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## **Public Version**

**Independent Evaluator's Report –  
SDG&E's 2013 RFO  
for Combined Heat and Power Contracts**

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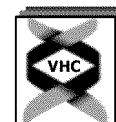


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## I. INTRODUCTION

On December 21, 2010, a Combined Heat and Power (CHP) Settlement among the California utilities, CHP participants and contract holders was approved by the California Public Utilities Commission (CPUC or Commission) in Decision 10-12-035. The key results of this Settlement are that the California Investor-Owned Utilities (IOUs) are required to conduct a series of Requests for Offers (RFO) to allow re-contracting of existing CHP facilities<sup>1</sup> and to encourage the development of new, economic CHP facilities. Under the Settlement the utilities have to meet both MW and Greenhouse Gas (GHG) Reduction Goals.

On August 7, 2013, San Diego Gas & Electric Company (SDG&E) issued its 2013 CHP RFO, the second of three RFOs planned during the Initial Program Period, seeking CHP Power Purchase Agreements (PPAs or Agreements).<sup>2</sup> This report describes and discusses this RFO.

In the 2013 CHP RFO, SDG&E had a target to secure approximately 50 “Facility<sup>3</sup> MW.” Offers were submitted on September 16, 2013. After its review and evaluation, SDG&E selected no offers from this RFO, because SDG&E viewed the offer prices and corresponding above-market costs and net cost per tonne of GHG reduction credits as too high. SDG&E believes better offers may be submitted in subsequent RFOs.

Earlier, on July 3, 2013, SDG&E had filed an Advice Letter requesting the CPUC's approval for a 56 MW CHP contract with NAPG that resulted from SDG&E's 2012 CHP RFO. SDG&E had also signed a bilateral offer for 50 MW CHP. A second bilateral offer providing 57 MW is under negotiation. At the time SDG&E was evaluating offers from this CHP RFO, these three CHP contracts, if approved, would have provided 163 MW toward its 210 MW goal, which was set in the CHP Settlement.<sup>4</sup> However, on April 3, 2014, SDG&E notified NAPG, the Jasmin offeror, that NAPG's obligations under the pending Jasmin contract had not been met. Hence, SDG&E terminated the contract. On April 18, SDG&E notified the Procurement Review Group (PRG) that the contract had been terminated and that NAPG had accepted the termination. In accordance with General Order 96.B, Section 5.3, SDG&E withdrew both Advice Letters on April 22, 2013.

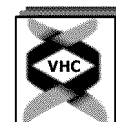
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<sup>1</sup> A database of California CHP facilities is available at: <http://www.eea-inc.com/chpdata/States/CA.html>

<sup>2</sup> The Program MW targets for SDG&E for the first, second and third CHP RFOs are 60, 50 and 50 MW respectively, totaling 160 MW. After the Initial Program period, SDG&E has a target of an additional 51 MW.

<sup>3</sup> In part, Section 5.25 of the CHP Settlement Agreement Term sheet, states: “The capacity of a New CHP Facility to be used to count progress towards the MW Targets shall be established by a Capacity Demonstration Test.” For this report, VHC assumes that the established capacity will be equal to the nameplate capacity.

<sup>4</sup> The CHP Settlement is discussed in the Background section of this report.



In its role as the Independent Evaluator (IE) for the 2013 CHP RFO, Van Horn Consulting (VHC) has prepared this report, in which confidential information is redacted, as indicated by [REDACTED] of the redacted text. The Confidential Appendix is fully redacted, since it contains the detailed offer prices, economic evaluation results and GHG reduction credit model results. The Public version of this report is the same as the Confidential version, except that the redacted portions are indicated in black. Our report presents information on SDG&E's CHP RFO process, VHC's evaluation of the offers and VHC's view of SDG&E's decision to select no offers. Because no contract resulted from this RFO, this IE report is the only formal filing that is being made regarding this RFO.

The IE review process resulted from a series of Commission rulings and decisions affecting California's 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 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<sup>5</sup> that seek products of more than three months in duration."<sup>6</sup> 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 bias and to avoid preferences favoring the selection of affiliate offers over offers from other participants.<sup>7</sup>

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."<sup>8</sup>

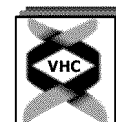
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<sup>5</sup> Competitive RFOs include those issued to satisfy service area needs and to provide specific supply-side resources not covered by the Commission's Energy Efficiency (EE) and Demand Response (DR) programs.

<sup>6</sup> This requirement creates uniformity between the contract length for which an IOU must consult its Procurement Review Group (PRG) and the IE process.

<sup>7</sup> 108 FERC ¶61,081 (2004): "Opinion and Order ... Announcing New Guidelines for Evaluating Section 203 Affiliate Transactions."

<sup>8</sup> "Administrative Law Judge's Ruling Issuing Templates For Independent Evaluator Reports And Contract Approval Requests," Rulemaking 06-02-013, dated May 8, 2008.



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 CHP RFO, SDG&E requested supply offers, resulting in the need for a review by the CPUC, involvement of an IE and an IE report based on the Long Form template. In Decision 12-04-046, the CPUC clarified that the public form of the IE report must be the same as the confidential report with the confidential information redacted.<sup>9</sup> Confidential and/or privileged materials, 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, have been redacted as shown in the public (redacted portions shown in black) and confidential (unredacted, but with redacted portions highlighted in grey) versions of this report.

## **II. BACKGROUND**

### **A. 2013 CHP RFO Overview**

In accord with the Qualifying Facility and CHP Program Settlement Agreement and related documents (including the CHP Program Settlement Agreement Term Sheet) approved by the CPUC on December 16, 2010, in Decision 10-12-035 (collectively, the “Settlement Agreement”), SDG&E issued its second CHP RFO, in order to achieve both its megawatt target (“MW Target”) and its GHG Emissions Reductions Target, as established and defined in the Settlement Agreement.

Pursuant to the CHP Program Settlement, SDG&E seeks to acquire a total of up to 160 MW of CHP nameplate capacity under PPAs during the Initial Program Period (2011-2015) and

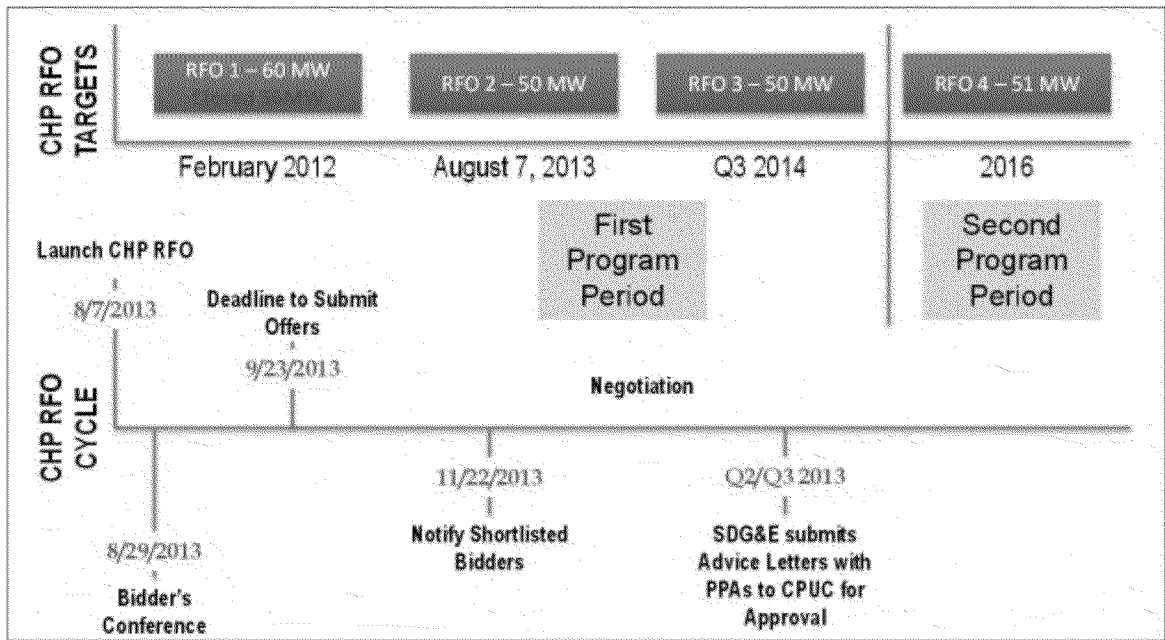
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<sup>9</sup> “On the cleanup side, one proposal is that any public IE reports be identical to the corresponding confidential IE report, except for the redaction of confidential material. This is a simple approach to help ensure that the public and confidential versions of an IE report do not give differing impressions, or inadvertently contradict each other. It is the same approach that the Commission generally uses for testimony and briefs in its proceedings. We adopt this proposal, with the clarification that public versions must show where redactions have been made, and confidential versions must show which parts are redacted from the public versions... Public versions of independent evaluator reports shall be identical to the corresponding confidential versions, except for the visible redaction of confidential material.” CPUC Decision 12-04-046, April 19, 2012, pp. 66 & 77.



