3 | Full year | Must-take | System and Local | SP-15 | Unit | Bio- Gas |
| Covanta Delano | Full year | Must-take | System | SP-15 | Unit | Bio-Mass |
| Envirepel Vista | Full year | Must-take | System and Local | SP-15 | Unit | Bio-mass |
| Envirepel Ramona | Full year | Must-take | System and Local | SP-15 | Unit | Bio-mass |
| GRS (Coyote Canyon ) | Full year | Must-take | System | SP-15 | Unit | Bio-Gas |
| Oasis Power Partners | Full year | Intermittent | System | SP-15 | Unit | Wind |
| PPM Energy | Full year | Intermittent | System | SP-15 | Unit | Wind |
| Stirling | Full year | Must-take | System | SP-15 | Unit | Solar |
| Pacific Wind | Full year | Intermittent | System | SP-15 | Unit | Wind |

| | | | | | | |
|---|---|---|---|---|---|---|
| Esmeralda - Truckhaven | Full year | Must-take | System | SP-15 | Unit | Geothermal |
| Esmeralda II | Full year | Must-take | System | SP-15 | Unit | Geothermal |
| FPL/WTE Acquisitions, LLC | Full year | Intermittent | System | SP-15 | Unit | Wind |
| Mt. Signal Solar | Full year | Must-take | System | SP-15 | Unit | Solar |
| MMR II | Full year | Must-take | System | SP-15 | Unit | Solar |

## D. Need Determinations

D. 07-12-052 authorized SDG&E to meet the resources needs of its bundled customers (both system and local) and to procure new resources needed to meet grid reliability concerns. In addition, it authorized SDG&E to procure the equivalent quantity of local capacity associated with any retirements of local area resources that occur beyond the amount of retirements it forecasts in its LTPP.

## E. Need Determination – Total Service Area

SDG&E determined the need for new capacity to be built to meet the local resource adequacy need of all of its system-wide customers (including the bundled customers). Because SDG&E does not know the contractual energy and capacity position of direct access customers in its service area, the only assessment SDG&E can make is whether there will be sufficient capacity in its service area to meet the reliability needs of all customers in the service area.

Exhibit III-1 in Appendix F provides SDG&E's service area need determination based on the 1 in 2 demand forecast with a 15%-17% PRM approach. This table does not show any need for new capacity. However, SDG&E's system is constrained by local capacity requirements. The local area capacity need is based on the CAISO grid planning requirements that utilities use to design their systems so that there will be no interruption of customer load following a single transmission circuit outage, with the largest generator already out of service.

This is referred to as the "G-1/N-1" criterion.39/ For purposes of SDG&E capacity planning, this criterion requires that SDG&E have sufficient on-system resources and import capability to serve the full adverse peak summer demand forecast (1 in 10) during the worst G-1/N-1 event. SDG&E's current worst G-1/N-1 event would be the outage of the Palomar plant plus the loss of the Southwest Power Link (SWPL). Beginning in 2009, the worst G-1/N-1 is forecasted to be the loss of the Otay Mesa plant plus SWPL.40/

Tables III-2 and III-3 show the total service area assessment with and without the Sunrise Powerlink which, if approved, is forecasted to go into service in 2011. (Also see Appendix F, Exhibits III-2, III-3, III-4 for underlying data). These tables show if there is sufficient capacity in each year to meet the G-1/N-1 criteria. These tables show both a high and low need. Both tables are based on the CEC's 90/10 load forecast and assume that all the currently existing capacity in the service area remains in service except for the South Bay Power Plant, which is assumed to retire at the end of 2009. The values in these tables do not include the Margarita and Orange Grove peaking projects approved in D.07-09-010. The high need value is based on existing capacity. The low need value is after assuming future demand response, including the impacts from AMI reduces the local need. The negative values in tables represent shortages of physical capacity above the minimum level, and positive numbers represent capacity above the minimum level.

39/ The CAISO periodically reviews this criterion based on historical data and actual grid operations and may develop more stringent criterion. Based on CAISO review of historic generator outage data for the San Francisco area, the CAISO Board approved use of a G-4, N-2 planning criterion for that portion of the CAISO controlled grid.

40/ The assumption that the full output of the Palomar and Otay power plants will be treated as the largest G-1 is based on the CAISO's current assumptions.

**Table III-2**

**Service Area Need with the Sunrise Powerlink**

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|
| High | (93) | 458 | (322) | 600 | 522 | 447 | 372 | 296 | 223 |
| Low | (93) | 690 | (86) | 840 | 765 | 694 | 622 | 550 | 480 |

The table without the Sunrise Powerlink shows the same needs as above through 2009. Starting in 2010, without the Sunrise Powerlink, additional generation is needed in all years. No existing generation would be able to retire until sufficient new generation is built to meet the identified shortage and replace the retiring generation.

**Table III-3**

**Service Area Need without the Sunrise Powerlink**

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|
| High | (93) | 458 | (322) | (400) | (478) | (553) | (628) | (704) | (777) |
| Low | (93) | 690 | (86) | (160) | (235) | (306) | (378) | (450) | (520) |

D. 08-11-008 authorizes SDG&E to procure up to the 530 MWs of new local capacity authorized in D.07-12-052, with the stipulation that applications for this procurement should be supported by updates of the status and projected on-line date of the Sunrise Powerlink project. Subtracting the 133 MWs of resources already approved by the Commission, this results in an additional 397 MWs of authorization for local area resources through 2015. D.07-12-052 also noted that if a previously authorized resource is determined unviable during the development process and the associated contract is terminated, the procurement authority for those megawatts remains.

## F. Need Determination – Bundled Customer System Need

SDG&E's bundled customer need is the amount of capacity that SDG&E needs to contract for to meet the Commission's 15% planning reserve margin requirement. SDG&E's bundled customer need is shown in the table below.[41/] The range is based on the same factors as described in service area need. Details on the capacity balance are included in Appendix F, Exhibit III-2. This need will be reduced by Margarita and Orange Grove, when they come on line.

**Table III-4**

**Bundled Customer System Need**

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|
| High | [redacted] | [redacted] | [redacted] | (1724) | (1897) | (1924) | (2110) | (2180) | (2250) |
| Low | | | | (1480) | (1649) | (1673) | (1855) | (1921) | (1988) |

## G. Bundled Customer Local Capacity Need

Because SDG&E's entire service area is a load pocket, SDG&E's bundled customers have a requirement that a portion of their generation capacity be located within the load pocket. The necessary amount of local capacity is determined each year as a local RA requirement. Like the need for total capacity in the service area, SDG&E bundled customer need for local capacity is impacted by the Sunrise Powerlink. The local capacity need identified here creates a limitation on where a portion of the total bundled customer system need identified above can be procured and thus is a subset of the total bundled customer system need.

The tables below show the bundled customers' additional local capacity need with and without the Sunrise Powerlink. The tables show the amount of local capacity, in addition to the local capacity

41/ Positive values in the tables in this section mean SDG&E needs to acquire that amount of capacity. Negative values mean there is capacity in excess of the minimum capacity to meet a 15% reserve margin.

already in its portfolio, that SDG&E would contract for to meet local RA requirements. Both a high and low need is shown based on the same range as the System Need Table. Like the Bundled System Need Tables, these values will be reduced with the capacity from Margarita and Orange Grove, when they come on line. It should be noted that these values represent the minimum that SDG&E would need locally to meet the local RA requirement. SDG&E procurement may produce local capacity in excess of these values.

**Table III-5**

**Bundled Local Need with Sunrise Powerlink**

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|
| High | [redacted] | [redacted] | [redacted] | (463) | (666) | (734) | (801) | (870) | (936) |
| Low | [redacted] | [redacted] | [redacted] | (249) | (448) | (512) | (577) | (643) | (706) |

The table without the Sunrise Powerlink shows the same local RA requirement as above through 2011. Without the Sunrise Powerlink, local RA needs increase substantially. As can be seen, without the Sunrise Powerlink, the local RA need is almost 900 MW higher in all cases than it is with the Sunrise Powerlink.

**Table III-6**

**Bundled Local Need without Sunrise Powerlink**

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|
| High | [redacted] | [redacted] | [redacted] | (1,361) | (1,564) | (1,632) | (1,700) | (1,769) | (1,835) |
| Low | [redacted] | [redacted] | [redacted] | (1,146) | (1,346) | (1,411) | (1,476) | (1,542) | (1,605) |

## H. Resource to Fill Identified Need

SDG&E will pursue all cost effective EE, DR and DG which may exceed the capacity assumed in these totals and thus reduce this need. Also, SDG&E will seek renewable power to meet the identified need. To the extent SDG&E needs to add fossil fuel generation to meet this need, it will seek

to do so via peaking facilities. Given SDG&E's existing resource mix, including the large amount of must-take power from nuclear and renewable sources and the portfolio's three combined-cycle plants, a substantial portion of bundled customers' annual energy needs will be met. Thus, what is needed is peaking capacity that will operate infrequently, but can be started quickly when loads increase and then shut down as loads decrease. Since these peaking facilities are expected to operate at low annual capacity (serving as a back-up to our renewable power), their contribution to SDG&E's overall GHG production is expected to be low. Although the plan assumes that these facilities will be powered by natural gas fired units for purposes of the GHG analysis in Section V, the RFO to fill this need will be open to all technologies that can fulfill the requirements.

SDG&E's future RFOs will also request offers for black start capability. The current black start capability in SDG&E's service area is provided by a fleet of combustion turbines that are nearing the end of their economic life. It is possible that many of the units will be retired within the planning horizon. Thus, future RFOs will request offers for black start capability, so that the new capacity being added will be able to provide this function to the ISO and the older units will not have to be maintained solely for this service.

## I. Approved Resource Plan

SDG&E's Approved Plan is discussed below. This plan follows the Energy Action Plan and the Commission's policies in determining the amount of various resource types. Also any resources to be added will be consistent with SDG&E's plan to reduce GHG emissions from its portfolio. The Preferred Plan results in a portfolio of resources to meet SDG&E's bundled customer needs over the 10-year

planning period that balances supply- and demand-side options.[42/]

Committed and uncommitted cost-effective energy efficiency programs are estimated to reduce SDG&E's energy requirements by 2,561 GWH and capacity requirements by 487 MW between 2007 and 2016. This result is in addition to the accomplishments of SDG&E's past energy efficiency programs. These amounts are consistent with the targets adopted in D.04-09-060.

"Price-Triggered" DR programs, including its AMI project, are estimated to reduce peak capacity requirements by 249 MW by 2016. This amount is consistent with Commission goals for a 5% reduction in peak demand from price-driven DR.

Peak load reductions from DG/self-served load are expected to grow from 120 MW to 157 MW. This growth is from a combination of generation sources at customer locations, including the addition of solar PV systems under the CSI. These amounts are based on the CEC load forecast.

Renewable resources are planned to provide 318 MW of capacity in 2010 and 727 MW in 2016. It is expected that these renewable resources will satisfy about 20% of SDG&E's energy needs by 2010 and continue to increase over time on a trajectory toward meeting 33% of SDG&E's energy needs by 2020.[43/] The ability to meet these targets will be impacted by the availability of the necessary transmission.

The remaining resource needs for bundled customers should be balanced between new resources to meet grid reliability concerns, other resources in the SDG&E load pocket to meet local RA needs and, finally, other resources that can be sourced on a least-cost basis, including their GHG impacts.

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[42/] All capacity values are based on capacity at time of peak. For some technologies, total installed capacity is substantially larger than capacity counted at peak.

[43/] Percent of energy mix is based on previous year's sales.

## IV. Procurement Strategy by Resource

### A. Introduction to Resource Acquisition Strategy

In Section II ("Procurement Implementation Plan") of this LTPP, SDG&E has discussed various procurement products and the process for procurement. In this section, SDG&E addresses several product types not addressed in detail elsewhere.

### B. Energy Efficiency

SDG&E's forecast reflects the Commission's approved targets for 2007 – 2008 and targets for 2009-2013 adopted in D.04-09-060. For projections beyond 2013, SDG&E has estimated future energy efficiency savings based on the trend of the economic potential of commercially available measures from the May 2006 California Energy Efficiency Potential Study.[44/] Table V-2 shows the peak and energy targets in the approved plan.

[44/] Itron, et al, California Energy Efficiency Potential Study, Volume 1: Final Report, May 24, 2006, p. 12-6.

**Table IV-1**

**SDG&E Electricity Savings Goals for Energy Efficiency**

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Annual Savings Goal GWh/yr | 280.5 | 285.1 | 284.4 | 282.3 | 273.6 | 262.5 | 221.7 | 214.9 | 246.2 | 245 | 246 |
| Total Cumulative Savings Goal GWh/yr | 817.3 | 1,102.4 | 1386.8 | 1,669.1 | 1,942.7 | 2,205.2 | 2,426.9 | 2,641.8 | 2888 | 3133 | 3379 |
| Annual Peak Savings Goal (MW/yr) | 54.6 | 54.2 | 54.0 | 53.6 | 52.0 | 49.9 | 42.1 | 40.8 | 46.7 | 46.7 | 46.7 |
| Cumulative Peak Savings Goal (MW) | 155.3 | 209.5 | 263.5 | 317.1 | 369.1 | 419.0 | 461.1 | 501.9 | 548.6 | 595.2 | 642 |
| Annual Uncommitted Energy Efficiency (2009-2013)—(3), (4) | 0.0 | 0.0 | 0.0 | 30.0 | 56.0 | 51.0 | 45.0 | 41.0 | 46.7 | 46.7 | 46.7 |
| Cumulative Uncommitted Energy Efficiency (2009-2013)—(3), (4) | 0.0 | 0.0 | 0.0 | 30.0 | 86.0 | 137.0 | 182.0 | 223.0 | 270 | 316 | 363 |

Notes:
(1) Total savings = all savings from energy efficiency programs funded by public goods charge and procurement funding. This total includes savings from energy efficiency programs already in the CEC's demand forecast.
(2) The 2006 Cumulative Savings (GWH and MW) include savings from the 2004-2005 programs.
(3) The CPUC's goals are annual goals that SDG&E assumed will be installed by the end of each program year. However, for resource planning purposes, SDG&E assumed that only a portion of the expected annual MW will be installed in time to impact each year's summer demand.
(4) SDG&E considers program years with approved PUC budgets as committed. Therefore, program years 2006-2008 are currently part of the committed energy efficiency resources, as the budgets were approved in D.05-09-043. Future program years (2009 onwards) are considered uncommitted. In fact, the PUC expects to review and revise as necessary the 2009-2016 energy savings and demand reduction goals before 2009.
(5) The energy efficiency forecast does not change under different load condition scenarios (e.g., 90/10, 80/20 and 50/50).

## C. Demand Response

Demand Response Programs (DRPs) offer an alternative to adding supply-side resources through capacity additions by providing customers opportunities to participate in demand-side management while seeking to limit the impact on their operations. DRPs are designed to target the top 80-100 hours of the year when energy costs are at their highest.

The following are the proposed programs and expected enrolled demand reductions for 2007-2008. Note that the table shows the total enrollment megawatts which will exceed the megawatts of peak reduction actually achieved when the programs are called.

**Table IV-2**

| | **2007** | **2008** |
|---|---|---|
| **Day-Ahead** | | |
| Voluntary CPP | 20 | 25 |
| DBP | 37 | 43 |
| CPA DRP | 0 | 0 |
| Capacity Bidding Program (*) | 20 | 25 |
| Peak Day 20/20 | 49 | 63 |
| **Sub-total: Day-Ahead Programs** | **126** | **156** |
| **Day-Of Programs** | | |
| DBP-E | Combined with DBP | Combined with DBP |
| BIP | 10 | 12 |
| CPP-E | 5 | 6 |
| Res Smart Thermostat | 2 | 0 |
| Summer Saver | 38 | 42 |
| Clean Gen | 25 | 25 |
| Peak Gen | 60 | 60 |
| **Sub-total: Day-Of Programs** | **140** | **145** |
| Technical Assistance and Technology Incentives: | 91 | 121 |
| **Total:** | **357** | **422** |

(*) 6/1/06 filed AL 1799-E proposing DBP

The following table shows the amounts of expected peak reductions included in the plan. The amounts in 2007 and 2008 are based on approved funding and expected program reductions. For 2009 and beyond, the plan is based on Commission-adopted goals.

**Table IV-3**

| Year | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|
| MW | 76 | 96 | 230 | 233 | 236 | 240 | 244 | 242 | 245 | 249 |

## D. Renewable Energy Procurement Strategy

SDG&E continues to move aggressively toward the 20% requirement by 2010. Additionally, SDG&E's LTPP assumes that renewable power will increase as a percent of its total supply over time after 2010. SDG&E plans to utilize flexibility mechanisms allowed under the Renewable Portfolio Standard (RPS) program, issue competitive solicitations and pursue ownership opportunities in order to achieve this objective. Renewable procurement beyond 2010 is also needed to replace expiring contracts, as well as to increase renewables as a total portion of the portfolio. SDG&E has filed detailed renewables resource plans along these lines with the Commission.

To the extent it is necessary to do so, SDG&E will avail itself of the flexible mechanisms permitted under the RPS program, including: (1) the ability to sign bilateral agreements; (2) the ability to bank purchases in excess of the IPT; (3) the ability to borrow, if necessary, from the bank to make up for purchase shortfalls; and (4) the use of RECs when authorized by the Commission. SDG&E's resource assumptions presented in this LTPP presume that new transmission facilities will be built as required to allow SDG&E to access out-of-area renewable resources by 2010 and beyond.

SDG&E's efforts to meet this goal include issuing RFOs in 2003 (as part of the Grid Reliability RFO), 2004, 2005, 2006 (a renewables-only RFO and as part of the 2007/08/09 RFO), 2007 and 2008. In addition to PPAs, SDG&E is currently exploring the possibility of owning certain renewables technologies and will continue to evaluate ownership opportunities in the future. SDG&E also notes

that certain projects could require SEP funding from the CEC to move forward and that all executed contracts will be subject to approval by the Commission. The implementation of such a diversified approach will increase the probability of project completions and provide the best overall strategy for procuring the most cost-effective renewable resources.

In order to achieve 20% of renewable generation by 2010 based on a 2009 forecast of retail sales (in accordance with the methodology established by D.04-06-014), SDG&E will be required to procure incremental renewable energy in 2010 equal to 8% of its retail sales;[45/] that is, SDG&E currently has 12% of its retail sales from renewable energy under contract for delivery in 2010. SDG&E may contract for energy in excess of this amount because not all contracts will deliver the amount and on the schedule estimated at signing. For planning purposes, SDG&E has assumed that capacity and energy will be procured by various resource types. Actual procurement results will be dependent upon offers received and a least-cost, best fit evaluation of those offers

**Procurement Beyond 20%**

SDG&E's efforts to reduce GHG emissions include voluntarily expanding its renewables procurement beyond the mandatory 20%. Through the added procurement of renewables, SDG&E will have a lower level of GHG emissions and, more importantly, will be encouraging the development of renewables. SDG&E is also supportive of the Commission's goals expressed in the Energy Action Plan II. That plan contemplates expanding renewables acquisition beyond 20% if feasible and cost-effective to do so, and it's a place holder for renewable power to be on track to meet 33% in 2020.

SDG&E's LTPP continues to increase its renewables portfolio beyond 20%. Due to the "lumpiness" of major resource additions, this trajectory may not be a smooth year-on-year increase.

[45/] Based on SDG&E's April 2008 Compliance report

The exact percentages of resources that will make up future portfolios cannot be known until procurement is undertaken and offers for additional supply are evaluated; however a "best guess" future portfolio is presented in Appendix E, Exhibit II-1 where SDG&E has taken into account resource commitments under contract that start delivery during the plan term. Actual future procurement, as well as SDG&E's possible use of RECs during the course of this plan, will likely result in a different proportional contribution from the sources of deliveries of renewable power.

In order to fulfill its internal goal of increasing renewable generation beyond 20%, SDG&E would need to procure incremental renewable supplies. Incremental supplies do not necessarily need to come from new resources. SDG&E will have a number of contracts expiring between 2006 and 2020. SDG&E may re-sign or replace these contracts with existing resources in addition to renewables contracts with existing resources currently under contract to another party.

Whether SDG&E is able to achieve a 20% resource mix by 2010, or greater amounts in future years, will depend in part on how contracted resources perform, whether sufficient renewable resources will be available for purchase by SDG&E, whether SDG&E can procure and count unbundled RECs towards meeting its renewable requirements and whether additional transmission will become available to allow SDG&E to import renewable energy and capacity from outside its service area. These planned additions include potential resources located in the Imperial Valley area that could be accessed contingent upon SDG&E successfully being able to import such energy and capacity into SDG&E's service territory.[46/]

[46/] To the extent that SDG&E accesses these resources earlier than 2010, these resources may be able to be added earlier than 2011. SDG&E believes that the ability to access renewable resources from the Imperial Valley will play a key role in SDG&E's ability to continue to increase its renewables portfolio post-2010 and could also, depending upon other impacts to its overall plan, be a determining factor in its ability to achieve an overall 20% requirement.

For SDG&E, the lack of transmission infrastructure is a major impediment to achieving 20% by 2010 and higher percentages in future years. Results from the 2004 and 2005 renewables RFOs validate earlier concerns that availability of transmission will have a significant impact on SDG&E's ability to achieve the mandate of 20% by 2010. A substantial amount of the associated projected annual energy purchases are dependent in some way on new transmission being approved and built to import the energy from areas that are rich in renewables energy potential (e.g., Imperial Valley, Tehachapi and eastern San Diego County) into San Diego, which has a relatively smaller renewable energy development potential.

Of the Commission-approved renewables contracts, several are contingent on new transmission. The Stirling Energy Systems (SES) and the Esmeralda Truckhaven Geothermal (Esmeralda) projects will be located in the Imperial Valley and the Pacific Wind project will be located in the Tehachapi area. The agreement with SES contemplates the purchase by SDG&E of up to 900 MW of new solar-related energy from SES in three phases. Once developed, Phase 1 of the SES Project will, by itself, constitute approximately 3.6% of SDG&E's retail sales. Phase 2 would add another 3.6% beginning in 2012. However, all phases of this project are contingent upon the construction of new transmission facilities. At a minimum, "gen-tie" facilities must be built to reach the transmission grid at the Imperial Irrigation District's (IID) system, the Imperial Valley substation or the Sunrise Powerlink.

Another renewables development project, Esmeralda, proposes to construct a total of 60 MW of geothermal facilities in the Imperial Valley. The project is expected to achieve commercial operation in 2011 and is also contingent upon the construction of new transmission facilities. At a minimum, "gen-tie" facilities must be built to reach the transmission grid at the IID system, the Imperial Valley

substation or the Sunrise Powerlink. Again, the Sunrise Powerlink will enhance the ability to economically transmit power from the project to the San Diego load center.

