



Van Horn Consulting
*Energy, Economic, Regulatory
& Environmental Consultants*
Orinda, CA 94563

Public Version

Independent Evaluator's Report:
SDG&E's Short-List Selection
For Its March 2007
Request For Offers For
Eligible Renewable Resources

Van Horn Consulting
Orinda, CA 94563
consulting@vhcenergy.com

Mike Katz
Ed Remedios
Andy Van Horn

July 30, 2007



Table of Contents

	<u>Page</u>
1. Introduction	1
a. <i>California Regulatory Background on the Role of Independent Evaluator</i>	1
b. <i>Van Horn Consulting’s Role as the Independent Evaluator</i>	2
c. <i>Van Horn Consulting’s Review and Advisory Activities</i>	6
2. Comments on Request for Eligible Renewable Offers Outreach	6
3. Review of Bid Processing	6
a. <i>Bid Conformance & Error Correction</i>	6
b. <i>Bidder Anonymity</i>	7
c. <i>Data Verification</i>	8
4. Review of Bid Evaluation	8
a. <i>Evaluation Criteria</i>	8
b. <i>Overview of the Evaluation of Bids</i>	8
c. <i>Short List Filters</i>	11
5. Discussion Areas	11
a. <i>Selection of Assumptions</i>	11
b. <i>Treatment of Bids with Different Contract Periods</i>	12
c. <i>Resource Adequacy (RA) Costs</i>	13
d. <i>Time of Day Adjustments</i>	14
e. <i>Transmission Ranking Cost Report (TRCR) Costs</i>	14
f. <i>Congestion Costs</i>	14
g. <i>Total Supplemental Energy Payments (SEPs)</i>	15
h. <i>Bid Revisions</i>	16
i. <i>The Affiliate Bid</i>	16
j. <i>On-Line Dates</i>	16
k. <i>Renewable Portfolio Standard Contracting Target</i>	17
l. <i>Green House Gas (GHG) Adder</i>	17
m. <i>IOU/IE Areas of Disagreements and Resolution</i>	17
6. VHC’s Opinions and Conclusions Regarding the Short List Selection	18
a. <i>Amount of Resources Selected</i>	18
b. <i>Fairness Assessment</i>	19
c. <i>Least-Cost Best-Fit Assessment</i>	19
d. <i>Short list Discussion</i>	19
e. <i>Affiliate Bid</i>	21
f. <i>Additional Recommendations</i>	21
Appendix A: PA Consulting’s Review of the Renewables RFO	22
Appendix B: SDG&E’s Renewables RFO Short List and Offers Near The Cutoff	24
Appendix C: SDG&E’s Analysis of Need for the Renewables Short List	25
Appendix D: Discussion of SDG&E’s Renewables RFO Economic Evaluation	27



1. INTRODUCTION

This report provides Van Horn Consulting’s (VHC’s) assessment of the fairness of San Diego Gas & Electric Company’s (SDG&E’s) short list selection for its March 2007 Request for Offers from Eligible Renewable Resources. VHC has reviewed SDG&E’s bid receipt and evaluation processes and methods, as well as spot-checking data, calculations, and interim results.¹ In addition to conducting on-site and telephone interviews and discussions with SDG&E personnel, VHC reviewed bid-related materials and quantitative analyses, recommended refinements and participated in discussions with the California Public Utilities Commission’s (CPUC’s) Procurement Review Group (PRG).

In addition to describing VHC’s role as the Independent Evaluator (IE) and activities performed, this report recommends refinements to the bid evaluation process and presents our opinion of SDG&E’s bid processing and selection process.

This is the “public” version of Van Horn Consulting’s Report. The unredacted version of this report contains confidential and/or privileged materials and review and access to it are restricted subject to PUC Sections 454.5(g), 583, D.06-06-066, GO 66-C and the Confidentiality Agreement with the CPUC. Text that has been redacted (not displayed in the public version) is designated as such by being shaded in black, e.g., [REDACTED].

a. California Regulatory Background on the Role of Independent Evaluator

This section summarizes the regulatory background for the IE’s review of SDG&E’s solicitations for eligible renewable resources.

The “Report of the Independent Evaluator on 2008 Local Peaking Capacity RFO” for SDG&E² provides a good summary of the regulatory requirements for an Independent Evaluator. Highlights from this report and additional discussion follow.

The primary focus of the Federal Energy Regulatory Commission’s (FERC’s)³ IE requirements is to prevent a bias and preferences for affiliate offer selections over other participants. 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 procurement where there are affiliates, IOU-built or IOU-turnkey bidders” from that point forward (pp.

¹ VHC did not independently verify the absolute value of all elements incorporated in SDG&E’s evaluation (such as Transmission Ranking Cost Report [TRCR] costs and transmission congestion costs). However, VHC generally identified the methods supporting these cost calculations, in order to determine that the models applied and the results were reasonable.

² PA Consulting Group, Report of the Independent Evaluator on the 2008 Local Peaking Capacity RFO for San Diego Gas and Electric, May 1, 2007.

³ 108 FERC paragraph 61,081 (2004).



135f). The CPUC’s intent was to ensure that a utility did not favor itself or an affiliate. Since this Request for Offers did not preclude affiliate bids or build-own-transfer (BOT) bids, SDG&E has contracted for an IE. Under the decision cited above, the role of the IE is to assist the utility in RFO design and observe the utility’s procurement and evaluation process in order to provide an opinion concerning “fairness.”

D.06-05-039 requires an IE for every Investor Owned Utility (IOU) Renewable Portfolio Standard (RPS) solicitation. The IE is required to submit a preliminary report to the CPUC regarding the IOU’s RPS short list and a final report on the IOU’s entire solicitation, evaluation and selection with each request for contract approval. The IE is directed to “separately evaluate and report on the IOU’s entire solicitation, evaluation and selection process for this and all future solicitations ... [to] serve as an independent check on the process and final selections.” Thus, this report is the preliminary report to the CPUC regarding SDG&E’s RPS short list.

b. Van Horn Consulting’s Role as the Independent Evaluator

VHC began its role as IE for SDG&E on May 14, 2007, two weeks prior to the receipt of renewable resource bids on May 30, 2007. VHC assumed the role previously performed by PA Consulting, which had previously reviewed the design of the solicitation and the early evaluation criteria. PA Consulting’s review is discussed in Appendix A.

As the IE, VHC has performed two principal roles:

- To ensure that SDG&E performs a fair and unbiased solicitation and bid selection process; and
- To provide advice to improve processes, evaluation techniques and assumptions.

VHC has looked for biases in the following three types of bids:

- Bids from SDG&E’s affiliate,
- Bids that unduly advance SDG&E’s transmission development & ownership interests, and
- Build-Own-Transfer (BOT) bids.

These three types of bids have the potential to provide an advantage to Sempra or to provide additional shareholder benefits to SDG&E compared to other types of contracts from third parties. Such potential advantages could possibly provide an incentive to design the RFO structure itself or to use evaluation techniques or underlying assumptions to create bias in the selection process.

VHC’s primary focus has been to ensure the fair treatment of bids, and to avoid economic techniques and assumptions that could lead to intentional or unintentional biases in the



selection of resources (e.g., preferences for certain types of technologies, supply versus demand-side options; the mix of peaking, dispatchable resources and baseload resources; and start-date and contract term preferences). VHC has focused on the relative ranking of the offers resulting from the bid costs and SDG&E adjustments to those costs, rather than focusing on the absolute value of the costs.