51 MW in the Second Program Period<sup>10</sup> (2016-2020). These two periods are defined in the Settlement Agreement Term Sheet and are illustrated in Figure 1.<sup>11</sup> By means of this RFO, the second of three solicitations to be held during the Initial Program Period, and various other procurement alternatives under the Settlement Agreement, SDG&E requested offers to help meet its Initial Program MW Target of 160 MW by November 23, 2015, the end date of the Initial Program period.

**Figure 1. CHP RFO Program Cycle**  
 (Schedule Provided at the Pre-Bidders Call)



This RFO was limited to existing, new, repowered and expanded CHP facilities seeking either a CHP Pro Forma PPA or a CHP Utility Prescheduled Facility (UPF) PPA with SDG&E and to existing CHP facilities that wished to change operations and convert the facility to a UPF.

<sup>10</sup> The second Settlement program period starts four years after the Settlement effective date.

<sup>11</sup> SDG&E noted in the April 18, 2014 PRG meeting that the third CHP RFO is now planned for the second or third quarter of 2015.





**B. Products Requested in the 2013 CHP RFO**

In its RFO, SDG&E sought short-term (up to seven years) and long-term (up to twelve years) CHP supply resources, located either within or outside SDG&E's service territory. It requested both existing and new generation, as shown in Table 1 below.

**Table 1. Products Requested in SDG&E's 2013 CHP RFO**

<u>Product #</u>	<u>Short-term or Long-term</u>	<u>Location</u>	<u>Minimum Offer, MW</u>	<u>Delivery Start</u>	<u>Other</u>
Existing	Seven Years	CAISO Connected	5	Within 24 months of PPA Execution	No Credit/Collateral requirements. Existing contracts with SDG&E would continue credit terms.
Expanded	Twelve Years	CAISO Connected	5	Within 36 months of CPUC Approval	Credit and Collateral requirements
New/Repowered/Expanded	Twelve Years	CAISO Connected	5	Within 60 months of CPUC Approval	Credit and Collateral requirements
Utility Prescheduled Facility (UPF)	As-Negotiated	CAISO Connected	5	Up to 12 Years	Credit and Collateral requirements

During the 2013, CHP RFO process, SDG&E also conducted negotiations with [REDACTED] counterparties regarding potential bilateral offers.

**III. SUMMARY**

**A. Ranking of Offers**

SDG&E received offers from [REDACTED]. Each offeror was requested to provide two offers: one with the seller and one with the buyer responsible for the GHG allowance costs. [REDACTED]

<sup>12</sup> [REDACTED]



[REDACTED]  
 [REDACTED] Discussion of the evaluation of the offers is given in Sections III B., IV C., IV D. and the Appendix.

Table 2 shows information and evaluation results for the most attractive offers. [REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]

**Table 2. Summary Information and Evaluation Results for the Most Attractive Offers**

<u>Offer</u>	<u>Capacity Contract Offer/ Nameplate MW</u>	<u>Contract Term, Years</u>	<u>Above-Market Costs, k\$ NPV/ Nameplate MW</u>	<u>Levelized Above-Market Cost, \$/MWh</u>	<u>GHG Reduction Credit, tonnes</u>	<u>Levelized cost of GHG reduction credits, \$/tonne</u>	<u>Comments</u>
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

<sup>13</sup> The Appendix and answers to IE Template questions contains bid information and evaluation results for all offers.



Several metrics were used for the ranking of offers: the Net Present Value (NPV) \$/MW of the above-market cost, levelized above-market costs in \$/MWh<sup>14</sup> and the levelized cost in \$ per metric ton (tonne<sup>15</sup>) of those GHG reduction credits that count towards SDG&E's CHP Settlement goals. The key ranking metric is the levelized cost/tonne of GHG reduction credits. The reason for this is that meeting the CHP Settlement GHG reduction credit goal is far more challenging than meeting the CHP Settlement MW goal. In all likelihood, meeting the goal for GHG tonne reduction credits will require many more MW under contract than needed to satisfy the 211 MW goal. This is because GHG reduction credits from most new facility contracts and from re-contracting with existing CHP facilities making operational changes are expected to generate only moderate amounts of GHG reduction credits relative to the CHP MW provided. This characteristic causes the metric of the contribution towards the CHP Settlement MW goal to have limited influence on the ranking of offers. The economic comparison of the offers is discussed in Section B2, below. Detailed results and evaluations for each offer are shown in both the report and the Appendix: RFO Bid and Evaluation Data.

## B. Offer Selection

### 1. Characteristics of CHP RFO and Potential Bilateral Offers

VHC views the [REDACTED] as the only attractive offer from the 2013 CHP RFO. It has the following attributes:

- [REDACTED]
- [REDACTED]
- [REDACTED]

<sup>14</sup> The levelized above-market cost of power in \$/MWh was not used in this RFO to rank offers, since it is not an appropriate metric to use to compare peaking resources to baseload resources.

<sup>15</sup> SDG&E uses "MT" as the abbreviation for tonne or metric ton.

<sup>16</sup> See the Appendix for further discussion of GHG reduction benefits. [REDACTED]



[Redacted text block]

- [Redacted list item]
- [Redacted list item]

[Redacted text block]

[Redacted text block]

<sup>17</sup> The GHG reduction credits are calculated using the Double Benchmark Method, [Redacted] CHP Program Settlement Agreement Term Sheet, October 8, 2010. <http://www.cpuc.ca.gov/PUC/energy/CHP/settlement.htm>

<sup>18</sup> SDG&E had been using a GHG reduction credit target of 0.45 MMT. At the April 18, 2014 PRG meeting, Noel Crisostomo, CPUC, noted that SDG&E's target is 0.5 MMT, which includes the 0.45MMT associated with bundled IOU customers and 0.05MMT from unbundled Direct Access Community Choice Aggregation (DA/CCA) customers. This number is updated annually, see: <http://www.cpuc.ca.gov/NR/rdonlyvres/88C93F7C-E3A7-4146-B24E-54A916CD3B21/0/CHPProgramGHGERTCalculationsv3.xls>

<sup>19</sup> [Redacted footnote text]



• [REDACTED]

The second most attractive offer was the [REDACTED] offer with SDG&E paying for the GHG allowance costs. This offer is much more costly than the [REDACTED] offer. Its above-market cost of [REDACTED] is more than [REDACTED] times more expensive than the [REDACTED] offer. The levelized GHG reduction credit cost of [REDACTED] is nearly [REDACTED] times the cost of the calculated [REDACTED] GHG credits. Note, however, that VHC does not view the [REDACTED] offer as exorbitant in price. Rather, this offer is indicative of what small new cogeneration projects cost in California. Although the [REDACTED] [REDACTED] the [REDACTED] offer is not nearly as attractive as the now terminated Jasmin offer, solely due to the fact that the Jasmin offer could have generated extremely large GHG reduction credits, due to the retirement of the Rio Bravo Jasmin coal-fired facility.

Table 3 summarizes the April 2014 status of all potential bilateral offers now under consideration by SDG&E that might also help meet its CHP Settlement MW and GHG Reduction Goals.



