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Public Version

Independent Evaluator's Report – Product 2: New Local Generation and SDG&E's June 9, 2009 RFO for Demand Response and Supply Resources

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Table of Contents

List of Figures

List of Tables

I. INTRODUCTION

San Diego Gas & Electric Company (SDG&E) is requesting authority to enter into three long-term power purchase tolling agreements (PPTAs) that would add a total of approximately 450 MW of needed local capacity to SDG&E's existing portfolio of resources. These three PPTAs resulted from offers that were received for Product 2, new long-term local capacity, in SDG&E's Request for Offers (RFO) for Demand Response (DR) and Supply Resources, issued on June 9, 2009.[1] Three contracts have been negotiated with the following non-utility entities: EIF's Apex Pio Pico Energy Center, 305 MW; Wellhead's Escondido Energy Center, 45 MW; and Goldman Sachs/Cogentrix's Quail Brush Generation Project, 100 MW.

SDG&E's need for new local generation is determined by the need for sufficient resources that are physically located in the San Diego load pocket and are capable of meeting local Resource Adequacy (RA) requirements for all load serving entities (LSEs). This need also accommodates the additional retiring resources that were not included in SDG&E's 2006 Long Term Procurement Plan (LTPP) retirement assumptions.

In its role as the Independent Evaluator (IE) for the 2009 RFO, Van Horn Consulting (VHC) has prepared this public report, as well as a Confidential Addendum. These documents evaluate SDG&E's proposed PPTAs for Product 2 in the context of the offers for supply resources that were received in response to the 2009 Supply RFO. Hence, our report discusses the current status of all products in the RFO.

The IE review process resulted from a series of California Public Utilities Commission (CPUC or Commission) rulings and decisions affecting California's Investor-owned Utilities (IOUs). The CPUC's December 2004 decision on long-term resource procurement (D.04-12-048) stated that it would "require the use of an IE for resource

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[1] Request for Offers for Demand Response and Supply Resources, June 9, 2009. SDG&E requires these resources to support reliability within its service territory, supply energy to bundled customers and meet other portfolio needs, including Resource Adequacy (RA) requirements.

procurement where there are affiliates, IOU-built or IOU-turnkey bidders" from that point forward (pp. 135f). The CPUC's intent was to ensure that a utility did not favor itself or an affiliate. Decision 07-12-052, Conclusion of Law, item 24, states "IEs are valuable to the procurement process and we direct the IOUs to utilize IEs according to the parameters established in this decision and in D.04-12-048." On page 140, the Decision also states: "Further, given that IOUs may not know with certainty whether or not it or its affiliate will bid on a particular solicitation, the Commission requires that an IE be utilized for all competitive RFOs[2] that seek products of more than three months in duration."[3] Under the decisions cited above, the role of the IE is to assist the utility in RFO design and observe the utility's procurement, evaluation and contract negotiation processes, in order to provide an opinion concerning "fairness." In addition to the CPUC's requirements, the Federal Energy Regulatory Commission (FERC) requires an IE to prevent a bias and to avoid preferences favoring the selection of affiliate offers over offers from other participants.[4]

In 2008, the CPUC ruled that: "parties are to use the attached templates for the purposes specified on the templates: The IEs are to use the IE templates, either the short form or the long form, when preparing their reports on the utilities' RFOs, and the utilities are to use the contract approval template when submitting a request to the Commission for approval of a resource contract. These templates are to be used for the purposes specified until further notice."[5]

For the Short Form and the Long Form templates, the CPUC requires that:

1. "This short form template should be used for transactions that do not require submission of an application for CPUC approval, including those transactions that are documented in the IOU's Quarterly Compliance Report (QCR) and/or are submitted to the Commission for approval via advice letter."
2. "This template should be used whenever an Independent Evaluator submits a report on the outcome of an IOU RFO bid process for review by the California Public Utilities Commission. This long form template should be used for transactions that require submission of an application for CPUC approval."

In its RFO, SDG&E requested supply offers for some products which require the Short Form template and others the Long Form. These products are described in Section II of this report.

[2] Competitive RFOs include those issued to satisfy service area needs and to provide specific supply-side resources not covered by the Commission's Energy Efficiency (EE) and Demand Response (DR) programs.
[3] This requirement creates uniformity between the contract length for which an IOU must consult its Procurement Review Group (PRG) and the IE process.
[4] 108 FERC ¶61,081 (2004): "Opinion and Order … Announcing New Guidelines for Evaluating Section 203 Affiliate Transactions." VHC is not aware of any additional CPUC requirements for the IE review of Demand-Side Management programs acquired via an RFO process.
[5] "Administrative Law Judge's Ruling Issuing Templates For Independent Evaluator Reports And Contract Approval Requests," Rulemaking 06-02-013, dated May 8, 2008.

SDG&E's selection of offers for some products are necessarily dependent on its selection of offers for other products. For this reason and for ease in preparing and reading this IE report, VHC has used the Long Form template for all products, rather than the Short Form template for some products and the Long Form template for other products.[6] The Long Form template addresses all the questions that are in the Short Form template but in greater detail. VHC also provides additional comments and observations regarding SDG&E's solicitation, evaluation and contracting process that may not be required by the IE Template questions, but that VHC believes are relevant.

The application for which this IE report is being submitted is for the approval of SDG&E's contracts solicited for Product 2. However, SDG&E's selection of short-listed offers in the 2009 RFO and its Least-Cost, Best-Fit (LCBF) evaluation included all the Supply Products. The LCBF evaluation considered how sequential combinations would make-up an LCBF portfolio. Therefore, although the focus of this Public IE Report is on the Product 2 contracts, this report and its Confidential Addendum address the RFO and the evaluations as an integrated whole.

This public report does not contain confidential and/or privileged materials. However, the Addendum provides confidential information, for which review and access are restricted, subject to PUC Sections 454.5(g), 583, D.06-06-066, and General Order (GO) 66-C.

II. BACKGROUND

A. Products in the 2009 Supply RFO

In its RFO, SDG&E sought short-term and long-term supply resources, local resources, as well as resources outside SDG&E's service territory. It requested both existing and new generation, as shown in Table 1 below. Information on requirements, such as the minimum capacity, capacity factors and heat rates is also included in Table 1.

During the evaluation of offers for the 2009 Supply RFO, SDG&E also evaluated two non-conforming offers, as well as several conforming bilateral offers, which SDG&E had received earlier. These bilateral offers were from existing facilities and conformed to the RFOs requirements for Product 5 offers from existing units. The Confidential Addendum provides additional detail regarding these offers.

[6] This IE Report uses the CPUC's Long Form template dated November 9, 2010.

Table 1. Products Requested in the 2009 RFO

Product #	Type	Short-term or Long-term	Local or Outside	Term, years	Minimum Offer, MW	Delivery Start	Other
1	DR	Short	Local	3	1	2012	Ability to respond within 10 minutes. Targeted toward non-residential customers with demand >100kW. Under a Direct Load Control program and be curtailable between 12:00 p.m. and 6:00 p.m.
2	New Gen (Toll)	Long	Local	20	100	2010-2014	Min C.F. 30%. Availability 98%. Anticipated HR <=10,500 Btu/kWh. Capable of regulation. Additional value for quick start. Requires Offer contain pricing & option for black start.
3	Existing Gen (Toll)	Short	Local	1 or 2	400	2010/11	Capable of regulation. Started/Shut down as needed. Additional value for quick start. Requires Offer contain pricing & option for black start.
4	Existing Gen (Toll)	Short	Outside	2	200	2010	Capable of regulation. Started/Shut down as needed. Additional value for quick start.
5	Existing Gen (Toll)	Long	Local	10	400	2012	Supply from a unit utilizing OTC will be offered a contract with SDG&E that consists of a 2-year transaction with the possibility to extend for eight 1-year options. Capable of regulation. Started/Shut down as needed. Additional value for quick start.
6	New or Existing Gen (Toll)	Long	Outside	10	200	2012	Supply from a unit utilizing OTC will be offered a contract with SDG&E that consists of a 2-year transaction with the possibility to extend for eight 1-year options. Additional value for quick start.
7A	Firm LD Energy	Short	Local & Outside	2 or 4	200	2010/12	3rd Q 6 x 16 on-peak. Refreshing prices allowed once.
7B	RA	Short	Local & Outside	2 or 4	200	2010/12	3rd Q or full year.

B. SDG&E's Local RA Zone

There is a possibility that there will be a new additional Greater San Diego/Imperial Valley local Resource Adequacy (RA) zone, after the Sunrise Powerlink goes into operation. Sunrise Powerlink is expected to begin deliveries of energy to San Diego in 2012. SDG&E's existing local RA area and the potential new local RA areas are depicted in Figure 1 below. SDG&E informed bidders that this decision will be made by the California Independent System Operator (CAISO), but as of March 2011, no changes have been made to SDG&E's local area boundaries. Since the current local RA zone would be fully incorporated into the broader local area, any RA resources located in the current zone will contribute to meeting RA requirements, whether or not an enlarged zone is created. SDG&E further informed bidders that they must perform their own market research and directed them to the CAISO's study and preliminary statements.[7]

Generation facilities in SDG&E's local RA zones are more limited than those outside the local RA zone. As a result, offer prices for supplies in SDG&E's local RA zone are generally higher than offer prices for system supplies outside the local RA zone. If the CAISO creates the new Greater San Diego /Imperial Valley local RA zone, the supplies available to SDG&E to meet RA in this new zone would increase. Furthermore, prices for offers that become local RA resources, but were not previously qualified as local RA, may increase. SDG&E is monitoring the situation to avoid the potential for stranded capacity and to ensure that the most economically attractive offers are selected, if and when the new zone is established.

C. SDG&E's Local and System RA Needs

Since issuing its RFO in June 2009, SDG&E has updated its Need values for both local and system resources. As discussed in SDG&E's application, SDG&E's bundled customers have a need for local and system resources for all years through 2020. The local Need decreases in 2013, when the Sunrise Powerlink is forecasted to be in service and fully counted by the CAISO in reducing the Need for local resources.[8] Local Need will continue to grow in later years, as load continues to grow.

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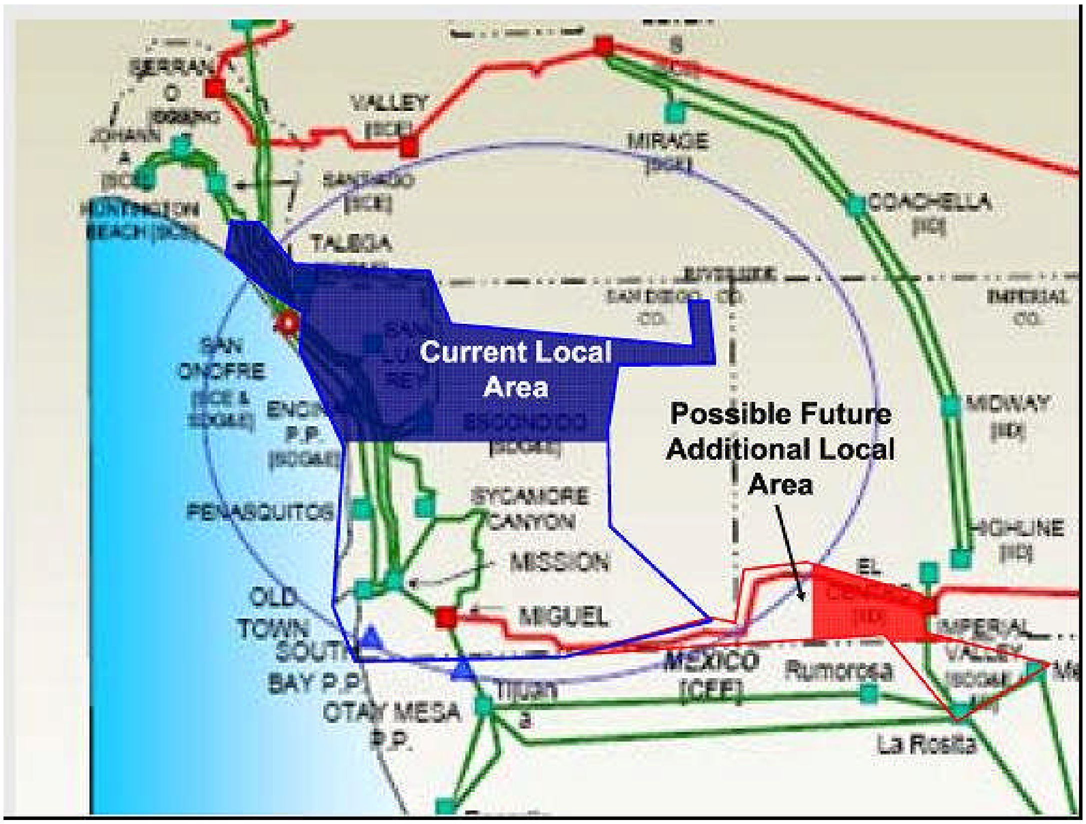
[7] These are available at http://www.caiso.com/1f42/1f42d6e628ce0.html and http://www.caiso.com/20ad/20ad77d04d70.pdf

[8] The Sunrise Powerlink is currently projected to be put into service in 2012. However, for planning purposes, SDG&E assumes that its updated local RA needs in 2012 will still be based on the Sunrise Powerlink not being in service, since local RA needs are determined by October of the prior year, and the Sunrise transmission line will still be under construction in October 2011.