To ensure fair treatment, VHC has monitored the bid receipt and processing for conformance with SDG&E’s internal protocols. VHC provided advice on the economic evaluation methods and assumptions used to select short list offers. VHC reported on its assessment of the process and evaluation both orally and in memoranda and presentations to SDG&E and to the PRG.

Among other issues, VHC has addressed the questions from the Energy Division’s template for the Role of the IE that pertain to the short list selection. Some Least-Cost Best Fit (LCBF) questions, such as potential congestion resulting from multiple new projects, may be deferred to our final report, if SDG&E performs additional modeling during the negotiation phase. The questions addressed in this report include:

Did the IOU do adequate outreach to potential bidders, and did its outreach activity result in an adequately robust solicitation to promote competition? (See section 2.)

Is the IOU’s methodology for RPS selection designed fairly?

1. Identify principles used to evaluate methodology

- *The procurement target should be large enough to ensure that the utility has a reasonable chance of meeting the 20 % target (taking into account contract failures). (See section 5.k and 6.a.)*
- *The IOU bid evaluation should only be based on those criteria requested in the response form. There should no consideration of any information that might indicate whether the bidder is an affiliate. (See sections 3.b, 4.a. and 6.e.)*
- *The methodology should identify how quantitative measures will be considered and be consistent with an overall metric. (See section 4.a.)*
- *There should be no difference in the evaluation method for different technologies that cannot be explained in a technology-neutral manner. (See sections 4.a)*
- *The methodology does not have to be the one the IE would independently have selected but it needs to be “reasonable.”*



2. *Describe IOU LCBF methodology (or alternately include IOU’s own description)* (See section 4.a. & Appendix D.)
3. *Using the principles in # 1, evaluate the strengths and weaknesses of the IOU’s LCBF methodology.* (See sections 5 and 6.f.)
 - *How does IOU compare to LCBF methodologies used in other states, to the best of the IE’s knowledge?* (This will be covered in the final report)
 - *Does the methodology inherently favor any technology (e.g. Wind vs. geothermal vs. biomass) or operating characteristic (baseload vs. peaking)?* (See section 5.c and Appendix D.)
 - *Does the relationship between Project Commercial On-line Date (COD) and Transmission On-line Date COD, i.e., take into account the locational and temporal fit?* (See section 5.j. More discussion will be in the final report.)
 - *Discuss any issues of transmission cost analysis regarding appropriate use of TRCRs or other transmission-related costs estimates. What procedures did the utility have in place for acquiring all appropriate transmission information, subject to constraints imposed by FERC’s Standards of Conduct?* (See section 5.e.)
 - *Are the evaluation criteria (ie. cost, project viability) weighted appropriately? Discuss in particular the relationship between the IOU’s bid ranking, price and project viability.* (See section 6.)
 - *What future LCBF improvements would you recommend?* (See section 6.f.)
 - c.1. *Was the LCBF contract evaluation process fairly administered?* (See section - 6.)
 - *Were affiliate bids treated in the same manner as non-affiliate bids?* (See section – 5.i.)
 - *Were bidder questions answered fairly and consistently and the answers made available to all?* (See section 5.h.)
 - *Did the utility ask for “clarifications” that provided the bidder an advantage over others?* (See section 5.h.)
 - *Were bids given equal credibility in the economic evaluation?* (See sections 4 and 6.)



- *Was there reasonable justification for any fixed parameters that enter into the methodology (e.g., RMR values, debt equivalence parameters)? (See sections 5.a to 5.g.)*
- *Were qualitative factors used only to distinguish among substantially equal bids? (See section 4.c.)*
- c.2. *Describe the IE methodology to evaluate the administration of the IOU LCBF process (See section 4 and Appendix D.)*
- c.3. *Did the IOU fairly identify nonconforming bids – fair both to the nonconforming bidders and to other conforming bidders? (See section 3.a, 5.e and 5.h.)*
- c.4. *For those parts of the process which the utility conducted itself, were the parameters and inputs determined reasonably? What controls were in place? (See section 3.a and 5.h.)*
- c.5. *For those parts of the process that were outsourced either to the IE or to 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? (See section 5.f.)*
- c.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? (See section 5.e.)*
- c.7. *Beyond any quantitative analysis, describe any important areas in which the IOU exercised further judgment in creating its short list. (See sections 4.c and 5.h.)*
- c.8. *Results analysis*
 - a. *Please identify instances where the IE and the IOU disagreed in the LCBF evaluation process. (See section 5.m, unless noted below)*
 - i. *Discuss specific problems and solutions*
 - ii. *Identify specific bids if appropriate*
 - iii. *Does the IE agree that IOU made reasonable and justifiable decisions to exclude, shortlist and or/execute contracts with projects? If IE did their own separate bid ranking and selection process and it differed from the IOU’s in outcome, include all relevant information here. (See Section 6.b)*
 - iv. *What actions were taken by the IOU to rectify any deficiencies associated with rejected bids? (See Section 5.e.)*



b. *Was the overall evaluation fairly administered?* (See section 6.b.)

c. *Van Horn Consulting’s Review and Advisory Activities*

Van Horn Consulting was given access to all the personnel involved with bid processing and evaluation. VHC team members were on-site the day of the receipt and initial processing of the bids, which were delivered electronically.

During the bid evaluation period, VHC had several on-site meetings, and numerous conference calls and e-mail communications to discuss the economic spreadsheets, models and key assumptions used to rank the offers. SDG&E provided VHC with spreadsheets, so that VHC could review the methodology and calculations for the evaluation. VHC did not perform a separate economic evaluation to validate the results. VHC was given an overview of the congestion model and key assumptions used in the model, but VHC did not critique or validate the model, which was applied by an SDG&E contractor.⁴

2. Comments on Request for Eligible Renewable Offers Outreach

VHC can only provide cursory comments on the outreach, since it was not under contract during the time of the issuance of the RFO. VHC understands that notification was given to a large number of bidders and a workshop for potential bidders was held. This appears to be common practice among the three IOUs in California. Since thirty-four bids were accepted by SDG&E for evaluation, VHC believes that SDG&E’s outreach was sufficient to promote competition.⁵

3. Review of Bid Processing

The SDG&E Processing Team (PT) ensured that each bid conforms to the RFO and prepared a summary page of information from the individual bids along with a checklist indicating the location of required information within each bid document. However, if a bid was received from an affiliate, extensive care was taken to change every identifying characteristic by using a fictional name and removing any materials that would allow the Evaluation Team (ET) to conclude that the offer was from an affiliate.⁶

Electronic passwords and separate servers were used to ensure that no members of the ET had access to the bid information, until after the bids were processed by the RFO processing team.

a. *Bid Conformance & Error Correction*

⁴ The modeling methods used for this RFO evaluation were approved by TURN and the CPUC.

⁵ For PA Consulting’s review of this phase of the RFO see Appendix A.

⁶ See Affiliate Bid discussions in sections 5i and 6e.



The PT screened each bid against a checklist and checked the bids for conformance with the RFO.