The Pacific Wind agreement proposes a 205 MW wind project in the Tehachapi area. The project is anticipated to achieve commercial operation in 2011 or 2012 and is contingent on new transmission. In addition, SDG&E continues to receive offers for additional renewable resources in the Imperial Valley area. Developers will continue to pursue the development of potential solar, geothermal and wind facilities in the Imperial Valley area and either bid these projects into future utility RFOs or seek buyers for the energy produced by these facilities.

## E. Distributed Generation (California Solar Incentive and Self Served Load)

The LTPP is based on the CEC's forecast for energy and capacity from the California Solar Initiative and self served load. The capacity at time of peak for each of these sources assumed by the CEC is shown in Table IV-4.

**Table IV-4**

| Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|
| CSI (MW) | 7 | 10 | 13 | 16 | 20 | 23 | 26 | 30 | 33 |
| Self Serves Load (MW) | 113 | 115 | 116 | 117 | 119 | 120 | 121 | 122 | 124 |

## F. Other Generation Supply Resources

To the extent that the preferred resources discussed above are not sufficient to meet SDG&E's bundled customer need, SDG&E will consider meeting its need from resources in its service territory, in the CAISO control area and from imported generation (from outside of the CAISO control area). As discussed above, SDG&E will add resources based on the loading order. If fossil-fired generation is

added, it will be peaking generation that will operate at a very low capacity factor, thus minimizing its contribution to SDG&E's GHG output.

## G. Integration of Transmission and Procurement Planning

FERC Order 2004 limits the coordination between transmission and procurement activities that might otherwise be considered part of integrated transmission and procurement planning. Because the LTPP is created in large part by the merchant side of SDG&E, the access to transmission data available to the developers of the plan is heavily limited by FERC Order 2004's restrictions on non-public transmission information.

### Key Transmission Projects that are Critical to SDG&E's Procurement Resource Plan

As stated previously, the Sunrise Powerlink will increase SDG&E import capability by 1,000 MW and allow additional out-of-area renewable generation from the Imperial Valley to reach the San Diego load pocket. SDG&E's ability to meet the 20% renewables requirement by 2010 is challenged by the ability of SDG&E to access resources outside of its service area, the anticipated cost of accessing these resources and the cost of upgrading or constructing transmission to access these resources.[47/]

SDG&E currently has one proposed generation project with an identified delivery network transmission upgrade. The Bullmoose biomass facility will require a 69 kV transmission line to be reconductored by December 2009. The other local generator being added is the 40 MW Lake Hodges Pumped Storage project, which does not require a network transmission upgrade.

47/ In many cases, *physical access* to transmission is not an issue under the CAISO's non-discriminatory, competitively-based open access transmission rules. Physical access is always possible provided transmission users are willing to pay the marginal cost of obtaining such access. Hence, it is the *cost* of such access that is the relevant concern and whether the cost will render either access or renewable development uneconomic.

While SDG&E may be able to procure resources in other parts of California without new transmission being built, the cost of delivering that energy to SDG&E's customers will rise due to congestion costs and other related factors. SDG&E evaluates the cost of congestion and transmission upgrades for each of its offers and includes those costs in its least-cost, best fit analysis.[48/] SDG&E is concerned that congestion and transmission upgrade costs will adversely affect the relative cost-effectiveness of some renewable resource projects.

Additionally, certain resources will not be able to deliver unless new or upgraded transmission projects are completed. This could affect resources in several areas, including new wind production in the Tehachapi area, new wind production in SDG&E's Crestwood area and new geothermal, wind and solar facilities in the Imperial Valley area.

48/ The evaluation criteria SDG&E uses are consistent with the directives from D.03-06-071, D.04-06-013, D.04-07-029 and D.06-05-039.

## Section V. Evaluation of Resource Plan

This section highlights the environmental impacts of SDG&E's Preferred Plan in this LTPP. SDG&E's Preferred Resource Plan results in a substantial reduction in the total GHG emissions of the portfolio. Thus, the LTPP represents a reasonable basis for moving ahead with procurement.

### Environmental Impacts

SDG&E's LTPP looks to minimize the environmental impacts by adding resources according to the loading order. The plan adds the following preferred resources:

- The plan looks to reduce 2,562 GWH of future energy demand through committed and uncommitted energy efficiency programs over the 2007-2016 time frame.
- The plan meets the Commission's goal of achieving a 5% reduction in peak demand from "price driven" demand response. The plan also includes 249 MW of dispatchable demand response impacts.
- The plan meets 20% of the bundled customers' energy needs by 2010 with renewable power and increases that percentage over time. This amount will fluctuate based on how future projects develop.
- To the extent fossil generation is added, it will be peaking capacity that is mainly provided for capacity to back up the preferred resources. Since these units are expected to operate at a very low capacity factor, their contribution to SDG&E's total GHG production will be very low.
- SDG&E applies a GHG adder when evaluating all contracts of greater than five years in duration.

Table V-1 below shows the estimated total (metric tons/year) and rate (tons/GWh) of GHG emissions.

**Table V-1**

**Forecasted GHG Emissions for SDG&E's Preferred Resource Plan**

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|
| Total CO2 Emissions (1,000 tons) | 5,900 | 5,150 | 5,050 | 4,650 | 4,600 | 4,500 | 4,150 | 4,150 | 4,200 |
| CO2 emission rate (tons/GWHR) | 319 | 274 | 264 | 240 | 235 | 228 | 208 | 206 | 206 |

To develop this GHG emissions estimate, SDG&E updated emission rates from its LTPP filing and applied the following assumptions:

- All renewable sources (including wind, solar, bio-mass, bio-gas and geothermal) were assigned no GHG emissions.
- Nuclear power was assigned no GHG emissions.
- Natural gas fueled resource emissions were determined based on fuel usage at a rate of 117 lbs/MMbtu.
- Emissions for SDG&E's single coal contract were based on fuel usage and an emissions rate of 205 lbs/MMbtu.
- QFs were assigned an emissions rate of 800 lb/MWh. The QF contracts for SDG&E are with combined heat and power facilities. As has been discussed in R.06-04-009, the use of waste heat from the facility avoids the need to generate steam from another source, thus reducing GHG emissions associated with the electricity produced. For this LTPP, SDG&E is using a GHG rate for the energy assuming existing cogeneration is as efficient, on average, as new combined cycle generation.
- SDG&E has three DWR contracts that are firm LD (and thus are not unit specific and the source of the energy is not known). For these contracts, SDG&E has assumed an emissions rate of 1,100lbs/MWh. This rate was developed by assigning rates based on the CARB's adopted rate for reporting non-specific purchases.
- SDG&E's LTPP assumes SDG&E will periodically make economy energy purchases from the market. Some of these purchases may be from specific suppliers where a specific rate could be assigned; others will be from markets where a specific source cannot be identified. For this plan, economy energy purchases are all assumed to come from the market.
- SDG&E has assigned a rate of 1,100 lbs/MWh for these purchases based on CARB's adopted rate for reporting non-specific purchases. In addition, following the CARB methodology, emissions have been increased by 7.5 percent to account for losses in transporting electricity from the source to the market hub.
- SDG&E's resource plan forecasts that SDG&E will make some economic sales. Because these sales provide power to other LSEs who will be accounting for the GHG emissions of this power, SDG&E deducted from its total emissions an amount of emissions associated with sales. SDG&E used the same rate for sales as for purchases because if others account for emissions based on a general market rate, power injected into that market should receive a credit at the same rate.

As can be seen in Table V-1, SDG&E sees its total GHG emissions declining over time. The plan estimates emission will drop by over 1,500 metric tons over the planning period. It should also be noted that the average emissions rate of the portfolio will drop by almost a third. Given this substantial drop, SDG&E believes this LTPP is fully consistent with the State's GHG reduction policy.

## VI. Cost Recovery Issues

In this section, SDG&E describes existing cost recovery mechanisms for procurement-related costs and also summarizes the Commission's guidance related to debt equivalence and Financial Accounting Standards Board (FASB) Interpretation No. 46(R) (FIN 46(R)) for resources procured during the term of this LTPP.

### Existing Recovery Mechanisms For Procurement Costs

SDG&E's recovery mechanisms for procurement-related costs were adopted by the Commission in D.04-12-048 and D.02-10-062. The existing balancing account and ratemaking recovery mechanisms (ERRA, Gas Cost Recovery, Non-Fuel Generating Costs) are described below.

*ERRA Balancing Account* - The ERRA records revenues from SDG&E's Electric Energy Commodity Cost (EECC) and EECC-Transitional Bundled Service rate schedules, adjusted to exclude CDWR purchases, and commodity revenues assigned to the Non-Fuel Generation Balancing Account (NGBA).[49/] In accordance with AB57, SDG&E's ERRA is subject to a trigger mechanism that requires the filing of a rate change application if SDG&E's monthly forecasts indicate that the ERRA will face an undercollection or over-collection in excess of 5% of the previous year's non-CDWR generation revenues.[50] SDG&E will continue to utilize the existing ERRA balancing account and ratemaking mechanisms for applicable ongoing and future costs.

*Gas Cost Recovery* - When procuring gas, gas-related services and hedging for CDWR, SDG&E will continue to act as limited agent for all gas purchased for forecasted CERS needs, which will remain the financial obligation of CDWR. This relationship is outlined in the DWR-SDG&E

[49/] In compliance with D.03-12-062, the NGBA became effective January 1, 2004.
[50/] In D.07-05-008 (OP 2), the Commission authorized SDG&E to notify the Commission though an advice letter filing, instead of an application, when the ERRA balance exceeds its trigger point and SDG&E does not seek a change in rates, if the ERRA balance will self-correct below the trigger point within 120 days of filing.

Operating Agreement Exhibit B, as further detailed in Section III C "Fuel Supply Procurement Strategy" of this LTPP. The costs associated with these DWR volumes, purchased as agent for CDWR, will continue to be recovered through the CDWR annual revenue requirement.

In procuring gas, gas-related services and hedging for the forecast volumes of URG units (owned and under contract), SDG&E will transact in its own name. SDG&E expects to incur costs for the URG units (including Palomar, Miramar, and Otay Mesa), similar to those costs incurred while procuring as agent for CDWR in operationally administering its contracts (Sunrise and CalPeak). All such SDG&E-incurred costs will be recorded into the ERRA as generation fuel costs and will be recovered through rates applied to that account. As discussed above, these costs may, in any given year, include margin and other hedging costs incurred for future years.

*NGBA Balancing Account* - The Non-Fuel Generation Balancing Account (NGBA) records the authorized O&M and capital-related non-fuel revenue requirements associated with new turnkey and utility-owned generation plants.[51/] The disposition of the NGBA account is addressed in SDG&E's consolidated advice letter filing that sets electric rates beginning January 1 of each year. SDG&E plans to continue to utilize the existing NGBA balancing account and ratemaking mechanisms in order to provide for timely cost recovery between rate cases of revenue requirements associated with ongoing and future utility-owned generation projects.

**Current Commission Guidance Related to Debt Equivalence**

In D. 08-11-008, the Commission allowed "the use of the 20% DE adder in head-to-head competition between PPAs where no UOG projects (including EPC or PSA bids) are being considered

52/

[51/] SDG&E's NGBA also includes non-fuel costs related to its ownership share of SONGS that are approved for SDG&E as part of D.06-05-016 in SCE's General Rate Case.
[52/] D.08-11-008, at p 16.

SDG&E will work with its Independent Evaluator and Procurement Review Group in integrating debt equivalence into its bid evaluation criteria, in particular to ensure that "the use of the DE adder does not disadvantage bids for renewable and innovative low-carbon resources that may have higher capital costs than traditional gas-fired generation"[53].

The Commission also stated that, "We continue to direct the IOUs, especially SDG&E, to raise any individual concerns it has with the impact of a particular PPA on its debt to equity ratio in its Cost of Capital proceeding."[54]

**Current Commission Guidance Related to FIN 46(R)**

In D.07-12-052, the Commission indicated that SDG&E or any other IOU may address the impacts of FIN 46(R) on its capital structure in Cost of Capital proceedings. In addition, the Commission stated that, "At this point in time, without prejudice to the issue being re-introduced in future LTPP filings, we do not find that there is sufficient information for us to know how a utility should weigh the FIN 46(R) impacts of a PPA when evaluating competing bids."[55]

[53] D.08-11-088, at p. 16.
[54] D.07-12-052, p. 164.
[55] D.07-12-052, p.165.

# SAN DIEGO GAS & ELECTRIC COMPANY'S
# 2006 LONG TERM PROCUREMENT PLAN

# APPENDICES

## APPENDIX A – SDG&E ADVICE LETTER 1920-E

Ken Deremer
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August 3, 2007

**ADVICE LETTER 1920-E**
(U902-E)

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

**SUBJECT: AMENDMENT TO SDG&E's ASSEMBLY BILL 57 PROCUREMENT AND PENDING 2006 LONG TERM PROCUREMENT PLANS**

**PURPOSE**

SDG&E hereby requests expedited approval to amend its California Public Utilities Commission (Commission) approved Assembly Bill (AB) 57 Procurement Plan (PP)[1] and its pending 2006 Long-Term Procurement Plan (LTPP) to clarify that SDG&E is authorized to participate in the California Independent System Operator Corporation's (CAISO) Long-Term Congestion Revenue Rights (LT-CRRs) allocation process that will result in LT-CRRs being allocated to SDG&E for a 10-year term.

**BACKGROUND**

As part of the CAISO's Market Redesign and Technology Upgrade (MRTU), the current transmission rights mechanism, known as Firm Transmission Rights (FTRs), will be replaced by CRRs. The CAISO's CRR process distinguishes LT-CRRs, which have a delivery term of ten years, from other CRRs, which have delivery terms of up to one year. The CAISO intends to allocate LT-CRRs to Load Serving Entities (LSEs) based upon their historical load and a demonstration of resources owned or under contract. The CAISO's LT-CRR proposal and allocation process was recently approved by the Federal Energy Regulatory Commission (FERC) in a July 6, 2007 order.[2]

Currently, the procurement of most CRRs is already permitted. SDG&E's PP authority includes a category for transmission products, which will contain CRRs,[3] and permits SDG&E to enter into transactions with a delivery term of up to five years without requiring Commission pre-

[1] SDG&E filed its 2004 Short-Term Procurement Plan ("2004 STPP") on May 15, 2003, and it was approved by the Commission in D.03-12-062. In D.04-12-048, the Commission approved SDG&E's 2004 Long-Term Procurement Plan. Subsequently, pursuant to D.04-12-048, SDG&E filed a total of three updates to its STPP via Advice Letter. Those were AL 1676-E on March 25, 2005, AL 1745-E on November 16, 2005, and AL 1745-E-A on March 22, 2006. The collective set of SDG&E's 2004 STPP, including subsequent modifications and updates, and SDG&E's 2004 LTPP constitute SDG&E's current AB 57 Procurement Plan. SDG&E's 2006 LTPP, which combines both long and short term procurement plans, was filed December 11, 2006, is currently pending in R.06-02-013.

[2] California Independent System Operator, 120 FERC ¶ 61,023 (2007).

[3] D.04-12-048 at 115 (listing approved products for all three utilities).

approval. However, since LT-CRRs have a ten-year term, the acquisition of LT-CRRs requires additional Commission authorization.

Under the CAISO's LT-CRRs allocation process, SDG&E can nominate LT-CRRs from its Tier 1 and 2 award of CRRs. Unfortunately, there is not enough time for SDG&E to submit these nominations to the Commission for pre-approval and for the Commission to act on SDG&E's request. Under the CAISO's current schedule, Tier 1 and 2 awards will be completed by September 12, 2007, and LSEs will nominate LT-CRRs between September 21 and 25, 2007. The CAISO will then allocate the LT-CRRs among LSEs pursuant to its FERC-approved allocation methodology and will announce the results by October 2, 2007. Thus, SDG&E needs pre-approved authority from the Commission to participate in the CAISO's LT-CRR nomination and allocation process, which will result in ten-year LT-CRRs being allocated to SDG&E.

As such, SDG&E requests Commission approval to modify its PP and its 2006 LTPP to explicitly state that the CAISO's LT-CRR allocation process is an authorized process for SDG&E to acquire LT-CRRs, without the need for Commission pre-approval of specific LT-CRRs.[4]

This filing will not increase any rate or charge, cause the withdrawal of service, or conflict with any rate schedule or rule.

**EFFECTIVE DATE**

SDG&E believes that this Advice Letter should be classified as Tier 3 and, as such, requires a resolution to be issued by the Commission. In accordance with Public Utilities Code § 311(g)(2), SDG&E asks for the Commission to reduce the 30 day review period of the draft resolution in order to have this expeditiously approved by September 6, 2007 so that SDG&E can have authorization to participate in the CAISO's LT-CRR nomination and allocation process.

**PROTEST**

Anyone may protest this Advice Letter to the California Public Utilities Commission. The protest must state the grounds upon which it is based, including such items as financial and service impact, and should be submitted expeditiously. The protest must be made in writing and must be received within 20 days of the date this Advice Letter was filed with the Commission. There is no restriction on who may file a protest. The address for mailing or delivering a protest to the Commission is:

CPUC Energy Division
Attention: Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102

Copies of the protest should also be sent via e-mail to the attention of both Honesto Gatchalian (jnj@cpuc.ca.gov) and Maria Salinas (mas@cpuc.ca.gov) of the Energy Division. A copy of the protest should also be sent via both e-mail and facsimile to the address shown below on the same date it is mailed or delivered to the Commission.

Attn: Todd Cahill

[4] SDG&E identified CRRs as products related to MRTU and transmission products in its 2006 LTPP. See Volume I, Section III, pg 48-50., filed December 11, 2006 in R.06-02-013.

Public Utilities Commission 3 August 3, 2007

Regulatory Tariff Manager
8330 Century Park Court, Room 32C
San Diego, CA 92123-1548
Facsimile No. (858) 654-1788
E-mail: tcahill@semprautilities.com

**NOTICE**

A copy of this filing has been served on the utilities and interested parties shown on the attached list, including interested parties to service list R.06-02-013, by either providing them a copy electronically or by mailing them a copy hereof, properly stamped and addressed.

Address changes should be directed to SDG&E Tariffs by facsimile at (858) 654-1788 or by e-mail at SDG&ETariffs@semprautilities.com.

_____
KEN DEREMER
Director – Tariffs & Regulatory Accounts

(cc list enclosed)

# CALIFORNIA PUBLIC UTILITIES COMMISSION

ADVICE LETTER FILING SUMMARY
ENERGY UTILITY

MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No. **SAN DIEGO GAS & ELECTRIC (U 902)**

Utility type:
☒ ELC ☐ GAS
☐ PLC ☐ HEAT ☐ WATER

Contact Person: Will Fuller
Phone #: (858) 654-1885
E-mail: wfuller@semprautilities.com

EXPLANATION OF UTILITY TYPE
ELC = Electric GAS = Gas
PLC = Pipeline HEAT = Heat WATER = Water

(Date Filed/ Received Stamp by CPUC)

Advice Letter (AL) #: 1920-E

Subject of AL: Amendment to SDG&E's Assembly Bill 57 Procurement and Pending 2006 Long Term Procurement Plans

Keywords (choose from CPUC listing): Procurement, Transmission, Congestion Revenue Rights

AL filing type: ☐ Monthly ☐ Quarterly ☐ Annual ☒ One-Time ☐ Other

If AL filed in compliance with a Commission order, indicate relevant Decision/Resolution #:

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL N/A

Summarize differences between the AL and the prior withdrawn or rejected AL[1]: N/A

Does AL request confidential treatment? If so, provide explanation:

Resolution Required? ☒ Yes ☐ No

Tier Designation: ☐ 1 ☐ 2 ☒ 3

Requested effective date: 9/6/07

No. of tariff sheets: 0

Estimated system annual revenue effect: (%): N/A

Estimated system average rate effect (%): N/A

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected: N/A

Service affected and changes proposed[1]: N/A

Pending advice letters that revise the same tariff sheets: N/A

**Protests and all other correspondence regarding this AL are due no later than 20 days after the date of this filing, unless otherwise authorized by the Commission, and shall be sent to:**

**CPUC, Energy Division**
**Attention: Tariff Unit**
**505 Van Ness Ave.,**
**San Francisco, CA 94102**
**mas@cpuc.ca.gov and jnj@cpuc.ca.gov**

**San Diego Gas & Electric**
**Attention: Todd Cahill**
**8330 Century Park Ct, Room 32C**
**San Diego, CA 92123**
**tcahill@semprautilities.com**

[1] Discuss in AL if more space is needed.