Figure 1. SDG&E's Existing and Possibly New Local Capacity Areas



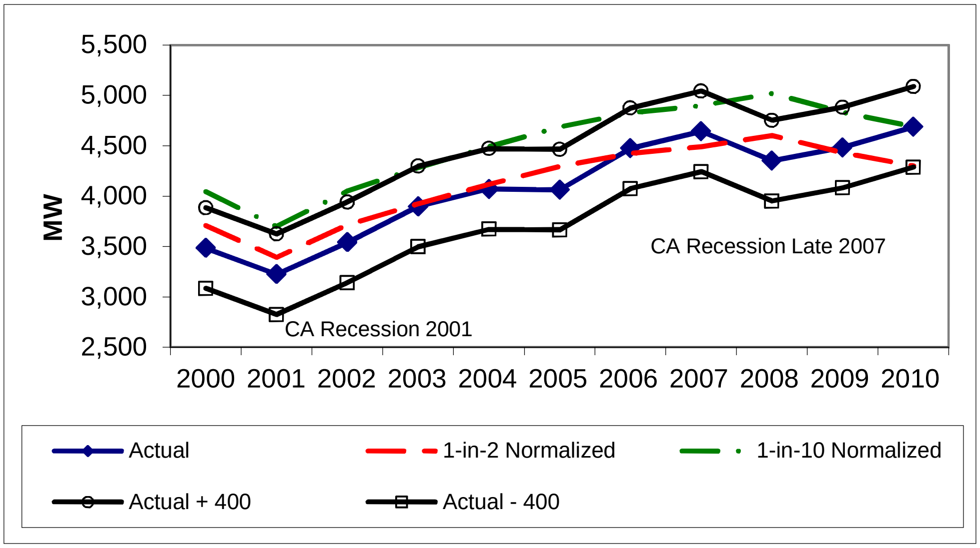
VHC has reviewed estimates of SDG&E's system need, as this need has changed during 2009 and 2010. Further information is presented in the Confidential Addendum.

VHC also reviewed data on SDG&E's peak loads for the period 2000 to 2010. Figure 2 below shows:

- Actual Peak loads,
- Peak loads normalized for 1-in-2 and 1-in-10 weather years, and
- Actual peak loads plus 400 MW and minus 400 MW.

The results show that SDG&E's peak loads can decline or increase significantly from one year to the next. In both 2001 and in 2007, years in which California had economic recessions, the peak loads were significantly lower than the peak load for the year prior to the recession. In some other years, loads increased by much more than the average for the 11-year period. For all years, except 2010, actual peak loads are relatively close to the values for loads normalized for 1-in-2 weather years and below values normalized for 1-in-10 weather years. In 2010, actual loads are almost 400 MW above and approximately equal to the loads normalized for 1-in-2 weather and 1-in-10 weather years, respectively.

Figure 2. SDG&E's Peak Loads 2000 to 2010



Other factors that SDG&E has accounted for in estimating its need for new capacity include:

- The Once Through Cooling (OTC) policy adopted by the state Water Resources Control Board to phase out or greatly reduce the use of coastal and estuarine waters for power plant cooling.[9] The Encina Power Plant (960 MW) must meet this relatively new obligation by December 31, 2017. Hence, to estimate need, SDG&E now assumes the retirement of Encina units 1, 2 and 3, or a total of 320 MW by 2013, with the remaining Encina capacity to be retired in 2017.

- Revised assumptions for load and resources, such as the CEC's forecast, produced in late 2010,[10] as well as updates to all resources including using the CAISO current Net Qualifying Capacity (NQC) resource ratings.[11] VHC notes that 2010 forecasts are below the CEC's 2009 Integrated Energy Policy Report's demand forecast.[12]

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[9] The policy was issued on May 4, 2010 and is available at: http://www.wecc.biz/committees/BOD/TEPPC/TAS/08192010/Lists/Minutes/1/CA_OTCRetirement_TEPPC2020Basecase2010_08_18.pdf

[10] The report is available at http://www.energy.ca.gov/2010publications/CEC-200-2010-011/CEC-200-2010-011-SD.PDF

[11] 2011 Final Net Qualifying Capacity (NQC) Report as posted on the CAISO web site at: http://www.caiso.com/276a/276a8c14493a0.xls

[12] CEC-200-2011-002-CTF, Miguel Garcia-Cerrutti, Tom Gorin, Chris Kavalec, and Lynn Marshall. Revised Short-Term (2011-2012) Peak Demand Forecast Committee Final Report. California Energy

However, if the California economy recovers more rapidly from the recession or if demand response and distributed generation programs are not as successful as assumed, actual demand could exceed the CEC's forecasts.

- Future uncertainties and unanticipated events, including delays or cancellation of planned facilities, premature retirements or extended outages, natural disasters, such as fires and earthquakes, terrorism or sabotage. While SDG&E's planning does not accommodate all the ways that additional power plants may be needed earlier than presently anticipated, VHC believes it is prudent for SDG&E to maintain a modest surplus of capacity rather than a deficit.
- The need to provide a generation resource mix capable of integrating increasing amounts of renewable energy into the grid from intermittent generation technologies. The Product 2 resources will add new capacity with lower heat rates, quicker starting capabilities and greater operational flexibility.

Based on consideration of these factors, VHC concurs with SDG&E that the Product 2 resources being evaluated here are needed to satisfy local Resource Adequacy and prudent planning criteria. Moreover, without their addition, the retirement of the Encina OTC generating units would most likely lead to insufficient local RA capacity.

III. SUMMARY

A. RFO Results to Date

SDG&E selected for short-listing and negotiation a number of offers for the 2009 RFO products. Although this report focuses on the Product 2 contracts, it also indicates the status of all the RFO Products, as shown in Table 1. Table 2 provides a brief summary of the status of each of the products SDG&E solicited in its 2009 All-Source RFO.

Commission, Electricity Supply Analysis Division. CEC-200-2011-002-CTF. pp 13-16.

Table 2. Current Status of 2009 RFO Products

Product	**Type**	**Status**
1	Demand Response (DR)	Negotiations for three-year DR contracts with short-listed offerors have been halted, awaiting CPUC direction.
2	New Local Gen (Toll)	The local capacity from this offer is needed to meet SDG&E grid reliability needs. A portion will be allocated to SDG&E to meet its bundled customers' local and system resource adequacy (RA) needs. Long-term contracts with three short-listed bidders have been signed and are being submitted to the Commission for approval in this application. The cumulative amount of capacity selected from Product 2 offers is 450 MW.
3	Existing Local Gen 2010 - 11 (Toll)	SDG&E negotiated a one-year contract and a one-year extension with NRG Encina for 964 MW to provide local RA capacity needed in 2010 and 2011.
4	Existing System Gen 2010 - 11 (Toll)	No two-year Product 4, non-local offers were selected, because of the uncertainty with SDG&E's open system RA position.
5	Existing Local Gen 2012 – on (Toll)	SDG&E is completing its negotiations of 10-year contracts with short-listed Product 5 offerors for local RA.
6	New or Existing Gen 2012- on (Toll)	No Product 6, non-local offers were selected because changing local and system capacity needs were met by the Product 2, 3 and 5 selections.
7A	Firm LD Energy 2010 - 2012	No 2 or 4-year Product 7A offers were selected, because SDG&E opted to use its short-term hedging program instead.
7B	RA 2010 - 2012	Due to need uncertainty, SDG&E elected to fill remaining RA need closer to the time period of the identified need.

Product 1 requested 3-year contracts to provide Demand Response reductions to be made available on 10-minute notice. Although SDG&E suspended negotiations for the second time in April 2011, it plans to resume negotiations after receiving additional direction from the Commission.

Product 2 requested new, tolling generation located in SDG&E's Local System area for a 20-year contract duration.[13] In this application, SDG&E is submitting the three contracts negotiated with the short-listed Offerors for CPUC approval.

[13] Product 2 is for new, local tolling generation for 20 or more years, starting in 2010 to 2014. Units must be capable of operating at greater than a minimum of 30% annual capacity factor and be capable of regulation at a heat rate <10,500 Btu/kWh.

For Product 3, SDG&E executed a one-year tolling agreement to meet 2010 Local RA needs and agreed to an extension to cover 2011.[14] The tolling contracts executed under Product 3 give SDG&E the ability to satisfy both local and system needs.

All three of the Product 4 offers were less attractive than the Product 7B offers to which they were compared. In addition, the amount of System RA needed was uncertain, due to the uncertainty surrounding South Bay's 2010 designation as a Reliability Must-Run (RMR) unit by the CAISO. Thus, no Product 4 offers were selected. SDG&E also elected not to execute any Product 6 offers, since the short-listed Product 2 and 5 offers, which are needed to address the uncertainty of the local RA situation, would satisfy much of SDG&E's system RA needs.

Product 5 is for tolling agreements for supply from existing generators providing local Resource Adequacy for a 10-year term, starting in 2012. For this product, SDG&E requires flexible resources that are capable of providing regulation during the morning and evening ramps and/or units that can be started and shut down as needed. Supply offered from a unit utilizing Once Through Cooling (OTC) could be offered a contract consisting of an initial 2-year term with the possibility to extend the contract with up to eight one-year contracts. As of April 2011, final contract negotiations are being completed for Product 5 offers.

CalPeak's El Cajon combustion turbine (CT) unit is located at SDG&E's El Cajon substation within SDG&E's Eastern O&M Center and is subject to a 10-year lease with SDG&E that expires on October 31, 2011.[15] The land lease agreement grants SDG&E the option to purchase the plant at the end of the lease agreement.[16] SDG&E has chosen to exercise this option, because the ECEF purchase meets the requirements of Product 5 and will be considerably less expensive than a PPA would be. SDG&E filed its Application (U 902 E) for the Authority to Acquire the CalPeak El Cajon Energy Facility (ECEF) with the CPUC on January 5, 2011.

After the receipt of RFO offers in August 2009, SDG&E determined that it did not need to contract for Product 6 (New or Existing, Long-term, System RA) to satisfy its changing system Resource Adequacy (RA) needs. This decision was made because the short-listed

[14] The contract with NRG is referred to as Cabrillo Power I, LLC for units at the Encina plant.
[15] CalPeak's ECEF is a 52 MW Combustion Turbine (CT) peaking facility currently under contract with the DWR, expiring at the end of 2011. All its associated energy, capacity, and ancillary services products are assigned to SDG&E.
[16] The land lease with CalPeak grants SDG&E the right to buy the El Cajon unit on an "as is" basis at the "fair market value" of the gas turbine, the generator and the electrical/control unit only, less the cost to restore the site to its pre-existing condition.

Product 5 offers (Existing, Long-term, Local RA) could satisfy SDG&E's System RA requirements at a lower cost.[17]
During 2009 and 2010, SDG&E assessed the indexed power market and concluded that this market is currently deep and liquid. As a result, SDG&E decided not to accept any Product 7A offers (Firm, short-term, Liquidated Damages energy). Instead, SDG&E intends to accomplish its price hedging via other resources, such as natural gas and Renewable Portfolio Standard (RPS) resources.