Mike Katz was on-site on May 30, when Renewable RFO bids were delivered electronically to SDG&E. Most of the bids were submitted before the 12:00 p.m. soft deadline on May 30. By 1:30 p.m., a preliminary summary sheet of bids was available. Two bids were not included in the preliminary summary list because [REDACTED]

[REDACTED]. The other bid not included did not have a site but included a bid price for delivery starting in July 2009. Mike Katz concurred with removing these two bids. One bidder was not allowed to bid, because it did not register until May 30th at 2:50 p.m., two days past the registration deadline. This bidder then claimed it was having problems submitting the bid electronically, after the noon deadline for bid submittals, and it asked for additional time to submit a bid.

Most bids did not provide the Transmission Ranking Cost Report (TRCR) costs that were requested to be included in the offer package. To keep a robust supply of bids available for review, no bids were removed because of this issue. The TRCR cost estimates used in the economic screening are discussed in section 5d.

b. Bidder Anonymity

For this RFO, SDG&E’s bid processing team opted not to make bidders’ identities anonymous to the ET, except for disguising potential affiliate bids. The reason given for choosing not to conceal bidders’ identities was the difficulty of removing all identifying characteristics of the entity submitting the bid. Bid documents contain extensive use of logos and other identifying characteristics. However, if a bid were to be received from an affiliate, extensive care would have been taken to disguise the identity of the bidder (e.g., by using a fictional name) to prevent the ET from concluding that the offer was from its affiliate.⁷

VHC concurs with this approach. Until after the shortlist was determined, it was intended that VHC would not know if an affiliate bid had been submitted and disguised, thus reducing the risk of VHC disclosing the identity of an affiliate bidder to the ET. The PT subsequently decided to only submit the Bid Response Forms for all bids in an Excel spreadsheet to the ET as an expedient way to mask affiliate bids, with changes to affiliate bid names, in the event there would have been any affiliate bids. All the Bid Response Forms were moved to [REDACTED] to ensure that each bidder’s data was accurately transferred to the ET. Members of the ET without access to [REDACTED] were given the bid information in files on a Compact Disc.

⁷ See section 6.e for discussion on the Sempra affiliate bid.



c. Data Verification

The ET receives all data from the bid sheets electronically and then transfers the information into economic analysis spreadsheets. Various people transfer information in Excel workbooks. A different person checks this data transfer to verify accurate transfer of data. Additional review was performed on projects that had a more complicated bid to ensure not only that the data was transferred accurately, but also that interpretations of the bids were done correctly.

4. REVIEW OF BID EVALUATION

a. Evaluation Criteria

SDG&E summarizes the evaluation criteria for selecting renewable resources in a presentation titled “Least Cost Best Fit Evaluation.”⁸ VHC has reviewed the evaluation criteria from this presentation and other internal SDG&E documents. VHC believes the application of the evaluation criteria results in the selection of the appropriate bidders on the short list.

b. Overview of the Evaluation of Bids

The evaluation of bids is a three-step process: 1) Conformance check; 2) Preliminary modeling to develop a short list; and 3) When needed, more detailed modeling with SDG&E’s Capacity Expansion or production simulation models.

The conformance check verifies that the offers meet minimum RFO requirements.

The preliminary short list is created by first determining the “all-in” price, which is the bid offer price with adjustments for time-of-delivery differences, and adds for transmission costs, congestion costs, Resource Adequacy (RA) and Debt Equivalence. The projects are then ranked by the “all-in” price. VHC worked with SDG&E to ensure a fair comparison among projects with different start-dates and terms. The technique was to add prices derived from annual Market Price Referent (MPR) prices to the beginning or end of individual offers to allow all projects to be compared over a common time frame. The prices derived from the MPR in this application can be viewed as the replacement energy and capacity costs.

- Offer Price

Some bids submitted flat prices for all hours in the year, while others had prices

⁸ Presentation by Daniel Frank, presented at a CPUC workshop on December 15, 2006.



that were modified for time of day (TOD) profiles. An adjustment factor was calculated as follows:

For each project, the energy to be supplied in each of the six time periods (on-peak, semi-peak and off-peak for summer and for winter) was multiplied by the corresponding TOD profile factor.⁹ The sum of these products divided by the annual energy equals the adjustment factor to be applied to the level annual bid price.

The short list evaluation uses the bid prices modified for TOD profiles, if necessary, divided by the adjustment factor. The use of the adjustment factor recognizes the differing values of power by TOD period. For example, an offer that would only deliver on-peak power would have a lower adjusted price for ranking purposes than would an offer with a different TOD profile.

- Resource Adequacy (RA)

Resource Adequacy adjustments account for the difference between the rated capacity of a resource or offer and the actual offered capacity and energy delivered during peak and near-peak periods. The RA factors are 95% for Biomass, 95% for Landfill Gas, 95% for geothermal, 60% for Solar Thermal, 30% for Solar Photovoltaic and 24% for wind. SDG&E derived these values for RA factors from a combination of both actual and forecasted delivery patterns from developers in a way consistent with the CPUC’s recommended methodology. The back-up capacity cost, which is added to the cost of the bid, is calculated using the capacity of the bid multiplied by one minus the RA factor, expressed as a fraction. SDG&E estimated the cost for the back-up capacity in 2007 to be [REDACTED].¹⁰ This cost is escalated at the inflation rate.

SDG&E is using the CEC recommended methodology and its own estimate of the costs of capacity to calculate the additional costs needed to compare bids with these different technologies.

- Transmission Costs

Transmission costs were determined for each bid, by various methods. Projects within SDG&E’s service area, connected at distribution voltage, incur no transmission costs. For other bidders, the transmission costs depend on the delivery point. Only two bidders submitted TRCR data. For those bids, the TRCR information was used. For other bids, information from other sources

⁹ The TOD profile factors are approved by the California Public Utilities Commission. For SDG&E, these are 1.6411, 1.0400, 0.8833 for summer peak, semi-peak, and off-peak respectively and 1.1916, 1.079 and 0.7928 for winter peak, semi-peak, and off-peak respectively.

¹⁰ The value is based on bids for SDG&E’s 2008 Peaker RFO for simple cycle combustion turbines without debt equivalence.



was used.¹¹ Transmission Ranking Cost Report (TRCR) data for both SCE and SDG&E clusters were used to allocate capital costs based on the bidder’s capacity. A level annual capital charge rate was applied to obtain annual charges, from which a \$/MWh cost was calculated.¹²

- Congestion Costs

Congestion costs were developed for selected bids using ABB’s GridView model. The bids were evaluated using an In/Out approach. These results provided hourly Locational Marginal Prices (LMP) for the years 2010 and 2015 for each of the selected bids.¹³ Note that some projects (i.e., those not expected to be on the short list) were not evaluated for congestion costs, so as to avoid unnecessary costs for model runs.

The congestion cost for an offer is calculated from the difference between the hourly LMP at the injection point for the bid and the hourly LMP values for SDG&E’s Load Aggregation Point (LAP). The LMP values in the LAP are weighted for all buss points within SDG&E’s service territory using approved CAISO allocation factors. The congestion cost analysis approach used by SDG&E has been reviewed by TURN, the CPUC’s Energy Division and the previous IE and was found to be satisfactory for this purpose. The transmission cost and congestion analyses assume the Sunrise Transmission Link will become operational in 2010.