General Order No. 96-B
ADVICE LETTER FILING MAILING LIST

cc: (w/enclosures)

Public Utilities Commission
DRA
D. Appling
S. Cauchois
J. Greig
R. Pocta
W. Scott
Energy Division
P. Clanon
S. Gallagher
H. Gatchalian
D. Lafrenz
M. Salinas
CA. Energy Commission
F. DeLeon
R. Tavares
Alcantar & Kahl LLP
K. Harteloo
American Energy Institute
C. King
APS Energy Services
J. Schenk
BP Energy Company
J. Zaiontz
Barkovich & Yap, Inc.
B. Barkovich
Bartle Wells Associates
R. Schmidt
Braun & Blaising, P.C.
S. Blaising
California Energy Markets
S. O'Donnell
C. Sweet
California Farm Bureau Federation
K. Mills
California Wind Energy
N. Rader
Children's Hospital & Health Center
T. Jacoby
City of Chula Vista
M. Meacham
E. Hull
City of Poway
R. Willcox
City of San Diego
J. Cervantes
G. Lonergan
M. Valerio
Commerce Energy Group
V. Gan
Constellation New Energy
W. Chen
CP Kelco
A. Friedl
Davis Wright Tremaine, LLP
E. O'Neill
J. Pau

Dept. of General Services
H. Nanjo
M. Clark
Douglass & Liddell
D. Douglass
D. Liddell
G. Klatt
Duke Energy North America
M. Gillette
Dynegy, Inc.
J. Paul
Ellison Schneider & Harris LLP
E. Janssen
Energy Policy Initiatives Center (USD)
S. Anders
Energy Price Solutions
A. Scott
Energy Strategies, Inc.
K. Campbell
M. Scanlan
Goodin, MacBride, Squeri, Ritchie & Day
B. Cragg
J. Heather Patrick
J. Squeri
Goodrich Aerostructures Group
M. Harrington
Hanna and Morton LLP
N. Pedersen
Itsa-North America
L. Belew
J.B.S. Energy
J. Nahigian
Luce, Forward, Hamilton & Scripps LLP
J. Leslie
Manatt, Phelps & Phillips LLP
D. Huard
R. Keen
Matthew V. Brady & Associates
M. Brady
Modesto Irrigation District
C. Mayer
Morrison & Foerster LLP
P. Hanschen
MRW & Associates
D. Richardson
Pacific Gas & Electric Co.
J. Clark
M. Huffman
S. Lawrie
E. Lucha
Pacific Utility Audit, Inc.
E. Kelly
R. W. Beck, Inc.
C. Elder
San Diego Regional Energy Office
S. Freedman
J. Porter
School Project for Utility Rate Reduction
M. Rochman

Shute, Mihaly & Weinberger LLP
O. Armi
Solar Turbines
F. Chiang
Sutherland Asbill & Brennan LLP
K. McCrea
Southern California Edison Co.
M. Alexander
K. Cini
K. Gansecki
H. Romero
TransCanada
R. Hunter
D. White
TURN
M. Florio
M. Hawiger
UCAN
M. Shames
U.S. Dept. of the Navy
K. Davoodi
N. Furuta
L. DeLacruz
Utility Specialists, Southwest, Inc.
D. Koser
Western Manufactured Housing
Communities Association
S. Dey
White & Case LLP
L. Cottle
Interested Parties
R.06-02-013

## APPENDIX B – SDG&E ADVICE LETTER 1926-E

Ken Deremer
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kderemer@semprautilities.com

September 14, 2007

**ADVICE LETTER 1926-E**
(U902-E)

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

**SUBJECT: AMENDMENT TO SDG&E's ASSEMBLY BILL 57 PROCUREMENT PLAN TO CLARIFY THE UPFRONT STANDARDS THAT APPLY TO THE PROCUREMENT OF CONGESTION REVENUE RIGHTS**

**PURPOSE**

San Diego Gas and Electric Company (SDG&E) hereby requests expedited approval of an update to its Commission-approved Assembly Bill (AB) 57 Procurement Plan (PP[1]) and its pending 2006 Long-Term Procurement Plan (LTPP) in order to establish upfront standards applicable in obtaining Congestion Revenue Rights (CRRs), including Long-Term CRRs (LT-CRRs), through the California Independent System Operator Corporation's (CAISO) CRR allocation and auction process. SDG&E recently filed Advice Letter 1920-E, which requested Commission authorization for SDG&E to participate in the CAISO's LT-CRR allocation process that will result in LT-CRRs being allocated to SDG&E for a 10-year term. This Advice Letter seeks Commission approval of the upfront standards for obtaining all CRRs, including LT-CRRs.

SDG&E has read the Advice Letter updates that Pacific Gas and Electric (PG&E) and Southern California Edison Company (SCE) have submitted on this same topic.[2] In order to promote equity among similarly-situated load-serving entities, facilitate hedging and the avoidance of undue speculation in congestion markets, and enhance flexibility in integrating new resources, especially renewable resources, into utility procurement portfolios, SDG&E urges the Commission to adopt two additional conditions beyond those proposed in the PG&E and SCE advice letters:

1. The three investor-owned utilities should be directed not to seek renewal in the Priority Nomination Process Tier of CRRs obtained pursuant to the 2006 source-verification priority mechanism once the underlying commercial arrangement has expired; and

[1] SDG&E filed its 2004 Short-Term Procurement Plan (2004 STPP) on May 15, 2003, and it was approved by the Commission in D.03-12-062. In D.04-12-048, the Commission approved SDG&E's 2004 Long-Term Procurement Plan. Subsequently, pursuant to D.04-12-048, SDG&E filed a total of three updates to its STPP via Advice Letter. Those were AL 1676-E on March 25, 2005, AL 1745-E on November 16, 2005, and AL 1745-E-A on March 22, 2006. The collective set of SDG&E's 2004 STPP, including subsequent modifications and updates, and SDG&E's 2004 LTPP constitute SDG&E's current AB 57 Procurement Plan. SDG&E's 2006 LTPP, which combines both long and short term procurement plans, was filed December 11, 2006, is currently pending in R.06-02-013.
[2] See SCE Advice Letter 2141-E, filed July 24, 2007 and PG&E Advice Letter 3106-E, filed August 20, 2007.

2. The three investor-owned utilities should be directed not to convert CRRs obtained pursuant to the 2006 source-verification mechanism to LT-CRRs unless the underlying commercial arrangement is of ten years duration or longer.

These additional conditions would explicitly link the IOU's renewal of source-verified CRRs and conversion of source-verified CRRs to LT-CRRs to anticipated usage of transmission from the underlying commercial arrangements that gave rise to the priority allocation of CRRs. These conditions are needed to ensure that the methodology adopted by the CAISO for the initial allocation of CRRs and LT-CRRs does not foreclose equitable open access to transmission in the future, so that SDG&E can meet its future renewable energy needs and obtain comparable amounts of useful CRRs to hedge congestion costs for our customers. The factual background and argument supporting inclusion of these two conditions in the long-term procurement plans of the three investor-owned utilities has been set forth in SDG&E's FERC pleadings protesting the CAISO's CRR allocation mechanism[3], and will be argued further, as needed, in SDG&E's comments on the various draft resolutions that have begun to emerge on this subject.

**BACKGROUND**

As part of the CAISO's Market Redesign and Technology Upgrade (MRTU), the current transmission rights mechanism, known as Firm Transmission Rights (FTRs), will be replaced by CRRs. The attributes of CRRs and the process for making such rights available to market participants differ from the FTR process. Load serving entities (LSE) can acquire CRRs from the CAISO through independent allocation or auction processes. Under certain conditions, an LSE can convert the length of a CRR acquired through the allocation process to 10 years. The fact that CRR's can be up to 10 years in length requires pre-approval by the Commission, hence this update to SDG&E's PP and 2006 LTPP in order to provide upfront standards that will be applicable to CRR and LT-CRR transactions.

**DISCUSSION**

In light of the long term nature of CRRs, SDG&E requests that the Commission incorporate into SDG&E's LTPP the following upfront standards related to the procurement of CRRs which will enhance SDG&E's PP and 2006 LTPP on a going-forward basis:

**1. CRR Source-Sink Pairs Or "Paths"**

a. SDG&E proposes that it be allowed to obtain CRRs for any source connecting existing generation sources to existing loads or for any source location that SDG&E reasonably anticipates that it might need to flow energy in the future due to the addition of new contracts, resources or load obligations.
b. To promote equity among similarly-situated load-serving entities, SDG&E and the other investor-owned utilities should be directed not to seek renewal in the Priority Nomination Process for those CRRs from sources that were obtained pursuant to the 2006 source-verification priority mechanism once the underlying commercial arrangement has expired.

[3] *See Motion to Intervene and Protest of San Diego Gas & Electric Company Regarding the California Independent System Operator Corporation's Proposed Amendments to Facilitate the Initial Congestion Revenue Right Allocation and Auction Process,* ER07-869-000 (May 29, 2007); *Motion for Leave to File Answer and Answer of San Diego Gas & Electric Company,* ER07-869-000 (June 19, 2007; and *Request for Rehearing of San Diego Gas & Electric Company,* ER07-869-000 (August 6, 2007).

**2. Maximum Volume Limits**

Overall or total CRR volume limits are unnecessary for the CAISO's allocation process because the CAISO tariff establishes volume limits for SDG&E as an LSE based on SDG&E's adjusted load metric. Therefore, SDG&E proposes that the Commission not establish total or overall limits for SDG&E's procurement of CRRs.

**3. PRG Consultation**

a. SDG&E will continue to consult with its PRG regarding CRR's having a term greater than one calendar quarter.
b. SDG&E will consult with the PRG regarding CRR nominations prior to converting awarded CRRs to LT-CRRs. SDG&E will also consult with its PRG regarding any participation in the annual CRR auction.

**4. Valuation and Risk Analysis**

Prior to participating in the annual and monthly CRR allocation/auction process, SDG&E will identify candidate CRRs for consideration based on the location and magnitude of its resources and loads (existing, and expected future). SDG&E will review its CRR valuation and risk analysis with its PRG and select its CRR nominations for the allocation process from these candidate CRRs.

**5. SDG&E's Participation In The CRR Auction And Conversion Of CRRs To LT-CRRs**

a. Because the CRR auction is competitive and likely will involve a number of market participants, SDG&E anticipates that the resulting auction prices will fairly reflect the value of CRRs obtained. Accordingly, SDG&E requests that the Commission approve SDG&E's participation in the CRR auction process and establish that all SDG&E auction awards are in compliance with upfront standards and therefore are per se reasonable.
b. The annual CRR allocation process includes a step that allows LSEs to convert a portion of their awarded annual rights into LT-CRRs which have a term of ten years. In Advice Letter 1920-E, filed August 3, 2007, SDG&E has separately requested Commission authority to participate in the LT-CRR conversion and allocation process. This request was necessary because LT-CRRs have a term of 10-years. Under SDG&E's current PP, it is required to seek pre-approval for transactions with a term longer than five years. SDG&E requests that in approving this advice letter, the Commission authorize SDG&E to convert CRRs to LT-CRRs as a part of the CRR allocation and auction process.
c. To promote equity among similarly-situated load-serving entities, SDG&E and the two other investor-owned utilities should be directed not to convert CRRs obtained pursuant to the 2006 source-verification mechanism to LT-CRRs unless the underlying commercial arrangement is of ten years duration or longer.

**6. Transactions in Secondary CRR Market**

CRRs can be bought and sold bilaterally not unlike energy products, with the exception that bilateral CRR transactions must be registered with the CAISO to establish the current holder of the CRR. SDG&E will use the same processes and controls that its Procurement Plan authorizes SDG&E to use for energy transactions to pursue both sales and purchases of CRRs in any secondary market that might develop.

This filing will not increase any rate or charge, cause the withdrawal of service, or conflict with any rate schedule or rule.

**EFFECTIVE DATE**

SDG&E believes that this Advice Letter should be classified as Tier 3 and, as such, requires a resolution to be issued by the Commission. SDG&E respectfully requests that the Commission issue a resolution addressing this advice letter by October 18, 2007, or as expeditiously as possible, so that SDG&E can have authorization to participate in the CAISO's CRR nomination and allocation process with the upfront standards presented in this Advice Letter.

**PROTEST**

Anyone may protest this Advice Letter to the California Public Utilities Commission. The protest must state the grounds upon which it is based, including such items as financial and service impact, and should be submitted expeditiously. The protest must be made in writing and must be received within 20 days of the date this Advice Letter was filed with the Commission. There is no restriction on who may file a protest. The address for mailing or delivering a protest to the Commission is:

CPUC Energy Division
Attention: Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102

Copies of the protest should also be sent via e-mail to the attention of both Honesto Gatchalian (hnj@cpuc.ca.gov) and Maria Salinas (mas@cpuc.ca.gov) of the Energy Division. A copy of the protest should also be sent via both e-mail and facsimile to the address shown below on the same date it is mailed or delivered to the Commission.

Attn: Todd Cahill
Regulatory Tariff Manager
8330 Century Park Court, Room 32C
San Diego, CA 92123-1548
Facsimile No. (858) 654-1788
E-mail: tcahill@semprautilities.com

**NOTICE**

A copy of this filing has been served on the utilities and interested parties shown on the attached list, including interested parties to service list R.06-02-013, by either providing them a copy electronically or by mailing them a copy hereof, properly stamped and addressed.

Address changes should be directed to SDG&E Tariffs by facsimile at (858) 654-1788 or by e-mail at SDG&ETariffs@semprautilities.com.

_____
KEN DEREMER
Director – Tariffs & Regulatory Accounts

(cc list enclosed)

# CALIFORNIA PUBLIC UTILITIES COMMISSION

ADVICE LETTER FILING SUMMARY
ENERGY UTILITY

MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No. **SAN DIEGO GAS & ELECTRIC (U 902)**

Utility type:
☒ ELC ☐ GAS
☐ PLC ☐ HEAT ☐ WATER

Contact Person: Will Fuller
Phone #: (858) 654-1885
E-mail: wfuller@semprautilities.com

EXPLANATION OF UTILITY TYPE
ELC = Electric GAS = Gas
PLC = Pipeline HEAT = Heat WATER = Water

(Date Filed/ Received Stamp by CPUC)

Advice Letter (AL) #: 1926-E

Subject of AL: Amendment To SDG&E's Assembly Bill 57 Procurement Plan To Clarify The Upfront Standards That Apply To The Procurement Of Congestion Revenue Rights

Keywords (choose from CPUC listing): Procurement, Transmission

AL filing type: ☐ Monthly ☐ Quarterly ☐ Annual ☒ One-Time ☐ Other

If AL filed in compliance with a Commission order, indicate relevant Decision/Resolution #:

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL N/A

Summarize differences between the AL and the prior withdrawn or rejected AL[1]: N/A

Does AL request confidential treatment? If so, provide explanation:

Resolution Required? ☒ Yes ☐ No

Tier Designation: ☐ 1 ☐ 2 ☒ 3

Requested effective date: 10/18/07

No. of tariff sheets: 0

Estimated system annual revenue effect: (%): N/A

Estimated system average rate effect (%): N/A

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected: N/A

Service affected and changes proposed[1]: N/A

Pending advice letters that revise the same tariff sheets: N/A

**Protests and all other correspondence regarding this AL are due no later than 20 days after the date of this filing, unless otherwise authorized by the Commission, and shall be sent to:**

**CPUC, Energy Division**
**Attention: Tariff Unit**
**505 Van Ness Ave.,**
**San Francisco, CA 94102**
**mas@cpuc.ca.gov and jnj@cpuc.ca.gov**

**San Diego Gas & Electric**
**Attention: Todd Cahill**
**8330 Century Park Ct, Room 32C**
**San Diego, CA 92123**
**tcahill@semprautilities.com**

[1] Discuss in AL if more space is needed.

General Order No. 96-B
ADVICE LETTER FILING MAILING LIST

cc: (w/enclosures)

Public Utilities Commission
DRA
D. Appling
S. Cauchois
J. Greig
R. Pocta
W. Scott
Energy Division
P. Clanon
S. Gallagher
H. Gatchalian
D. Lafrenz
M. Salinas
CA. Energy Commission
F. DeLeon
R. Tavares
Alcantar & Kahl LLP
K. Harteloo
American Energy Institute
C. King
APS Energy Services
J. Schenk
BP Energy Company
J. Zaiontz
Barkovich & Yap, Inc.
B. Barkovich
Bartle Wells Associates
R. Schmidt
Braun & Blaising, P.C.
S. Blaising
California Energy Markets
S. O'Donnell
C. Sweet
California Farm Bureau Federation
K. Mills
California Wind Energy
N. Rader
Children's Hospital & Health Center
T. Jacoby
City of Chula Vista
M. Meacham
E. Hull
City of Poway
R. Willcox
City of San Diego
J. Cervantes
G. Lonergan
M. Valerio
Commerce Energy Group
V. Gan
Constellation New Energy
W. Chen
CP Kelco
A. Friedl
Davis Wright Tremaine, LLP
E. O'Neill
J. Pau

Dept. of General Services
H. Nanjo
M. Clark
Douglass & Liddell
D. Douglass
D. Liddell
G. Klatt
Duke Energy North America
M. Gillette
Dynegy, Inc.
J. Paul
Ellison Schneider & Harris LLP
E. Janssen
Energy Policy Initiatives Center (USD)
S. Anders
Energy Price Solutions
A. Scott
Energy Strategies, Inc.
K. Campbell
M. Scanlan
Goodin, MacBride, Squeri, Ritchie & Day
B. Cragg
J. Heather Patrick
J. Squeri
Goodrich Aerostructures Group
M. Harrington
Hanna and Morton LLP
N. Pedersen
Itsa-North America
L. Belew
J.B.S. Energy
J. Nahigian
Luce, Forward, Hamilton & Scripps LLP
J. Leslie
Manatt, Phelps & Phillips LLP
D. Huard
R. Keen
Matthew V. Brady & Associates
M. Brady
Modesto Irrigation District
C. Mayer
Morrison & Foerster LLP
P. Hanschen
MRW & Associates
D. Richardson
Pacific Gas & Electric Co.
J. Clark
M. Huffman
S. Lawrie
E. Lucha
Pacific Utility Audit, Inc.
E. Kelly
R. W. Beck, Inc.
C. Elder
San Diego Regional Energy Office
S. Freedman
J. Porter
School Project for Utility Rate Reduction
M. Rochman

Shute, Mihaly & Weinberger LLP
O. Armi
Solar Turbines
F. Chiang
Sutherland Asbill & Brennan LLP
K. McCrea
Southern California Edison Co.
M. Alexander
K. Cini
K. Gansecki
H. Romero
TransCanada
R. Hunter
D. White
TURN
M. Florio
M. Hawiger
UCAN
M. Shames
U.S. Dept. of the Navy
K. Davoodi
N. Furuta
L. DeLacruz
Utility Specialists, Southwest, Inc.
D. Koser
Western Manufactured Housing
Communities Association
S. Dey
White & Case LLP
L. Cottle
Interested Parties
R.06-02-013

## APPENDIX C – REQUIREMENTS FOR THE PRG, IE, AND RFOS FROM D.07-12-052 and D.08-11-008

### 2006 LTPP Compliance Table

**Forecasts, Resources, and Need Determination**

- IOUs are to use the CEC's forecast in their LTPPs.

- Until a new PRM methodology is developed, need determination shall be based on the CEC's base forecast under baseline (1-in-2) temperature conditions pursuant to D.04-12-048.

- The non-overlapping portion of IOU's uncommitted EE goals not included in the CEC forecast should be treated as a resource.

**Procurement Process Issues**

*PRG*

- IOUs are to provide PRG members with meeting agendas and materials a minimum of 48 hours in advance of the PRG meeting, unless there are unusual, extenuating circumstances that the IOU communicates to PRG members in an email announcing a meeting or distributing meeting materials on a tighter timeframe.

- The IOUs are to provide confidential meeting summaries to PRG members that include a list of attending PRG members (including the organizations represented), a summary of topics presented and discussed, and a list of information requested or offered to be supplied after the meeting, (and identify the requesting party).

- The IOUs are to individually set up and maintain a web-based PRG calendar that can be accessed and updated by the IOU.

- The IOUs are to provide the following information to the public through a web-based forum: date, meeting time and duration of the meeting; the individuals participating in the meeting and organization represented by the individual; and a list of non-confidential items discussed.

- When procuring or potentially procuring CAM resources, the IOUs are to utilize an advisory CAM Group consistent with the proposal as presented in Attachment D.

- The IOUs are required to consult with their PRGs for any transaction with a delivery term greater than three months' duration.

*IE*

- Each IOU, in conjunction with each respective PRG, shall develop a pool of at least three, but preferably more, IEs to be used beginning January 1, 2009. Each IOU should develop and periodically add to its IE pool as follows:

1. The IOU shall develop a list of prospective IEs via industry contacts, literature searches, PRG recommendations, and similar methods, solicit information from the prospective IEs and circulate the list of candidates and their "resumes" to the PRG and ED staff for feedback.

2. The IOU should rely on the guidance regarding IE expertise and qualifications provided in D.04-12-048. However, these qualifications should represent the minimum necessary for an IE to be effective, and the IOU and the PRG should include any additional relevant information that it has gained thru its experiences implementing the IE requirements;

3. The IOU and PRG shall interview a subset of prospective candidates that the IOU, PRG, and ED staff deem most suitable for the role (IOUs should arrange for the PRG to conduct interviews with candidate IEs in isolation from the contracting IOU);

4. The PRG shall coordinate the development and submittal to the IOU its recommendations on each prospective candidate (including the general consensus and any opposition to the consensus). The IOU shall submit a written list of qualified IEs to ED to add to the contracting IOU's pool. The list must contain the recommendations of the PRG that were submitted to the IOU. ED will evaluate the proposed IE's competencies based on the guidelines in D.04-12-048 as well as evaluating the IEs independence including any conflicts of interest. ED shall give final approval for inclusion of an IE in the IE pool by letter to the submitting IOU. ED will also have the right to final approval of the use of a particular IE for each RFO.

5. Beyond the development of the initial IE pool, additional IE's may be added to the pool by following the same procedures listed above.

6. An IE may remain in the IE pool for two years, after which he/she must go through a reevaluation process based upon the inclusion criteria to assure continued compliance. The reevaluation process will involve additional reviews of the IE candidate by the PRG, IOU and ED staff including additional interviews, if necessary

7. The IOU shall develop a pro forma contract to be used each time it contracts with an IE. If deviations from the pro forma contract are necessary, the modifications must be fully supported when the IOU seeks final approval of the contract. This pro forma

contract shall be submitted as part of the next LTPP filing and will be subject to Commission approval.

- Each IOU is to provide the name and information of the IE for each IOU, the type of procurement solicitation the IE was used for and the amount of money involved in the procurement solicitation be reported to the IOUs PRG before and after the solicitation takes place.

- In D.08-11-008, the Commission modified the requirements for use of an Independent Evaluator (IE), such that: (i) SDG&E is required by the Commission to use an IE in the solicitation process, for products of greater than two years in duration and (ii) SDG&E must employ an IE wherever an affiliate or utility bidder is present, regardless of contract duration.[56/] The Commission defines when the contract duration clock begins as: (1) at the time the contract resources begin delivery or the product is made available, if delivery or availability of the product occurs within one year of contract execution; or (2) at the time of contract execution, if delivery or availability does not begin within one year of contract execution. Further, to ensure that an IE is retained in all cases where an affiliate or utility may participate in an SDG&E RFO process, the Commission requires that SDG&E address the possibility of affiliate or utility bids by designating at the outset of an RFO whether such bidders are allowed to participate. If SDG&E chooses not to make such a determination up front, SDG&E will either require that all parties that intend to participate in an RFO submit a notice of intent early in the RFO process such that an IE can be retained before bids are received, or designate at the outset of the RFO that an IE will be used. Competitive RFOs include RFOs issued to satisfy service area need and supply side resources not including EE and DR. For solicitations of less than five years, the IE report shall be filed with the QCR.
- The IOUs, in consultation with the PRG and ED, shall develop comprehensive conflict of interest disclosure requirements for the IE. An IE may be disqualified from participating in an RFO process if there are particular egregious conflicts of interest that arise during the contract. The conflict of interest disclosure requirements shall be approved along with the standard contracts in the next LTPPs proceeding.

- In order to clarify the information required in IE reports, we direct ED to develop a template for IEs to use when developing their reports.

[56/] D.08-11-008 at page 27 and OP #2.

*RFO & RFO Process*

- The IOUs shall use a project application template developed by ED when developing an application for an approval of winning bid projects.