**Table 3. April 2014 Status of CHP RFO and Bilateral Offers That Could Contribute Towards SDG&E's CHP Settlement Goals**

<u>Offer</u>	<u>Type</u>	<u>Facility MW</u>	<u>Contract MW</u>	<u>GHG Reduction Credits, tonnes per year</u>	<u>Status</u>
Jasmin <sup>20</sup>	New/ Repowered	56	56	213,938	Terminated as of 12/31/2013
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]		
	[REDACTED]	[REDACTED]	[REDACTED]		

[REDACTED] If SDG&E were to secure revised [REDACTED] contracts in addition to the now terminated Jasmin offer, then SDG&E would have met its CHP Settlement MW target for the first 3 RFOs, which total 160 MW. Without the Jasmin contract, SDG&E must still procure additional MWs to meet its Initial Program period MW target. Furthermore, without the Jasmin contract, it will likely be very difficult for SDG&E to meet its GHG reduction goals. VHC has reviewed SDG&E's estimates of GHG reduction credits for one of the bilateral offers and notes that the expected amount would be far less than the GHG reductions attributed to the terminated Jasmin offer.

<sup>20</sup> At the March 21, 2014 PRG meeting, SDG&E informed VHC and the PRG that [REDACTED]  
 [REDACTED]  
 Hathaway, the owner of the land that served as Rio Bravo Jasmin's thermal host (steam Enhanced Oil Recovery), had sued Rio Bravo for not producing oil and gas [REDACTED]. In turn, Rio Bravo Jasmin sued Tetra Oil, the field operator. See Cases S-1500-CV-279595 and S-1500-CV-280185 at <http://www.kern.courts.ca.gov/home.aspx>. In addition, the GHG reduction credits from the coal plant retirement were subject to claims by the co-owner of Rio Bravo Jasmin facility. At the April 18, 2014 PRG meeting, SDG&E confirmed that both parties had accepted the termination. The termination date was effective on 12/31/2013, [REDACTED]



## 2. Decision To Select No Offers

As indicated above, the most attractive offer from the RFO is the [REDACTED] offer [REDACTED] per tonne of GHG reduction credits<sup>21</sup>. SDG&E opted not to select this offer.

The key reasons<sup>22</sup> SDG&E decided not to select the offer in December 2013 are the following:

- The costs were viewed as being too high, with GHG reduction credit costs being [REDACTED] than the winning bid from the 2012 CHP RFO.
- SDG&E believed it had already made reasonable progress towards meeting its CHP MW and GHG Reduction goals.
- SDG&E has two more RFOs to find attractive offers to meet both its CHP MW and GHG Reduction goals.

During a December 19, 2013 conference call, Energy Division staff<sup>23</sup> recommended that the SDG&E procurement team consider short-listing the [REDACTED] offer because the offer:

- Has many positive attributes,
- Makes a contribution towards the GHG reduction goals,
- Is more attractive than all other offers in this RFO, and
- Is less costly than contracts tied to new CHP development.

The Energy Division staff also noted that there may be a limited number of Utility Prescheduled Facility (UPF) offers available in future RFOs.

VHC believes that SDG&E should have short-listed the [REDACTED] offer, because all the CHP offers from this RFO and the previous RFO, except for the Jasmin offer, have had leveled costs per tonne of GHG reductions far greater than this offer. The terminated Jasmin offer was viewed as exceptionally and uniquely attractive, because of the large GHG reduction benefits from the phase-out of the existing coal-fired facility. The fact that the most attractive offer in this RFO had a calculated GHG reduction cost much higher than the winning bid from the first RFO was expected and was not a compelling reason to not select the [REDACTED] offer.

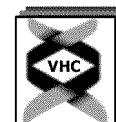
VHC stated in its last IE report, regarding SDG&E's 2012 CHP RFO, the following:

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<sup>21</sup> [REDACTED]

<sup>22</sup> As referenced on page 17, SDG&E provided its rationale for not selecting any offers, as summarized here.

<sup>23</sup> As referenced on page 19, Noel Crisostomo of the CPUC's Energy Division sent an email summarizing the comments that he and Jason Houck provided to SDG&E. Their key points are summarized here.



“VHC believes that it is unlikely that the achievable GHG reduction credits and the cost/tonne of GHG reduction from offers in future RFOs will be as attractive as the Jasmin III offer. The reason for this is that very few (if any) new offers can generate large GHG reduction credits from fuel switching from coal to natural gas. The large amount of GHG reduction credits that come from the elimination of burning coal is the key reason that the levelized cost per tonne of GHG reduction credits is relatively low.”<sup>24</sup>

VHC was correct in making this statement. Furthermore, VHC still believes that few, if any, new CHP resource developments in California will yield a lower cost per tonne of GHG reduction credits than the [REDACTED] offer in this RFO. SDG&E would need to receive a number of UPF contract restructuring offers from currently inefficient cogeneration projects in future RFOs, in order to get offers that might be more attractive than the offer that was rejected in this RFO. VHC does not know the number of these types of contracts that may be offered to SDG&E. However, such offers will also need to come from outside SDG&E's service territory, since SDG&E has only one more existing contract that is a candidate for a UPF restructuring offer that is not already under negotiation. Nevertheless, SDG&E's decision not to select any offer in this RFO may be validated after the next CHP RFO, if more attractive offers, in fact, arrive. However, if only higher-priced offers arrive, then SDG&E will not have pursued what is, in VHC's judgment, the apparent Least-Cost, Best-Fit solution to comply with the CHP Settlement during the 2013 CHP RFO.

Furthermore, even if an offer, more attractive than [REDACTED], were to be submitted in the next RFO, that offer, in addition to the [REDACTED] offer, plus the [REDACTED] pending CHP contracts,<sup>25</sup> would still, almost certainly, result in SDG&E being short of meeting its GHG reduction credit goal. The CHP Settlement notes in Section 6.9 that “Any IOU that is unable to meet its GHG Emissions Reduction Target must make a showing to justify its inability to meet the GHG Emissions Reduction Target.” In particular, Section 6.9.2.1 notes that “If the IOU claims that CHP RFO offer prices are excessive, the IOU must refer to independent or publicly-available sources...” In addition, Section 6.9.3 allows the utility to address the issue that “A lack of need exists.” In all likelihood, such a showing will be required by SDG&E, since meeting the target of 500,000 tonnes of calculated GHG reductions appears to be unlikely at this time.

The remainder of this IE report provides VHC's conclusions and recommendations, followed by answers to the IE Long-Form Template questions. In addition, the Appendix provides more details regarding the ranking and data for all the offers.

<sup>24</sup> VHC IE\_Report-Public Version-SDGE\_2012\_CHP\_RFO 7-2-13\_Public.pdf, p. 13, as filed July 23, 2013, with SDG&E Advice Letter #2501-E for Jasmin Power III – SD6000, LLC.

<sup>25</sup> At the time, SDG&E was evaluating potential CHP offers, including the terminated Jasmin III offer. [REDACTED]





### C. VHC Conclusions and Recommendations

With respect to SDG&E's 2013 RFO, VHC finds that:

1. SDG&E has conducted a fair and competitive RFO process.
2. There were no intentional or unintentional biases to unfairly select particular product types or specific offers.
3. SDG&E has a reasonable evaluation and ranking criteria to minimize costs to its customers and to find the most attractive Least-Cost, Best-Fit (LCBF) solution to meeting both its CHP Settlement MW and GHG Reduction Goals. However, for the reasons stated above, VHC does not concur with SDG&E's decision not to short-list any offers from this RFO.
4. VHC believes that selecting the most attractive offer from this RFO would most likely have been part of the LCBF solution to meet the CHP Settlement GHG Reduction and MW goals.<sup>26</sup> However, after the next RFO, it will be clear if SDG&E's strategy to defer procurement to the future RFOs is the superior LCBF CHP procurement strategy or not.