- Debt Equivalence (DE)

Long-term contracts are viewed by debt rating agencies as a long-term financial or debt-like liability. SDG&E includes a DE adder for all offers except Build-Own-Transfer (BOT) offers. The BOT offers are excluded because these projects are financed like all other utility owned assets and do not require a Debt Equivalence adder.

The methodology used for the DE adder is consistent with the approach approved by the CPUC in its Decision 04-12-048 in the 2004 LTPP proceeding. A risk factor of 20% and discount rate of 10% are used. The rebalancing

¹¹ These sources included information organized by the location of an SCE or SDG&E Cluster and an SDG&E / ISO Generator interconnection feasibility study. [REDACTED]

[REDACTED] Wheeling charges that would be applicable to other bids are included in the bidder’s submitted prices. For some bids [REDACTED] for which TRCR data were not submitted, SDG&E used cost information for similar projects or from other sources.

¹² One of the bidders on the short list, [REDACTED] claims that sufficient transmission capacity for its project exists, since upgrades are already in place. Transmission costs for this bidder are shown as zero.

¹³ [REDACTED]



percentage for both debt and equity are each assumed to be 50%.¹⁴ Note that SDG&E calculates the DE adder over the time frame of the comparison of all options not just the contract term length. The rationale for this is that additional contracts would have been secured in addition to the shorter-term contracts when compared to a longer-term contract.

c. Short List Filters

VHC observed two primary filters in the bid selection process. The first was significant non-conformance of the RFO responses, which resulted in the rejection of bids. The second was Supplemental Energy Payments (SEP), which are discussed in section 5.g. The size of the potential SEP resulted in the removal of one bid. SDG&E’s rationale for using the SEP filter was that overall SEP payments are limited and, therefore, recovery of above market contract payments becomes uncertain.

5. DISCUSSION AREAS

a. Selection of Assumptions

The choice of key assumptions can affect the total levelized cost of projects and the selection of projects. Several key assumptions are noted below, but the discussion here of the parameters is limited to possible impacts on the selection of offers for the short list.

i. General Economic Parameters

Changes in the assumptions for escalation and discount rates will affect the absolute prices, but VHC does not believe that they would alter the overall ranking of bids on the short list.

ii. Forward Price Curves

No impact.

iii. Natural Gas Prices

Natural gas prices influence the MPR used in the economic evaluation that allowed projects to be compared over common time frames. The impact on the selection of bids for inclusion on the short list is minimal. Under a low gas price scenario, the Supplemental Energy Payments (SEPs) could increase significantly, which has the potential to limit the total amount of offers with

¹⁴ SDG&E has capital ratios of 45.25% for Debt, 5.75% for Preferred Equity and 49.0% for Equity. Rating Agencies treat Preferred Equity as debt for debt equivalence calculations.



SEPs that might be deemed to be attractive to acquire.

iv. Electric Demand Growth

The total demand growth could influence the total amount of resources required to meet RPS goals, but not the relative order of offers on the short list.

v. Market Price Referent

[REDACTED]

vi. Debt Equivalence

VHC notes that DE adders are calculated over the entire economic time frame of comparison. VHC believes this approach is reasonable for screening purposes. After short list selection, the overall LCBF portfolio risk assessment will take into account the differing DE requirements for SDG&E’s overall portfolio of contracts.¹⁵

b. Treatment of Bids with Different Contract Periods

There are several ways to compare offers with different contract start dates and durations. VHC discussed the following three options with SDG&E:

Constant dollar comparison – Remove inflation from the all bid prices and compare them on a constant dollar basis.

Benefit/Cost (B/C) Ratio – Develop B/C ratios for each project over the time frame of the offer and rank projects by B/C ratios.

Replacement Energy and Capacity Costs – Add the appropriate replacement energy costs to the beginning and end of contracts with different start dates and terms to allow projects to be compared over a common time frame. This is the option that SDG&E selected. VHC concurred this would provide a fair comparison among options.

[REDACTED]

¹⁵ Generally a contract with a short duration should be assigned a lower risk than a contract with a similar price but a longer duration. However, the methodology for the DE adders, approved by the CPUC, does not address this issue.



[REDACTED]

VHC has worked with SDG&E to refine its methodology for comparing projects with different start dates and terms. The methodology for the Renewables RFO uses prices derived from [REDACTED] to fill in prices for power at the beginning and end of offers. VHC recommended changes to these calculations and suggests updating the analysis after [REDACTED], if it differs significantly from the values used in the analysis.

c. Resource Adequacy (RA) Costs

RA costs are different for different technologies, as discussed in section 4.b.¹⁷ In order to estimate RA costs, SDG&E has derived its RA factors from the actual delivery patterns of various resource types in a way consistent with the CPUC -recommended methodology. It found that the factors represent general estimates of deliveries during peak periods. For this RFO the load patterns in the bids were appropriately compared to these delivery patterns and were found to match fairly closely. Thus, the factors represent empirical estimates of the expected capacity during high load or peaking hours. Nevertheless, VHC views these factors as approximate. As experience with renewable technologies changes, these factors may also change. Because these factors have the potential to create a preference for one technology over another, they should be periodically updated.

Over time a more detailed and extensive analysis of the amount of capacity and energy delivered during the needle peak hours from different technologies may result in changing the expected amounts of capacity needed to back-up different technology types. For example, it is possible that the RA factors assigned to wind resources would increase and the RA factors for solar projects would decrease. This area warrants additional empirical analysis in the future.

A second issue regarding the RA costs is the capacity costs added to offers. SDG&E used [REDACTED], which was based on their recent peaker solicitation. However, if lower cost back-up capacity could be secured (e.g., considering out-of-area capacity), then this could

¹⁶ [REDACTED]

¹⁷ Here, RA represents the back-up capacity cost for intermittent, energy limited and non-dispatchable peaking resources. Typically, the bulk (80 percent or more) of capacity value for resources occurs during the peak hours of the top ten peak-load days in each year.



influence the ranking of projects. For example, resources such as a wind or photovoltaic power plant that require more capacity to back-up the offer could be disadvantaged relative to other technologies if the capacity costs were to be high.

VHC does not believe the overall short list would change with lower capacity costs than those currently being applied. However, it is possible that the order of offers on the short list could change. VHC will work with SDG&E during the Level 3 LCBF evaluation to ensure that capacity costs used in evaluation of offers are consistent with current market conditions and forecasted capacity costs.

d. Time of Day Adjustments

SDG&E uses a CPUC-approved methodology and TOD factors based on historical load profiles to adjust costs for the value of energy as a function of the time period. VHC concurs that this is valid for screening purposes. However, production simulation modeling might provide better estimates of the value of energy from resources with different energy delivery profiles. VHC notes that best-fit analyses of options could change energy values relative to the estimates used in the short list screening. Although VHC does not expect that more detailed modeling would change the selection of the short list, it could affect the selection of the best fit combination of resources that would be the most economic for SDG&E.

e. Transmission Ranking Cost Report (TRCR) Costs

Thirty-two out of the thirty-four bids did not provide TRCR or other transmission cost upgrade costs associated with their project, as requested by the RFO. SDG&E, therefore, had to make such estimates, in order to estimate the “all-in” prices of the bids. VHC believes that SDG&E’s effort to estimate the transmission costs for each bid was fair and unbiased.