- The IOUs are to hold a meeting with the IE, PRG and ED to outline their plans and solicit feedback prior to drafting RFO bid documents. Draft RFO bid documents are to be developed under the oversight of an IE, vetted through the PRGs and any differences resolved by ED staff in advance of the public issuance of the bid documents.

- If an IOU needs new fossil resources not formally authorized in a LTPP decision, the IOU must make a showing through an Advice Letter that unusual or extreme circumstances warrant such an action.

*LTPP Compliance Filing*

- The IOUs are to develop a common numbering system, similar to the one used to track tariff revisions (GO 96-B 8.4.2), with a redline strikeout method, to track revisions to each Commission-approved LTPP. All IOU updates or modifications to the LTPPs, via the Advice Letter process, are to include redlined pages of the existing procurement plan as well as "cleaned-up" replacement pages which include the tariff-like numbering ordered above.

- The IOUs are required to file conformed 2006 LTPPs, via a compliance filing [Tier Three Advice Letter] no later than 90 days from the date of this decision. The conformed 2006 LTPPs shall incorporate all of the directives contained in the body of this decision as well as any updates filed through the Commission's Advice Letter process between the issuance of this decision and the due date of the compliance filing.

- We direct the utilities to work with the Energy Division to develop a format for the compliance filing.

*Utility-Owned Generation & Competitive Solicitations*

- IOUs' RFOs are changed in the following ways:
  - RFOs may not seek both PPAs and UOG bids.
  - UOG resources are to be brought to the Commission via an application that includes justification for the UOG due to a unique circumstance.
  - IOUs may no longer consider as an option in their competitive RFOs the transfer of the fully depreciated resource underlying the PPA to the IOUs.
  - Cost- and savings-ratemaking mechanisms will be considered on a case-by-case basis and the requested treatment must be justified by unique circumstances.

*Risk Management & Fuel Supply Plans*

- ED, the PRG and the IOUs shall address the issues of concern regarding the risk management proposals discussed in the context of this decision with each respective IOU in future PRG meetings As a result, each IOU should submit revised risk management proposals via Advice Letter. In the interim, we require the two IOUs to continue operating under their existing Commission-approved risk management plans.

*General Procurement Issues*

- IOUs are to consider the use of Brownfield sites first before building new generation on Greenfield sites, subject to the parameters set forth in the decision.

- ED, the IOUs and interested parties are to create an AB 57 Procurement Plan Implementation Manual of each IOU that includes a comprehensive set of procurement rules, including any IOU-specific requirements, that can be accessed by all interested market participants to determine each IOU's compliance with its AB 57 Procurement Plan. This manual will not substitute for a Commission decision and in case of any conflict, the Commission's decision will govern.

- An IOU must publicly reveal the names of winning bidders after key commercial terms have been finalized, within thirty days of filing an application, or withdraw the application until the bidder's identity and other required information can be released. The actual contract does not have to be revealed.

## APPENDIX D – GLOSSARY OF TERMS

### Area Load

The electrical load in given geographic area irrespective of what LSEs are providing generation services to end-users within the area.

- **Service Area Load** is generally used to mean the load in an IOU distribution service area including loads served by IOUs through bundled service tariffs, loads served by ESPs under direct access, and loads served by CCAs through the provisions of AB 117. In addition, for the SCE service area the generation and loads of MWD Metropolitan Water district included.

- **Planning Area Load** is generally used to mean Service Area Load plus the loads of publicly-owned utilities embedded within an IOU distribution service area or adjacent to the IOU distribution service area which collectively received transmission service from the PTO unit of an IOU.

PG&E and SCE provide transmission services to, and plan such services for, an extensive list of publicly-owned utilities in common with their own distribution service area customers. In contrast, SDG&E provides no such transmission services to publicly-owned utilities.

### Base-load Unit

A power generating facility that is economic to run in all hours at full or near full capacity levels.

### Bilateral Contracts

A two-party agreement for the purchase and the sale of energy and/or capacity products and services.

### Booked-out Power

Rather than delivering equal and offsetting positions (i.e., for the same operating hour and delivery point), two parties agree to not deliver the transaction quantity and instead settle the financial terms of the contract. The parties avoid scheduling and transmission charges.

### Bundled Customers

Bundled customers are those customers of the IOU for whom the IOU provides a suite of “bundled” services, including procuring and supplying electricity, as well as providing transmission, distribution and customer services.

### Bundled Service

Electric power, transmission, distribution, billing, metering and related service provided by the IOU.

**Capacity**
The amount of electric power for which a generating unit, generating station, or other electrical apparatus is rated either by the user or manufacturer. Usually is measured in MW.

**Community Choice Aggregation Service (CCA Service)**
Community Choice Aggregation Service allows customers to purchase electric power and, at the customer's election, participate in additional energy efficiency or conservation programs from non-utility entities known as Community Choice Aggregators (CCAs). It is a form of direct access.

**Community Choice Aggregator**
Any city, county, or city and county, or group of cities, counties, or cities and counties, whose governing board or boards elect to combine the loads of their residents, businesses, and municipal facilities in a community wide electricity buyers' program. (see PU Code § 331.5.)
A CCA may also provide certain energy efficiency and conservation programs to its CCA customers.

**Customer Class**
A "Customer Class" refers to, in general, a group of customers with similar service requirements. Typical customer classes include residential, industrial, commercial and agricultural.

**Demand Response Programs**
"Demand response" refers to actions taken by end-users to reduce power demand during critical peak times or to shift demand to off-peak times. A demand response program provides customers with incentives for reducing load in response to an event signal. These incentives can take the form of a financial credit or their bill, a dynamic rate or exemption from rolling blackouts. Events can be called for economic or reliability reasons. Because demand response programs are designed to operate only a few hours per event, they typically reduce capacity (kW) but not energy (kWh).

**Direct Access**
The ability of end-use customers located in the service territory of an IOU to purchase electricity from retail sellers other than their local utility.

**Direct Access Customers**
Customers located within the service territory of an IOU who purchase electricity from sellers other than their local utility. DA customers continue to receive and pay for delivery services from their local utility.

**Direct Access-Eligible Customer**
A customer located within the service territory of an IOU who is eligible for Direct Access.

**Distribution System**
The substations, transformers and lines that convey electricity from high-power transmission lines to ultimate consumers, or for Electric Microutilities, the distribution lines that convey electricity from the generating units to the ultimate customer.

**Distribution Lines**
Overhead and underground facilities which are operated at distribution voltages, and which are designed to supply two or more customers.

**DWR Contracts**
Contracts for generating resource capacity and energy deliveries executed by the California Department of Water Resources during 2001 and allocated to the investor owned utilities for contract administration purposes only.

**EEI Contract**
Edison Electric Institute contract is a standard master agreement that provides the base terms and conditions for transactions executed between two parties of a particular master agreement.

**Electric Microutility**
Any electrical corporation that is regulated by the California Public Utilities Commission and organized for the purpose of providing sole-source generation, distribution, and sale of electricity exclusively to a customer base of fewer than 2,000 customers. (Public Utilities Code § 2780.) An Electric Microutility is not connected to the ISO controlled transmission grid and thus has no relationship with the ISO nor any ability to import or export power.

**Electric Service Provider (ESP)**
An entity that is licensed by the CPUC to provide electric power service to Direct Access Customers (see PU Code §§ 218.3 and 394). An end-use customer can act as its own ESP as long as it complies with all requirements of being an ESP. Also referred to as Energy Service Providers.

**Electronic Quarterly Reports ("EQR"):**
All FERC jurisdictional public utilities, including power marketers, must file EQRs, in which they:

- Summarize contractual terms and conditions in their agreements for all jurisdictional services, including:
  1. Market-based power sales;
  2. Cost-based power sales; and
  3. Transmission service
- Detail transaction information for short-term and long-term market-based power sales and cost-based power sales during the most recent calendar quarter.
- Tariff holders without effective contracts and transactions must file the ID Data portion of the EQR.

**Energy**
Energy is the amount of electricity produced, flowing or supplied by generation, transmission or distribution facilities or consumed over time. Usually it is measured in units of watt-hours or standard multiples thereof, e.g., 1,000 Wh=1 kWh, 1,000 kWh=1MWh, etc.

**Energy Efficiency**

Programs and measures designed to reduce consumer energy consumption. Example of programs and measures include lighting retrofit, process redesign and appliance rebates which encourage consumers to purchase high-efficiency appliances.

**Exchange Traded Contracts**

Contract for electric capacity and energy executed through electronic and voice exchange markets under standard product terms and conditions. Products are generally for “standard products” (peak, on-peak or flat) and standard periods of duration (hourly, daily, balance of month, monthly, quarterly).

**Heat Rate**

A number that tells how efficient a fuel-burning power plant is. Measured by Btu/kWh. The heat rate equals the Btu content of the fuel input divided by the kWh or power output. The lower the heat rate of a generating unit is, the more efficient the unit is.

**Intermediate Unit**

A generator unit that is used for energy production as required with a capacity factor normally in the range of 15-60%.

**Interruptible Service or Tariff**

Electricity supplied under agreements that allow the supplier to curtail or stop services at times.

A service under which, upon notification from the Independent System Operator, the IOU requires the customer to reduce the demand imposed on the electrical system to firm service level (i.e., a level below which the customer’s load will not be interruptible), and the customer must comply within 30 minutes.

**Investor-Owned Electric Utility (IOU)**

An investor owned utility (IOU) is a private company owned by stockholders that provides electric utility services to a specific service area. A designation used to differentiate a utility owned and operated for the benefit of shareholders from municipally owned and operated utilities and rural electric cooperatives. The investor-owned utility is regulated by the California Public Utilities Commission.

**Load**
Load is the amount of electric power supplied to meet end users' needs. Load is also an end-use device of an end-use customer that consumes power. Load should not be confused with demand, which is the measure of power that a load receives or requires.

**Load-Serving Entity (LSE)**
An entity that provides electric power service to end-use customers. LSEs include but are not limited to IOUs, ESPs, CCAs and public-owned utilities.

**Must-Take Generation**
Utilities are mandated to take electricity from specific resources identified by the CPUC . Except for Electric Microutilities, the receiver of must-take generation will pay for the electrical energy output of must-take resource even if they refuse to schedule and receive that energy. For this reason, these resources are always economic to receive and scheduled in order to minimize financial loss. Regulatory must-take generation include QF generating units under federal law, nuclear units and pre-existing power-purchase contracts that have minimum-take provisions.

**New-World Contracts**
IOU Contracts for electric capacity and energy executed after January 1, 2003 when utilities returned to procurement.

**Old-World Contracts**
IOU Contracts for electric capacity and energy executed prior to January 1, 2003 when utilities returned to procurement.

**Off-peak**
Periods of low demands. All the time outside the on-peak period.

**On-peak**
Periods of the highest demand.

**Peak Demand**
The electric load that corresponds to a maximum level of electric demand in a specified time period.

**Peaking Unit**
A power generating station that is normally used to produce extra electricity during peak load times. Typical peaking resources are fully dispatchable and deliver in approximately 10% of hours.

**Price Curves:**

- **Forward Curve** (or "futures price") - A forward curve is a term structure of forward prices observed in the market. Forward contracts, like futures, are agreements to buy or sell a commodity at a future time. Forward price is the price to be paid at delivery.
- **Price Forecast -** A price forecast is a projection of future price levels (these could be day-ahead prices, futures prices, monthly prices etc.) expressed either in nominal or a given year's dollars.

**Qualifying Facilities (QFs)**

"Qualifying facilities" (QFs) are non-utility cogeneration or other power producers that often generate electricity using renewable and alternative resources, such as hydro, wind, solar, geothermal, or biomass (solid waste). QFs must meet certain operating, efficiency, and fuel-use standards set forth by the Federal Energy Regulatory Commission (FERC) pursuant to PURPA (The Public Utility Regulatory Policies Act of 1978).

**Reliability-Must-Run (RMR) Agreements**

A Must-Run Service Agreement between the owner of an RMR Unit and the ISO within geographical areas identified via the Local Area Reliability Service (LARS) process.

**Reliability Must-Run (RMR) Generation**

Generation that the ISO determines is required to be on line to meet applicable reliability criteria requirements. This includes:
i) Generation constrained on line to meet NERC and WECC reliability criteria for interconnected systems operation;
ii) Generation needed to meet load demand in constrained areas; and
iii) Generation needed to be operated to provide voltage or security support of the ISO or a local area.

**Residual Net Long for Capacity (Surplus)**

When the capacity resources under an LSE's control exceed the peak hourly demand (MW), including the required planning reserve margin, of the LSE's customers, the LSE is in a residual net long situation for capacity.

**Residual Net Long for Energy**

When the energy requirement (kWh or MWh) of the LSE's customers load, for a given period of time (i.e. hour, month, year, etc), is less than the total energy supply available to serve the LSE's customers, the LSE is in a residual net long situation for energy.

**Residual Net Short for Capacity (Deficit)**

When the peak hourly demand (MW), including the required planning reserve margin, of the LSE's customers exceeds the capacity resources under the LSE's control, the LSE is in a residual net short situation for capacity.

### Residual Net Short for Energy

When the energy requirement (kWh or MWh) of an LSE's customer load, for a given time interval (i.e. hour, month, year, etc), is greater than the total energy supply available to serve the LSE's customers, the LSE is in a residual net short situation for energy.

### Spark Spread

The difference between the market price of electricity and its cost of production for a specific natural gas fired generating plant.

### Spot Market

A market in which transactions take place at most one day ahead of scheduled delivery.

### Spot Price

The price for spot transactions.

- **Market Clearing Price:** The price in a market at which supply equals demand. All demand prepared to pay at least this price has been satisfied and all supply prepared to operate at or below this price has been purchased.

### System Net Energy Forecast

Energy used by IOU and direct access customers, as measured at generation (includes T&D losses).

### Transmission & Distribution ("T&D") Losses

Electric energy or capacity that is wasted in the normal operation of a power system. Some kilowatt-hours are lost in the form of waste heat in electrical apparatus such as substation transformers. Line losses are kilowatts or kilowatt-hours lost in transmission and distribution of electricity.

### Tolling Agreements

In a tolling agreement, the buyer is also the fuel supplier, and instead of buying kilowatt hours, the buyer, in effect, buys the service of converting fuel into electric energy. The project owner still sells capacity and ancillary services. However, instead of a sale of goods, a tolling agreement is more in the nature of a service contract, where the project owner sells fuel conversion services. The term "tolling agreement" derives from the fact that the project owner is charging the purchaser a "toll" for allowing the purchaser's fuel to pass through the owner's project.

### UDC (Utility Distribution Company)

An entity that owns a distribution system for the delivery of energy (to and from the ISO controlled grid) and that provides regulated retail electric service to eligible customers, as well as regulated procurement service to those end-use customers who are not yet eligible for direct access, or who choose not to arrange services through another retailer. Electric Microutility is defined separately above

and is not included in this definition.

**Utility Generation**

Resources owned by an investor-owned utility. Does not include resources that may be under contract or otherwise available to utilities, such as DWR contracts.

**Weather scenarios - 1:5, 1:10, & 1:20**

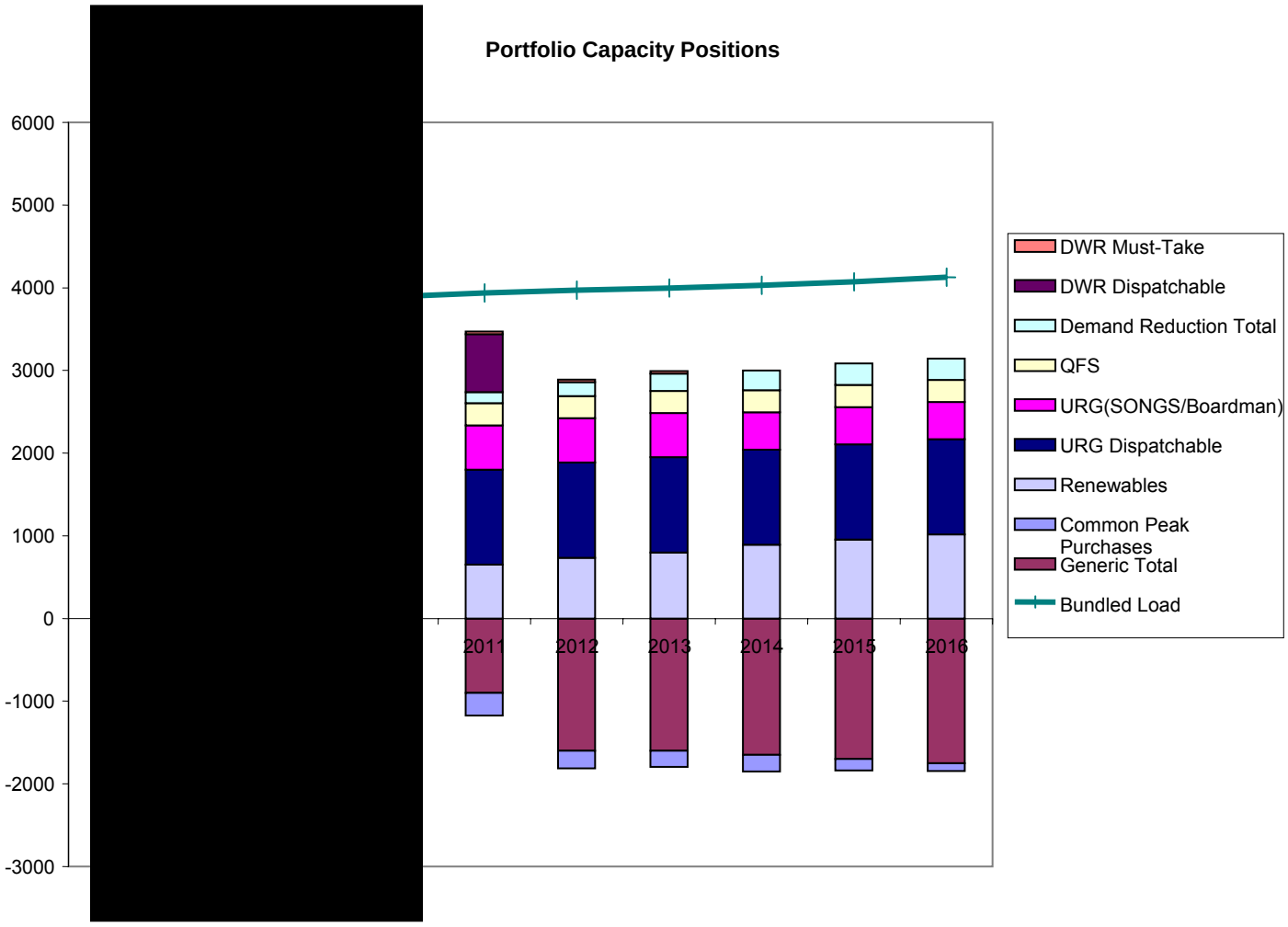
Forecasts of expected highest demand (MW) under different weather scenarios. 1:2 means average weather conditions. 1:5, 1:10, 1:20 mean probability of hot temperature (one in every five, ten or twenty years).

## APPENDIX E – EXHIBITS TO SECTION II

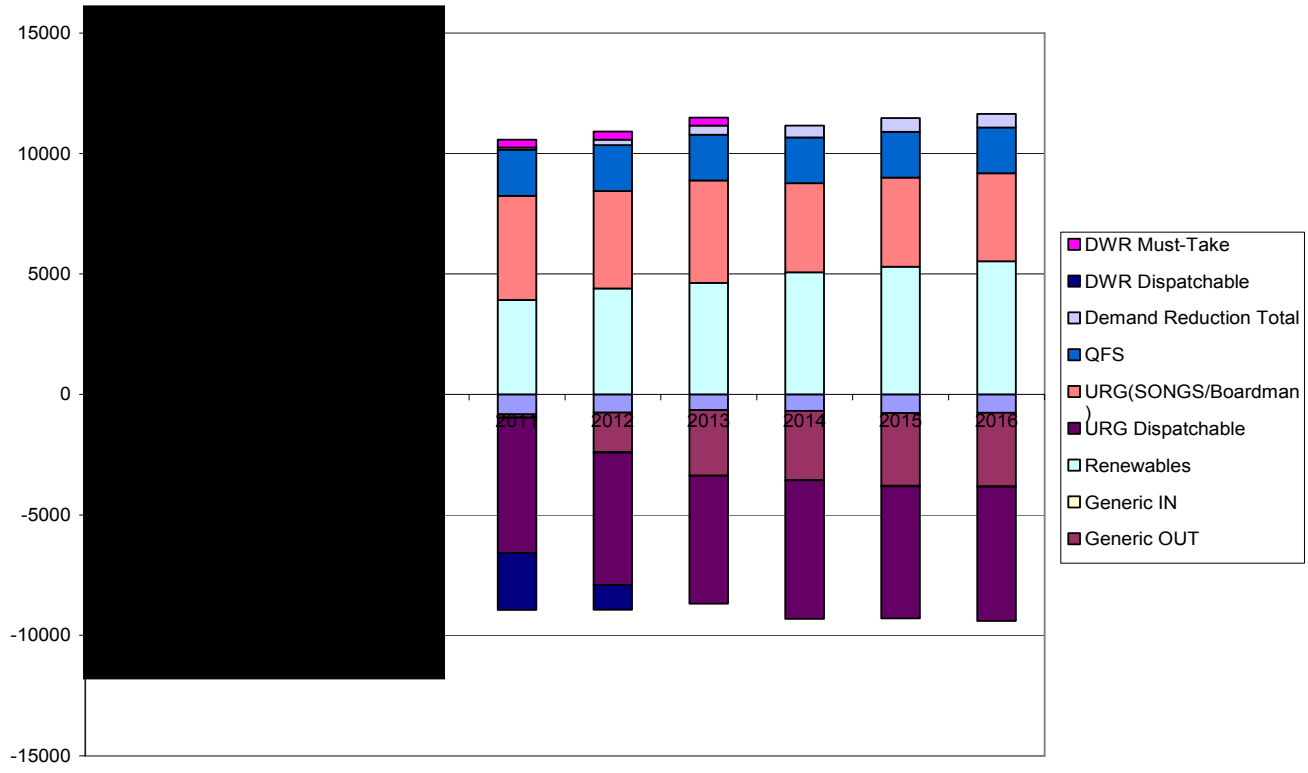
### Exhibit II – 1: Physical Procurement Positions

In this exhibit, SDG&E graphically displays the forecast physical positions that it will need to either procure (short positions) or dispose of in an economic manner (long positions). These are the positions which will be acquired using the upfront standards described in this LTPP, primarily in Section II "Procurement Implementation Plan". The positions graphed below are:

- Portfolio Capacity Positions
- Portfolio Energy Positions
- Ancillary Services Positions - This table is representative of the next two year Ancillary Service requirement for the SDG&E bundled portfolio, and tabulates the amount of AS available to SDG&E (through units that it owns or controls) to meet those requirements. Positions for future years of the portfolio will change based upon actual procurement and will be updated in the 2008 LTPP.
- Environmental Positions
  - Renewable Energy
  - NOx (ERCs); the future NOx positions identified are subject to change depending upon the type and ownership of future resource additions.
  - SOx
- Resource Adequacy Positions - These graphs show SDG&E's ability to meet the System RA obligation of 115% of portfolio load requirement at time of peak. The positions are presented on a monthly basis for the first three years of the plan and on an annual basis for the remaining seven years of the LTPP. All positions shown are either owned or controlled (for purposes of RA counting) by SDG&E and use the current CPUC RA counting rules for the carious types of resources included. There is no forecasted allocation from RMR contracts beyond 2007.