Product 7B could provide a supply resource that contributes at the margin, based on SDG&E's load/generation balance. However, reductions in estimated system need and the availability of adequate RA capacity from Products 2, 3 and 5 led SDG&E not to procure any short-term RA from Product 7B offers.

The remainder of this public IE report focuses on SDG&E's Product 2 RFO offers, their evaluation, negotiation and contracts. The Confidential Addendum provides additional discussion of the specific RFO offers and confidential issues regarding this multi-product RFO.

B. Review of Product 2

The three long-term power purchase tolling agreements (PPTAs) described here resulted from 37 offers in response to the Product 2 solicitation.[18] Contracts were negotiated with the following non-utility entities: Energy Investors Funds' (EIF) Apex Pio Pico Energy Center, 305 MW; Wellhead's Escondido Energy Center, 45 MW; and Goldman Sachs/Cogentrix's Quail Brush Generation Project, 100 MW.

General characteristics of these offers are:

<u>EIF Apex Pio Pico (305 MW)</u>

- Planned COD May 2014,
- 3 General Electric LMS 100PA turbines in simple cycle configuration,
- After a site change from Chula Vista, the project will be located between the Otay Mesa and Miguel substations on 12 acres of private land adjacent to the Otay Mesa power plant,

[17] However, SDG&E recognized that if the negotiations for Product 5 contracts were not successful, it would have to determine how to satisfy any unfilled gaps in its RA needs.
[18] Product 2 is for new, local tolling generation for 20 years, starting in 2010 to 2014. Units must be capable of operating at greater than a minimum of 30% annual capacity factor and be capable of regulation at a heat rate <10,500 Btu/kWh. Additional value was considered for quick start capability with pricing and an option for black start was required, in order to satisfy Product 2 specifications.

- A new Application for Certification (AFC) was needed with a change in site. The new AFC was filed February 9, 2011 with the CEC and has been found to be data adequate.
- The contract was executed on February 2, 2011.

<u>San Diego Community Power Project/Enpex/Cogentrix/Quail Brush Power Project (100 MW)</u>

- Planned COD June 2014,
- Cogentrix (owned by Goldman Sachs) bought out ENPEX Corporation's ownership of the project on February 8, 2011,
- 11 Wartsila 20V34SG reciprocating gas-fired engines, 9.1 MW each,[19]
- Located on private land adjacent to and south of the Sycamore Canyon landfill inside the City of San Diego, accessing the Sycamore substation.
- Interconnection flexibility to either the Miguel-Sycamore line as offered or to the Sycamore-Mission line.
- Will apply for CEC AFC.

<u>Wellhead Escondido (45 MW)</u>

- This is an existing 35 MW CT that will be re-powered to 45 MW.
- Offered COD June 2011, now July 2012, in order to maintain SDG&E's near-term RA by delaying the proposed repower of the existing 35 MW plant to 2012,
- 1 GE LM 6000PC turbine in simple cycle configuration, and
- Located in Escondido on the south side of Hwy 78 just West of I-15, near Palomar. The existing unit has operated on this site for about 10 years and will replace the existing MMC equipment, a 35 MW FT4).

Wellhead Escondido's original Interconnection Agreement can be used as long as the unit's capacity does not exceed 50 MW. The original RFO offer was for the re-power to meet a Commercial Operation Date (COD) of June 2011. During negotiations this date was delayed to July 2012, in order to enable the existing 35 MW unit to remain in operation, while facilitating the shutdown of South Bay, which occurred at the end of 2010. However, meeting the July 2012 COD will require a timely decision by the CPUC to approve this contract.

A contract to cover continued July-December 2010 operation was executed June 1, 2010, and a dispatch option to enable real-time market calls on the Escondido unit was added on July 13, 2010. A contract for 2011 RA capacity and a 2011 Dispatch Option was expected to be

[19] Because SDG&E had requested a reduction in the project size to 100 MW, Cogentrix proposed changes in technology and offered to build either a GE LMS 100 (one 100 MW unit) or a GE LM 6000 (2 units at 50 MW each) or Wartsila reciprocating gas-fired engines (11 units at 9.1 MW each). The Wartsila offer was the lowest-priced and was evaluated and selected.

executed, at the same time as the 25-year Product 2 PPA for the re-powered Wellhead unit, which was executed on February 25, 2011.[20]

Other competitive Product 2 offers were received in August 2009. However, these offers were determined to be less competitive in cost, primarily because Apex had a better position in the CAISO transmission queue than these offers that were similarly located and would not need significant transmission upgrades. The additional costs of transmission upgrades rendered these otherwise competitive offers too high in price. Other Product 2 offers with higher bid-ranking costs were also judged to be non-competitive and were not shortlisted.

Throughout 2009 and most of 2010, SDG&E's procurement group and the project developers relied on their own estimates of transmission upgrade costs. However, when the CAISO released the results of its Cluster 2 Phase I Interconnection transmission study in November 2010, the parties were quite concerned, because CAISO's estimated upgrade costs were many times higher than other estimates. The CAISO's estimated costs of transmission upgrades were based on the need to provide sufficient transmission capacity for all projects in the Phase I queue and were characterized as "worst-case" maximum costs. This assumption, among others, arguably increased the CAISO's Cluster 2 Phase I estimated costs well above costs that had been reasonably expected. In addition to transmission upgrades in SDG&E's service territory, the CAISO's Phase I analysis would also require additional upgrades in SCE's service territory. As of April 2011, project developers, this IE and SDG&E continue to believe the estimated Phase I costs are unrealistically high. See section IV. F of the Confidential Addendum for additional discussion of this issue.

SDG&E also shortlisted one competitively-priced offer and continued negotiations with this counterparty for over a year. As it turned out, the offeror did not have adequate site control. After reaching agreement on many other aspects of the potential contract, SDG&E terminated negotiations when the offeror was unable to demonstrate that it had a site for the project. *Given the protracted nature of the negotiations, VHC believes that a greater degree of due diligence by both the offeror and SDG&E should have clarified the status of the offeror's lack of site control at an earlier date.*

C. VHC Recommendations

With respect to SDG&E's Application for approval of these three Product 2 contracts, VHC finds that

1. SDG&E has conducted a fair and competitive RFO process.

[20] The RFO requested a delivery period of 20 years for Product 2 offers. Wellhead extended its original 20-year offer to 25 years. The delivery period for the other Product 2 offers remains at 20 years.

2. There were no intentional or unintentional biases to unfairly select particular product types or specific offers.[21]

3. SDG&E's evaluations demonstrate that these contracts have lower bid-ranking costs than the other offers received for Product 2.

4. SDG&E used reasonable selection criteria to minimize costs and risks to its customers and to construct a Least Cost – Best Fit (LCBF) portfolio.

5. These three contracts are being entered into in order to meet the CPUC's direction to add new generation and to ensure that adequate capacity exists so that all LSE's can meet local grid reliability criteria. Applying the Cost Allocation Mechanism will be beneficial to SDG&E's bundled customers, since they will not be required to bear the entire cost of this new generation.

For the foregoing reasons, and because these contracts meet the requirements for Product 2, are competitively priced and will provide local RA, energy and ancillary services to customers, VHC recommends that the Commission approve all three contracts.

With respect to SDG&E's future supply RFOs, VHC recommends that:

1. SDG&E review whether the time taken for evaluation of offers, short-listing, contract negotiations and contract execution can be shortened. Additional documentation of procedures prior to issuing an RFO and completion of evaluation models prior to receiving offers may help to shorten the time required.

   Offers for this RFO were received in August 2009, and short-listing was finished in October and November 2009. In general, RFO short-listing and contract negotiation processes can be difficult and time-consuming, sometimes taking years to complete, because issues and contracts may have to be resolved in sequence, and because there are many uncertainties outside of SDG&E and counterparties' control.

2. SDG&E carry out post-RFO "Lessons Learned" reviews with RFO team members and the IE to consider how its RFO processes could be improved and accelerated. For example, "Lessons Learned" could discuss how to implement improvements, such as:

   - Better documentation of the evaluation processes and models. Documentation would facilitate model review, validation and transfer, when members of the evaluation team change, and

   - Enhanced communication among management and negotiators about specific objectives and particular wording of the negotiated terms and conditions in

[21] Although there were offers from affiliates, no affiliate offers were awarded contracts.

contracts for each Product, as the contracts are revised. Better communication might facilitate solutions that would be more readily agreed to by different counterparties and, thus, reduce the time needed to negotiate contracts.

3. SDG&E consider a longer time window for soliciting short-term offers in future RFOs. Nevertheless, VHC finds that the rationale to include short-term contracts for one or two years starting in 2010 or 2011 was reasonable for this RFO, because of the major uncertainties that could thereby be resolved by 2012. Short-term contracts with durations longer than two years may provide increased flexibility for later start dates of new long-term contracts. Then, again, SDG&E always has the option to have another RFO to obtain additional short-term contracts
4. SDG&E develop an approach to analyzing congestion costs to apply, when it receives more than one attractive offer at locations that would contribute to congestion.
5. SDG&E review the marginal costs for capacity from bids to its RFO for possible consideration as proxy values for years not included in the contract period for use in its economic evaluation of offers.
6. SDG&E examine its Ancillary Services (A/S) price forecasts and compare the forecasts with the A/S revenues it currently receives. VHC also suggests that SDG&E further analyze A/S prices under various scenarios that incorporate the development of resources that lack operational flexibility.
7. The CPUC and SDG&E work with the CAISO to improve the process, input assumptions and timeliness of CAISO's studies of transmission interconnection and network upgrade costs.
8. SDG&E conduct expanded LCBF analyses to further evaluate the effects of key uncertainties in facility and offer on-line dates, demand growth, fuel prices, GHG regulations and other market conditions.
9. SDG&E consider implementing a more robust optimization approach for determining the selected combination of contracts in the LCBF portfolio for RFOs with multiple products.
10. SDG&E consider soliciting fewer Products in future RFOs.
11. SDG&E consider placing a limit on the number of bids one offeror can submit for a specific product, unless SDG&E sees benefits from receiving a very large number of bids from a single entity, as was the case for Product 7B.
12. SDG&E review historical data on contract defaults to determine if such data might be useful in setting collateral requirements.
13. SDG&E consider further refinements to its determination of collateral requirements. After RFO offers were submitted, SDG&E revised its methodology for calculating the collateral needed from offerors, thereby reducing its requested RFO collateral

requirements. SDG&E should continue to refine its methodology for calculating collateral needs in future RFOs.

14. SDG&E provide additional information to bidders on collateral required, including different requirements for the three time periods that are now being applied in the negotiated contracts. (For this RFO, SDG&E specified collateral requirements that varied by product and credit rating of the Seller, but were not differentiated by the periods for development, for satisfaction of Conditions Precedent up to the delivery date, and for the delivery period.)
15. SDG&E develop a quantitative method to include a credit-risk adder in its short-list evaluation of offers. Doing so would provide a quantitative measure to distinguish offers with varying collateral amounts or offers providing lower quality collateral. The use of a credit-adder would not preclude taking into account other factors and trade-offs during the contract negotiations.
16. SDG&E confirm and re-affirm during the shortlisting and negotiation process that offerors have adequate site control to build their projects.
17. SDG&E institute the following changes for its next RFO in its outreach to potential Demand Response (DR) bidders:
    - Identify DR firms not on SDG&E's current list of 900 email addresses used for its 2009 RFO,
    - Expand coverage of the press release for the contracts resulting from this RFO and for announcing the next RFO. The 2009 press release was picked up by MW Daily and California Energy Markets,
    - Interview those DR attendees at the pre-bid conference that did not submit bids,
    - "Color code" or otherwise highlight the DR portion of SDG&E's website RFO materials, since most of the products being solicited are supply-side rather than demand-side, and
    - Provide additional descriptions of the CAISO's Proxy Demand Resource bidding program.

IV. RESPONSES TO QUESTIONS IN THE LONG FORM TEMPLATE

VHC's responses to the Commission's Long Form Template Questions are given below. Responses to some questions reference VHC's Confidential Addendum.