VHC recommends changing the RFO process to allow bidders enough time, information or whatever else bidders may need, so that they submit bids that include transmission costs. If SDG&E decides that it will calculate transmission costs for bidders that do not provide the information, then this should be stated in future RFOs.

f. Congestion Costs

Congestion cost forecasts for projects that need to deliver energy over congested transmission paths are uncertain.¹⁸ Many parameters can lead to uncertainty in these estimates. Uncertain factors include: 1) timing and costs of transmission upgrades, 2) bidder behavior, 3) amount and location of new resource development, 4) changes in

¹⁸ As noted previously, the congestion cost analysis approach used by SDG&E has been reviewed by TURN, the CPUC’s Energy Division and the previous IE and was found to be satisfactory for this purpose.



market rules, and 5) retirements of older units. However, since all candidate projects are run through the ABB GridView model, VHC concludes that all projects were treated in an equitable manner. To further support this conclusion, all congestion estimates were performed by an independent consultant, not by SDG&E personnel.

VHC notes that congestion results used for this evaluation are based upon a scenario wherein the Sunrise Transmission Link is assumed to be built. Several offers may be contingent upon the Sunrise Transmission Link being built or they otherwise might experience increased congestion. VHC understands that a CPUC decision regarding the Sunrise Transmission Link will be made next year. If the Sunrise link were to be delayed significantly or not built, then VHC recommends an updated analysis of congestion costs to determine if the ranking of offers would change and if additional renewable resources are needed to replace projects that are contingent upon the Sunrise Transmission Link. [REDACTED] projects would have higher congestion costs, if the Sunrise Transmission Link were not built.

i. Single-Offer Congestion Costs

The in/out modeling for each single offer is an appropriate methodology for short list ranking. However, the total amount of congestion costs from the aggregate development of resources is likely to be higher than the sum of the congestion costs from each individual offer.

ii. Aggregate Congestion Costs

Additional congestion modeling may be needed for the “Best Fit” assessment to determine the combinations of resources that provide the lowest overall portfolio cost.

Summary results of historical and forecasted congestion in MWh and the price changes due to congestion would be useful in understanding the estimates for congestion costs.

g. *Total Supplemental Energy Payments (SEPs)*

SEPs are the above market costs of renewable energy contracts. California utilities can access a limited pool of funds to cover the above market costs of these contracts. SDG&E estimated this amount to be approximately \$10 million/year. SDG&E uses this amount as a factor in the screening of bids for the short list.

VHC sees that there is potential risk associated with applying this screening filter. Under a low gas price scenario, it is possible that most renewable resources could be screened out with this filter, due to relatively higher SEPs.



h. Bid Revisions

Several weeks after the bids were initially submitted, two bidders submitted revised/corrected bids with lower prices than originally submitted on the RFO due date. Although these revised bids did not make the short list, VHC expressed its concern to SDG&E and, later, to the PRG that allowing late revisions before the determination of the short list could provide an unfair advantage to the bidders who made the revisions. VHC brought this issue to the attention of the PRG on July 9, 2007. Some members of the PRG also expressed concern that certain bidders were provided this opportunity while others were not. VHC recommends that SDG&E clearly state when and under what conditions bid revisions will be allowed in future RFOs.

VHC has an additional reservation regarding the possibility of allowing bid revisions from an affiliate before determination of a short list. If the affiliate were somehow able to become aware of the initial bid results through an inadvertent communication at Sempra Corporation, then it could potentially take advantage of this circumstance. If SDG&E’s policy is to continue to allow bid price reductions before the short list is developed, then future RFOs should clearly state the policy and provide guidelines for allowing bid revisions before the short list is finalized.¹⁹ VHC recommends that the PRG and SDG&E discuss this issue further, before the next RFO is issued.

i. The Affiliate Bid

During the bid evaluation period while the short list was being determined, Sempra, the parent corporation of SDG&E, announced on June 29, 2007 that it was entering the renewable energy business. This allowed some members of the ET team to surmise that the offer [REDACTED] came from a Sempra affiliate.

Although SDG&E became aware of this possible affiliate bid before the short list was developed, VHC does not believe that this had any bearing on the evaluation and selection of resources that made the short list. In fact, the economic evaluation of options was nearly complete by the date of the announcement. After being informed of the announcement, VHC spent additional time reviewing the economic evaluation of the Sempra affiliate bid and concluded that the evaluation was done in same manner as the evaluation for all other offers.

j. On-Line Dates

SDG&E has calculated the annual energy contributions of renewable resources coming on-line in order to meet the RPS goal of 20 percent of retail energy supplied by renewable resources by 2010. SDG&E understands that the flexible compliance rules will allow it

¹⁹ It should be noted that after the shortlist is determined and contract negotiations commence, one goal is to achieve favorable bid revisions from any or all of the short-listed bidders.



- iii. VHC recommended annualized [REDACTED] for start-date and term adjustments. This led to adjustments in the economic values of the short list candidates. Even though the ranking order changed for some offers within the short list, VHC concurs that the short list of bidders provided to the PRG is the appropriate short list.

6. VHC’S OPINIONS AND CONCLUSIONS REGARDING THE SHORT LIST SELECTION

As discussed above, VHC reviewed SDG&E’s bid receipt and evaluation processes and methods, as well as spot-checking data and calculations. In addition to conducting on-site and telephone interviews and discussions with SDG&E personnel, VHC reviewed bid-related materials and quantitative analyses, recommended refinements, and participated in discussions with the PRG.

a. Amount of Resources Selected

VHC concurs that the number of projects selected for the short list in conjunction with projects already under negotiation or under contract should provide a sufficient supply of offers and, ultimately, contracts that will satisfy SDG&E’s renewable resource goals.

The total energy that could be provided by the bids on the short list is approximately twice the amount needed for SDG&E to meet an RPS energy percentage of 24 to 26 percent, which would satisfy the Commission’s RPS target of 20 percent of retail energy in 2010. Because it is difficult to estimate the likelihood of the successful development and operation of the short listed projects, and because a 2020 RPS target of 33 percent may be required, SDG&E prefers a short list size that could, in principle, provide energy in excess of the 2010 requirement.

Both VHC and the PRG recommended a probabilistic assessment to look at the potential combined outcomes of projects now under contract, under negotiation or on the short list. SDG&E provided the results of this assessment to VHC and the PRG on July 9, 2007. Although such estimations are highly uncertain, VHC recommends that these or similar estimates be updated on a regular basis to provide a rough gauge for progress towards meeting RPS goals and to indicate if there is a need for additional procurement. As updates are done, VHC recommends that the probabilities within the various categories be allowed to vary, instead of assigning values of zero or one for each qualitative factor.

As noted in section 5.j, the timing of Sunrise Transmission Link could affect the amount of supply available and the selection of resources.



b. Fairness Assessment

VHC concludes that SDG&E has run a fair and unbiased solicitation to select its short list from the offers received May 30, 2007, in response to its RFO, issued March 12, 2007. In developing its short list SDG&E utilized appropriate assumptions and applied quantitative models to assess all bidders equitably. VHC reviewed and spot-checked the calculations used in developing the short list.²⁰ There were no qualitative factors that changed the selection of offers. A large potential SEP payment was used to remove one offer from the list. All offers were treated in an equitable manner. This includes the affiliate bid that was not known to be an affiliate bid until a public announcement was made by Sempra at a time when the economic evaluations were almost completed.