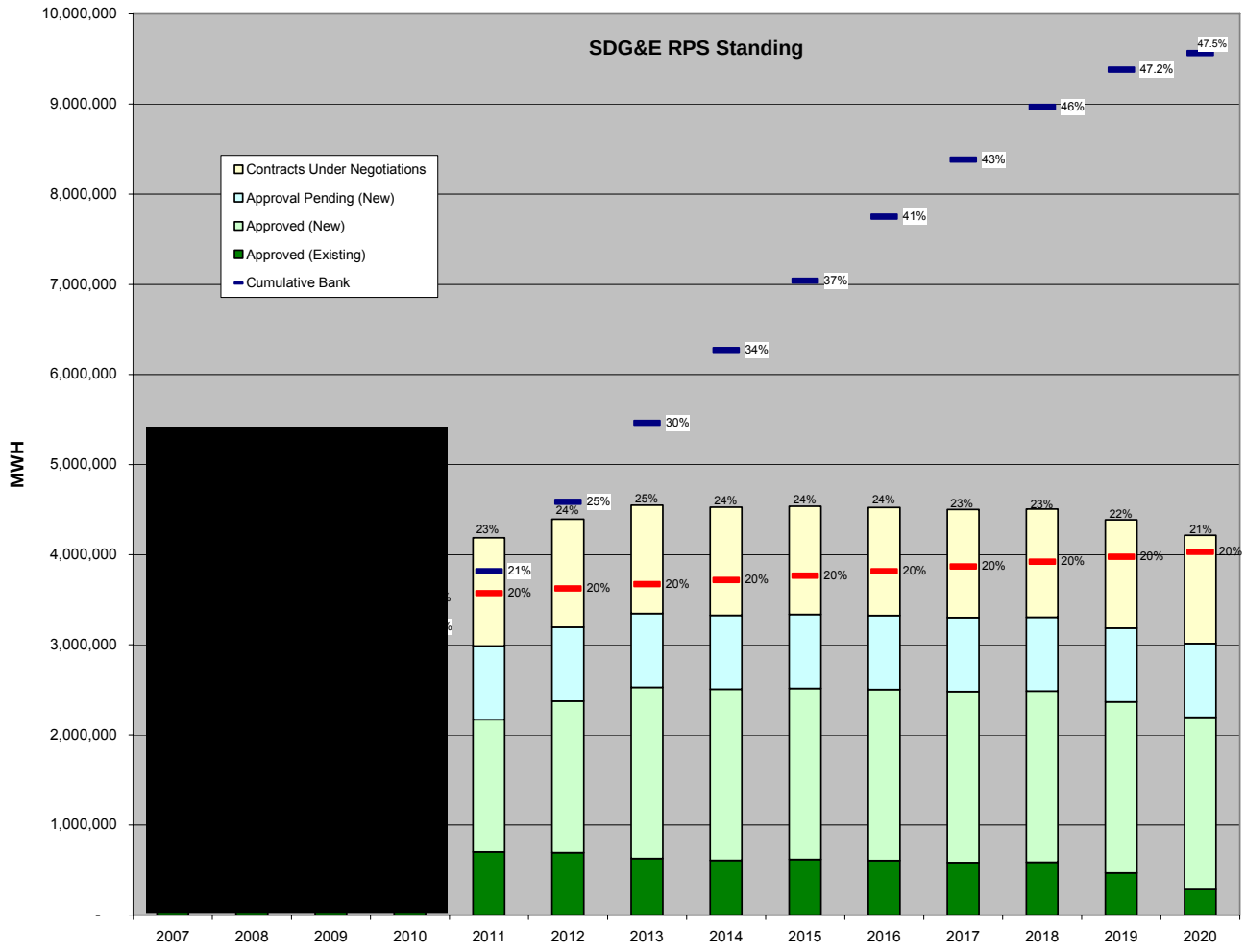

Portfolio Capacity Positions
6000
5000
4000
3000
2000
1000
0
-1000
-2000
-3000
2011
2012
2013
2014
2015
2016
DWR Must-Take
DWR Dispatchable
Demand Reduction Total
QFS
URG(SONGS/Boardman)
URG Dispatchable
Renewables
Common Peak Purchases
Generic Total
Bundled Load

**Portfolio Energy Positions**

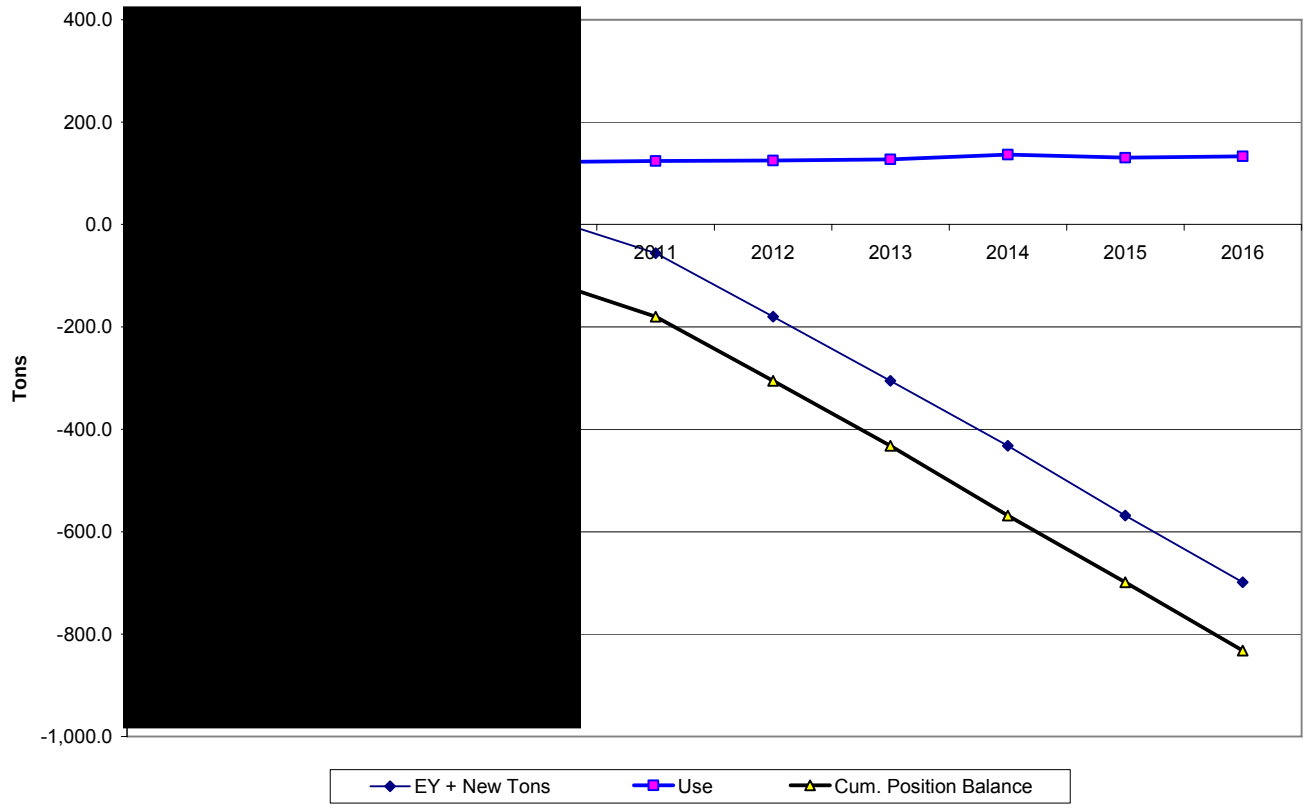



**Ability to Self Provide Ancillary Services with SDG&E Generation Portfolio**

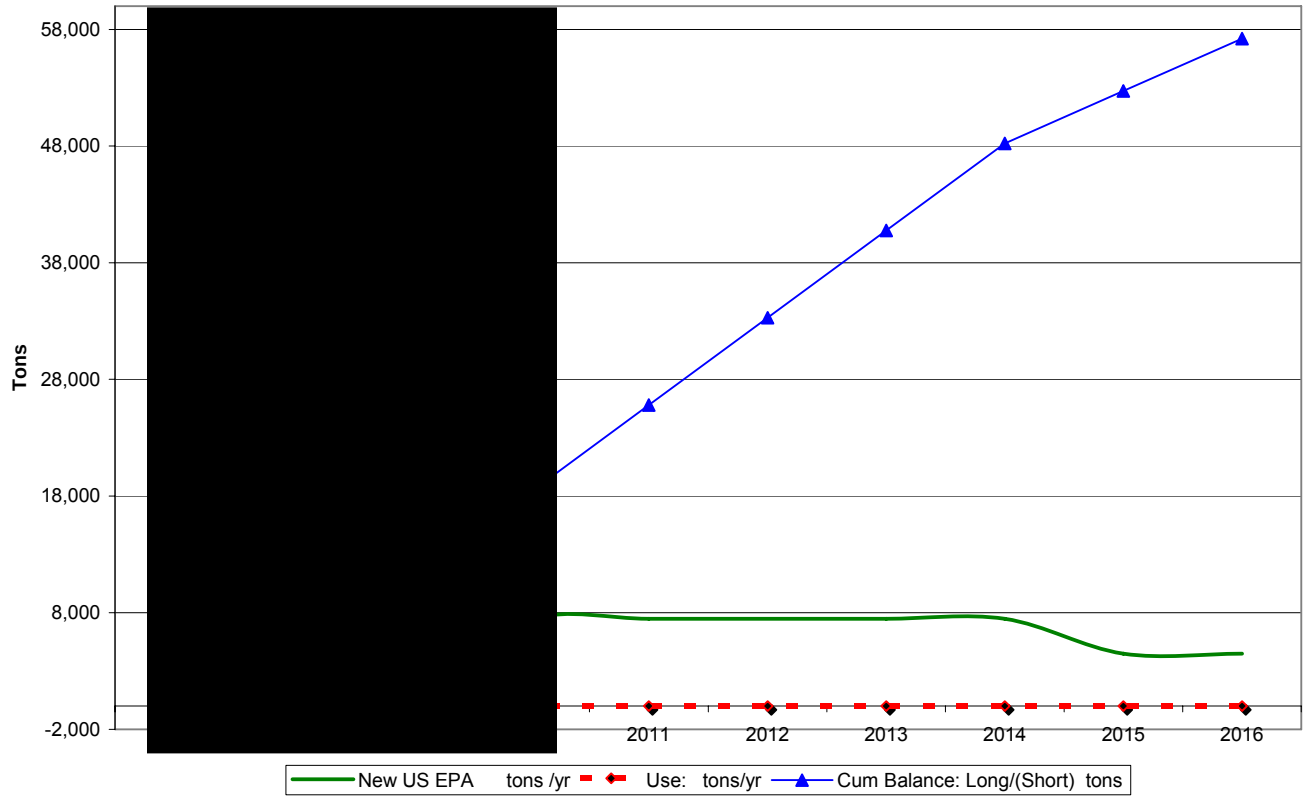
[redacted]


SDG&E RPS Standing
MWH
10,000,000
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
Contracts Under Negotiations
Approval Pending (New)
Approved (New)
Approved (Existing)
Cumulative Bank
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
23%
21%
20%
24%
25%
20%
25%
20%
24%
20%
24%
20%
24%
20%
23%
20%
23%
20%
22%
20%
21%
20%
30%
34%
37%
41%
43%
46%
47.2%
47.5%

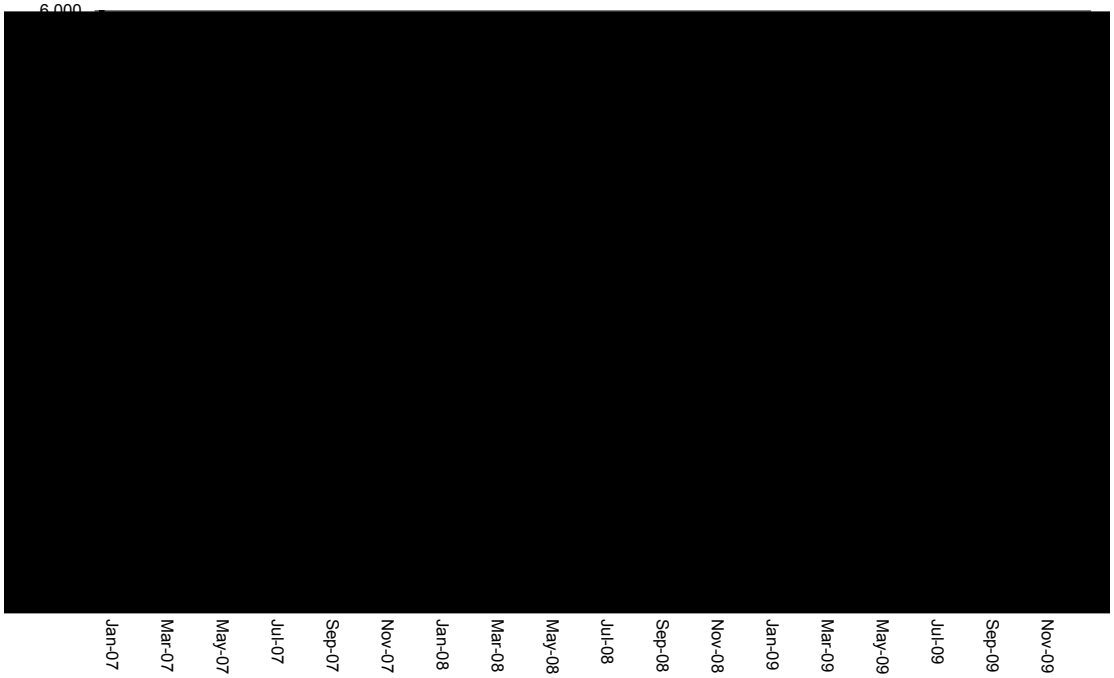
**Forecast of NOx Position**



**Forecast of SOx Position**



**Resource Adequacy Requirements and Supply by Month for 2007-2009**



**Resource Adequacy Requirements and Supply on Annual Peak for 2007-2016**

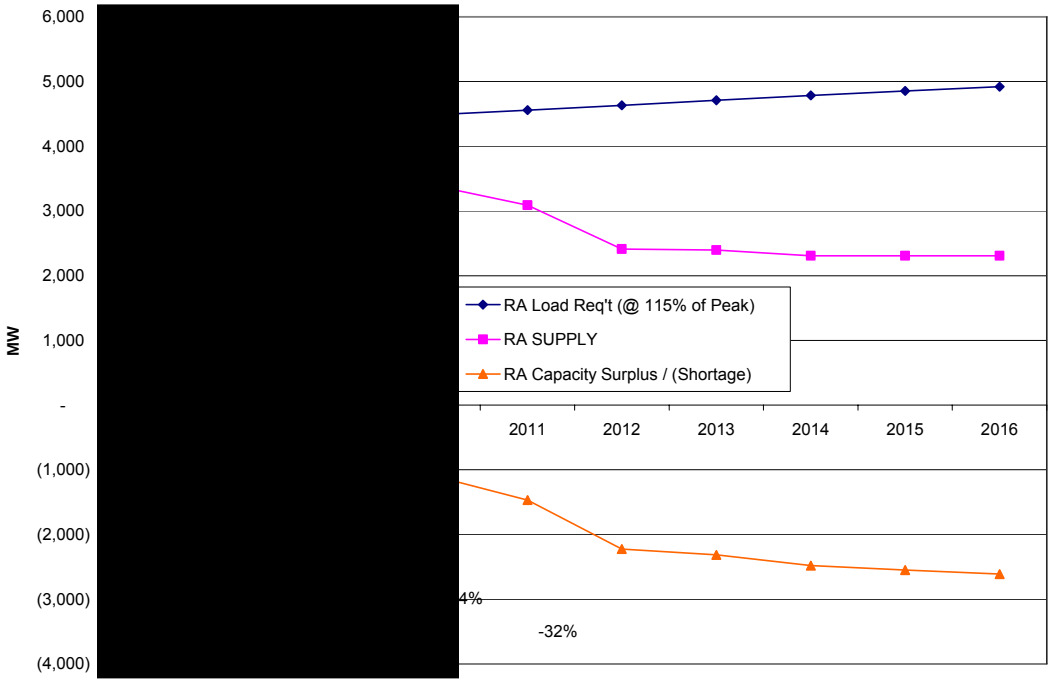


**Exhibit II – 2**

SDG&E'S REQUEST FOR OFFER EVALUATION METHODOLOGY
**OFFER PROCESSING AND EVALUATION**

This document outlines SDG&E general methodology for processing and evaluating all offers submitted in a RFO. The process outlined in this Attachment is necessarily generic and high-level; the process will be customized for each RFO depending on the specific RFO and products being sought but the process and evaluation methods will follow this general outline. The final process for each RFO will be reviewed with the Independent Evaluator (IE) and the Procurement Review Group (PRG) prior to receiving bids. The intent is to implement a systematic approach to assess the merits of all offers without prejudice for or against any particular Respondent or a particular product type.

A component of the approach involves the establishment of two teams, the Processing Team (PT) and the Evaluation Team (ET). The PT is charged with processing all incoming offers and more importantly, redacting or masking all Respondent distinguishing information in advance of forwarding all offers to the ET for analysis. This document details the roles and responsibilities of teach team.

It is important to reiterate that the PRG and IE will play key consultative roles during all phases of the solicitation, especially during offer evaluation.

**Processing Offers**
The Processing Team will collect and document all offers received by the deadline. Members of this team do not perform any analysis or make any decision with regard to the merits of any offer during Evaluation Levels I, II and III (as detailed later in this document). The Processing Team will carry out the following steps:

A. On the Due Date
   1. Save offers and all incoming documents to a restricted, secured server. Only members of the processing team and the Independent Evaluator will have access to the files on the restricted server.
   2. Block the SDG&E website from accepting offers after the closing deadline.

B. Each offer received will be documented in an Excel spreadsheet summarizing key characteristics such as: resource type, offer number, technology, price, type of facility, product type (such as as-available, unit firm, peaking, or baseload), offer amounts (MW), contract terms, etc.

C. Prepare Offers for Level I Evaluation.
   1. Redact or mask all Respondent distinguishing information including company name, contact information, specific project location, etc., on all forms and documents submitted. Assign to each offer a sequential name (i.e., Respondent 1/Offer 1, Respondent 1/Offer 2,

Respondent 2/Offer 1, etc.) to protect Respondent identity. The PT will however assign minimum location information necessary for evaluation, such as:
   i. Delivery point
   ii. Whether or not the resource is in California
2. Place the forms and documents in a server for the ET to access.

D. Prepare Offers for Level II Evaluation.
1. Determine congestion costs associated with each offer.
2. Update the Redacted List by including congestion costs for all offers.
3. Send the updated Redacted List to the evaluation team.

E. Collect Hardcopy of Offers
1. File hardcopies in secure cabinets.
2. Follow-up with Respondents who have not submitted hardcopies.
3. Verify that hardcopies are identical to the offers received electronically.

**Evaluation Process Overview[57]**

SDG&E intends to evaluate all offers via a three-step process. Passing each level is required in order to advance to the next level, with the eventual Short Listed offers having to pass all levels. The following provides a general description of each evaluation level.

**Level I:** **Check for Conformance.** All offers are checked to meet minimum RFO criteria established for each product type. Minimum criteria will be provided to all bidders in the RFO. All offers meeting minimum requirements will pass Level I, will be deemed "conforming" and will move on to Level II.

**Level II:** **Screening Analysis.** All conforming offers will be screened and assessed to get an initial ranking. Ranking is based on pre-established, quantitative criteria unique to each product type. The ET would perform this assessment based on offer data. All offers passing Level II will be deemed "Short List Candidates" and move on to Level III.

**Level III:** **Modeling/Detailed Analysis.** All Short List Candidates will be modeled in SDG&E's production cost model to determine how they perform as part of SDG&E's portfolio. During this step any set-asides, (preference resource), will be considered. Offer rankings will be updated based on final model dispatch of the portfolio of offers that best meets SDG&E's bundled customer needs.

SDG&E will develop the Short List based on Level III modeling and negotiate with the best offers after the offers have been modeled in SDG&E's production costing model. The following outline describes details associated with each level.

[57] Since it is not possible to perfectly predict all variations in offers, SDG&E reserves the right to vary from these criteria. Any variation will be applied equally to all offers in which the variation is applicable. Any variation will be explained to the IE and PRG as to the basis for deviating from the proposed criteria and how it benefits customers.

**A. Level I: Check for Conformance**

1. Offers will be determined to be conforming or non-conforming based on a list of criteria in the RFO. Not all products in an RFO will have the same conformance requirements. The list may include the following items; this list may be expanded to customize evaluation in any given RFO:
   a. Product type
   b. Minimum and/or maximum capacity (MW) requirement
   c. Seasonal requirement (monthly or quarterly)
   d. Online date requirement and/or seasonal requirements
   e. Fixed heat rate requirement
   f. Locational and delivery point requirements
   g. Grid reliability requirements

SDG&E reserves the right, in its sole discretion, to either reject any non-conforming offer, or negotiate with any non-conforming offer. Summarily rejecting all non-conforming offers may not be in its customer's best interest as some offers may present opportunities that were unknown to SDG&E at the time that it issued its RFO.