A. Role of the Independent Evaluator (IE)

1. Describe key IE roles – IEs provide an independent evaluation of the IOU's bid evaluation and selection process and help inform the CPUC and the Procurement Review Group (PRG) about the process by addressing the following questions:

a. Did the IOU conduct adequate outreach to potential bidders and did its outreach activities result in an adequately robust solicitation to promote competition?

VHC began its role as IE for SDG&E on March 11, 2009, by reviewing and commenting on a draft of the RFO. The RFO was posted on the SDG&E 2009 Supply RFO web site on June 9, 2009. SDG&E also issued a press release, which was picked-up by some trade publications, and contacted likely bidders using a list of 900 e-mail addresses.

SDG&E posted four sets of questions and answers on its RFO and on July 8, 2009, held a Pre-Bid Conference to which potential bidders were invited. Andy Van Horn, the IE, attended this meeting. Fifty-six attendees signed in at the Pre-Bid Conference. Some potential bidders had more than one representative present.

In response to the RFO, SDG&E received responses from a sufficient number of Offerors to indicate that the RFO was competitive. (Details are given in the Confidential Addendum.)

As expected, there were a limited number of bids for Product 1 (DR) and for Product 3 (Existing local, short-term resources) and Product 5 (Existing local, long term resources). Several additional conforming bilateral offers were submitted prior to the RFO due date and were evaluated along with the other Product 5 offers. For the other Products, several bidders submitted multiple bids and some submitted options with differing terms from an individual generating facility. Although there were several offers from an SDG&E affiliate, none of those offers resulted in a contract for any product.

Taking into consideration SDG&E's limited geographic area and the fact that there are relatively few existing local generating facilities, the number of responses is reasonable and sufficient to promote competition. VHC believes that SDG&E conducted adequate outreach for its Supply Products 2 to 7.

For additional information on outreach to potential bidders, see section III of the Confidential Addendum.

b. Were the IOU's bid evaluation methodology and selection process designed fairly?

SDG&E evaluated its Product 1 (DR) offers separately from the supply bids. VHC concurs that the evaluation of DR offers independent from the evaluation of supply options is warranted, because supply and demand-response economic analyses cannot be compared directly, and the CPUC has developed specific methods for DR. DR products have different benefits depending on the perspective used (participant, rate impact, program administrator and total resource cost). Furthermore, the capacity values used for the assessment of DR bids, as required under CPUC guidelines, may differ from the capacity values used in supply-side evaluations.

SDG&E selected its short-list of supply offers for years 2010 and 2011 (Product 2, new, local, long-term; Product 3, existing, short-term, local; Product 4, existing, outside, short-term; and Products 7A, Firm LD Energy, and 7B, RA, short-term, local and outside), separately from its evaluation of supply options for years 2012 and beyond.

SDG&E analyzed offers for the later years using the following steps:

- New local generation (Product 2, long-term),
- Existing Long-term local generation local generation (Product 5, long-term), and local and outside firm LD Energy (Product 7A, short-term) and RA (Product 7B, short-term), and
- New or existing long-term outside generation (Product 6).

VHC finds it reasonable to first determine the lowest-cost combination of offers that would meet SDG&E's local and system short-term needs and then select offers for later years. This approach allowed SDG&E to compare both short-term and long-term offers to meet its needs for years 2011 and 2012. This was also necessary in order to have agreements in place for 2010 and 2011.

At its Pre-Bid Conference, SDG&E informed bidders that it would use the following three-level evaluation process for selecting supply offers for Products 2 through 7B.

Level I: Conformance Check

SDG&E checked to ensure that each offer met minimum criteria, as specified for each Product type. The following minimum RFO criteria were checked:

- New or existing capacity resource,
- Contract term and start date,
- Black start operation,
- Local or system RA capacity, and
- 100% deliverable RA capacity.

Level II: Develop Short-List

The short-list was established by evaluation and analysis using pre-established quantitative and qualitative criteria. SDG&E ranked the offers using levelized benefit-adjusted costs. Offers were compared for each Product before offers among Products were compared.

The impacts due to differences in start dates and lengths of contracts were accounted for in the economic evaluation in order to establish the short-list. The energy benefits of offers were included as part of SDG&E's Level II analysis.

The number of offers included in the short-list for each product was sufficient to meet a multiple of SDG&E's anticipated capacity needs. As a result, potentially competitive offers were not excluded from the short-lists.

Level III: Modeling/ Detailed Analysis

Short-listed offers were modeled by applying SDG&E's production cost model to evaluate how the offers would perform as part of SDG&E's portfolio.

The results from the production cost modeling combined with spreadsheet analyses took into account both benefit and cost factors, including capacity, energy, greenhouse gas emissions, ancillary services, transmission, congestion and debt equivalence. Not all factors would be analyzed or quantified if there was no difference in that factor between the offers for that Product. Offers to meet SDG&E's needs for years 2010 and 2011 were evaluated prior to offers for later years. Then, SDG&E selected the cost-effective offers that could meet its local area RA requirements before selecting offers that could meet its system RA needs. SDG&E also used qualitative measures, such as site control, to differentiate among offers with similar quantitative values.

SDG&E's analysis sought to optimize the selection of short-term and long-term offers, taking into account the value of flexible operations (e.g., ramping and quick start and stop). The selection of offers was also influenced by other factors, such as uncertainties resulting from the retirement of generating facilities that currently rely on once-through cooling (OTC) and from the possibility of project delays.

In its RFO SDG&E reserved "the right to evaluate non-conforming Offers and may request additional data from Respondents to bring non-conforming Offers into conformance." Prior to the RFO, SDG&E had been in negotiations regarding several power plants. Conforming offers were submitted prior to the RFO and then evaluated along with the offers submitted on the RFO due date. Non-conforming offers were also considered, but ultimately were evaluated separately and rejected.

Based on our review and detailed examination that included checking the methods and separate spreadsheet evaluations, VHC concludes that SDG&E's evaluation methodology and selection process were designed and executed fairly.

See the Confidential Addendum for additional information.

c. Were the IOU's bid evaluation and selection process, and the negotiation of specific contracts, administered fairly?

VHC reviewed SDG&E's key assumptions, economic analysis calculations, the results of its production simulation modeling, its spreadsheets for calculation of collateral and levelized costs, and the selection of its short-lists. VHC also joined in telephone calls for the negotiations of individual contracts with bidders. SDG&E regularly documented the status of negotiations in a weekly Project Status Matrix, which VHC reviewed and commented upon. In some cases, VHC requested re-analysis of offers, including Least-Cost, Best-Fit (LCBF) analysis, to determine the sensitivity of the rankings. In other cases, VHC performed its own calculations to test results. VHC also read and reviewed draft contract provisions and commented on them, as it judged necessary.

VHC believes that SDG&E's bid evaluation and selection process, and the negotiation of specific contracts were administered fairly.

For more discussion of contract negotiations, see the Confidential Addendum.

d. Did the IOU make reasonable and consistent choices regarding which bids were rejected, which were short-listed and which were brought to the CPUC for approval?

It is VHC's opinion that SDG&E made reasonable and consistent choices regarding bids which were rejected, which were short-listed and which were brought to the CPUC for approval. Key criteria, including each offer's levelized benefit-adjusted costs and the balance among negotiated contract terms and conditions, were applied consistently to determine the contracts to be brought to the CPUC for approval.

2. Describe IE oversight activities (i.e., attended negotiation meetings, reviewed Request for Proposals materials, attended pre-bid conference, evaluated proposals and/or reviewed evaluation process and results, etc.) and reporting/consultation with CPUC, PRG and others.

VHC team members reviewed and commented on a draft of the RFO in March 2009. Andy Van Horn attended the Pre-Bid Conference, held on July 8, 2009. He reviewed four sets of questions and answers to queries by potential bidders, which were initially prepared by SDG&E and then posted on SDG&E's web site. He was on-site the day of the initial receipt and processing of the bids, which were delivered electronically on August 10, 2009. He confirmed that all affiliate bids arrived before the deadline and maintained a copy of the offers for later corroboration.

During the bid evaluation period, VHC conducted interviews on-site and held phone conversations with SDG&E personnel, and participated in numerous conference calls and e-mail communications to discuss the bid processing and evaluation criteria. VHC reviewed SDG&E's economic spreadsheets, methodology, models and key assumptions. VHC also modified some of SDG&E's assumptions to test and validate the economic evaluations and cost-effectiveness results.

VHC recommended that SDG&E develop a weekly Project Status Matrix to track negotiations for each product and worked with SDG&E on its content. VHC regularly reviewed the updated Project Status Matrix. VHC reviewed all emails and participated in all calls with affiliates during the evaluation and negotiation process.

During the negotiation process VHC reviewed draft contracts, including mark-ups, and offered corrections and comments on particular sections when warranted.

In addition, VHC participated in Procurement Review Group (PRG) meetings throughout 2009, 2010 and 2011 to date. VHC made presentations at a number of these meetings, including September, October and November 2009, March, August and December 2010, and January 2011.

3. Any other relevant information not asked above but that may serve to make future RFOs more transparent to parties.

See VHC's Recommendations in section III C. of this report and also in section IX of the Confidential Addendum. It would make future RFOs more transparent to parties, if SDG&E provided additional information on the collateral required, including the different requirements for the three time periods that are now being applied in the contracts resulting from this RFO. (For this RFO, SDG&E specified collateral requirements that varied by product and credit rating of the Seller, but were not differentiated for different time periods. The three periods with different collateral requirements that apply to Product 2 are the pre-construction period, the construction period and the delivery period.

B. How did the IOU conduct outreach to bidders and was the solicitation robust?

See our answers below and our response to A.1.a. For additional information on outreach to potential bidders, see section III of the Confidential Addendum.

1. Describe the IOU outreach to potential bidders (e.g., sufficient publicity, emails to expected interested firms)

See Response to A.1.a.

2. Identify principles used to determine adequate robustness of solicitation (e.g., number of proposals submitted, number of MWhs associated with submitted proposals)

See Response to A.1.a. For each Supply Product SDG&E determined that the number of MW offered was sufficient to construct a short-list with offers that summed to a multiple of the MW needed.

3. Did the IOU do adequate outreach? If not, explain in what ways it was deficient.

See Response to A.1.a. For all the Products, except Product 1, Demand Response, the number of offers was robust. For Demand Response, partly because the number of potential offerors is limited, there was a limited number of offers. See VHC's Recommendations in section III C. of this report to improve outreach to potential DR bidders.

4. Was the solicitation adequately robust?

Yes. See Response to A.1.a.

It is VHC's judgment that the number of responses to this RFO for the requested products was reasonable and met expectations for this solicitation. The offers received have resulted in competitive prices for these Products.

5. Did the IOUs seek feedback about the bidding/bid evaluation process from bidders after the solicitation was complete?

Not to VHC's knowledge.

6. Was the outreach sufficient and materials clear such that the bids received meet the needs the solicitation was intending to fill?

SDG&E received bids for all products in its RFO. After bids were evaluated, SDG&E determined that it did not need offers for Products 6 (New or existing, long term, system) and 7A (Firm LD energy, short-term, local and system) and Product 7B (RA, short-term, local and outside). SDG&E received a sufficient number of bids to create robust short-lists and to select and negotiate competitive contracts.

7. Any other information relevant to outreach to bidders and robust solicitation not asked above but important to the IOU's process.

Because a number of bids were mutually exclusive, unless SDG&E sees benefits from receiving a very large number of bids from a single entity, for its next RFO it should consider placing a limit on the number of bids an Offeror can submit for a particular product.

It has also been suggested that holding an additional pre-bid conference outside of the San Diego area might increase the number of offers. For example, for its 2010 Renewables RFO, SDG&E hosted two pre-bid conferences. One of them was in the Imperial Valley, which has the potential for small solar, geothermal and biomass projects. However, in VHC's opinion holding two or more pre-bid conferences in different locations for an RFO for conventional supplies would probably not increase the number of bids.