In our judgment, the bids were evaluated fairly, enabling SDG&E to make reasonable comparisons of the values of the bids and to rank projects appropriately in order to develop a short list for negotiations.

c. Least-Cost Best-Fit Assessment

The short list screening analysis can be viewed as the least-cost portion of the LCBF analysis. The short list provides potential least-cost options available to meet a 20 percent RPS goal. During the negotiations, VHC will work with SDG&E to determine if additional production simulation modeling (or capacity expansion modeling) and refined congestion, transmission and RA costs are needed to find the best-fit combination of contracts that can meet the RPS goal at the lowest overall cost.

d. Short List Discussion

Appendix B contains summary information on the short listed bids, along with offers near the cutoff. There are [REDACTED] bids on the short list. All technologies that were offered, with the exception of Solar PV, are included in the short list. The highest ranking Solar PV bid has an “all-in” price of over [REDACTED] per MWh compared to [REDACTED] per MWh for the lowest ranked (highest all-in price) bid selected for the short list.

The projects on the short list range in size from 0.3 MW (for a Landfill Gas project) to almost 250 MW for [REDACTED] Wind projects. [REDACTED]

[REDACTED] As discussed Section 5.i of this report, VHC is satisfied that there has been no bias in favor of the bids from the affiliate.

²⁰ VHC did not independently verify the absolute value of all elements incorporated in SDG&E’s evaluation (such as Transmission Ranking Cost Report [TRCR] costs and transmission congestion costs). However, VHC generally identified the methods supporting these cost calculations, in order to determine that the models applied and the results were reasonable.



A Solar Thermal project is the highest ranked project that is not included in the short list, but it did not meet the on-line date requirements. One particular [REDACTED] project might have made it to the short list, but this project was not selected, due to its very high estimated SEP requirement of [REDACTED] million. The other offers near the cut [REDACTED]

VHC’s opinion is that the short list is a robust list that should provide sufficient resources for SDG&E to meet its 2010 RPS goal. Negotiations with bidders will allow SDG&E to better assess the probability of the successful development of these offers. [REDACTED]
[REDACTED] VHC will monitor these changes.

The mix of resources is shown on Figure 1 in terms of percentage of energy provided by the type of resource compared to the total energy of all bids on the short list. The RFO has resulted in a well-balanced mix among [REDACTED] generation technologies. The contribution by [REDACTED] is low, as would be expected since the potential for this resource is limited. SDG&E’s overall renewable capacity mix changes, with [REDACTED] increasing to [REDACTED] and [REDACTED] of the supplied capacity, respectively, while the capacity contributions of the other baseload renewable resources are lowered.

Figure 1

This figure has been redacted.





e. Affiliate Bid

Throughout most of the short list evaluation for this RFO, there were no known bids from any SDG&E/Sempra affiliate. However, late in the determination of the short list candidates, Sempra Energy announced its entry into the renewable energy business [REDACTED]

[REDACTED]. Although the extent of Sempra’s involvement in the specific projects proposed to this RFO, if any, remains unknown to the ET and to VHC, we are now treating [REDACTED] bids as affiliate bids. Hence, VHC re-examined the economic assessment of these bids compared to the other offers and concluded that there has been no preferential treatment. VHC will carefully monitor any subsequent negotiations to ensure consistent treatment of all parties.

Additional Recommendations

Future RFOs need to state SDG&E’s policy regarding revising bids prior to the determination of the short list. Without clarifications, it is possible that some bidders would receive more flexibility than other bidders. If bidders have the opportunity to reduce prices after bids are submitted but before the short list is set, then strict controls regarding information flow within Sempra would be required and confirmation and/or audits of those controls would be necessary to ensure that a Sempra affiliate or any other bidder could not gain an advantage during the offer short list selection process.

In this RFO SDG&E’s procurement department had to make the TRCR estimates for nearly all the bids. Future RFOs should make revisions to enable more (ideally, all) bidders to submit transmission costs in conformance with SDG&E’s bid requirements. The lack of a TRCR or a CAISO study makes probability assessments more uncertain regarding the amount of resources that can come on-line by 2010.²¹

List of Appendices:

Appendix A – PA Consulting’s Review of the Renewables RFO

Appendix B – SDG&E’s Renewables RFO Short list and Offers Near the Cutoff

Appendix C – Probabilistic Needs Analysis for the Short list

Appendix D – Discussion of Economic Evaluation Spreadsheets

²¹ The more detailed CAISO study is not usually performed for a new project until after the short list is determined, and contract negotiations begin.



APPENDIX A: PA CONSULTING’S REVIEW OF THE RENEWABLES RFO

During the period prior to the receipt of bids, PA Consulting served as the Independent Evaluator. This Appendix incorporates text from a July 27, 2007, letter from Jonathan Jacobs, Managing Consultant, PA Consulting, to Mike Katz, Van Horn Consulting.

SDG&E 2007 Renewables RFO

This letter describes the activities undertaken by PA Consulting Group as the Independent Evaluator for the 2007 Renewables RFO prior to your engagement in that position (and in the case of the “locational attribute methodology development”, during the early part of your engagement).

1. During February, PA initiated discussions with SDG&E of “lessons learned” from the 2006 RFO, and how they could be used to improve the evaluation process of the 2007 RFO. There were four key topics:
 - a. We suggested that SDG&E use something other than the CPUC’s computed MPR [Market Price Referent] as a reference in the initial evaluation, given the delays in computing that value in 2006.
 - b. We reminded SDG&E of some confusion between the computation of ranking cost described in the Evaluation Criteria document and the way the ranking cost was actually computed, and recommended that the document be brought into conformance with the method to be used.
 - c. We noted concerns that had been expressed about congestion cost estimates (discussed at greater length below).
 - d. We suggested that SDG&E reconsider whether it is necessary or valuable to include a step that computes an optimal portfolio, after the short-listing.

In April 2007 I met with SDG&E in San Diego and reviewed the evaluation criteria they were planning to use for the Renewables RFO, as well for the 2010-2012 Capacity RFO.

2. We received a draft of the RFO document on March 1, at the same time it was provided to the PRG. SDG&E finalized the RFO in conjunction with the CPUC Energy Division. As far as I know, PA had no influence on changes to the wording of the RFO relative to the 2006 RFO.
3. I attended SDG&E’s pre-bid conference in San Diego on March 30, where I was introduced to the potential bidders. I made a few remarks there primarily about the significance of transmission upgrade costs and how, in order to ensure that their bids were conforming, developers should make sure that SDG&E was able to associate their project with a TRCR cluster or a CAISO System Impact Study.
4. The bulk of my and PA’s effort associated with this RFO had to do with the estimation of congestion costs. I reviewed the locational cost estimates that ABB had presented to SDG&E for the 2006 RFO, and the way SDG&E had used that information.



ABB’s computer model forecasts three components of nodal prices: energy (system lambda), losses and congestion. The impact of a plant’s location has to do with both the congestion component and the loss component: it is the difference between the production cost impact of adding the plant at its bid location, and what the impact would be if an identical plant could be added at the Load Aggregation Point.