**B. Level II: Screening Analysis**

1. For each offer, SDG&E will calculate the total average annual cost for each year. Costs may be in either $/MW or $/MWHR depending on the product. The following factors may be included in the initial screening analysis:
   a. Capacity Costs as submitted in offer
   b. Energy cost/benefit will be calculated based on the energy costs in the offer minus energy benefits. Energy benefits may be determined in a number of ways such as comparing energy costs from the offer vs. forward price curve. Energy costs will be based on data in the offer for energy costs or heat rate, fuel price and variable O&M costs.
   c. Debt Equivalence when appropriate.
   d. Congestion costs/benefits will be added to/subtracted from Offers.
   e. Resource Adequacy Credit value, system and/or local, may be added if needed.
2. SDG&E will rank all the offers. Depending on the term of the RFO the ranking may be based on individual year scores or the net present value

**Modeling and Detailed Analysis of Short List Candidates**

A. Level III: Modeling Short List Candidates

1. SDG&E will model all Short List Candidates in its production cost models to determine the portfolio of resources that provides the lowest cost to customers.
2. Ancillary Service Credit may be added to offers that offer Ancillary services. Which ancillary services will be valued and the value for each service will be determined prior to bid evaluation. The Green House Gas (GHG) Cost will be assessed by adding a cost equal to the GHG adder times the change in GHG emissions associated with the entire portfolios operation with the offer as compared to the

portfolio without the Offer. The annual cost will be the change in the portfolio's GHG emissions times GHG cost adder.

3. Assessment of Non-quantifiable terms. At this step SDG&E will assess non-quantifiable terms such as:

   a. Benefits to minority and low income areas

   b. Resource diversity

   c. Environmental stewardship

   d. Corporate capabilities, credit, and proven experience

**Selection of Final Offers for the Short List**

The offers that make of the lowest cost portfolios will be short listed and SDG&E will begin negotiation with these parties. Production modeling may be rerun as offers are refined in the negotiation process. The shortlist may be truncated based upon need being filled compared to amount of offers received. For instance, if SDG&E is soliciting 250mw of capacity, it would not be necessary of useful to evaluate 10,000mw of offers – only a reasonable group of the top offers will be evaluated.

**Major Modeling and Evaluation Assumptions**

For each RFO the major modeling and evaluation assumptions used for all alternatives will be specified. These will include items such as:

Need

The resource need for the RFO will be defined during the process of creating the solicitation. SDG&E reserves the right to adjust that need during the RFO process if required by circumstances. These may include items such as the conclusion of others RFO being finalized, resources in the plan becoming no longer viable, or CPUC action or decisions that impact need. Any such adjustment would be reviewed by the PRG and IE.

Production Model Inputs

A. The base case resource plan will be defined. In most cases this will be SDG&E's most recent CPUC approved Resource Plan with any changes for resources additions.
B. Natural Gas Prices – Gas price will be updated.
C. Electric Market Prices will be updated.
D. The value used for each Ancillary Service will be designated. The method for determining congestion costs will be spelled out. Any value for Resource Adequacy will be stated. Green House Gas Cost will be stated. Transmission Interconnection Costs
E. Inflation and discount factors to be used.

## Exhibit II – 3: Portfolio Financial Positions

This Attachment contains the graphs and tables referred to in the LTPP Section II, Part B "Risk Management Policy and Strategy". An index and brief description of each follows:

- Graphic Example of Short and Intermediate Hedge Strategy

  In this example, SDG&E illustrates the potential cumulative effect of the short and intermediate hedge strategies on Year 2012 that will be employed in execution of this plan.

- Forecast Hedging Activity

  In this series of graphs, SDG&E illustrates the potential amount of hedging that is forecast to be undertaken in the first five years of this LTPP in implementation of the risk strategy described in Section II, Part B "Risk Management Policy and Strategy", subject to the targets described in that section. In each year, SDG&E forecasts the hedging volumes expected to be done to implement its intermediate term hedge strategy [redacted] year). In displaying the hedge volumes required to implement the short term strategy, SDG&E makes the assumption that it will need a portfolio hedged to [redacted] in year 2 and [redacted] in year 1. These are forecasts only and actual volumes will depend upon market conditions at the time. Lastly, in each year, SDG&E speculates about the source of some of its hedge positions; these are forecast possibilities only – again, actual sources of hedges will depend upon market conditions.

- Forecast Customer Market Price Risk Positions (gwh)

  This chart uses data from the candidate resource plan to present a view of the market price risk exposure of customers from short positions – that is, energy that the plan identifies as needed by customers but which is not yet purchased. Until this energy is purchased at a fixed price or has a price cap established through hedging, customers will continue to be exposed to price risk as market prices fluctuate. The unhedged position is disaggregated into specific resource categories to illustrate the risk that exists in each of the various markets.

- Forecast Customer Market Price Risk Positions (%)

  This chart is basically the same information that is presented in the previous chart however the positions are displayed in percentages of the total portfolio position rather than in gwh's.

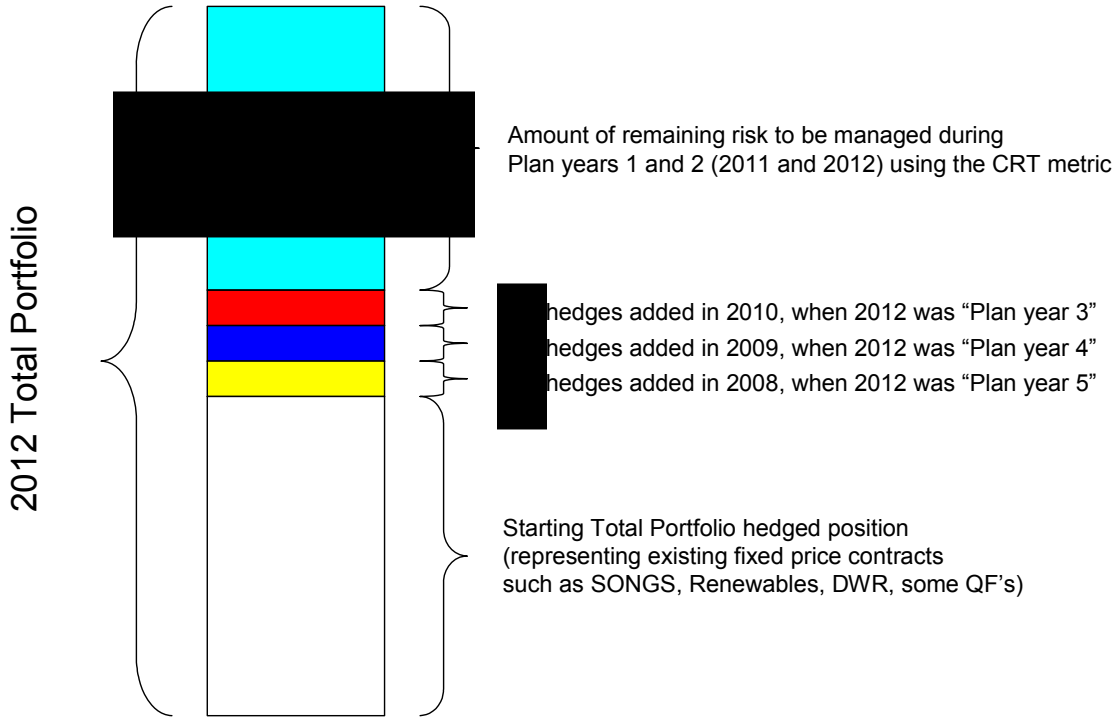
- Collateral Limit vs Liquidity Requirement
  In this chart, SDG&E has made an estimation of the collateral that may be necessary to support the hedging activities forecast in this attachment. It is the marginable hedging activity that creates the potential need for collateral. This chart assumes that marginable hedging volumes will stay roughly constant over time once the initial hedging targets are met for the five year time frame (ie. as one year rolls off, another year rolls on and hedge volumes will be roughly reset). For ease of calculation, this chart further assumes the S&P liquidity requirements and VtE will be approximately

the same for each 5-year period over time. The chart shows that it is statistically possible that SDG&E could use all liquidity that has been approved for margining associated with the hedge plan. Actual use of collateral will depend upon market conditions.

- Sample Monthly Risk Report

  This is a sample of one month's required CPUC risk report.

**Graphic Example of Short and Intermediate Hedge Strategy**



## Forecast Hedging Activity

**Customer Market Price Risk Positions (GWh)**

## Customer Market Price Risk Positions (%)

# Collateral Limit vs. Liquidity Requirement

### Exhibit II – 4: Physical Gas Positions

This exhibit contains graphs in which SDG&E presents the following information, referred to in the LTPP Section II Part C "Fuel Supply Procurement Strategy":

- Forecast Physical Gas Burns (w/o sales)

In these two graphs, SDG&E has estimated, based upon the price forecasts used to create the candidate resource plan descried in Section II of this LTPP, the volumes of gas that will need to be procured as fuel for dispatchable power plants used to meet bundled customer load. The first chart presents monthly volumes forecast for the first two months of the plan. The second chart displays annual volumes for the remaining eight years of the LTPP. These forecasts will change with market prices and implied market heatrates.

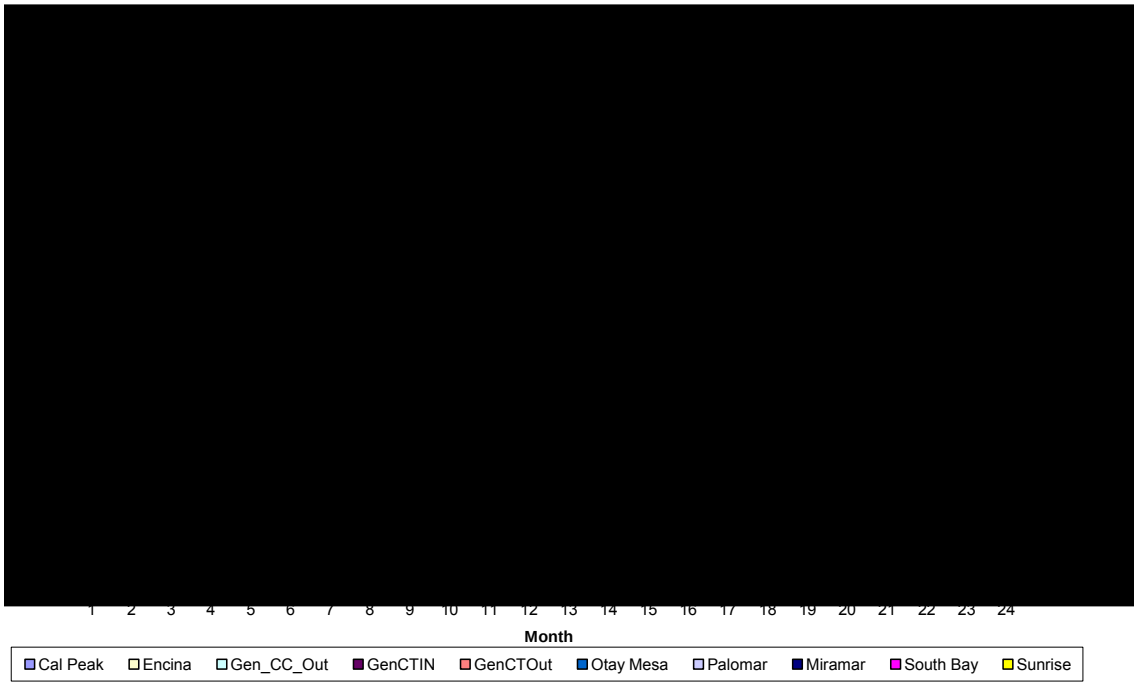
- Forecast Physical Gas Burns (w/ sales)

In these two graphs, SDG&E forecasts the total amount of gas to be purchased under this plan. These volumes are the bundled customer requirement forecast above, with additional volumes forecast for wholesale market sales, based upon prices and market heatrates used in the creation of the candidate resource plan described in Section II of this LTPP. Not included in these volumes are gas requirements for any ISO dispatch, such as uneconomic dispatch under RMR, Resource Adequacy or Must Offer or Resource Adequacy; these volumes are not easily forecast by SDG&E.

- Estimated Gas Costs

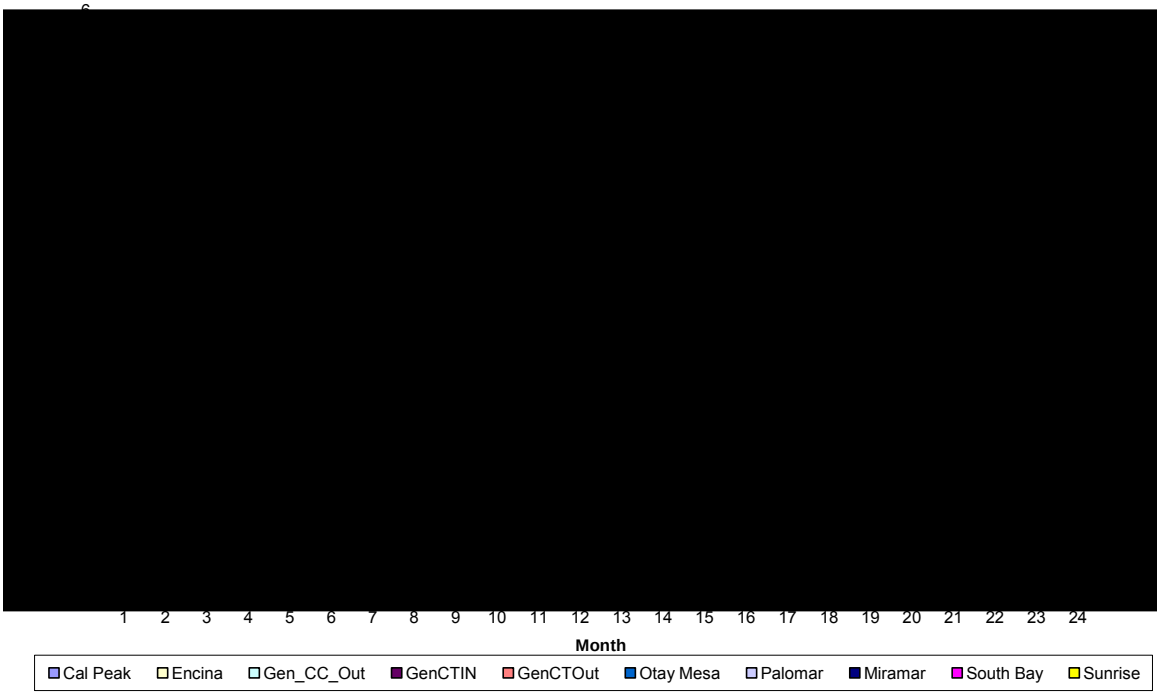
In these two graphs, SDG&E takes forecast volume from the tables above ("w/o sales") and uses forward price curves to develop estimates of costs fro procuring this gas.

**Monthly Gas Burn for Bundled Load 2007-2008**



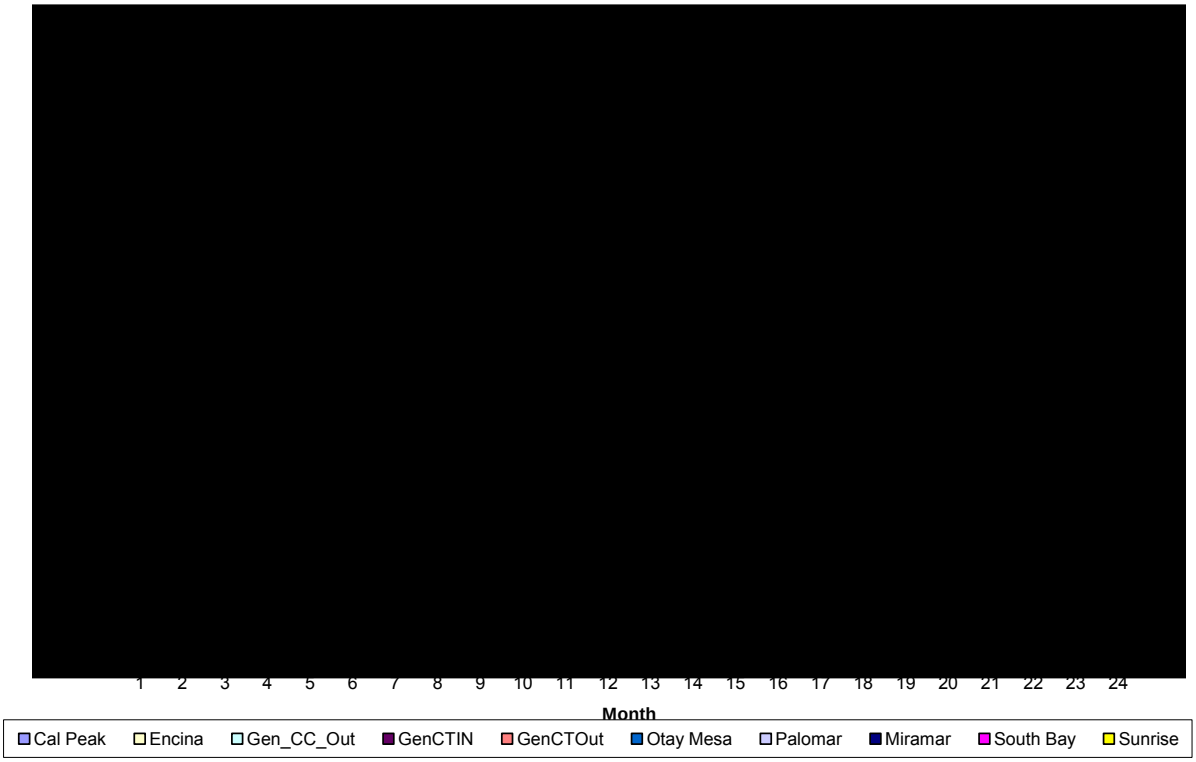
**Gas Burn for Bundled Load 2009-2016**

**Monthly Gas Burn with Sales 2007-2008**

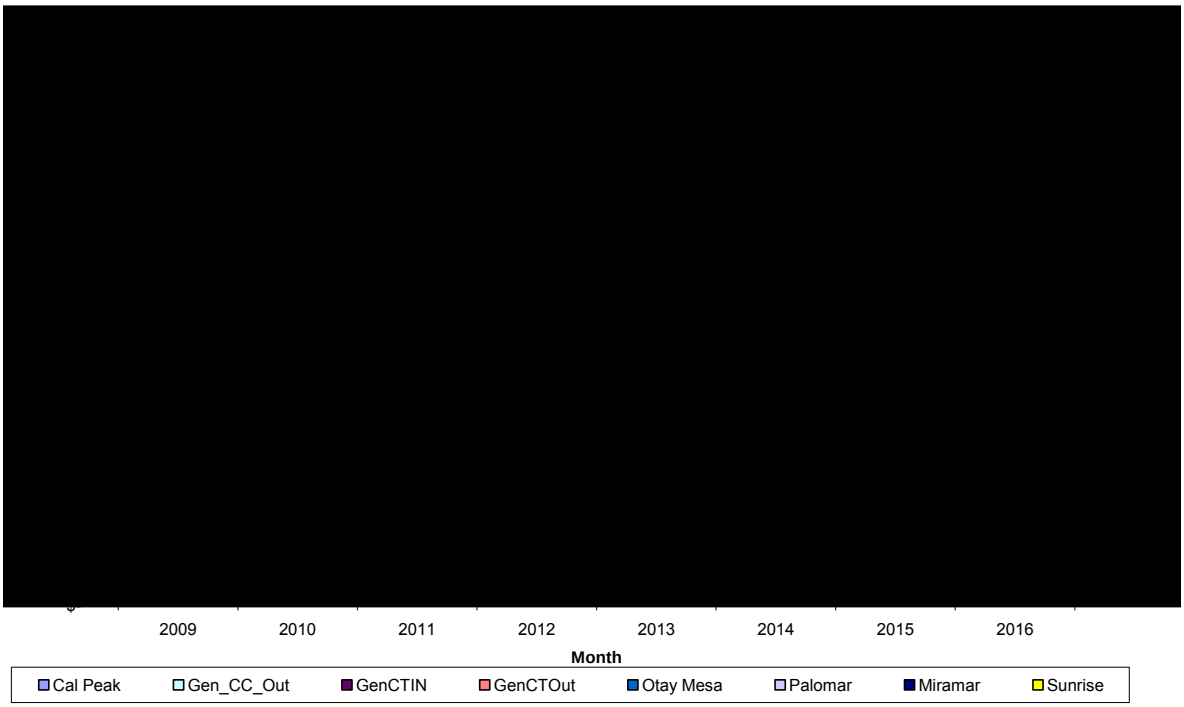


**Gas Burn with Sales 2009-2016**

**Monthly Fuel Cost for Bundled Load 2007-2008**



**Fuel Cost for Bundled Load 2009-2016**



## APPENDIX F – EXHIBITS TO SECTION III

# Exhibit III-1
# SDG&E Service Area System Need (MW)

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|
| **LOAD FORECASTS** | | | | | | | | | | |
| 1 | 1-in-2 SDG&E Service Area Summer Temperature Demand | 4,568 | 4,641 | 4,712 | 4,784 | 4,856 | 4,925 | 4,994 | 5,063 | 5,131 |
| **RESOURCES** | | | | | | | | | | |
| 2 | Existing Service Area Generation | 2943 | 2943 | 2943 | 2943 | 2943 | 2943 | 2943 | 2943 | 2943 |
| 3 | Service Area Additions (non-RPS) [2] | 0 | 602 | 602 | 602 | 602 | 602 | 602 | 602 | 602 |
| 4 | Transmission Import Limit [3] | 2850 | 2850 | 2850 | 2850 | 2850 | 2850 | 2850 | 2850 | 2850 |
| 5 | Retirements | 0 | 0 | (702) | (702) | (702) | (702) | (702) | (702) | (702) |
| 6 | Service Area RPS Additions | 0 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| 7 | Price Sensitive Demand Response [4] | 110 | 267 | 271 | 275 | 279 | 283 | 287 | 291 | 295 |
| 8 | Interruptible/DR Curtailable Programs [4] | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| 9 | Total Service Area Resources | 5,948 | 6,735 | 6,037 | 6,041 | 6,045 | 6,049 | 6,053 | 6,057 | 6,061 |
| **PLANNING RESERVES** | | | | | | | | | | |
| 10 | Planning Reserve | 1,380 | 2,094 | 1,325 | 1,257 | 1,189 | 1,124 | 1,059 | 994 | 930 |
| 11 | Planning Reserve (%) [5] | 30.2% | 45.1% | 28.1% | 26.3% | 24.5% | 22.8% | 21.2% | 19.6% | 18.1% |
| 12 | Lower Bound of Planning Reserve Requirement (15%) | 685 | 696 | 707 | 718 | 728 | 739 | 749 | 759 | 770 |
| 13 | Upper Bound of Planning Reserve Requirement (17%) | 777 | 789 | 801 | 813 | 825 | 837 | 849 | 861 | 872 |
| 14 | **1 in 2 SDG&E Service Area Surplus (Deficit) [6]** | **603** | **1,305** | **524** | **444** | **364** | **287** | **210** | **133** | **58** |

[1] Based on CEC's 2007 IEPR 1-in-2 peak demand, which embeds self-served load, committed EE and approximately 100% of uncommitted EE.
[2] Includes Otay 562 MW and Lake Hodges 40 MW.
[3] Assumes that Sunrise Transmission Line is not built
[4] Grossed up by 15% to account for planning reserve value
[5] Planning Reserve % = [(Service Area Resources/Service Area Demand)-1].
[6] Surplus represents amount above upper bound of PRM, deficit represent amount below lower bound. No deficit or surplus for values within PRM bounds.