C. Was the IOU's methodology for bid evaluation and selection designed fairly?

1. Identify the principles you used to evaluate the IOU's bid evaluation methodology, including the following (at a minimum):

a. Is the IOU bid evaluation based on those criteria specified in the bid documents? In cases where bid evaluation goes beyond the criteria specified in the bid documents, the IE should note the criteria and comment on the evaluation process. Do the IOU bid documents clearly define the type and characteristics of products desired and what information the bidder should provide to ensure that the utility can conduct its evaluation?

The RFO documents defined the type and characteristics of each of the products desired, as well as the criteria on which SDG&E based its evaluation. The RFO specified, by product, the type of offer (i.e., DR, new or existing generation, Firm LD energy, and RA), location within or outside SDG&E's service area, the delivery start date, the term for the offer as well as other requirements (e.g., capacity factor and regulation capability).

In its RFO, SDG&E listed the following qualitative factors to differentiate among offers with similar benefit-adjusted costs:

1. Brownfield vs. Greenfield – the proposed location will be assessed to determine if the project is located at a brownfield or greenfield site.
2. Environmental stewardship – SDG&E will assess the project team's history and any special benefits of the specific Offer.
3. Financing plan – the Offer will be assessed as to the plan and likelihood of the project securing the necessary financing.
4. Technology, major equipment manufacturers and operational flexibility. The evaluation will include an assessment of the proposed technology's commercial operating history, and the manufacturer's U.S. presence and experience.
5. Operational flexibility of generating assets available to SDG&E. This factor incorporates unit capabilities that include size, start-up time, ramping response, minimum up and down times.

6. Development risk – consideration will be given to site control, regulatory and other risks as appropriate that could diminish the viability of the project.
7. Corporate capabilities and proven experience.
8. Ability to meet schedule.
9. Project team (environmental, engineering, equipment procurement, construction) – the Project team was assessed to determine whether it had demonstrated experience with the specific technology and implementation plan they proposed.
10. Credit Risk.

VHC suggests that an eleventh item be added to this list: 11. Confirmation of Site Control, *in order to increase the awareness of various factors affecting the likelihood that the project can be built on the offered site.*

At the Pre-Bid Conference, SDG&E also informed bidders that it would reject offers which were deemed to have unreasonably low or high offers.

All forms and documents necessary to submit offers were posted on the 2009 RFO web site. Potential bidders were provided the opportunity to ask questions about the RFO. Four sets of questions and answers were prepared by SDG&E, then reviewed and modified by VHC and then posted on the website.

Potential bidders were invited to the Pre-Bid Conference at which SDG&E made presentations addressing:

- Anti-trust guidelines,
- Procurement oversight,
- Bid evaluation approach,
- Other RFO requirements (i.e., collateral, RFO milestones and schedule), and
- Communications.

Bidders were informed that SDG&E would check that the offers met the minimum criteria specified in the RFO, and that SDG&E reserved the right to consider non-conforming offers and would contact bidders for clarification to clear non-conforming conditions. SDG&E explained how it would evaluate offers to develop short-lists and its approach to conducting more detailed analysis of those bids on the short-lists.

See the response to Long Form Topic A.1.b above for further clarification of SDG&E's evaluation methodology and selection process.

VHC believes that SDG&E's communications and presentations concerning its evaluation process were consistent with the approach it used to select offers and that all potential bidders were given adequate opportunity to ask questions about SDG&E's methodologies. Overall, SDG&E's bid documents defined the type and characteristics of products desired and indicated the information the bidder needed to provide in order for SDG&E to conduct its evaluation.

As noted in the Recommendations, VHC believes that additional information regarding collateral requirements could have been supplied to bidders. Since offers were submitted in this RFO, SDG&E has changed its collateral requirements.

b. Does the methodology identify how qualitative and quantitative measures were considered and were consistent with an overall metric?

SDG&E informed bidders of its methodology, discussed in Response to Topic A.1.b above. SDG&E's explanation of its methodology identified both qualitative and quantitative measures, as well as the overall metric, levelized benefit-adjusted costs. Once offers were determined to conform to the requested Product requirements, the primary metric for short-listing was the cost metric. Quantitative measures were primarily considered during the negotiations.

c. Are there differences in the evaluation method for different technologies that cannot be explained in a technology-neutral manner (e.g. evaluation metric should be ability to ramp 10 MW/minute rather than, must be a hydro storage facility)?

Product 1 (DR) offers were evaluated separately from Products 2 through 7B, the supply offers. Because there are specific CPUC criteria for DR, DR offers were not directly compared to supply-side offers. This is partly because different perspectives and mandated cost-effectiveness tests lead to different comparisons of the attractiveness of DR offers compared to supply-side offers.

There were differences in requirements by product for the supply offers as shown in Table 1. For each of Products 2 through 7B, there was no difference in the evaluation methods applied across different technologies. Of course, certain technologies were likely to provide better capabilities for meeting each different Product's requirements, which were specified in a technology-neutral manner.

d. Was the bid evaluation methodology consistent with CPUC direction?

Yes. SDG&E used the appropriate cost-effectiveness tests for the DR offers. SDG&E also performed its selection process to find the appropriate ranking of offers within its selection for individual Products 1-7 and to construct an LCBF combination of supply offers in accord with CPUC direction.

2. Describe the IOU's Least Cost Best Fit (LCBF) methodology (or alternatively include IOU's own description).

For Product 1(DR), SDG&E used the CPUC's adopted cost-effectiveness tests, and supplemented this analysis with a matrix scoring system shown in Appendix B of the Confidential Addendum.

The steps in SDG&E's LCBF analysis for Supply Products 2 to 7 are described here and in section IV. A.1.b. SDG&E analyzed its supply options for years 2010 and 2011 (Product 2, new, local, long-term; Product 3, existing, short-term, local; Product 4, existing, outside, short-term; and Products 7A and 7B, Firm LD Energy and RA, short-term, local and outside), separately from its evaluation of supply options for years 2012 and beyond.

For the later years (2012 – on) SDG&E used the following sequence to determine its LCBF needs for:

1. New local generation (Product 2, long-term),
2. Existing local generation (Product 5, long-term),
3. Local and outside firm LD Energy (Product 7A, short-term) and RA (Product 7B, short-term), and
4. New or existing long-term outside generation (Product 6).

A sequential process was applied, based on the timing or need for each given Product. SDG&E first analyzed those Products with the most constraints, proceeding to those Products with the least constraints. All Products were then evaluated based on the costs and benefits which each offer would provide as part of SDG&E's portfolio.

The short-list evaluations were largely conducted using particular sets of assumptions and components embedded in several spreadsheet models. VHC reviewed and critiqued a number of assumptions and methods, as indicated in the Confidential

Addendum. Among the areas reviewed by VHC for the RFO product evaluations were the:

- Discount Rate,
- Collateral Requirements and SDG&E's Calculation Methodology,
- Debt Caps and debt/equity ratio caps,
- Valuation Metrics,
- Capacity Values,
- Energy Values,
- Transmission Upgrade Costs
- Ancillary Services Values and Methodology,
- GHG Price/Adder, and
- Other assumptions.

Each offer was initially ranked by Product by applying SDG&E's Level 2 Screening methodology. SDG&E used its screening process to rank the list of offers. The top-ranked offers from the screening process were then evaluated based on SDG&E's Level 3 analysis, which used a production cost model to determine the energy benefits, when the offer was added to SDG&E's bundled customers' portfolio. Level 3 analysis also included transmission interconnection costs and ancillary service benefits. Various combinations of RFO contracts were tested using the framework described in the Confidential Addendum to determine the LCBF portfolio.

VHC tested the sensitivity of potential short-listed choices to several key uncertainties, as indicated in the Confidential Addendum. Overall, SDG&E's LCBF portfolio balanced uncertainties imposed by the Sunrise Transmission Link, OTC retirements, timing of economic recovery, re-emergence of Direct Access and potential delays or cancellations of resources.

Based on our review, VHC determined that the Level 2 screening was appropriate for creating the short-list and that the Level 3 Production Cost Modeling, as part of the portfolio evaluation, has resulted in an appropriate LCBF selection of offers from this RFO.

For future RFOs, VHC recommends that SDG&E conduct expanded LCBF analyses to further evaluate the effects of key uncertainties in facility and offer on-line dates, demand growth, fuel prices, GHG regulations and other market conditions.

VHC's confidential comments on particular areas are provided in sections IV. A through IV. K. of the Confidential Addendum.

3. Did the IOU bid evaluation criteria change after the bids were received? Explain the rationale for the changes.

SDG&E's basic bid evaluation criteria remained the same during the evaluation process. The cost and benefit calculations were refined and corrected as needed, and assumptions were updated during the year following the receipt of bids, while negotiations were conducted with the short-listed parties.

4. Using the principles in #1, evaluate the strengths and weaknesses of the IOU's LCBF methodology:

a. How did the IOU methodology compare to other methodologies used in other solicitations, to the extent that the IE can make such comparisons?

For this solicitation SDG&E used an evaluation approach similar to the approach taken in its prior All Source RFO in 2007. However, the specific models used were either newer versions or replacements for models applied previously.

For the short-term offers, SDG&E optimizes its selection, in order to find the lowest levelized costs with benefits, and makes other adjustments to normalize the lifetimes for the comparison of different offers. SDG&E then examines various combinations of offers it judges to be feasible, in order to find the combination that meets its local and system needs at the lowest costs.

SDG&E negotiates the contract terms and conditions after the short-listed contracts are selected. It periodically adjusts its LCBF combinations as negotiations proceed to account for changing Need and changes to other assumptions, such as changes in contract terms and conditions and to counterparties dropped from further negotiations.

VHC believes that SDG&E's methodology has yielded an appropriate LCBF selection of offers and an LCBF portfolio.

b. Did the methodology have a bias against any technology, operating characteristic, location, etc.?

No. The analysis to rank offers the costs (including locational costs) and benefits of individual bids and the Level 3 LCBF analysis was not biased. Transmission information from CAISO system impact studies was not uniformly available nor uniformly applicable, which could affect the ranking of some offers. The CAISO's current Cluster analysis approach, which can significantly over-estimate transmission upgrade costs, has the potential to delay or derail projects that may not, in fact, require costly upgrades. Nevertheless, the short-list selection for each Product was sufficiently broad to avoid bias in the selection of short-listed offers.

c. Discuss the role of "portfolio fit" in LCBF in this solicitation's methodology.

See Responses to A.1.b and C.2 above.

d. Discuss any issues of transmission-related cost (or benefit) impacts and estimates. What procedures did the utility have in place for acquiring all appropriate transmissions information, subject to constraints imposed by FERC's Standards of Conduct?

In its evaluation of offers, SDG&E included estimated costs for transmission interconnection and network upgrades for new resources by applying an annual charge based on the estimated capital expenditures for interconnection and network upgrades. SDG&E is aware of potential transmission constraints and lines where new generators might have to pay significantly higher upgrade costs, if and when currently available transmission capability is exceeded by other new plants that may precede the selected RFO projects in the CAISO queue.

There was no need to assess the costs of transmission upgrades for offers from operating plants, such as the Product 5 offers. However, the estimated costs of transmission upgrades were important for distinguishing among the Product 2 offers for new facilities. SDG&E applied its own estimates of transmission upgrade costs in its determination of the shortlisted offers in 2009.

Results from the CAISO Cluster 2 Phase 1 transmission interconnection study were released on November 15, 2010, more than a year after RFO shortlists were developed, but before the completion of negotiations.[22] The maximum costs of the Phase I study transmission upgrades were estimated to be very much higher for Apex Pio Pico, including network upgrades in SDG&E's service territory and in SCE's territory, and for Cogentrix/Enpex's 200 MW project before its reduction in size to 100 MW, also including upgrades in SCE's territory. (Since Wellhead Escondido is a

[22] CAISO, Cluster 2 Phase 1 Cluster Interconnection Study, Group Report for SDG&E Area. November 15, 2010.

repower of an existing project there is no upgrade or interconnection issue, if the plant's capacity remains below 50 MW.)