Over a period of several months, in discussions with SDG&E, ABB, the CPUC and a ratepayer advocacy organization, I analyzed the locational cost impact, proposed a method to estimate it from marginal nodal costs, and obtained all parties’ agreement for SDG&E to use the method in the 2007 Renewables RFO.



APPENDIX B: SDG&E’S RENEWABLES RFO SHORT LIST AND OFFERS NEAR THE CUTOFF

This table has been redacted.





APPENDIX C: SDG&E’S ANALYSIS OF NEED FOR THE RENEWABLES SHORT LIST

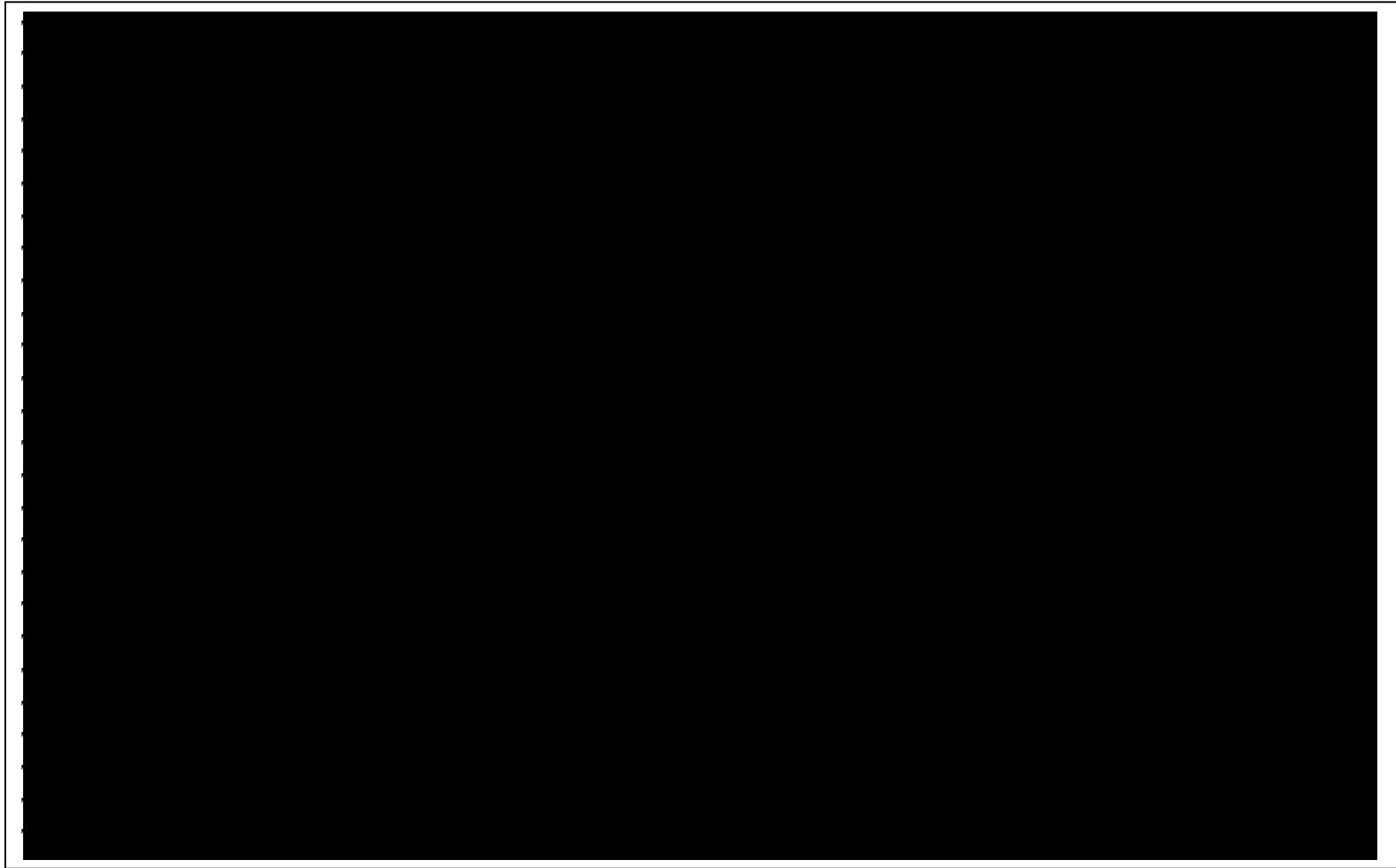
This table has been redacted.





Needs Analysis Probabilities

This table has been redacted.





APPENDIX D: DISCUSSION OF SDG&E’S RENEWABLES RFO ECONOMIC EVALUATION

Overview

Van Horn Consulting (VHC) has reviewed the methodology used by SDG&E to evaluate the bids in response to its Eligible Renewables Request for Offers (RFO). In addition, VHC has reviewed the results of SDG&E’s evaluation.²²

The SDG&E spreadsheet used to determine the short list ranks the bids by calculating a levelized “All-In Price,” which includes adders for: (1) Transmission, (2) Congestion, (3) Resource Adequacy (RA) and (4) Debt Equivalence (DE). The methodology adjusts the levelized bid price to take into account, if necessary, the TOD period during which the energy is provided by the bidder.²³ The methodology also takes into account differences in start dates, end dates and duration of bids by using the same evaluation period (2007 to 2040) to evaluate all bids. It assumes annual power purchases at prices derived [REDACTED] [REDACTED] for the years before start dates and after the end dates of the bids.

In developing the short list, SDG&E also considered the magnitude of the potential SEPs. The California Energy Commission (CEC) allocates and awards SEPs to eligible renewable energy resources to cover above-market costs of renewable energy.^{24, 25}

Some bids are likely to change as a result of negotiations. Thus, SDG&E may refine its analysis of the bids on the short list and update the inputs for its risk assessments of the bids. SDG&E will also consider other factors, such as the financial strength of the bidders and the availability of sufficient feedstock for biomass projects, in its ongoing evaluation of the bids.

Data and Assumptions

Data from the bids used for the evaluation includes the capacity, the hourly energy deliveries over a year and the prices. The analysis also uses information on the injection point and, when available, costs for transmission.

²² The latest version checked by VHC is “2007 LCBF – Transmission Cost Analysis (2007_07_05).xls.”

²³ The six time of day periods are On-Peak, Semi-Peak and Off-Peak for the Summer season and for the Winter season.

²⁴ SDG&E’s payment obligation is capped at the MPR. SEPs are additional costs arising from contract prices above the MPR. However, the total amount of all SEPs will be limited.

²⁵ SB 1078 requires the CEC to certify eligible renewable energy resources, to design and implement an accounting system to verify compliance with the Renewable Portfolio Standard (“RPS”) by retail sellers, and to allocate and award supplemental energy payments to cover any above market cost of renewable energy.



The source for the inflation rate, the Weighted Average Cost of Capital (used as the discount rate to calculate levelized costs) and the Levelized Annual Capital Costs rate (used for determining annual capital related charges) is SDG&E’s Economic Assumptions Manual, dated June 7, 2006.