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

1. SDG&E should start the next CHP RFO as soon as practicable, in order to make progress in meeting the CHP Settlement's GHG reduction and MW goals.
2. SDG&E fully document the economic evaluation model applied in this RFO. This would include a detailed description of key modeling calculations, assumptions and the manual processes needed to create and transfer data between the SDG&E evaluation model and the CPUC Energy Division GHG reduction credit spreadsheet.
3. SDG&E should 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, identification of causes for delays in the evaluation and selection of offers and negotiations could lead to closer adherence to the schedule to complete future Applications for approval of selected offers. SDG&E should create and write-up a detailed process map for future CHP RFOs based on its experiences from the past two CHP RFOs. This would help ensure that all

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<sup>26</sup> This conclusion is based on the results available at the time that SDG&E rejected the [REDACTED] offer. VHC may have slightly moderated its view of the best offer's desirability, if the 2/10/2014 results were available at the time that SDG&E made its decision not to short-list the [REDACTED] offer.



RFO activities are executed according to target timelines. SDG&E should also seek feedback about the RFO process from bidders.

4. SDG&E consider sensitivity analyses of key uncertainties, such as forecast GHG allowance costs, energy and natural gas prices and capacity values to determine if the selection or ranking of offers would be highly sensitive to these parameters.
5. SDG&E test and refine key assumptions much earlier in the evaluation process. In particular, the relationships and validation of forecasts of energy prices with embedded GHG allowance costs, natural gas and GHG allowance prices need to be done earlier in the evaluation process. The forecast of the flexible capacity value also needs to be developed earlier in the evaluation process.
6. All changes to evaluations of the offers should be time stamped with notes of the changes made relative to previous versions of the evaluations.
7. The CPUC and SDG&E could work with the CAISO to improve the accuracy and timeliness of CAISO's studies of transmission interconnection and network upgrade costs. In addition, if approximate system upgrade costs could be gleaned from the CAISO TRCR process and included in the evaluation, then the preliminary ranking of offers would be more accurate.

#### **IV. RESPONSES TO QUESTIONS IN THE LONG FORM TEMPLATE**

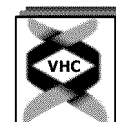
VHC's responses to the Commission's Long Form Template Questions are given below. Responses to some questions reference the Appendix.

##### **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:

<ol style="list-style-type: none"><li>a. Did the IOU conduct adequate outreach to potential bidders and did its outreach activities result in an adequately robust solicitation to promote competition?</li></ol>
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VHC began its role as IE for this SDG&E CHP RFO in April 2013, by discussing with SDG&E staff the issues and schedule for the upcoming 2013 CHP RFO. VHC reviewed the RFO material before the RFO was issued on August 7, 2013, and posted



on the SDG&E 2013 CHP RFO web site.<sup>27</sup> SDG&E also issued a press release, which was picked-up by some trade publications and contacted all existing CHP QFs under contract with SDG&E, as well as other possible bidders using a list of e-mail addresses. Mike Katz, the IE, participated in SDG&E's pre-bid web-based conference on August 29, 2013. [REDACTED]

In response to the RFO, SDG&E received offers from [REDACTED] Offerors, which indicates that the RFO was generally competitive for the 50 MW that were requested. Each Offeror was required to submit two bids: one with SDG&E responsible for GHG allowance costs and a second bid with the Offeror bearing those costs. With respect to bids from existing CHP facilities, VHC views the number of offers to be adequate in light of the relatively small amount of MW desired. However, there were [REDACTED] [REDACTED], which made offers that provided GHG reduction credits<sup>28</sup> that would count towards SDG&E's GHG reduction goal under the CHP Settlement. This number would normally be viewed as a marginally competitive number of bids. However, VHC believes that one of these offers, [REDACTED], had a high probability of being more attractive than offers from future RFOs, because the cost per tonne of GHG reduction was the second lowest that has been offered to SDG&E in its two CHP solicitations.

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

The IE worked with SDG&E on the design and assessment of the metrics and evaluation methodology to rank and select offers. The following gives an overview of the IE involvement in these areas.

At its Pre-Bid Conference, the IE gave an overview of the key factors that would influence the ranking of offers. A slide, shown as Figure 2, was discussed to explain to bidders the various components of the costs and benefits of offers that would be considered in the selection of offers. In particular, it was pointed out that contributions to the CHP Settlement goals would be important in the ranking of offers.

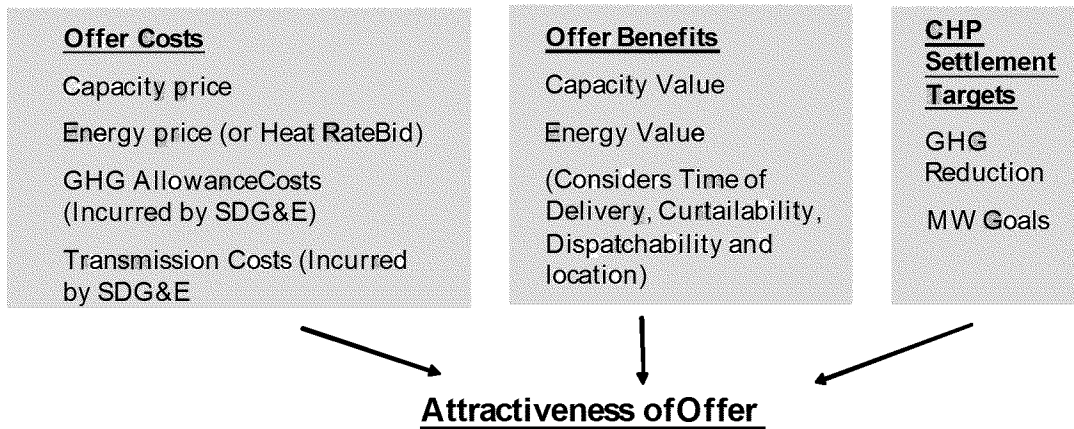
<sup>27</sup> <http://www.sdge.com/2013-request-offers-seeking-chp-power-purchase-agreements>

<sup>28</sup> Note that GHG reduction credits are not GHG allowances. The GHG reduction credits are defined in the CHP Settlement and, in general, are based on the calculated difference in the GHG production from the new facility relative to a benchmark. If the facility is an existing facility, then GHG reduction credits are only awarded, if there is a change in operation that reduces the future GHG emissions relative to historical GHG emissions.



**Figure 2. Slide on Economic Evaluation Presented at Pre-Bid Conference**

**Economic Evaluation**



*The IE critiques and reviews the SDG&E's evaluation and ranking of offers to ensure all offers are assessed correctly and the lowest net-cost combination of offers is selected for the short list to meet the CHP Settlement goals*

Conformance Check

SDG&E checked to ensure that each offer met minimum criteria, as specified for each Product type shown in Table 1. The following minimum RFO criteria were checked:

- All Offerors included at least one offer such that the seller pays for the GHG allowance costs, and
- Offer Forms were complete.

Mike Katz, the IE, and Scot Rolfe, SDG&E, first reviewed the offers for conformance. There were minor issues with some incomplete information in the offer bids. Mike and Scot agreed that the additional data could be acquired from the bidders, if the offers were to make it to the short list. [REDACTED] did not initially provide an offer with the Offeror paying for the GHG allowance costs. Mike Katz and Scot Rolfe agreed to prompt [REDACTED] to send the additional offer in quickly. The key reason for allowing this flexibility is that, in general, none of the Offerors is



willing to take on GHG allowance cost price risk since the cost for hedging this risk is likely to be expensive and may be difficult to secure.<sup>29</sup>

Further discussion of the methodology is provided in response to Item C.1.b below.

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

The IOU's bid evaluation and selection process was administered fairly and followed the process discussed in response to the previous question.

VHC reviewed SDG&E's key assumptions, economic analysis calculations, the results of its production simulation modeling, its spreadsheets for calculation of levelized costs, GHG reduction credits and the ranking of offers for potential selection to be included in the short list. One metric that was calculated, i.e., the levelized above-market cost of power (\$/MWh), had the limitation that it is not an appropriate metric to use when comparing baseload and peaking offers. The NPV of the above-market cost of capacity (\$ NPV/MW) was used as the metric in the selection criteria to allow side-by-side comparisons of baseload and UPF contracts. However, as noted before, the levelized cost per tonne of GHG reductions was the key metric in ranking offers from this RFO.