**Exhibit III-2**
**Electricity Resource Planning**
**Capacity Resource Accounting Table**

Filing L: SDG&E
Case: Adopted Resource Plan
Date: 4/11/2008

| | | Low Need Case | | | | | | | | | High Need Case | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| line | **Capacity Resource Accounting Table** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
| | **PEAK LSE LOAD CALCULATIONS (MW):** | | | | | | | | | | | | | | | | | | |
| 1 | Forecast Total Peak-Hour Load | 4688 | 4819 | 4947 | 5073 | 5192 | 5306 | 5426 | 5547 | 5666 | 4688 | 4819 | 4947 | 5073 | 5192 | 5306 | 5426 | 5547 | 5666 |
| 2 | Uncommitted Energy Efficiency (-) | 0 | 54 | 106 | 156 | 198 | 238 | 285 | 332 | 379 | 0 | 54 | 106 | 156 | 198 | 238 | 285 | 332 | 379 |
| 3 | Committed Price-Sensitive DR Programs (-) | 96 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | Uncommitted Price-Sensitive DR Programs (-) | 0 | 232 | 236 | 239 | 243 | 246 | 250 | 253 | 257 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | Distributed Generation for Customer Use (-) | 113 | 115 | 116 | 117 | 119 | 120 | 121 | 122 | 124 | 113 | 115 | 116 | 117 | 119 | 120 | 121 | 122 | 124 |
| 6 | California Solar Initiative (-) | 7 | 10 | 13 | 16 | 20 | 23 | 26 | 30 | 33 | 7 | 10 | 13 | 16 | 20 | 23 | 26 | 30 | 33 |
| 7 | Direct Access Loads (-) | | | | 465 | 470 | 476 | 481 | 487 | 493 | | | | 489 | 495 | 501 | 507 | 513 | 519 |
| 8 | CCA & Departing/Arriving-New Municipal Loads (-/+) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | Net Peak Demand for Bundled Customers | | | | 4080 | 4143 | 4203 | 4263 | 4323 | 4382 | | | | 4295 | 4361 | 4424 | 4487 | 4550 | 4612 |
| 10 | Coincidence Adjustment (-) | 0 | #DIV/0! | #DIV/0! | ###### | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | 0 | ###### | ###### | ###### | ###### | ###### | ###### | ###### | ###### |
| 11 | Net Peak Demand + 15% Planning Reserve Margin | | | | ###### | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | | | | ###### | ###### | ###### | ###### | ###### | ###### |
| 12 | Firm Sales Obligations (+) | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | Firm LSE Peak Resource Requirement | | | | ###### | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | | | | ###### | ###### | ###### | ###### | ###### | ###### |
| | | | | | | | | | | | | | | | | | | | |
| | **EXISTING & PLANNED RESOURCES** | | | | | | | | | | | | | | | | | | |
| | **Utility-Controlled Fossil and Nuclear Resources:** | | | | | | | | | | | | | | | | | | |
| 20 | Palomar Energy Center | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 |
| 21 | Miramar Energy Facility I | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| 22 | El Dorado Power Plant | 0 | 0 | 0 | 0 | 476 | 476 | 476 | 476 | 476 | 0 | 0 | 0 | 0 | 476 | 476 | 476 | 476 | 476 |
| 23 | SONGS 2 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 |
| 24 | SONGS 3 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 |
| 25 | Total Dependable Fossil and Nuclear Capacity | 1062 | 1062 | 1062 | 1062 | 1538 | 1538 | 1538 | 1538 | 1538 | 1062 | 1062 | 1062 | 1062 | 1538 | 1538 | 1538 | 1538 | 1538 |
| | | | | | | | | | | | | | | | | | | | |
| | **Utility-Controlled Hydroelectric Resources:** | | | | | | | | | | | | | | | | | | |
| 30 | Total for all Hydro Plants over 30 MW | 0 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 0 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| 31 | Total for all Hydro Plants 30 MW or less | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 32 | Hydroelectric Capacity in Dry-Year Conditions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | Hydroelectric Capacity in Wet-Year Conditions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | | | | | | | | |
| | **Utility-Controlled Renewable Resources:** | | | | | | | | | | | | | | | | | | |
| 40 | Total Renewable Capacity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | Total Utility-Controlled Physical Resources | 1062 | 1102 | 1102 | 1102 | 1578 | 1578 | 1578 | 1578 | 1578 | 1062 | 1102 | 1102 | 1102 | 1578 | 1578 | 1578 | 1578 | 1578 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **DWR Contractual Resources:** | | | | | | | | | | | | | | | | | | |
| 50 | Cal Peak (Border) | 44 | 44 | 44 | 44 | 0 | 0 | 0 | 0 | 0 | 44 | 44 | 44 | 44 | 0 | 0 | 0 | 0 | 0 |
| 51 | Cal Peak (El Cajon) | 42 | 42 | 42 | 42 | 0 | 0 | 0 | 0 | 0 | 42 | 42 | 42 | 42 | 0 | 0 | 0 | 0 | 0 |
| 52 | Cal Peak (Enterprise) | 46 | 46 | 46 | 46 | 0 | 0 | 0 | 0 | 0 | 46 | 46 | 46 | 46 | 0 | 0 | 0 | 0 | 0 |
| 53 | Sunrise | 545 | 545 | 545 | 545 | 0 | 0 | 0 | 0 | 0 | 545 | 545 | 545 | 545 | 0 | 0 | 0 | 0 | 0 |
| 54 | Whitewater Energy Corp - Cabazon | 11 | 11 | 11 | 11 | 11 | 11 | 0 | 0 | 0 | 11 | 11 | 11 | 11 | 11 | 11 | 0 | 0 | 0 |
| 55 | Whitewater Energy Corp - Whitewater Hill | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 0 |
| 56 | Bear Product B | 275 | 275 | 275 | 0 | 0 | 0 | 0 | 0 | 0 | 275 | 275 | 275 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | Bear Product C | 50 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | Total DWR Contracts | 1027 | 1027 | 1027 | 702 | 26 | 26 | 0 | 0 | 0 | 1027 | 1027 | 1027 | 702 | 26 | 26 | 0 | 0 | 0 |
| | **Qualifying Facility (QF) Contractual Resources** | | | | | | | | | | | | | | | | | | |
| 70 | Natural gas | | | | | | | | | | | | | | | | | | |
| 71 | QF - Goalline | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 72 | QF - Naval Station | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| 73 | QF - North Island | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| 74 | QF - NTC | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| 75 | QF - Yuma | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| 76 | QF- KELCO | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 77 | QF- NTC Steam turbine | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| 78 | Biofuels | | | | | | | | | | | | | | | | | | |
| 79 | Otay Landfill I | 1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80 | Otay Landfill II | 1.5 | 1.5 | 1.5 | 0 | 0 | 0 | 0 | 0 | 0 | 1.5 | 1.5 | 1.5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 81 | San Marcos Landfill | 1.1 | 1.1 | 1.1 | 0 | 0 | 0 | 0 | 0 | 0 | 1.1 | 1.1 | 1.1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82 | Sycamore Landfill | 1.0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 83 | Geothermal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 84 | Small Hydro | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| 85 | Solar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 86 | Wind | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87 | Other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 88 | Total QF Capacity | 225 | 224 | 223 | 221 | 221 | 221 | 221 | 221 | 221 | 225 | 224 | 223 | 221 | 221 | 221 | 221 | 221 | 221 |
| | | | | 5 | | | | | | | | | 5 | | | | | | |
| | **Renewable Energy Contractual Resources:** | | | | | | | | | | | | | | | | | | |
| 100 | Covanta Delano | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| 101 | Mt Signal Solar | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 102 | MMR II | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 103 | Bullmoose | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 104 | City of San Diego MWD (Point Loma STP) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 105 | Covanta Otay 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 106 | Envirepel- Vista | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 107 | Envirepel- Ramona | 0 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 0 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 108 | Esmeralda I | 0 | 0 | 0 | 40 | 40 | 40 | 40 | 40 | 40 | 0 | 0 | 0 | 40 | 40 | 40 | 40 | 40 | 40 |
| 109 | Esmeralda II | 0 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 |
| 110 | FPL/WTE Acquisitions, LLC | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 111 | GRS (Coyote Canyon Land Fill Plnt) | 6 | 6 | 6 | 6 | 5 | | | | | 6 | 6 | 6 | 6 | 5 | | | | |
| 112 | GRS (Sycamore Landfill Plant) | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 |
| 113 | Kumeyaay | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 114 | MM Prima Deshecha Energy LLC | 4 | 4 | 6 | 6 | 6 | 6 | 6 | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 6 | 8 | 8 |
| 115 | MM San Diego LLC (Miramar Landfill) | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| 116 | MM San Diego LLC (North City Bio-Solid Plnt) | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| 117 | Oasis Power Partners | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 118 | Pacific Wind | 0 | 0 | 0 | 0 | 48 | 48 | 48 | 48 | 48 | 0 | 0 | 0 | 0 | 48 | 48 | 48 | 48 | 48 |
| 119 | PPM Energy | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 120 | SDCWA - Penasquitos | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 121 | Stirling | 0 | 0 | 81 | 217 | 271 | 325 | 325 | 325 | 325 | 0 | 0 | 81 | 217 | 271 | 325 | 325 | 325 | 325 |
| 122 | Renewable DG Supply | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 123 | Total Capacity from Renewable Energy Contracts | 86 | 114 | 225 | 420 | 522 | 568 | 565 | 567 | 567 | 86 | 114 | 225 | 420 | 522 | 568 | 565 | 567 | 567 |
| | **Other Bilaterial Contractual Resources:** | | | | | | | | | | | | | | | | | | |
| 130 | Encina 1 | 106 | 106 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 | 106 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 131 | Encina 2 | 103 | 103 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 103 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 132 | Encina 3 | 109 | 109 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 109 | 109 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 133 | Encina 4 | 299 | 299 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 299 | 299 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 134 | Encina 5 | 329 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 329 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 135 | Encina GT | 14 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 136 | Otay | 0 | 562 | 562 | 562 | 562 | 562 | 562 | 562 | 562 | 0 | 562 | 562 | 562 | 562 | 562 | 562 | 562 | 562 |
| 137 | PGE (Portland General Electric) | 86 | 86 | 86 | 86 | 86 | 86 | 0 | 0 | 0 | 86 | 86 | 86 | 86 | 86 | 86 | 0 | 0 | 0 |
| 138 | South Bay 1 | 145 | 145 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 145 | 145 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 139 | South Bay 2 | 149 | 149 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 149 | 149 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 140 | South Bay 3 | 174 | 174 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 174 | 174 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 141 | South Bay 4 | 221 | 221 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 221 | 221 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 142 | South Bay GT | 13 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 143 | EnerNoc | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| 144 | Non-Renewable DG Supply | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 145 | Total Other Bilateral Contracts | 1768 | 2330 | 668 | 668 | 668 | 668 | 582 | 582 | 582 | 1768 | 2330 | 668 | 668 | 668 | 668 | 582 | 582 | 582 |
| | **Short Term and Spot Market Purchases & Sales:** | | | | | | | | | | | | | | | | | | |
| 150 | Short Term Purchases | | | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 151 | Spot Market Purchases | | | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 152 | Short Term Sales (-) | | | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 153 | Net of Short Term Spot Market Purchases & Sales | | | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 160 | Total: Existing and Planned Capacity | | | 3113 | 3015 | 3060 | 2945 | 2947 | 2947 | | | 3113 | 3015 | 3060 | 2945 | 2947 | 2947 | | |
| | **DEMAND SIDE DISPATCHABLE RESOURCES** | | | | | | | | | | | | | | | | | | |
| 170 | Existing Interruptible / Emergency (I/E) Programs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 171 | Dispatchable Demand Response (DDR) | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| 172 | Total Capacity with I/E and DDR | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **FUTURE GENERIC RESOURCE NEEDS** | | | | | | | | | | | | | | | | | | |
| 180 | Generic Renewable Resources | | | | | | | | | | | | | | | | | | |
| 181 | Biofuels | 3 | 37 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 3 | 37 | 52 | 52 | 52 | 52 | 52 | 52 | 52 |
| 182 | Wind | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 |
| 183 | Solar | 0 | 0 | 19 | 0 | 106 | 106 | 106 | 106 | 106 | 0 | 0 | 19 | 0 | 106 | 106 | 106 | 106 | 106 |
| 184 | Total Generic Renewable Resources | 3 | 37 | 88 | 52 | 158 | 158 | 158 | 158 | 158 | 3 | 37 | 88 | 52 | 158 | 158 | 158 | 158 | 158 |
| | **Non-Renewable Generic Resources:** | | | | | | | | | | | | | | | | | | |
| 190 | Capacity for Baseload Energy | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 191 | Load-Following and Peaking Capacity | | | | 1428 | 1491 | 1514 | 1697 | 1763 | 1830 | | | | 1672 | 1739 | 1766 | 1952 | 2022 | 2092 |
| 192 | Load-Following (year-round) Capacity | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 193 | Peaking (seasonal) Capacity (Peaking Purchase) | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 194 | Total Capacity of Non-Renewable Generic Resources | | | | 1428 | 1491 | 1514 | 1697 | 1763 | 1830 | | | | 1672 | 1739 | 1766 | 1952 | 2022 | 2092 |
| 195 | Total Capacity of Future Generic Resources | | | | 1480 | 1649 | 1672 | 1855 | 1921 | 1988 | | | | 1724 | 1897 | 1924 | 2110 | 2180 | 2250 |
| | | | | | | | | | | | | | | | | | | | |
| | **CAPACITY BALANCE CHECK** | | | | | | | | | | | | | | | | | | |
| 200 | Total Capacity of all Resources | | | | 4638 | 4709 | 4777 | 4846 | 4914 | 4981 | | | | 4882 | 4957 | 5029 | 5101 | 5173 | 5243 |
| 201 | Net Open or Net Surplus Capacity Position | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | (1480) | (1649) | (1673) | (1855) | (1921) | (1988) | 0 | 0 | 0 | (1724) | (1897) | (1924) | (2110) | (2180) | (2250) |

## Exhibit III-3
## SDG&E Service Area High Need Detail

### With Sunrise Powerlink (South Bay Retirement in 12/2009)

| **Service Area Supply** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|---|---|---|---|---|
| 90/10 System Load Forecast | 4,970 | 5,049 | 5,127 | 5,205 | 5,283 | 5,358 | 5,433 | 5,509 | 5,582 |
| minus Uncommitted Demand Response | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| minus NSIL Transmission Import Limit | 2500 | 2500 | 2500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| Plus Generation Contingency (G-1) | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 |
| **Local Area Generation Requirement** | **3,036** | **3,115** | **3,193** | **2,271** | **2,349** | **2,424** | **2,499** | **2,575** | **2,648** |
| **Total Existing Local Supply** | **2,943** | **3,573** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** |
| **Total Local Supply Balance** | **(93)** | **458** | **(322)** | **600** | **522** | **447** | **372** | **296** | **223** |
| | | | | | | | | | |
| **Bundled Customer Local Requirement** | **2,723** | **2,794** | **2,865** | **2,039** | **2,110** | **2,177** | **2,245** | **2,314** | **2,380** |
| **Existing and Committed Local Supply** | **2,607** | **3,237** | **1,575** | **1,575** | **1,444** | **1,444** | **1,444** | **1,444** | **1,444** |
| **Bundled Customer Local Need** | **(116)** | **443** | **(1,290)** | **(463)** | **(666)** | **(734)** | **(801)** | **(870)** | **(936)** |

### Without Sunrise Powerlink (South Bay Retirement in 12/2009)

| | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|---|---|---|---|---|
| 90/10 System Load Forecast | 4,970 | 5,049 | 5,127 | 5,205 | 5,283 | 5,358 | 5,433 | 5,509 | 5,582 |
| minus Uncommitted Demand Response | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| minus NSIL transmission Import Limit | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 |
| Plus Generation Contingency (G-1) | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 |
| **Local Area Generation Requirement** | **3,036** | **3,115** | **3,193** | **3,271** | **3,349** | **3,424** | **3,499** | **3,575** | **3,648** |
| **Total Existing Local Supply** | **2,943** | **3,573** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** |
| **Local Supply Balance** | **(93)** | **458** | **(322)** | **(400)** | **(478)** | **(553)** | **(628)** | **(704)** | **(777)** |
| | | | | | | | | | |
| **Bundled Customer Local Requirement** | **2,723** | **2,794** | **2,865** | **2,936** | **3,008** | **3,076** | **3,144** | **3,213** | **3,279** |
| **Existing and Committed Local Supply** | **2,607** | **3,237** | **1,575** | **1,575** | **1,444** | **1,444** | **1,444** | **1,444** | **1,444** |
| **Bundled Customer Local Need** | **(116)** | **443** | **(1,290)** | **(1,361)** | **(1,564)** | **(1,632)** | **(1,700)** | **(1,769)** | **(1,835)** |
| **SDG&E Share Percentage** | **89.7%** | **89.7%** | **89.7%** | **89.8%** | **89.8%** | **89.8%** | **89.9%** | **89.9%** | **89.9%** |

| **In San Diego Resource** | | **Capacity** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **URG** | | | | | | | | | | | |
| Miramar | | **46.6** | 46.6 | 46.6 | 46.6 | 46.6 | 46.6 | 46.6 | 46.6 | 46.6 | 46.6 |
| Palomar | | **566.0** | 566.0 | 566.0 | 566.0 | 566.0 | 566.0 | 566.0 | 566.0 | 566.0 | 566.0 |
| | | | | | | | | | | | |
| **Existing and Committed Contracts** | | | | | | | | | | | |
| South Bay 1 | | **145.0** | 145.0 | 145.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| South Bay 2 | | **149.0** | 149.0 | 149.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| South Bay 3 | | **174.0** | 174.0 | 174.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| South Bay 4 | | **221.0** | 221.0 | 221.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| South Bay GT | | **13.0** | 13.0 | 13.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina 1 | | **106.0** | 106.0 | 106.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina 2 | | **103.0** | 103.0 | 103.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina 3 | | **109.0** | 109.0 | 109.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina 4 | | **299.0** | 299.0 | 299.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina 5 | | **329.0** | 329.0 | 329.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina GT | | **14.0** | 14.0 | 14.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| El Cajon/Calpeak | | **42.2** | 42.2 | 42.2 | 42.2 | 42.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Border/Calpeak | | **43.8** | 43.8 | 43.8 | 43.8 | 43.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Escondidio/Calpeak | | **45.5** | 45.5 | 45.5 | 45.5 | 45.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lake Hodges Pumped Storage | | **40** | 0.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Otay | | **562** | 0.0 | 562.0 | 562.0 | 562.0 | 562.0 | 562.0 | 562.0 | 562.0 | 562.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **QFS** | | | | | | | | | | | |
| QF - Goalline | | **50.0** | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 |
| QF - Naval Station | | **47.0** | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 |
| QF - North Island | | **35.1** | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 |
| QF - NTC | | **21.9** | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 |
| QF- KELCO | | **7.0** | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| QF- NTC Steam turbine | | **2.4** | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| | | | | | | | | | | | |
| **Renewables** | | | | | | | | | | | |
| Kumeyaay | | **8.3** | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 |
| Hydro SO1 | | **1.6** | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| City of SD MWD (Point Loma STP) | | **3.5** | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| GRS (Sycamore Landfill Plant) | | **2.5** | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| MM Prima Deshecha Energy LLC | | **4.1** | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| MM San Diego LLC (Miramar Landfill) | | **2.7** | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| MM San Diego LLC (NC Bio-Solid Plnt) | | **1.0** | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Otay Landfill I | | **1.5** | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Otay Landfill II | | **1.5** | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| San Marcos Landfill | | **1.1** | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| Sycamore Landfill | | **1.0** | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Bullmoose | | **20.0** | 0.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Covanta Otay 3 | | **3.8** | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| SDCWA - Penasquitos | | **3.5** | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Enviropel - Ramona | | **8.0** | 0.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Enviropel - Vista | | **2.0** | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| **Existing and Committed Local Supply** | | | **2607** | **3237** | **1575** | **1575** | **1444** | **1444** | **1444** | **1444** | **1444** |
| | | | | | | | | | | | |
| **Merchant Generation** | | | | | | | | | | | |
| Encina 1 | | **106.0** | 0.0 | 0.0 | 106.0 | 106.0 | 106.0 | 106.0 | 106.0 | 106.0 | 106.0 |
| Encina 2 | | **103.0** | 0.0 | 0.0 | 103.0 | 103.0 | 103.0 | 103.0 | 103.0 | 103.0 | 103.0 |
| Encina 3 | | **109.0** | 0.0 | 0.0 | 109.0 | 109.0 | 109.0 | 109.0 | 109.0 | 109.0 | 109.0 |
| Encina 4 | | **299.0** | 0.0 | 0.0 | 299.0 | 299.0 | 299.0 | 299.0 | 299.0 | 299.0 | 299.0 |
| Encina 5 | | **329.0** | 0.0 | 0.0 | 329.0 | 329.0 | 329.0 | 329.0 | 329.0 | 329.0 | 329.0 |
| Encina GT | | **14.0** | 0.0 | 0.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 |
| El Cajon GT | | **13.0** | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Kearny GT1 | | **15.0** | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 |
| Kearny 2AB (Kearny GT2) | | **55.0** | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 |
| Kearny 3AB (Kearny GT3) | | **57.0** | 57.0 | 57.0 | 57.0 | 57.0 | 57.0 | 57.0 | 57.0 | 57.0 | 57.0 |
| Miramar GT 1 | | **17.0** | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 |
| Miramar GT 2 | | **16.0** | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| Larkspur Border 1 | | **46.0** | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 |
| Larkspur Border 2 | | **46.0** | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 |
| MMC - Electrovest (Otay) | | **35.5** | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 |
| MMC - Electrovest (Escondido) | | **35.5** | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 |
| El Cajon/Calpeak | | **42.2** | 0.0 | 0.0 | 0.0 | 0.0 | 42.2 | 42.2 | 42.2 | 42.2 | 42.2 |
| Border/Calpeak | | **43.8** | 0.0 | 0.0 | 0.0 | 0.0 | 43.8 | 43.8 | 43.8 | 43.8 | 43.8 |
| Escondidio/Calpeak | | **45.5** | 0.0 | 0.0 | 0.0 | 0.0 | 45.5 | 45.5 | 45.5 | 45.5 | 45.5 |
| **Total Existing Local Supply** | | | **2943** | **3573** | **2871** | **2871** | **2871** | **2871** | **2871** | **2871** | **2871** |