If imposed, these Phase I costs and the time to construct all the upgrades would render these Product 2 projects uneconomic. Based on a number of analyses commissioned by Apex Pio Pico, Apex has made public its concerns regarding the CAISO Cluster 2 Phase 1 Interconnection Study. Its concerns include the following:

- The CAISO study combines fully dispatchable local generation that is needed to provide local In-Basin reliability with Renewable Portfolio Standard ("RPS") intermittent resources outside the local area. The inclusion of Imperial Valley resources within Cluster 2 has led to excessive upgrades being allocated to reliability-needed facilities, such as the EIF Apex Pio Pico project;
- The deliverability study does not match generation to load with a realistic dispatch;
- The deliverability study's projection of substantial exports of Local Capacity out of the San Diego area to SCE creates an artificial need for large "backbone" transmission network upgrades linking San Diego and SCE, in order to accommodate the assumed exports;
- The percentage cost allocation of individual network upgrades in the Phase 1 study to Apex Pio Pico appears excessive relative to the percentage allocation to RPS-driven facilities in the Cluster study (e.g., two to four times as high). This may be driven by combining reliability-driven In-Basin generation with RPS intermittent generation in remote locations within a single Cluster, and
- The inclusion of all projects in the queue, both currently proposed along with previous serial projects, in the CAISO system impact studies has resulted in the transmission model using available transmission system capacity for projects that are not imminent. By including projects that are not making progress towards completion, but remain in the CAISO queue, unneeded network upgrades were projected. The estimated costs for these excess upgrades were then allocated to other facilities.

Neither SDG&E, the project developers nor this IE believes the Phase 1 network upgrade cost estimates are realistic. If the actual transmission upgrade costs reasonably attributable to either of these two projects are even close to the Phase 1 estimates, these projects most likely will not be cost-effective or able to be built on schedule.[23]

[23] In its August 2010 comments to the CAISO regarding possible changes to CAISO interconnection procedures, SDG&E stated: "…the Phase I study results will continue to provide misinformation to the IC [Interconnection Customer], the financial institutions working with the ICs to finance the project, and to the

The Phase 2 Cluster study is now in progress. In order to participate and retain their queue positions, EIF Apex and Cogentrix Quail Brush made deposits on February 11, 2011. The results of the Phase 2 study will be highly dependent on the assumptions, particularly the number of Cluster 2 projects that remain in the queue.

Because the upgrade costs will remain uncertain for some time, and to protect ratepayers and keep the final prices below the prices of non-shortlisted offers, SDG&E, Apex and Cogentrix negotiated Conditions Precedent that limit the maximum recoverable network transmission upgrade costs in each contract. These and the other CPs should enable the Commission to approve these contracts knowing that the transmission upgrade costs are capped. However, the CPs do not fix a CAISO study process that may significantly delay and/or contribute to the cancellation of desirable projects.

VHC recommends that both the CPUC and SDG&E work with the CAISO to improve the accuracy and timeliness of CAISO's studies of transmission interconnection and network upgrade costs.

e. How were the evaluation criteria weighted and was the weighting appropriate?

VHC believes that SDG&E used reasonable criteria to rank offers in its preliminary screening analysis. For the supply-side offers, the economic evaluations were based on the costs and benefits of the offers over the relevant time periods. Subjective parameters were not included in the ranking of offers for the short-list nor were they included in the ranking for the final selection of offers after the production cost modeling. Subjective factors were considered during the negotiations to assess the likelihood that individual developers would be successful in meeting the negotiated terms and conditions and to bargain for various improvements to the offers.

f. What future LCBF improvements would you recommend?

Supply Products

VHC believes that SDG&E's production simulation modeling provides reasonable estimates of the energy benefits from offers. However, the model does not co-optimize the dispatch of resources to maximize and energy and ancillary services values. VHC believes the SDG&E process to estimate the energy and ancillary

PTO's [Participating Transmission Owner's] procurement department. SDG&E believes this is a disservice to the developers." SDG&E stakeholder comments to the CAISO re: Small and Large Generator Interconnection Procedures Draft Final Proposal and Meeting. August 4, 2010.

benefits from new offers is uniformly applied and reasonable. Nevertheless, VHC recommends that SDG&E continue to examine the calculation of ancillary services benefits for offers in future RFOs.

In particular, SDG&E should examine more recent ancillary services settlement prices for various existing units, as well as CAISO's more recent "Market Redesign and Technology Upgrade" (MRTU) prices. This would ensure that estimates of current A/S prices match actual settlement results. VHC also recommends that SDG&E evaluate whether ancillary services prices are likely to increase in future years, as the proportion of renewable resources increases. The escalation of A/S benefits should be estimated in light of the large amount of non-dispatchable and/or intermittent renewables coming on line, which will most likely increase the need and price for A/S. It will also be useful for SDG&E to continue to review the relationships of CAISO A/S prices with market energy, capacity and fuel prices.

5. Describe how the IOU sought brownfield/repowering development opportunities.

Over all the supply products, SDG&E sought offers from both existing and new generation, located at brownfield and new sites. The Wellhead Escondido repowering project is an example.

6. Did the IOU consider contract viability?

SDG&E did not incorporate quantitative measures to assess contract viability in its initial rankings of supply offers. However, SDG&E did make judgments on the trade-offs among terms and conditions of contracts and considered the capabilities of each developer and proposed project to satisfy the Conditions Precedent and to deliver as contracted.

After more than a year of negotiations with one shortlisted offeror, it was determined that the offeror did not have site control, and the negotiations were terminated. As recommended above, VHC suggests that SDG&E confirm and re-affirm during the shortlisting and negotiation process that offerors have adequate site control to build their projects.

7. Any other information relevant to bid evaluation and selection not requested above but important in evaluation of the IOU's methodology.

VHC believes that SDG&E has significantly improved its methodologies for estimating credit and collateral risks and requirements, as discussed in the

Confidential Addendum. By adopting new elements of its methodology SDG&E has reduced its collateral requirements significantly below the amounts requested in the RFO. These reductions will not only enable prices to be lower than they otherwise would be, providing potentially significant savings to ratepayers over the life of long-term contracts, but will give developers additional flexibility and reduce their need for financing.

D. Was the LCBF evaluation process fairly administered?

1. Identify the principles you used to assess the fairness of the LCBF evaluation process, including the following (at a minimum):

a. What qualitative and quantitative factors were used to evaluate bids?

SDG&E used a levelized benefit-adjusted cost ($ per kW-year) to rank supply offers. This metric takes into account the contract price for capacity, energy benefits, ancillary services benefits, transmission costs and greenhouse gas costs. CPUC Decision 07-12-052, p 152 states: "All resources within an RFO should be compared against one another on a consistent, LCBF basis using the GHG adder to increase the costs of fossil resources…." The Commission also indicated that the methodology and assumptions used in making GHG calculations for LTPP should comport with the direction given in AB 32 and SB 1368. (Ibid, p.232.) To derive the costs and benefits for the supply products, SDG&E used its Level II and Level III quantitative analysis results. SDG&E short-listed offers using its Level II analysis. Then the Level III analysis modeled portfolios of short-listed supply offers. The final analysis also incorporated debt equivalence costs. SDG&E assessed contract terms and conditions reached through negotiations, in order to make its final selection of offers.

SDG&E did not need to use qualitative factors in the ranking and selection of supply offers for short-listing, although some qualitative factors, such as site control, were considered during contract negotiations. (The qualitative factors that SDG&E informed bidders that it might consider in the selection of offers are listed in response to question A.1.b above.) VHC concurs that the selected qualitative factors did not need to be applied for short-listing and would not have changed the ranking and initial selection of offers on the short-list.

b. If applicable, were affiliate bids treated the same as non-affiliate bids?

Yes. VHC performed a detailed review of the assumptions used and the analysis of the affiliate offers. VHC found that there was no preferential treatment or bias in the evaluation of the affiliate bids.

c. Were bidder questions answered fairly and consistently and the answers made available to all?

Four sets of questions and answers were posted on SDG&E's RFO web site. Potential bidders asked questions at the Pre-Bid Conference and via email. After review of draft answers by VHC, SDG&E posted the answers. SDG&E answered questions fairly and consistently, and the answers were available to all.

d. Did the utility ask for "clarifications" from bidders, and what was the effect, if any, of these clarifications?

During negotiations with short-listed offerors, SDG&E and bidders clarified various contract terms and conditions by exchanging draft contract mark-ups. The effects of these clarifications enabled the negotiations to resolve issues and proceed toward final contracts.

e. Were economic evaluations consistent across bids?

The economic evaluation for Product 1 (DR) was performed differently from the economic evaluation for the supply bids. SDG&E used a consistent approach to analyze its supply offers for Products 2 through 7B.

f. Was there a reasonable justification for any fixed parameters that enter into the methodology (e.g., RMR values; GHG metrics, etc.)?

Yes. There are a host assumptions and parameters used for the various evaluations done by SDG&E. These assumptions include values for avoided capacity costs, market capacity costs, ancillary services, Greenhouse Gas costs, transmission system network upgrade costs, energy losses, natural gas and electric market prices, and inflation and discount rates. Accepted information and data sources were used to calculate parameters used in the evaluation. In addition, SDG&E and VHC performed sensitivity analyses on some key variables.

Key assumptions and calculations are discussed in section IV of the Confidential Addendum.

2. Describe the IE methodology used to evaluate administration of IOU LCBF process.

VHC had numerous discussions with the SDG&E personnel responsible for the LCBF process regarding the specific methods used to estimate parameters and to calculate costs and benefits for the Level I, II and III analyses. VHC reviewed and critiqued numerous spreadsheets applied by SDG&E, developed our own calculations, made spreadsheet modifications and checks of variables of interest, and performed sensitivity analyses using different assumptions.

3. How did the IOU identify non-conforming bids? Did the utility identify the terms that deviate from the utility RFO for each bid, and was a quantitative and qualitative assessment of the cost or value of those deviations performed? Were non-conforming bids treated fairly and consistently? Was there a pre-established, consistently applied criteria to determine what issues of conformance would result in rejection and which were subject to negotiation?

All bids were treated consistently. SDG&E received one non-conforming bid for Product 5. SDG&E evaluated two other non-conforming offers, as well as several conforming bilateral offers, which had been received earlier. These bilateral offers were from existing facilities and conformed to the RFOs requirements for Product 5 offers from existing units.

4. For those parts of the process conducted by the utility, how were the parameters and inputs used and were they reasonable? What quality controls were in place?

SDG&E conducted the evaluations to short-list offers and to select offers. VHC reviewed the selection of supply offers and reviewed results of the analyses. The parameters and inputs used were reasonable and unbiased for the selection. Parameters and inputs were also consistent with those used by SDG&E for other internal studies. Quality control was conducted primarily through SDG&E's own review of modeling inputs and results with VHC checking the reasonableness of results and the spreadsheets used to calculate costs and benefits. VHC's further review provided additional checks for quality control, especially of the various spreadsheet models' logic, methods, calculations, inputs and results.

5. For those parts of the process outsourced to either the IE or a third party, what information/data did the utility communicate to that party and what controls did the utility exercise over the quality or specifics of the outsourced analysis?

For Product 5, SDG&E evaluated the purchase of existing facilities, as an alternative to power purchase agreements with one bidder. For determining the market value of the El Cajon Energy Facility (ECEF), SDG&E and CalPeak jointly agreed to outsource work to an independent engineering firm to estimate certain site-specific costs. SDG&E also out-sourced a review of one Product 2 bid to determine if the project costs, as initially bid, were reasonable.

In its review of SDG&E's short-lists and selection of final offers, VHC carried out additional calculations to investigate different assumptions and confirm the validity of the comparisons and selections.

6. Did the utility follow its transmission analysis procedures and include in its evaluation and selection process all appropriate transmission information that it could reasonably develop or acquire, subject to the constraints imposed by FERC's Standards of Conduct?

For Product 2 SDG&E performed its own estimates for each project, subject to the confidentiality of information required by FERC. Transmission analysis was not required for the evaluation of Product 5 offers. Although CAISO study results were not available for all offerors, SDG&E was able to estimate location specific costs that, in some cases, were dependent on the CAISO queue position of the offeror. Transmission upgrade costs were an important distinguishing factor between several Product 2 offers, as discussed in the Confidential Addendum.

During the course of the RFO, SDG&E's procurement group utilized the transmission information and studies made available to it.

7. Beyond any quantitative analysis, describe all additional criteria or analysis used in creating its short list. (e.g. Did the IOU take into consideration supplier concentration risk?)