Since no offers were selected, there were no contract negotiations.

Concurrently, two bilateral offers with existing CHP contracts with SDG&E were under negotiation during the course of the RFO process. SDG&E intends to continue negotiations to achieve two updated bilateral agreements [REDACTED]. SDG&E has not asked VHC to prepare IE reports for contracts and Advice Letter filings that may result from the bilateral negotiations, because the CHP Settlement does not require IE involvement with CHP bilateral negotiations.<sup>30</sup> However, VHC has reviewed one of two economic evaluations of the bilateral contracts.

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?

<sup>29</sup> It is also true that a very high-priced offer would satisfy the conformance criteria, but would not be selected.

<sup>30</sup> Although IE involvement is not required, the Energy Division requested VHC review [REDACTED].



It is VHC's opinion that SDG&E made consistent choices based on their view that the levelized cost per tonne of GHG reduction was too high. However, VHC believes short-listing and successfully negotiating the most attractive offer from this RFO would most likely have been part of a Least-Cost, Best-Fit solution to meet its CHP settlement MW and GHG reduction goals.

Rather than have VHC explain SDG&E's rationale for selecting no offers, Mike Katz requested a written explanation to ensure no mischaracterization by VHC. The following four paragraphs in italics and Table 4 were provided by SDG&E on January 7, 2014:

*On September 23, 2013 SDG&E received [REDACTED] in response to its 2013 CHP RFO issued on August 7, 2013 (2013 CHP RFO). Based on SDG&E's current progress towards meeting the CHP Settlement Agreement targets<sup>31</sup>, the relative valuation metrics associated with the bids (most notably the above market cost to ratepayers), and the fact that SDG&E will issue at least two additional CHP solicitations in the future, together led SDG&E not to short list any of the [REDACTED] received.*

*SDG&E has made significant progress toward meeting both the MW and GHG Reduction targets through the execution of one utility pre-scheduled facility amendment [REDACTED], the imminent execution of a second utility pre-scheduled facility amendment [REDACTED] as well as through the execution of a contract resulting from SDG&E's initial CHP RFO issued in February, 2012 (Jasmin). At this point in time based on these three alone, SDG&E will have reached ~77% of the Settlement Agreement MW target, and 49% of the GHG Reduction Target<sup>32</sup>. Considering the fact that SDG&E will issue at least two additional CHP RFO's in the future, SDG&E feels that there is adequate opportunity to procure additional CHP resources to meet both the MW and GHG reduction CHP targets<sup>33</sup>.*

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<sup>31</sup> California Public Utilities Commission (CPUC) Decision (D.) 10-12-035 issued in December, 2010 adopted the CHP Program Settlement Agreement which is included as attachment A to that decision.

<sup>32</sup> SDG&E's MW target is 211 MW. The [REDACTED] pending contracts mentioned would have combined for 162.4MW or 76.97% of the target level. In terms of the GHG goal, the current target is 500,000 metric tons of CO<sub>2</sub> equivalent annually and the [REDACTED] contracts, including the terminated Jasmin III contract, would have combined for a total of 220,538MT or 44.1% of the total.

<sup>33</sup> "SDG&E is also aware that the California Air Resources Board (CARB) may also reduce the GHG target levels in its 2013 scoping plan update." However, the Energy Division disagrees with SDG&E's claim for a reduced GHG target level. See the ARB's First Proposed Update to the Climate Change Scoping Plan [Update (p. 47-48) or the Energy chapter (p. 29-32)] that are provided at [http://www.arb.ca.gov/cc/scopingplan/2013\\_update/draft\\_proposed\\_first\\_update.pdf](http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf)



**Table 4. Summary of SDG&E CHP Targets / Progress Toward Meeting Targets**

	CHP Targets		SDG&E Progress		Facilities contributing to targets
	MW Target	GHG Reduction Target (MT)	MW Reached	GHG Reduction Reached (MT)	
1st RFO	60				Jasmin
2nd RFO	50				
3rd RFO	50				
4th RFO	51				
Total Total without Jasmin	211	500,000			

*Economically, the above market cost of the highest ranked offer received in response to the 2013 CHP RFO ( ) was deemed to be too excessive. The offer equated to (Levelized Net Market Value of GHG Benefits) in above market costs as compared to SDG&E executed from the February 2012 CHP RFO. Based on these figures, SDG&E ratepayers would be paying than our most recent contract and SDG&E’s management deemed this offer to be not attractive enough to pursue at this point in time. This determination was made following consultation with SDG&E’s Procurement Review Group (PRG), most recently on December 13, 2013.<sup>34</sup> During SDG&E’s PRG meeting on December 13, CPUC Energy Division staff advised that the offer was somewhat reasonable (taken by SDG&E to mean that the proposal costs were within the range of other recently executed contracts elsewhere in the state). However, SDG&E has chosen to defer procurement to future CHP RFO’s given the excessive costs associated with the offer.*

*Additionally, the CHP offers received in response to the 2013 CHP RFO were all associated with out of service territory projects. In contrast, SDG&E’s portfolio has specific need for local capacity, which was therefore not met by*

<sup>34</sup> Bidders in the 2013 RFO were notified on December 20, 2013.



*any of the offers received in response to the 2013 CHP RFO. In deferring procurement to future CHP RFO's, SDG&E believes that there is a reasonable chance that offers may more closely match our portfolio needs at more reasonable costs to ratepayers.*

SDG&E's justification for not accepting the [REDACTED] offer assumed that the Jasmin project and contract would be successfully completed and approved by the CPUC. As noted earlier in this report, the Jasmin contract was effectively terminated on December 31, 2013, because of non-performance by NAPG. However, SDG&E's procurement team was not made aware of the contract termination until early April, when it was informed by the SDG&E department monitoring contract credit requirements. If the procurement team had been aware by December 20, 2013, the date on which bidders were informed that no offers had been selected, that there was a high probability of Jasmin contract termination, then SDG&E would have in all likelihood shortlisted the [REDACTED] offer.

Before SDG&E made its decision to select no offers, Noel Crisostomo and Jason Houck of the Energy Division had a telephone conference call on December 19, 2013, with members of the SDG&E procurement team and Mike Katz, the IE. The following comments were provided to SDG&E by Energy Division representatives during this call, as recalled in a January 6, 2014 email from Noel Crisostomo to Mike Katz:

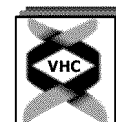
*Energy Division did not provide a recommendation for [REDACTED] by determining or finding that the [REDACTED] MT GHG credit was cost reasonable. As Jason and I recall, we provided SDG&E the following inputs to consider when determining their shortlist:*

- *The [REDACTED] offer, a UPF, had attractive attributes.*
- *SDG&E's small procurement target limits the number and depth of bids that it will receive in a CHP RFO. SDG&E's first and second CHP RFOs have produced limited opportunities for significant and cost-effective GHG reductions from individual facilities. Should SDG&E decline [REDACTED]'s offer, SDG&E will not be making incremental progress toward meeting the CHP Program GHG ERT after the second CHP RFO. As a result, there is a risk that SDG&E's future RFOs may not yield opportunities sufficient for SDG&E to meet its CHP Program GHG ERT.*

[REDACTED]

- *If confirmed as calculated, ED views [REDACTED] significant GHG Credit as a positive attribute that other offers in SDG&E's second RFO did not share.*





- *In light of these observations, ED suggested that SDG&E consider shortlisting*

VHC does not know whether the Commission would have considered the [REDACTED] offer as having an excessive cost to procure GHG reduction credits under the CHP Settlement. However, the Commission has access to more extensive CHP market information than SDG&E does, especially since the Commission has knowledge of CHP offers to SDG&E, SCE and PG&E. If the Commission were to have ruled on a contract Application resulting from this RFO, it would have provided a benchmark to SDG&E for this and subsequent CHP RFOs.

In addition, VHC has the view that all CHP contracts from RFOs will have above-market costs relative to non-CHP contracting options available to SDG&E. In our opinion expressed during the evaluation, the [REDACTED] bid was the most attractive offer in this RFO and had a reasonable probability of having lower costs per tonne of GHG reduction credits under the Settlement guidelines than future CHP offers will have.