## Exhibit III-4
## SDG&E Service Area Low Need Detail

### With Sunrise Powerlink (South Bay Retirement in 12/2009)

| **Service Area Supply** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|---|---|---|---|---|
| 90/10 System Load Forecast | 4,970 | 5,049 | 5,127 | 5,205 | 5,283 | 5,358 | 5,433 | 5,509 | 5,582 |
| minus Uncommitted Demand Response | 0 | 232 | 236 | 239 | 243 | 246 | 250 | 253 | 257 |
| minus NSIL Transmission Import Limit | 2500 | 2500 | 2500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| Plus Generation Contingency (G-1) | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 |
| **Local Area Generation Requirement** | **3,036** | **2,883** | **2,957** | **2,032** | **2,106** | **2,178** | **2,249** | **2,322** | **2,391** |
| **Total Existing Local Supply** | **2,943** | **3,573** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** |
| **Total Local Supply Balance** | **(93)** | **690** | **(86)** | **840** | **765** | **694** | **622** | **550** | **480** |
| | | | | | | | | | |
| **Bundled Customer Local Requirement** | **2,723** | **2,586** | **2,654** | **1,824** | **1,891** | **1,956** | **2,021** | **2,087** | **2,150** |
| **Existing and Committed Local Supply** | **2,607** | **3,237** | **1,575** | **1,575** | **1,444** | **1,444** | **1,444** | **1,444** | **1,444** |
| **Bundled Customer Local Need** | **(116)** | **651** | **(1,078)** | **(249)** | **(448)** | **(512)** | **(577)** | **(643)** | **(706)** |

### Without Sunrise Powerlink (South Bay Retirement in 12/2009)

| | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|---|---|---|---|---|
| 90/10 System Load Forecast | 4,970 | 5,049 | 5,127 | 5,205 | 5,283 | 5,358 | 5,433 | 5,509 | 5,582 |
| minus Uncommitted Demand Response | 0 | 232 | 236 | 239 | 243 | 246 | 250 | 253 | 257 |
| minus NSIL transmission Import Limit | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 |
| Plus Generation Contingency (G-1) | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 | 566 |
| **Local Area Generation Requirement** | **3,036** | **2,883** | **2,957** | **3,032** | **3,106** | **3,178** | **3,249** | **3,322** | **3,391** |
| **Total Existing Local Supply** | **2,943** | **3,573** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** | **2,871** |
| **Local Supply Balance** | **(93)** | **690** | **(86)** | **(160)** | **(235)** | **(306)** | **(378)** | **(450)** | **(520)** |
| | | | | | | | | | |
| **Bundled Customer Local Requirement** | **2,723** | **2,586** | **2,654** | **2,722** | **2,790** | **2,855** | **2,920** | **2,985** | **3,049** |
| **Existing and Committed Local Supply** | **2,607** | **3,237** | **1,575** | **1,575** | **1,444** | **1,444** | **1,444** | **1,444** | **1,444** |
| **Bundled Customer Local Need** | **(116)** | **651** | **(1,078)** | **(1,146)** | **(1,346)** | **(1,411)** | **(1,476)** | **(1,542)** | **(1,605)** |
| **SDG&E Share Percentage** | **89.7%** | **89.7%** | **89.7%** | **89.8%** | **89.8%** | **89.8%** | **89.9%** | **89.9%** | **89.9%** |

| **In San Diego Resource** | | **Capacity** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **URG** | | | | | | | | | | | |
| Miramar | | **46.6** | 46.6 | 46.6 | 46.6 | 46.6 | 46.6 | 46.6 | 46.6 | 46.6 | 46.6 |
| Palomar | | **566.0** | 566.0 | 566.0 | 566.0 | 566.0 | 566.0 | 566.0 | 566.0 | 566.0 | 566.0 |
| | | | | | | | | | | | |
| **Existing and Committed Contracts** | | | | | | | | | | | |
| South Bay 1 | | **145.0** | 145.0 | 145.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| South Bay 2 | | **149.0** | 149.0 | 149.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| South Bay 3 | | **174.0** | 174.0 | 174.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| South Bay 4 | | **221.0** | 221.0 | 221.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| South Bay GT | | **13.0** | 13.0 | 13.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina 1 | | **106.0** | 106.0 | 106.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina 2 | | **103.0** | 103.0 | 103.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina 3 | | **109.0** | 109.0 | 109.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina 4 | | **299.0** | 299.0 | 299.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina 5 | | **329.0** | 329.0 | 329.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Encina GT | | **14.0** | 14.0 | 14.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| El Cajon/Calpeak | | **42.2** | 42.2 | 42.2 | 42.2 | 42.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Border/Calpeak | | **43.8** | 43.8 | 43.8 | 43.8 | 43.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Escondidio/Calpeak | | **45.5** | 45.5 | 45.5 | 45.5 | 45.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lake Hodges Pumped Storage | | **40** | 0.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Otay | | **562** | 0.0 | 562.0 | 562.0 | 562.0 | 562.0 | 562.0 | 562.0 | 562.0 | 562.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **QFS** | | | | | | | | | | | |
| QF - Goalline | | **50.0** | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 |
| QF - Naval Station | | **47.0** | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 | 47.0 |
| QF - North Island | | **35.1** | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 |
| QF - NTC | | **21.9** | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 |
| QF- KELCO | | **7.0** | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| QF- NTC Steam turbine | | **2.4** | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| | | | | | | | | | | | |
| **Renewables** | | | | | | | | | | | |
| Kumeyaay | | **8.3** | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 | 8.3 |
| Hydro SO1 | | **1.6** | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 |
| City of SD MWD (Point Loma STP) | | **3.5** | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| GRS (Sycamore Landfill Plant) | | **2.5** | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| MM Prima Deshecha Energy LLC | | **4.1** | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 |
| MM San Diego LLC (Miramar Landfill) | | **2.7** | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| MM San Diego LLC (NC Bio-Solid Plnt) | | **1.0** | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Otay Landfill I | | **1.5** | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Otay Landfill II | | **1.5** | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| San Marcos Landfill | | **1.1** | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| Sycamore Landfill | | **1.0** | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Bullmoose | | **20.0** | 0.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Covanta Otay 3 | | **3.8** | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 |
| SDCWA - Penasquitos | | **3.5** | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| Enviropel - Ramona | | **8.0** | 0.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Enviropel - Vista | | **2.0** | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| **Existing and Committed Local Supply** | | | **2607** | **3237** | **1575** | **1575** | **1444** | **1444** | **1444** | **1444** | **1444** |
| | | | | | | | | | | | |
| **Merchant Generation** | | | | | | | | | | | |
| Encina 1 | | **106.0** | 0.0 | 0.0 | 106.0 | 106.0 | 106.0 | 106.0 | 106.0 | 106.0 | 106.0 |
| Encina 2 | | **103.0** | 0.0 | 0.0 | 103.0 | 103.0 | 103.0 | 103.0 | 103.0 | 103.0 | 103.0 |
| Encina 3 | | **109.0** | 0.0 | 0.0 | 109.0 | 109.0 | 109.0 | 109.0 | 109.0 | 109.0 | 109.0 |
| Encina 4 | | **299.0** | 0.0 | 0.0 | 299.0 | 299.0 | 299.0 | 299.0 | 299.0 | 299.0 | 299.0 |
| Encina 5 | | **329.0** | 0.0 | 0.0 | 329.0 | 329.0 | 329.0 | 329.0 | 329.0 | 329.0 | 329.0 |
| Encina GT | | **14.0** | 0.0 | 0.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 |
| El Cajon GT | | **13.0** | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 |
| Kearny GT1 | | **15.0** | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 |
| Kearny 2AB (Kearny GT2) | | **55.0** | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 |
| Kearny 3AB (Kearny GT3) | | **57.0** | 57.0 | 57.0 | 57.0 | 57.0 | 57.0 | 57.0 | 57.0 | 57.0 | 57.0 |
| Miramar GT 1 | | **17.0** | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 |
| Miramar GT 2 | | **16.0** | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| Larkspur Border 1 | | **46.0** | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 |
| Larkspur Border 2 | | **46.0** | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 |
| MMC - Electrovest (Otay) | | **35.5** | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 |
| MMC - Electrovest (Escondido) | | **35.5** | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 |
| El Cajon/Calpeak | | **42.2** | 0.0 | 0.0 | 0.0 | 0.0 | 42.2 | 42.2 | 42.2 | 42.2 | 42.2 |
| Border/Calpeak | | **43.8** | 0.0 | 0.0 | 0.0 | 0.0 | 43.8 | 43.8 | 43.8 | 43.8 | 43.8 |
| Escondidio/Calpeak | | **45.5** | 0.0 | 0.0 | 0.0 | 0.0 | 45.5 | 45.5 | 45.5 | 45.5 | 45.5 |
| **Total Existing Local Supply** | | | **2943** | **3573** | **2871** | **2871** | **2871** | **2871** | **2871** | **2871** | **2871** |

## Exhibit III – 5: Energy Tables

**Exhibit III-5**
**Electricity Resource Planning**
**Energy Balance Resource Accounting Table**

Filing LSE: SDG&E
Case: Adopted Resource Plan
Date: 4/25/2008

| line | | Energy Balance Resource Accounting Table | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **ENERGY DEMAND CALCULATIONS (GWh)** | | | | | | | | | | |
| 1 | | Forecast Total System Energy | | | | | 24686 | 25271 | 25834 | 26421 | 27010 | 27595 |
| 2 | | Uncommitted Energy Efficiency (2009-2016) (-) | | 0 | 282 | 556 | 818 | 1040 | 1255 | 1501 | 1746 | 1993 |
| 3 | | Committed Price-Sensitive DR Programs (-) | | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | | Uncommitted Price-Sensitive DR Programs (-) | | 0 | 17 | 17 | 17 | 18 | 18 | 18 | 18 | 19 |
| 5 | | Distributed Generation for Customer Use (-) | | 725 | 733 | 741 | 749 | 757 | 766 | 774 | 782 | 790 |
| 6 | | California Solar Initiative (-) | | 18 | 27 | 36 | 45 | 54 | 63 | 73 | 82 | 91 |
| 7 | | Direct Access Loads (-) | | | | | 3643 | 3668 | 3692 | 3715 | 3736 | 3757 |
| 8 | | CCA & Departing/Arriving-New Municipal Loads (-/+) | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | | Net Energy Requirement for Bundled Customers | | | | | 19413 | 19734 | 20040 | 20341 | 20646 | 20946 |
| 10 | | Firm Sales Obligations (+) | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | | Total LSE Energy Requirement | | | | | 19413 | 19734 | 20040 | 20341 | 20646 | 20946 |
| | | | | | | | | | | | | |
| | | **EXISTING & PLANNED RESOURCES** | | | | | | | | | | |
| | | **Utility-Controlled Fossil and Nuclear Resources:** | | | | | | | | | | |
| 20 | | Palomar Energy Center | | | | | 3497 | 3476 | 3458 | 3638 | 3499 | 3577 |
| 21 | | Miramar | | | | | 0 | 3 | 2 | 4 | 5 | 4 |
| 22 | | El Dorado Power Plant | | | | | 0 | 1648 | 2919 | 2982 | 3156 | 3216 |
| 23 | | SONGS 2 | | | | | 1901 | 1560 | 1971 | 1728 | 1971 | 1733 |
| 24 | | SONGS 3 | | | | | 1776 | 1841 | 1620 | 1971 | 1728 | 1917 |
| 25 | | Total Fossil and Nuclear Energy Supply | | | | | 7,174 | 8,529 | 9,971 | 10,323 | 10,358 | 10,447 |
| | | | | | | | | | | | | |
| | | **Utility-Controlled Hydroelectric Resources:** | | | | | | | | | | |
| 30 | | Total energy from all Hydro Plants over 30 MW | | | | | 43 | 43 | 39 | 40 | 38 | 36 |
| 31 | | Pumping Load for all Hydro Plants over 30 MW | | | | | -62 | -62 | -56 | -58 | -55 | -51 |
| 32 | | Total energy from all Hydro Plants 30 MW or less | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 33 | | Hydroelectric Energy in Dry-Year Conditions | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | | Hydroelectric Energy in Wet-Year Conditions | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | |
| | | **Utility-Controlled Renewable Resources:** | | | | | | | | | | |
| 40 | | Total Utility-Controlled Renewable Energy | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | |
| 41 | | **Total Utility-Controlled Physical Resources** | | | | | 7,155 | 8,511 | 9,954 | 10,305 | 10,342 | 10,431 |
| | | | | | | | | | | | | |
| | | **DWR Contractual Resources:** | | | | | | | | | | |
| 50 | | Cal Peak (Border) | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | | Cal Peak (El Cajon) | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 52 | | Cal Peak (Enterprise) | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 53 | | Sunrise | | | | | 2,490 | 1,139 | 0 | 0 | 0 | 0 |
| 54 | | Whitewater Energy Corp - Cabazon | | | | | 79 | 79 | 79 | 0 | 0 | 0 |
| 55 | | Whitewater Energy Corp - Whitewater Hill | | | | | 247 | 248 | 247 | 0 | 0 | 0 |
| 56 | | Williams Product A | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | | Williams Product B | | 1,352 | 1,346 | 1,345 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | | Williams Product C | | 246 | 245 | 244 | 0 | 0 | 0 | 0 | 0 | 0 |
| 59 | | Total Energy Supply from DWR Contracts | | | | | 2,816 | 1,466 | 327 | 0 | 0 | 0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Qualifying Facility (QF) Contractual Resources: (list each unit)** | | | | | | | | | | | |
| 70 | | Natural gas | | | | | | | | | | | |
| 71 | | QF - Goalline | | [redacted] | | | 400 | 401 | 400 | 400 | 400 | 401 | |
| 72 | | QF - Naval Station | | | | | 384 | 385 | 384 | 384 | 384 | 386 | |
| 73 | | QF - North Island | | | | | 293 | 294 | 293 | 293 | 293 | 294 | |
| 74 | | QF - NTC | | | | | 187 | 188 | 187 | 187 | 187 | 188 | |
| 75 | | QF - Yuma | | | | | 457 | 459 | 458 | 457 | 458 | 459 | |
| 76 | | QF- KELCO | | | | | 125 | 126 | 125 | 125 | 125 | 126 | |
| 77 | | QF- NTC Steam turbine | | | | | 19 | 19 | 19 | 19 | 19 | 19 | |
| 78 | | Biofuels | | | | | | | | | | | |
| 79 | | Otay Landfill I | | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 80 | | Otay Landfill II | | 13 | 13 | 13 | 4 | 0 | 0 | 0 | 0 | 0 | |
| 81 | | San Marcos Landfill | | 10 | 10 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | |
| 82 | | Sycamore Landfill | | 9 | 9 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 83 | | Geothermal | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 84 | | Small Hydro | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 85 | | Solar | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 86 | | Wind | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 87 | | Other | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 88 | | Total Energy Supply from QF Contracts | | [redacted] | | | 1,883 | 1,882 | 1,877 | 1,876 | 1,876 | 1,881 | |
| | | **Renewable Energy Contractual Resources:** | | | | | | | | | | | |
| 100 | | Covanta Delano | | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 | 365 | |
| 101 | | Mt Signal Solar | | 0 | 0 | 304 | 304 | 304 | 304 | 304 | 304 | 304 | |
| 102 | | MMR II | | 0 | 0 | 168 | 168 | 168 | 168 | 168 | 168 | 168 | |
| 103 | | Bullmoose | | 0 | 168 | 168 | 168 | 168 | 168 | 168 | 168 | 168 | |
| 104 | | City of San Diego MWD (Point Loma STP) | | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | |
| 105 | | Covanta Otay 3 | | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | |
| 106 | | Envirepel- Vista | | 12 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 107 | | Envirepel- Ramona | | | 26 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | |
| 108 | | Esmeralda I | | 0 | 0 | 0 | 334 | 334 | 334 | 334 | 334 | 334 | |
| 109 | | Esmeralda II | | 0 | 0 | 0 | 167 | 167 | 167 | 167 | 167 | 167 | |
| 110 | | FPL/WTE Acquisitions, LLC | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | |
| 111 | | GRS (Coyote Canyon Land Fill Plnt) | | 47 | 45 | 44 | 42 | 41 | 0 | 0 | 0 | 0 | |
| 112 | | GRS (Sycamore Landfill Plant) | | 19 | 19 | 19 | 19 | 19 | 19 | 2 | 0 | 0 | |
| 113 | | Kumeyaay | | 153 | 152 | 152 | 152 | 153 | 152 | 152 | 152 | 153 | |
| 114 | | MM Prima Deshecha Energy LLC | | 47 | 52 | 70 | 70 | 70 | 70 | 76 | 93 | 93 | |
| 115 | | MM San Diego LLC (Miramar Landfill) | | 26 | 26 | 26 | 26 | 26 | 13 | 0 | 0 | 0 | |
| 116 | | MM San Diego LLC (North City Bio-Solid Plnt) | | 7 | 7 | 7 | 7 | 7 | 2 | 0 | 0 | 0 | |
| 117 | | Oasis Power Partners | | 183 | 183 | 183 | 183 | 183 | 183 | 183 | 183 | 183 | |
| 118 | | Pacific Wind | | 0 | 0 | 0 | 240 | 627 | 626 | 626 | 626 | 627 | |
| 119 | | PPM Energy | | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | 82 | |
| 120 | | SDCWA - Penasquitos | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 121 | | Stirling | | 0 | 0 | 325 | 863 | 1,081 | 1,294 | 1,294 | 1,294 | 1,297 | |
| 122 | | Renewable DG Supply | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 123 | | Total Existing & Planned Renewable Contracts | | 1,048 | 1,245 | 2,061 | 3,338 | 3,944 | 4,095 | 4,069 | 4,085 | 4,090 | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Other Bilaterial Contractual Resources:** | | | | | | | | | | | |
| 130 | | Encina 1 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 131 | | Encina 2 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 132 | | Encina 3 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 133 | | Encina 4 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 134 | | Encina 5 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 135 | | Encina GT | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 136 | | Otay | | | | | 2,601 | 2,415 | 2,127 | 2,446 | 2,261 | 2,247 |
| 137 | | PGE (Portland General Electric) | | | | | 642 | 644 | 659 | 0 | 0 | 0 |
| 138 | | South Bay 1 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 139 | | South Bay 2 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 140 | | South Bay 3 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 141 | | South Bay 4 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 142 | | South Bay GT | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 143 | | Non-Renewable DG Generation | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 144 | | Total Energy Supply from Other Bilateral Contracts | | | | | 3,244 | 3,060 | 2,787 | 2,446 | 2,261 | 2,247 |
| | | **Short Term and Spot Market Purchases & Sales:** | | | | | | | | | | |
| 150 | | Short Term Purchases | | | | | 981 | 428 | 571 | 1,201 | 1,575 | 1,826 |
| 151 | | Spot Market Purchases | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 152 | | Short Term Sales (-) | | | | | 557 | 570 | 585 | 606 | 559 | 580 |
| 153 | | Net of Short Term Spot Market Purchases & Sales | | | | | 424 | -142 | -14 | 594 | 1,016 | 1,246 |
| | | | | | | | | | | | | |
| | | **FUTURE GENERIC ENERGY NEEDS** | | | | | | | | | | |
| 170 | | Generic Renewable Energy | | | | | | | | | | |
| 171 | | Biofuels | | 27 | 300 | 424 | 424 | 424 | 424 | 424 | 424 | 424 |
| 172 | | Wind | | 0 | 0 | 289 | 0 | 0 | 0 | 0 | 0 | 0 |
| 173 | | Solar | | 0 | 0 | 81 | 0 | 465 | 465 | 465 | 465 | 465 |
| 174 | | Total Generic Renewable Resources | | 27 | 300 | 795 | 424 | 889 | 889 | 889 | 889 | 889 |
| | | **Generic Non-Renewable Energy:** | | | | | | | | | | |
| 180 | | Generic Baseload Energy (Gen CC, Gen QF) | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 181 | | Generic Load-following and Peaking Energy (Gen CT) | | | | | 129 | 125 | 125 | 161 | 177 | 160 |
| 182 | | Generic Load-Following (year-round) Energy | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 183 | | Generic Peaking (seasonal) Energy (Peaking Purchase) | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 184 | | Total Generic Non-Renewable Energy Needs | | | | | 129 | 125 | 125 | 161 | 177 | 160 |
| 185 | | Total Future Generic Energy Needs | | | | | 553 | 1,014 | 1,015 | 1,051 | 1,066 | 1,049 |
| | | | | | | | | | | | | |
| 190 | | **Total of Energy from all Resources** | | | | | 19413 | 19734 | 20040 | 20341 | 20646 | 20946 |
| | | | | | | | | | | | | |
| | | **RENEWABLE ENERGY ACCOUNTING** | | | | | | | | | | |
| 200 | | Utility-Controlled Renewable Resources | | 14 | 36 | 34 | 43 | 43 | 39 | 40 | 38 | 36 |
| 201 | | QF Renewable Contract Resources | | 54 | 45 | 36 | 17 | 10 | 10 | 10 | 10 | 10 |
| 202 | | Existing & Planned Renewable Contracts | | 1,048 | 1,245 | 2,061 | 3,338 | 3,944 | 4,095 | 4,069 | 4,085 | 4,090 |
| 203 | | Generic Renewable Resources | | 27 | 300 | 795 | 424 | 889 | 889 | 889 | 889 | 889 |
| 204 | | Total State-Eligible Renewable Energy | | 1,143 | 1,626 | 2,926 | 3,822 | 4,886 | 5,033 | 5,008 | 5,022 | 5,025 |
| 205 | | Other Renewable Energy amounts | | | | | | | | | | |
| 206 | | Total Expected Renewable Energy | | 1,143 | 1,626 | 2,926 | 3,822 | 4,886 | 5,033 | 5,008 | 5,022 | 5,025 |
| | | **Biomass Energy Accounting** | | | | | | | | | | |
| 210 | | Biofuels (QF Contractual Resources) | | 44 | 35 | 27 | 7 | 0 | 0 | 0 | 0 | 0 |
| 211 | | Other Biomass Energy | | 558 | 729 | 745 | 743 | 743 | 683 | 657 | 672 | 673 |
| 212 | | Total Biomass Energy | | 602 | 764 | 771 | 750 | 743 | 683 | 657 | 672 | 673 |

*Load components updated per 2007 CEC IEPR forecast. Resource dispatch based on original 2006 LTPP and only updated to reflect new contract informatior