See Response in section C.1. of this report and section IV of the Confidential Addendum. Supplier concentration risk was not considered to be a problem.

8. Results analysis

a. Describe the IE, PRG, Energy Division and IOU discussion regarding the LCBF evaluation process. Please note any areas of disagreement between the IE and the IOU, if applicable.

i. Discuss any problems and solutions.

Discussions among the above parties regarding the LCBF process were limited. However, VHC discussed the LCBF process with SDG&E throughout the RFO.

The following were areas that were discussed as part of the overall evaluation and comparison of RFO offers.

Demand Response Products.

The cost-effectiveness tests for DR were updated by the Commission in late 2010, and have been applied by SDG&E. Qualitative criteria for future evaluations should also consider the level of competition and potential saturation in each DR market, as well as the issues indicated below.

Companies providing DR services operate under different business models. VHC believes the following areas are most relevant to comparing future DR offers:

- Measurement of customer baseline loads,
- Calculation and validation of customer responses,
- Robustness and adaptability of hardware and data systems
    - Use of proprietary hardware vs.
    - Outsourced hardware and systems,
- Marketing approaches to capture customers –
    - In-house vs. referral partners
    - California experience and success,
- Assessment of market segments, market share and potential for market saturation,
- Interfaces between the scheduling coordinator and bidder,
- Adaptability to changes in MRTU and CAISO Proxy Demand Resource and ancillary services,
- Cost structure, split of revenues with customers and contractual arrangements between bidder, customers and venture capital,
- Payment schedules and penalties,

- Financial backing and sustainability of DR firms,

In addition to the CPUC cost-effectiveness tests and the ranking process, SDG&E sought answers to the following questions during year-long negotiations and contracting:

- What will be the FERC-approved requirements for the CAISO Proxy Demand Response program under MRTU?
- If and when SDG&E's Product 1 contracts go live, will each Offeror's Direct Load Control program from this RFO be compatible with the CAISO's Proxy Demand Resource (PDR) program?
- Will PDR program reductions be additional to reductions under other DR programs?
- Is each Offeror committed to adapting to the CAISO requirements?
- What are each Offeror's plans for maintaining compliance with CAISO programs?
- If the proposed Product 1 programs are not compatible, how should SDG&E proceed?

LCBF considerations are necessarily different for DR products than for supply products. Hence, SDG&E has from time to time sought Commission guidance regarding its DR negotiations.

Supply Products. For the supply products, VHC raised issues associated with capacity values, natural gas and electricity prices and energy credits, ancillary service prices, congestion costs, transmission upgrade costs, the greenhouse gas cost adder, collateral requirements, subordinated security, contract terms and language, including the capacity payment formula, a credit risk adder, and other issues arising during specific negotiations. Issues relevant to Product 2 are discussed in the Confidential Addendum.

ii. Identify specific bids if appropriate.

Issues applicable to Products 2 and 5 are discussed in Section E. 2. below.

iii. Did the IOU make reasonable and justifiable decisions to exclude, short-list and/or execute contracts with projects? If the IE conducted a separate bid ranking and selection process and it differed from the IOU's outcome, explain process and any differences in results.

SDG&E made reasonable and justifiable decisions. VHC also requested and performed sensitivity analyses with different sets of assumptions and concluded that the selection of the bids was reasonable. VHC focused on marginal Offers to determine whether or not such offers should make the short-list for negotiations.

iv. What actions were taken by the IOU to rectify any deficiencies associated with rejected bids?

No actions were needed.

b. Was the overall evaluation fairly administered?

Yes.

c. Based on the IE's prior experience, how does this solicitation compare to other solicitations (to the extent the IE can describe these solicitations subject to confidentiality agreements)?

i. If applicable, how did this solicitation compare to others by the same IOU?

For Product 1 (DR), SDG&E included the ability to respond in 10 minutes in this RFO. VHC is not aware of this requirement in prior solicitations.

The supply RFO procedures and framework were similar to previous RFOs. In contrast to its 2007 All Source RFO, SDG&E abandoned attempts to disguise the identity of the Offeror in bids submitted by an affiliate, because the location and other characteristics of such bids essentially revealed the identity of the affiliate bidder to the evaluation team. VHC monitored the evaluations to assure that the affiliate bids were treated in an equivalent manner when compared to other bids for the same Product and without bias or preference.

ii. How did the process and the results compare to that of other IOUs in different jurisdictions?

No specific comparisons have been made.

9. Any other information relevant to the fair administration of the LCBF evaluation not asked above but important to the IOU's methodology.

See Response in section C. 7. VHC recommends that SDG&E conduct expanded LCBF analyses to further evaluate the effects of key uncertainties in facility and offer on-line dates, demand growth, fuel prices, GHG regulations and other market conditions. For RFOs with multiple products, SDG&E should consider implementing a more robust optimization approach to further define the LCBF combination of contracts in the selected portfolio.

E. Discussion of project-specific negotiations

1. Identify the methodology the IE used to evaluate negotiations.

Andy Van Horn participated in all calls with affiliate bidders, as well as numerous calls between SDG&E and other counterparties. He recommended the preparation of a Project Status Matrix to track negotiations and regularly reviewed the Project Status Matrix. He also reviewed contract mark-ups as they evolved and discussed changes to contracts for individual offers during conference calls and in discussions with individual negotiators.

In its approach to evaluating negotiations, VHC's primary concern was to ensure fairness to all counterparties. Goals of VHC's oversight were to determine that counterparties understood the contract terms and conditions and were given appropriate opportunities to improve their offers. VHC monitored negotiations selectively, as needed, to determine that all counterparties were offered equivalent contracts, subject to appropriate trade-offs unique to each offer and counterparty. VHC's reviews of contract mark-ups focused on the clarity of the contract language, particularly for new areas, and on areas where counterparties or SDG&E had questions or issues.

2. Using the above principles, evaluate the project-specific negotiations. Highlight any issues of interest/concern including unique terms and conditions.

Issues related to the Product 2, 3 and Product 5 contract negotiations included:

1. **Commercial operation and retirement dates.** This was an important issue for all Product 2 offers to build new facilities.[24] In general, this is an important issue for all contracts and for the development of an LCBF portfolio.

2. **Monthly capacity payments, variable O&M and start-up charges, associated energy and ancillary services, and RA penalties/adjustments.** The workings and outcomes of the monthly capacity payment formula and the effects of different minimum equivalent availability and reliability measurement and adjustment factors that would trigger adjustments to payments or assign a penalty were negotiated, along with payments for variable O&M, start-up, associated energy and ancillary services.

[24] Since Product 5 offers are all existing operating plants, start and end dates are certain.

3. **Unit operation, capacity ratings, heat rates, number of starts and dispatch.** The measurement of unit characteristics, including capacity and guaranteed heat rates, were issues that required agreement. Dispatchability, ramp rates, quick start and black start were also requirements for some products. Contract ambient conditions and capacity pricing needed to be brought inline, so total annual capacity payments would be consistent with where they were negotiated to be.

4. **Pricing.** Prices were negotiated starting from the RFO offer prices. In addition to the capacity price, elements of some tolling contracts included escalation indices for O&M costs or pro-rata sharing of costs for station power, for example. Final prices were traded-off against other contract terms and conditions.

5. **Charges for emissions of greenhouse gases (GHG).** Given the need to comply with California's AB 32 legislation and California Air Resources Board (CARB) regulations, counterparties needed to understand the new contract language addressing GHG emissions allowance and compliance costs and liabilities. Although there were no significant deviations in the individual contract terms regarding GHG costs and compliance, counterparties expressed varying views and opinions. SDG&E modified the contract language to acknowledge that it will "reimburse Seller for newly imposed taxes, charges, or fees for Greenhouse Gas ("GHG Charges") attributable to Buyer's dispatch of the Project," while limiting its responsibility for charges and requiring that allowances, credits or revenues received by the Seller be allocated to mitigate the GHG Charges paid by SDG&E. Because this was a new area for contracts, VHC's reviews of contract mark-ups focused on the clarity of the contract language and on the methodology outlined therein. For resources that will receive contracts as a result of their selection in the 2009 RFO, the contract provisions negotiated with each successful Offeror explicitly indicate the responsibilities for compliance with applicable GHG permits and regulations.

6. **Collateral requirements.** Collateral protects ratepayers from contract under-performance and from default of counterparties. However, high collateral requirements can also lead to higher-priced offers, since counterparties take their costs for posting collateral into account in making their offers. In the RFO SDG&E requested collateral amounts that were considered by unrated offerors and their financers to be very high. By analyzing the risk of default, SDG&E was able to significantly lower its collateral requirements below the value originally requested for unrated entities. (See section IV G of the Confidential Addendum for additional discussion.)

7. **Subordinated Security and First Priority Interest requirements and the need to keep Seller's debt ratio below a maximum percent.** For additional protection, SDG&E negotiated a subordinated security and first priority interest in the generating

facility for Product 2 contracts. SDG&E insisted that the Seller's debt/equity ratio be kept below a limit or placed a debt cap on the contract, which was amortized over the delivery term. (See section IV K of the Confidential Addendum for additional discussion.)

8. **Metering requirements.** CAISO has a requirement to separately ID and meter each generating unit at a plant, in order to dispatch each unit individually. This was an issue for the Apex Pio Pico plant. This issue was resolved in a conference call with CAISO, where Apex and the CAISO agreed to install three commercial CAISO low-side meters. Calculation of transformer losses and auxiliary loads was also an issue with Apex.

9. **Gas transportation.** Since the supply contracts are primarily tolling arrangements where SDG&E buys the natural gas fuel and schedules unit generation, the primary contract concerns were about defining the responsibilities and boundaries for taking title to the natural gas.

10. **Sarbanes-Oxley (SOx) and the need to consolidate PPA obligations on the balance sheet under FIN 46.** At the beginning of the negotiation process, conflicting opinions were initially obtained by SDG&E and Sellers from accounting firms regarding the effect of high Seller debt/equity ratios on the need to consolidate PPA obligations on SDG&E's balance sheet. Maximum debt/equity ratios, as well as the specific items to be included in the Seller's debt calculations over time, were the subjects of negotiations with Apex Pio Pico and CPV North City. Debt caps amortized over the delivery period were negotiated with Wellhead Escondido and with Cogentrix Quail Brush. The expected generation under a PPA was considered to be a potential yardstick or possible bright-line test to determine whether or not SDG&E has sufficient control over the operations of the unit to require consolidation of the contract obligations on its balance sheet. Some discussion indicated that contracts with generators with annual capacity factors below about 10 percent would not be required to be consolidated, even though SDG&E controls the scheduling and dispatch of the generating units.

11. **Conditions Precedent for Network Transmission Upgrades & Other Milestones**

    As discussed on pages 28-30 and in section IV. F. of the Confidential Addendum, the costs of network upgrades are presently uncertain. In order to limit the cost-recovery, Conditions Precedent were negotiated that limit the maximum recoverable network transmission upgrade costs for the EIF Apex Pio Pico and Cogentrix Quail Brush projects.

    Other typical Conditions Precedent addressed the timing of key milestones, such as:

    a. CPUC approval of the contract

b. Electrical interconnection (including limits on network upgrade costs),
c. Execution of the Large Generator Interconnection Agreement,
d. Acquisition of all necessary permits and approvals,
e. Satisfaction of all Conditions Precedent and no pending or threatened legal proceedings.

Because Product 3 and 5 contracts are for existing units issues 6 to 11 above were not sources of major concern in those negotiations. For all the supply PPAs, final pricing was subject to adjustments to the other contract terms.

With respect to issue 1, the timing of the eventual retirement of various individual generating units will affect the need for new RA capacity between 2012 and 2018.

Offers for this RFO were received in August 2009, and short-listing was largely completed in October and November 2009. These negotiations have taken longer to bring to fruition than is ideal. Although many issues had to be resolved in sequence and negotiations were affected by external events, regulatory changes and market uncertainties, VHC recommends that contract processes be accelerated, wherever possible, by improved cross- communication of revisions to common terms and conditions and other relevant data to be provided to each contract negotiator.