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 July 2013. Mike Katz participated in the Pre-Bid Conference, held on August 29, 2013. He was communicating with Scot Rolfe on the day of the initial receipt and processing of the bids, which were delivered electronically by 1:00 PM Pacific Time, September 23, 2013. He confirmed that there were no affiliate bids.

During the bid evaluation period, Mike Katz participated in numerous conference calls and e-mail communications to discuss the bid processing and evaluation criteria. The VHC team of Mike Katz, Andy Van Horn and Ed Remedios reviewed SDG&E's economic spreadsheets, methodology, models and key assumptions. VHC also suggested refinement of some of SDG&E's assumptions for the economic evaluations. In particular, the GHG allowance forecast diverged from the embedded GHG allowances in the electric energy price forecast. Scot Rolfe agreed that this was an issue and refined the forecasts to create internal consistency between embedded GHG allowance costs within the electric energy forecast and the GHG allowance price forecast.

In addition, VHC participated in Procurement Review Group (PRG) meetings throughout 2013 and 2014. Mike Katz highlighted key issues to the PRG during the CHP RFO discussions. These issues included the following:



- [REDACTED]
- The calculation of the GHG reduction credits, in the Settlement for UPF offers, does not include the GHG impacts of the replacement useful thermal energy generated by the cogeneration process. The replacement energy would have to be provided by a boiler, resulting in additional GHG emissions that are not taken into account.
- New cogeneration facilities are likely to have relatively high costs per tonne of GHG reductions. These costs are likely to be much higher than the Jasmin offer and higher than the [REDACTED] offer.

Mike Katz participated in the December 19, 2013 conference call with the Energy Division and SDG&E to discuss the attractiveness of the [REDACTED] offer.

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

Mike Katz suggested that, at the next pre-bid conference, SDG&E note that bids that do not offer firm capacity will not receive any capacity value in the economic evaluation. He also noted that prompting bidders to locate new projects in the San Diego local capacity area will result in higher benefits from the local capacity value that will be included in the evaluations.

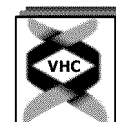
## **B. How did the IOU conduct outreach to bidders and was the solicitation robust?**

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 MWh associated with submitted proposals)

This being the second CHP RFO, the primary principle used to assess the robustness of the solicitation was a qualitative judgment based on comparing the number of offers and the number of counterparties relative to the 50 MW sought in this RFO.



The total of [REDACTED] MW<sup>35</sup> from offers received was a moderate amount relative to SDG&E's MW need. [REDACTED] had offers that provided GHG reduction credits. This result is in line with our expectations, because only new and repowered facilities (and certain restructured contracts) provide GHG reduction credits. The small amount of capacity desired in this RFO of 50 MW may not have generated significant interest from bidders. Furthermore, it is unclear if there are many attractive steam hosts looking to develop cogeneration projects in California

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

Yes. The CHP and QF community was very engaged in the CHP settlement process. Prospective bidders were aware of the timing of the CHP RFOs to be issued by the three California IOUs. The communication protocols applied by SDG&E are generally the same as used for its other RFOs. As noted in response to A.1.a, SDG&E contacted all QFs that have contracts with SDG&E to encourage offers in the CHP RFO.

4. Was the solicitation adequately robust?

Yes. See Responses to A.1.a, B.2 and B.3.

It is VHC's judgment that the number of responses to this RFO for the requested products was moderate, but reasonable and met expectations for this solicitation.

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 had a pre-bid webinar conference on August 29, 2013 to ensure prospective bidders understood the RFO process. There were [REDACTED] people participating that represented various companies. SDG&E had a communication channel for bidders to ask questions about the RFO, if they had questions about the materials provided and/or how to submit an offer. All information for the RFO was made available on this link:

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<sup>35</sup> This is the total MW offered from different sites and excludes the different contract pricing for whether the buyer or the seller pays for GHG allowance costs.



<http://www.sdge.com/2013-request-offers-seeking-chp-power-purchase-agreements>

Questions and answers regarding the RFO were posted on the SDG&E CHP RFO website.

VHC believes the outreach and materials for this RFO were clear and met the needs the solicitation was intending to fill.

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

VHC has no additional comments.

**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 general criteria that SDG&E would use for its evaluation. See the answer to question A1.b. regarding the general criteria to evaluate offers that were explained to prospective bidders at the pre-bidders' conference.

In its RFO, SDG&E listed the following qualitative factors<sup>36</sup> to differentiate among offers with similar benefit-adjusted costs:

- Project Viability,
- Project Reliability,
- Adherence to PPA Terms and Conditions, and

<sup>36</sup> The selection process did not require the use of qualitative factors to adjust the ranking and selection of the best offer.



- Supplier Diversity.

The selection of the short list offer was not influenced by these qualitative factors.

All forms and documents necessary to submit offers were posted on the 2013 RFO CHP web site. Potential bidders were provided the opportunity to ask questions about the RFO. Four answers to bidders' questions were prepared and posted by SDG&E.

Potential bidders were invited to the pre-bid webinar conference at which SDG&E made presentations addressing:

- RFO requirements (e.g., collateral, RFO milestones and schedule),
- Bid forms,
- Procurement oversight (presented by the IE),
- Bid evaluation approach and review (presented by the IE),
- Communications, and
- Timeline.

SDG&E explained to prospective bidders how to fill out bid offer forms. It was very important that bidders had a good understanding of the extensive information required in the offer forms, so as to avoid submissions of non-conforming or incomplete forms.

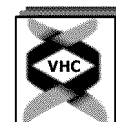
VHC believes that SDG&E's communications and presentations concerning its evaluation process were consistent with the approach it used to select offers and that all potential bidders were given adequate opportunity to ask questions about SDG&E's methodologies. Overall, SDG&E's bid documents defined the type and characteristics of products desired and indicated the information the bidder needed to provide in order for SDG&E to conduct its evaluation. The overview explained the costs and benefits of projects that would be included in the economic evaluation. However, the specific economic metrics to rank offers were not discussed with bidders.

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 that would be part of the evaluations.

#### Quantitative Factors

The quantitative factors used in the economic evaluations:



- Contract energy and capacity costs,
- Capacity Benefits,<sup>37</sup>
- Energy Benefits,
- Ancillary Services Benefits (if any),
- GHG Reduction Credits,
- GHG Allowance Costs,
- Congestion Costs, and
- Transmission System Upgrade Costs.

All the factors noted above are included, if applicable, in economic evaluations of contract offers, except for the GHG reduction credits calculated for these CHP offers. The type of CHP contracts entitled to GHG reduction credits and the calculation of these credits (and possibly debits) are described in the 2011 CHP Settlement<sup>38</sup> and can found at this link: <http://docs.cpuc.ca.gov/PUBLISHED/GRAPHICS/124875.PDF>

#### Short List Development

The IE and SDG&E staff agreed that a short list would be established by evaluation and analysis using both quantitative and qualitative criteria. SDG&E calculated three key metrics:

- NPV of above-market costs/MW,<sup>39</sup>
- Levelized above-market cost/MWh,<sup>40</sup> and
- Levelized cost/tonne of GHG reduction credits.<sup>41</sup>

The last metric of levelized cost/tonne of GHG reduction credits is the primary metric applied to rank offers. SDG&E also reviewed the MW contribution for each offer that would count toward meeting the CHP Settlement MW goals.

The method used to rank offers was as follows:

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<sup>37</sup> The capacity benefits vary for generic system capacity, flexible capacity and local area capacity.

<sup>38</sup> These settlement terms were approved by the CPUC in Decision 10-12-035 on December 16, 2010.

<sup>39</sup> The above-market costs are defined as the total cost of the offer less benefits provided by the offer.

<sup>40</sup> The levelized above-market cost of power, \$/MWh, was initially thought to be preferred metric to compare CHP offers. However, this metric did not allow for a side-by-side comparison of baseload and peaking offers. Therefore the NPV of above-market costs, \$/MW, was used for the comparison of all the offers. If all offers were baseload offers, then VHC believes the \$ NPV/MW and levelized \$/MWh metrics would give identical rankings.