The Energy Division of the CPUC provided the values for the 2006 MPR. Values for the 2007 MPR are not yet available. However, the group responsible for approving the MPR is considering changes to the 2006 MPR. [REDACTED]

Transmission

Transmission costs are determined for each bid by various methods. Projects within SDG&E’s service area, connected at distribution voltage, incur no transmission costs. For other bidders, the transmission costs depend on the delivery point. Only two bidders submitted TRCR data. For those bids, the TRCR information was used. For other bids, information from other sources was used.²⁶ Transmission Ranking Cost Report (TRCR) data for various SCE and SDG&E clusters were used to allocate capital costs based on the offered capacity. A level annual capital charge rate was applied to obtain annual charges, from which a \$/MWh cost was calculated.²⁷

Congestion

Congestion costs were developed for selected bids using ABB’s GridView model. The bids were evaluated using an In/Out approach. These results provided hourly Locational Marginal Prices (LMP) for the years 2010 and 2015 for each of the selected bids.²⁸ Note that some projects (i.e., those not expected to be on the short list) were not evaluated for congestion costs, so as to avoid unnecessary costs for model runs. Also note that the congestion costs estimates used to develop the short list are based on the Sunrise Transmission Link being in operation in 2010 and in 2015.

²⁶ These sources included information by SCE or SDG&E Cluster and an SDG&E/ISO Generator interconnection feasibility study. The transmission costs for the [REDACTED] bid are from a study of another project near the same location. The [REDACTED] bid was also assigned a wheeling charge. Wheeling charges that would be applicable to other bids are included in the bid prices. For some bids [REDACTED] for which TRCR data were not submitted, SDG&E used cost information for similar projects or from other sources.

²⁷ One of the bidders on the short list, [REDACTED] claims that sufficient transmission capacity for its project currently exists, since upgrades are already in place. Transmission costs for this bidder are shown as zero.

²⁸ These results are contained in an Excel spreadsheet, [REDACTED]



SDG&E provided VHC with the following description of ABB’s methodology:

Locational Costs

1. Locational Costs in \$/MWh will be calculated based on the difference between the hourly Locational Marginal Prices (LMP) at each generator’s injection point and the hourly LMP values for SDG&E’s Load Aggregation Point (LAP). The LMP values in the LAP will be weighted for all bus points within SDG&E’s service territory using approved CAISO allocation factors. SDG&E will subtract the LMPs for each generator’s injection point from the LMPs in SDG&E’s LAP and multiply the differences by the generator’s hourly production profile (MWh). The LMP has three components: marginal energy, marginal congestion and marginal losses. The hourly dollars will be summed and divided by the estimated annual generation to get a weighted average Congestion Cost in \$/MWh.
2. Consultants from ABB Inc. (“ABB”) will calculate hourly LMP values for each bidder, and the values for SDG&E’s LAP, using GridView’s Market Simulation Software. GridView mimics the operation of an electric market by dispatching units based on their bid prices, while taking into account the flow limits on transmission lines and interfaces under normal, as well as contingency conditions.
3. SDG&E will provide ABB with detailed information about the bidders. Information includes project size (MW), CAISO injection points (bus identity), technology and annual production profiles.
4. SDG&E will ask ABB to get the latest transmission related information. Currently, that information comes from SDG&E’s Sunrise Application, filed on January 26, 2007.

ABB will create an initial base case scenario without any of the current bidders. They will run scenarios for each bidder assuming that the bidder is the only generator added to the base case. The LMP values from each scenario will be used to calculate a Locational Cost for each corresponding bidder. SDG&E will instruct ABB to run scenarios for the years 2010 (the year that 20% renewable energy is required) and 2015 (the last year that reliable transmission information is currently available). Scenarios for earlier or later years may be run, if required to determine the trend of congestion.

Resource Adequacy

Predefined RA cost factors are used in the evaluation model. The RA cost factors are 95% for Biomass, 95% for Landfill Gas, 95% for geothermal, 60% for Solar Thermal, 30% for Solar Photovoltaic (PV) and 24% for wind. SDG&E derived these values for RA credits from a combination of both actual and forecasted delivery patterns from developers in a way consistent with the CPUC’s recommended methodology. The back-up capacity required is calculated using the capacity of the bid multiplied by one minus the RA cost



factor, expressed as a fraction. The cost for the back-up capacity, in 2007, is assumed to be [REDACTED]. This cost is escalated at the inflation rate.²⁹

Debt Equivalence

The methodology used for the DE adder is consistent with the approach approved by the CPUC in Decision 04-12-048 in the 2004 LTPP proceeding. A risk factor of 20% and discount rate of 10% are used. The rebalancing percentage for both debt and equity are each assumed to be 50%.³⁰

One of the bidders, [REDACTED] is now assumed to be an affiliate of Sempra. VHC asked SDG&E whether the affiliate bid should be treated any differently than other bidders for DE purposes. SDG&E’s position is that the impact on its balance sheet is the same whether or not the bidder is an affiliate. VHC concurs.

Beginning and End Effects

The bids have differences in start dates, end dates and the number of years. All bids were evaluated over the 2008 to 2040 period. Bid prices were used for the term of the bid. For the years before the start and after the end of the term of [REDACTED] was used to estimate an annual price for replacement energy and capacity. SDG&E performed sensitivity analyses to check if the short list ranking changed with [REDACTED]. This did not change the ranking.

The short list provided to the PRG was developed using levelized values [REDACTED]. This revision changed the rank order for some projects in the short list. The order for projects ranked 3, 4, and 5 and for projects ranked 7 and 8 changed. Furthermore, a solar thermal project [REDACTED] ranked lower than a wind project [REDACTED] that was ranked last on the short list. However, the solar thermal project did not meet the on-line date requirement. Hence, the short list remained unchanged.

Results

The bar chart (Figure D-1) below shows the net levelized TOD adjusted 2007 bid prices before adders with the adders stacked above for all bids on the short list plus six projects

²⁹ VHC believes that the assumed value for back-up capacity may be high, compared to capital related costs for a combustion turbine installed in 2007. Reducing the cost for capacity will lower the “All-in” price of a resource with a low RA credit and, thus, would improve the ranking of solar and wind resources. [REDACTED]

³⁰ SDG&E has capital ratios of 45.25% for Debt, 5.75% for Preferred Equity and 49.0% for Equity. Rating Agencies treat Preferred Equity as debt for DE calculations.

³¹ [REDACTED]



ranked immediately below the cut-off for the short list. Table D-1 below the bar chart provides the bidder name by the number used for the bidder in the chart.

Some observations are:

1. Transmission adders: Only two projects had estimated transmission adders [REDACTED].
2. Congestion adders: These are relatively small [REDACTED] and are not easily visible on the chart.
3. Resource Adequacy adders: The RA cost adders are clearly differentiated by resource type. For example, biomass, landfill gas and geothermal projects operate in a baseload mode and tend to have the lowest RA cost adders. Thus, [REDACTED] biomass, landfill gas and geothermal projects, have an RA adder of about [REDACTED] per MWh. A solar thermal project, [REDACTED] has an RA adder of [REDACTED] per MWh, and several wind projects, [REDACTED] have RA adders in the range [REDACTED] per MWh.
4. Debt Equivalence adders: The DE adder is in the range of [REDACTED] with bids with high bid prices [REDACTED] having DE at the high end of the range.



This figure has been redacted.





This table has been redacted.