The lengthy negotiations notwithstanding, given that each contract is unique and that trade-offs must be negotiated among various contract terms and conditions, VHC believes that SDG&E's negotiations with all counterparties were conducted fairly and that counterparties were given appropriate opportunities to present and improve their offers.

3. Was similar information/options made available to other bidders when appropriate, (i.e., if a bidder was told to reduce its price, was the same information made available to others?)

All bidders were offered the opportunity to offer revised prices along with updated collateral amounts that would meet SDG&E's new, lower collateral requirements, which were reduced after the receipt of RFO offers. The revised collateral amounts primarily affected Product 2 (20-year contracts for new, local generation) and have reduced the prices ultimately negotiated below what they would have been if the higher collateral amounts had been required.

4. Describe and explain any differences of opinion between the IE and utility. If resolved, describe the reasonableness of the outcome.

During the course of the evaluations, VHC reviewed and questioned the values used for various parameters and calculations. The choices made by SDG&E were reasonable, as were the results of the evaluations.

After review, VHC believed that the collateral amounts requested in the RFO were too high and raised this issue with SDG&E on a number of occasions. As described elsewhere in this report and the Confidential Addendum:

- The collateral offered by counterparties in their original RFO base offers did not meet SDG&E's requirement, as stated in the RFO for unrated entities.
- Most bidders were unrated counterparties with little or no credit history, resulting in their relatively high collateral requirements.
- Several counterparties subsequently offered higher capacity prices to meet the high collateral requirements.
- Higher capacity prices reflect the cost to secure additional collateral, because the cost of funds tends to be higher for unrated or highly-leveraged entities, in order to compensate for increased risk.
- Insufficient collateral exposes ratepayers to higher replacement costs in the event of counterparty default.

After the submission of bids, SDG&E changed its methodology for calculating risks of default and associated collateral requirements and was able to lower its requirements. SDG&E also assessed the value of holding a Subordinated Security Interest, which influenced the collateral requirement in some cases.

Because Offerors will have reduced financing needs, they can offer lower-priced contracts if they post less collateral, saving ratepayers substantial dollars over the life of the contracts in comparison to the situation where SDG&E's original RFO collateral requirement would have been posted by offerors. VHC believes this was a reasonable outcome that will lead to lower collateral requirements in future RFOs.

5. Any other information relevant to negotiations not asked above but important to understanding the IOU's process.

There are many considerations that SDG&E must balance in its negotiations. Maintaining RA, while accommodating the retirement of South Bay and uncertainties in RMR, keeping the flexibility of the Encina units, factoring in OTC retirements, Sunrise Powerlink's readiness, changes in projected demand, understanding the impacts of proposed site and on-line date changes for offered plants, keeping existing units under contract, dealing with uncertainty in network transmission upgrade costs, and keeping the negotiations moving forward were all factors affecting SDG&E's negotiation process.

F. Code of Conduct

1. Describe the design and implementation of the required Code of Conduct used by the IOU to prevent sharing of sensitive information between staff working with developers who submitted UOG bids and staff who create the bid evaluation criteria and select winning bids.

There were no Utility-owned Generation (UOG) bids submitted to the RFO. Hence, no special separation was needed.

2. Describe any violation(s) of that code.

Not Applicable.

3. Alternatively, provide an explanation of why this requirement is not applicable to this RFO.

There were no UOG bids in this RFO.

As part of an existing lease agreement with the CalPeak El Cajon Energy Facility, a power plant sited on land leased from SDG&E, SDG&E evaluated the purchase costs of the ECEF in comparison to signing a Product 5 PPA with CalPeak or with other parties. As described in SDG&E's Application to purchase the ECEF, its valuation of the facility was prescribed by the terms of the 2001 land lease to be a market price, which was determined by an independent engineering firm, not by SDG&E's evaluation team.[25] The sales price was constrained, because of the lease agreement and the independent valuation of the facilities.

[25] SDG&E filed an Application (U 902 E) for the Authority to Acquire the CalPeak El Cajon Energy Facility (ECEF) with the CPUC on January 5, 2011.

G. Affiliate Bids and UOG Ownership Proposals (if applicable)

1. Describe other safeguards and methodologies implemented by the IOU, including those stipulated in Commission decisions (e.g. D.04-12-048 and D.07-12-052) for head-to-head competition between utility ownership and independent ownership bids, to ensure that affiliate and UOG bids were analyzed and considered on as comparable a basis as possible to other bids, that any negotiations with such bids' proponents were conducted as comparably as possible to negotiations with other proponents, and that the utility's final selections in such cases did not favor an affiliate or UOG bid.

No affiliate bids were shortlisted for Product 2 and no UOG bids were received.

The ECEF purchase option was compared to PPA offers for Product 5 using the same methodology used to evaluate the Product 5 shortlisted offers. VHC reviewed these analyses, including the ECEF revenue requirements calculations, to ensure that the ECEF purchase was analyzed and considered on the same basis as Product 5 PPA offers. In addition, the market valuation of the facility components was conducted by an independent engineering firm to ensure the offer was fairly priced in accord with the terms of the 2001 land lease.

2. Describe compliance with the safeguards.

Andy Van Horn, the IE, was on-site when the electronic bids were received from offerors and received an electronic copy of the offers, including those from affiliates. Subsequently, he monitored all communications between the affiliates and SDG&E, including emails, meetings and conference calls. The evaluation criteria and models applied to the affiliate offers were the same as applied to the other bids for these products. For further discussion see section VII of the Confidential Addendum.

3. If a utility selected a bid from an affiliate or a bid that would result in utility asset ownerships, explain and analyze whether the IOU's selection of such bid(s) was appropriate.

SDG&E evaluated the purchase costs of the ECEF in comparison to signing a Product 5 PPA with CalPeak and with other Product 5 Offerors. The valuation of this facility was prescribed by the terms of the lease to be a market price, which was determined by an independent engineering firm, not by SDG&E's evaluation team.

H. Does (do) the contract(s) merit CPUC approval? Is the contract reasonably priced and does it reflect a functioning market?

1. Provide discussion and observation for each category and describe the project's ranking relative to other bids from the solicitation; and from an overall market perspective.

a. Contract Price, including cost adders (transmission, credit, etc.)

The contract prices for the completed Product 2 contracts are competitive and would result in savings to SDG&E customers compared to the other Product 2 offers. Conditions Precedent in the contracts offer protection to ratepayers that costs will not exceed maximum amounts. For example, Conditions Precedent limit the maximum recoverable amounts for transmission upgrades for Product 2 facilities located on new sites. See the Confidential Addendum for additional information.

b. Portfolio Fit

The Product 2 contracts will help SDG&E satisfy its near and long-term needs for resources to meet its Local Resource Adequacy requirements.

c. Project Viability

The Wellhead Escondido brownfield repowering project is viable, since it is currently operating and no factors have been identified that would prevent it from repowering with a known technology. The Apex and Cogentrix project developers have also taken the required steps to ensure that their greenfield projects proceed toward completion.

i. Technology

For Product 2 (new, long term, local), the Wellhead Escondido Energy Center repowering will use a General Electric LM6000PC turbine, and the Apex Pio Pico Energy Center will install three GE LMS100PS turbines. Both are well-suited turbines for this purpose. Although the LMS100 is a relatively new model, both turbines have similar characteristics and exhibit similar risks.

The Cogentrix Quail Brush Generation Project will install 11 Wartsila 20V34SG gas-fired reciprocating engines. These engines offer stable output, load following flexibility and high efficiency. Worldwide Wartsila has more than 600 gas-fired power plants with more than 1600 generator sets. SDG&E's engineers examined the Wartsila technology, before SDG&E selected Cogentrix/Enpex offer. Because they are reciprocating engines the NOx and PM10 emission rates are higher than for conventional turbines and this technology may have a greater permitting risk. However, because the original offer for the site was for 200 MW, Cogentrix believes that the emissions will meet applicable regulations.

ii. Bidder Experience (financing, construction, operation)

Developer experience was one of the qualitative factors in SDG&E's final decision to determine which Product 2 offerors to select for contracts. However, all of the offers that ended up in final negotiations had experienced bidders. Thus, bidder experience was not a driving factor during the negotiations.

iii. Credit and Collateral

Each Product 2 offeror has satisfied SDG&E's credit and risk criteria and will provide the required collateral.

iv. Permitting, site control and other site-related matters

The Wellhead developer owns the site on which the existing plant operates. Both EIF Apex Pio Pico and Cogentrix have their sites under option. Wellhead is subject to local permitting, while Apex filed a new Application for Certification with the CEC on February 9, 2011, and has received notice that its Application is data adequate. Cogentrix is preparing its CEC AFC to be filed soon. Site changes between August 2009 and late 2010 were taken into account in deciding to pick these three offers.

v. Fuel status

Fuel status was not a distinguishing issue, since these are tolling agreements where SDG&E will purchase the natural gas for each contracted facility.

vi. Transmission upgrades

The Wellhead facility is currently operating and will not require transmission upgrades if it remains under 50 MW. As discussed previously, the costs of network transmission upgrades for EIF Apex and Cogentrix/Enpex are uncertain. The maximum recoverable costs for both projects are limited by Conditions Precedent in each contract. EIF Apex Pio Pico, located near the Otay Mesa power plant, will utilize the available transmission capacity south of the Miguel substation. This means that other offers that would rely on the same transmission line would have to pay substantially more for upgrades, rendering them uncompetitive. Transmission upgrade costs were also important for calculating the levelized, benefit-adjusted costs and ranking the short-listed offers.

d. Any other relevant factors

VHC is not aware of any significant factors not mentioned in this report or the Confidential Addendum that would be expected to change SDG&E's decision to put forward these three Power Purchase Tolling Agreements (PPTAs) for Commission approval.

2. Based on the complete bid process:

a. Does (Do) the IOU contract(s) reflect a functioning market?

Yes. The 2009 RFO was competitive and the Product 2 offers are competitive. The offers for Product 2 reflected a range of prices and terms and technologies. Moreover, there were a robust number of bids. VHC believes that the resulting PPTAs reflect a functioning market.

b. Is (Are) the IOU contract(s) the best overall offer(s) received by the IOU?

Yes. SDG&E has selected an appropriate combination of offers from its 2009 RFO to make up a LCBF portfolio. The Product 2 contracts will be an important component of that portfolio, and the Product 2 PPTAs contracts are the best overall Product 2 offers received by SDG&E.

3. Is the contract a reasonable method of achieving the need identified in the RFO?

Yes, these contracts will provide a reasonable method to achieve the need identified in the RFO for new generation supplying local RA capacity.

4. If the contract does not directly reflect a product solicited and bid in an RFO, is the contract superior to the bids received on the products solicited in the RFO? Explain.

The purchase directly satisfies the solicitation for Product 2. Hence, this question does not apply.

5. Based on your analysis of the RFO bids and the bid process, does the contract merit Commission approval? Explain.

Yes. Based on VHC's review and analysis of the RFO bids and SDG&E's bid process, VHC finds that SDG&E has conducted a fair and unbiased RFO process, resulting in competitive Product 2 offers.

Based on the information provided to us, VHC believes that the approval of these PPTAs will contribute to SDG&E's LCBF portfolio of supply contracts.

For the foregoing reasons, and because these contracts meet the requirements for Product 2, are competitively priced and will provide local RA, energy and ancillary services to customers, VHC recommends that the Commission approve all three contracts.

I. Was the RFO acceptable?

1. Over all, was the RFO conducted in a fair and competitive process, free of real or perceived conflicts of interest?

VHC concludes that SDG&E has run a fair and competitive solicitation for 2009 RFO Products 1 through 7B, resulting in appropriate short-lists and reasonable negotiated contracts. VHC believes that the RFO was free of conflicts of interest.

2. Based on the complete bid process should some component(s) be changed to ensure future RFOs are fairer or provide a more efficient, lower cost option?

Based on the complete bid process, there are no changes related specifically to the selection of Product 2 offers or their comparison with offers for other Products. In general, SDG&E's new, revised method of calculating collateral requirements should yield a more efficient, lower cost result in future RFOs.

Several of VHC's specific recommendations, given in section III. C. of this report, are intended to enhance the efficacy of the evaluation process. Other recommendations will, perhaps, help speed up negotiations.

3. Any other relevant information.

No.