<sup>41</sup> GHG reduction credits are defined and calculated based on the CHP Settlement methodology. In general, the levelized cost /tonne of GHG reduction credits is defined as the above-market levelized costs per tonne of GHG reduction credits.



First, find the lowest levelized cost/tonne of GHG reductions. Then, examine the offers with the lowest levelized cost/tonne of GHG reductions to determine if these offers had reasonable above-market costs expressed in \$ NPV/MW and levelized above-market \$/MWh. Note that the above-market metrics give similar rankings of similar offers, unless the offer is dispatchable and is not providing baseload energy. The \$ NPV/MW ranking metric allows for side-by-side comparison of baseload and peaking offers. The \$/MWh above-market costs metric for baseload offers can also be used to compare the premiums paid for CHP offers with those paid for renewable resources.

Since existing resources with no change in operations do not provide any GHG reduction benefits, the attractiveness of these offers is generally lower, since they only contribute only towards the Settlement MW goal and not the GHG reduction goal.

Details of the inputs (e.g., bid type, facility information, firm and as-available capacity, and prices) for each offer were transferred to an evaluation model. The model used forecasts of market data (e.g., capacity on-peak and off-peak prices, electric energy prices, natural gas prices, and GHG allowance prices). The costs and values of each offer were determined using a monthly model with four Time-Of-Use periods (Super-Off Peak, Off-Peak, Semi-Peak and Peak).

The annual costs of each offer were then calculated by including the costs of each of the following components over the term of the offer:

1. Firm Capacity,
2. As-Available Capacity,
3. Fixed Operating and Maintenance Costs,
4. Variable Operating and Maintenance Costs,
5. Energy,
6. Congestion,<sup>42</sup>
7. GHG allowance costs, and
8. Transmission costs.<sup>43</sup>

The annual benefits of an offer were determined by summing the values of each of the following components, if applicable, over the term of the offer:

1. RA Capacity,<sup>44</sup>

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<sup>42</sup> [REDACTED] All other offers were not attractive and a congestion analysis was not done for these offers.

<sup>43</sup> System transmission upgrade costs were assumed to be zero for the [REDACTED] offer, since it is an existing facility. Estimates of system transmission upgrade costs were not included for the other less attractive offers.



2. Energy,
3. Ancillary Services,<sup>45</sup> and
4. Curtailment Value.

The NPV of the costs and the benefits were calculated using SDG&E's cost of capital as the discount rate.

#### Key Assumptions for Ranking of Offers

SDG&E used a spreadsheet model to obtain the ranking metrics for each of the offers. SDG&E also ran its production simulation model to estimate the energy benefits of the [REDACTED] offer. [REDACTED]

The [REDACTED] The energy benefits for the other offers with baseload dispatch were based on forecast baseload energy values.

The [REDACTED] [REDACTED] See the Appendix for more discussion of the capacity values used for offers.

The spreadsheet analyses took into account both benefit and cost factors, including capacity, energy, greenhouse gas allowance costs, transmission and congestion.<sup>46</sup> An adder for debt equivalence was not included in the evaluation. No offer had ancillary services revenues included as part of its benefits.

SDG&E used the CPUC Energy Division's spreadsheet (CHP Reporting Template) to calculate the GHG reduction credits<sup>47</sup> for each offer that produced credits. Section 7 of the CHP Settlement term sheet explains the GHG credit and debit calculations. Mike Katz checked key assumptions and the results for the GHG reduction credits for the offers. Furthermore, Mike Katz had multiple discussions with the Energy Division and SDG&E staff regarding these calculations and the appropriate assumptions to use.

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<sup>44</sup> Local RA capacity value is only added to offers that would help SDG&E meet its local RA needs. Flexible capacity value was given to the [REDACTED] offer since it would be a fully dispatchable combustion turbine.

<sup>45</sup> No ancillary services benefits were included in the economic evaluation of the offers provided in this CHP RFO.

<sup>46</sup> As noted earlier, [REDACTED] had congestion costs [REDACTED].

<sup>47</sup> The inputs into the spreadsheet included the appropriate emission factors to account for the carbon content of the primary fuel, coal, as well as other fuels used.





Based on our review, inputs to the model, refinements, assumptions and our detailed examination of the spreadsheet evaluations, VHC concludes that SDG&E's evaluation methodology and selection process were designed and executed fairly.

SDG&E noted that it would consider the use of qualitative measures, such as site control, to differentiate among offers with similar quantitative values. However, no qualitative measures were needed or used in ranking offers. The qualitative factors typically used are:

- Project Viability,
- Project Reliability,
- Adherence to PPA Terms and Conditions, and
- Supplier Diversity.

The qualitative factors did not influence the ranking of offers.

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

No.

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

The methodology is consistent. However, VHC believes that selecting the best offer from this RFO would most likely have been part of SDG&E's eventual Least-Cost, Best-Fit (LCBF) solution to meet both the CHP Settlement MW and GHG reduction goals. VHC believes it is unlikely that better offers offering GHG reductions will be available in the next RFO.

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

All offers were evaluated based on the costs and benefits that each offer would provide as part of SDG&E's portfolio and the contribution to SDG&E's CHP Settlement goals for MW and GHG Reduction.

The ranking of offers was established by evaluation and analysis using quantitative parameters, and the offers were ranked primarily using the key metric of leveled cost/ tonne of GHG reductions.



The additional metrics, noted below, provide additional insight about the market premium that SDG&E pays for CHP offers.

- \$ NPV/MW of above-market costs, based on SDG&E forecasts of market prices and costs, and
- Levelized above-market \$/MWh,

SDG&E also examined the MW contribution towards the CHP Settlement MW goal.

The foremost ranking procedure was first to find the lowest levelized cost/tonne of GHG reductions. Then, SDG&E examined offers with the lowest levelized cost/tonne of GHG reductions to determine if those offers had reasonable above-market costs expressed in \$ NPV/MW and levelized above-market \$/MWh. Note that the two above-market cost metrics give similar comparisons of offers, unless an offer is dispatchable and is not providing baseload energy. The \$ NPV/MW ranking metric allows for side-by-side comparison of baseload and dispatchable offers. The key advantage of the above-market costs per MWh metric for baseload offers is that it can be easily compared to the premiums to market prices for renewable resources. Since existing resources with no change in operations do not provide any GHG reduction credits, the attractiveness of these offers is generally fairly low, since such an offer only contributes towards the MW goal and not the GHG reduction goal. However, if an offer were to have very low above-market or below-market costs, then a case could be made that selecting this type of offer would yield flexibility in the subsequent RFOs to find the lowest-cost offers to meet the GHG reduction goals.

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

- Discount Rate and Discount Period,
- Delivery profiles and time-of-use periods,
- Valuation Metrics,
- Capacity Values,
- Energy Values (including embedded GHG allowance costs),
- GHG Allowance Costs,
- Transmission Upgrade Costs,<sup>48</sup>

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- Techniques to normalize the start date and life-time differences of offers, and
- Other assumptions.

The ranking of the short-list offers did not include system transmission (or TRCR) costs. VHC agreed with SDG&E that the inclusion of system transmission costs would only have resulted in reducing the attractiveness of all offers, except for existing facilities that do not propose to expand their capacity and would not incur upgrade costs. Without CAISO interconnection studies available for specific projects, it is difficult to estimate and compare potential transmission upgrade costs.

The following chart shows SDG&E's view in December 2013 of its progress toward meeting the GHG reduction and MW goals from the CHP Settlement. The red line shows a target of 450,000 tonnes of GHG reduction credits needed to meet the goal.<sup>49</sup>



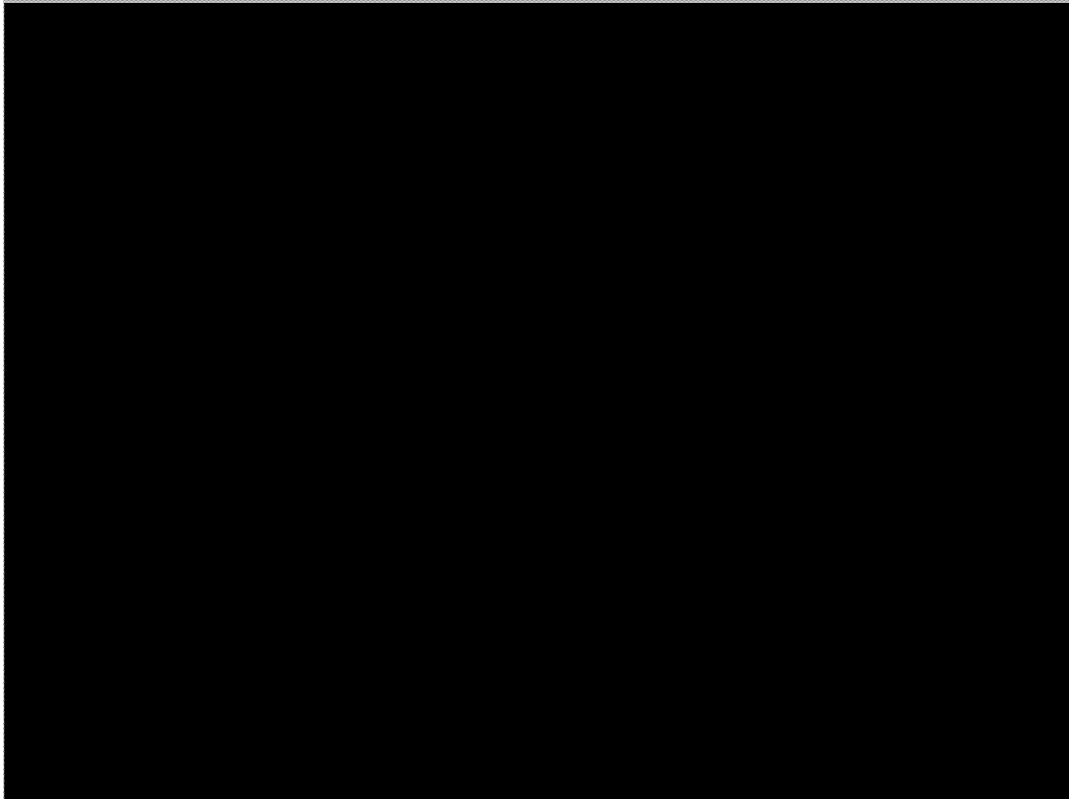
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<sup>49</sup> At the time SDG&E prepared the chart, SDG&E was using 450,000 tonnes as its goal for GHG reduction credits. The goal is 500,000 tonnes.



**Figure 3. Achieving SDG&E CHP Settlement Targets as of December 2013**

*This figure is redacted.*



Based on our review, VHC determined that SDG&E's evaluation resulted in an appropriate ranking of offers. However, as noted before, VHC believes that the most attractive offer in this RFO should have been short-listed, in order for SDG&E to continue to make progress in meeting its CHP GHG reduction goals. Even if lower cost offers were to be found in future RFOs, in all likelihood, the most attractive offer from this RFO would still have been part of the LCBF solution to meet the Settlement goal of 500,000 tonnes of GHG reductions. At the time SDG&E was evaluating offers, SDG&E's progress of approximately [REDACTED]

[REDACTED] The single pending Jasmin contract would have provided nearly 214,000 tonnes. However, receiving another offer like Jasmin was and is very unlikely.) Although not known at the time of evaluating the 2013 RFO offers, the termination of the Jasmin contract has significantly increased the need for additional CHP contracts. Selecting the most attractive offer in this RFO would have added slightly over [REDACTED] of credits towards meeting SDG&E's goal. Even if [REDACTED], the most attractive offer from this RFO would most likely have been part of the LCBF solution to meet the CHP Settlement goals, because an additional [REDACTED] tonnes of GHG credits would still

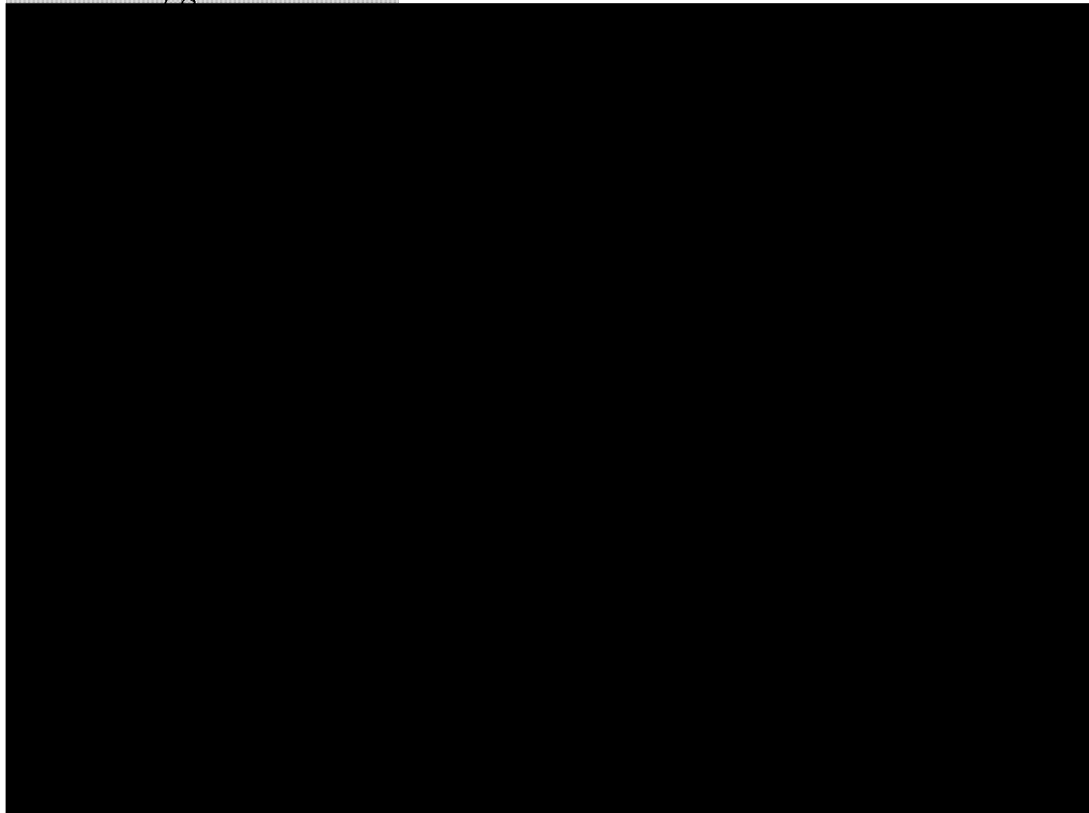


have been needed, based on the assumptions considered at the time of evaluating offers. Moreover, the [REDACTED] pending bilateral offers may only contribute [REDACTED] tonnes of GHG reduction credits toward SDG&E's target of 500,000 tonnes.

On April 18, 2014, at the PRG meeting, SDG&E updated its progress towards meeting the CHP Settlement GHG Reduction and MW goals, as shown in Figure 4 below prepared by SDG&E. SDG&E mentioned that it believed that there was a possibility that the GHG reduction goal for the CHP contracts with California IOUs could be removed in the ARB's February 10, 2014 Proposed First Update to the Climate Change Scoping Plan.<sup>50</sup> Energy Division disagreed with SDG&E regarding this statement and requested that SDG&E check with the ARB for clarification of the ARB's intentions regarding GHG reduction goals for CHP in California.

**Figure 4. Achieving SDG&E CHP Program Targets as of April 2014<sup>51</sup>**

*This figure is redacted.*



<sup>50</sup> [http://www.arb.ca.gov/cc/scopingplan/2013\\_update/draft\\_proposed\\_first\\_update.pdf](http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf)

<sup>51</sup> At the time SDG&E prepared the chart, SDG&E was using 450,000 tonnes as its goal for GHG reduction credits. The goal is 500,000 tonnes.



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

SDG&E's bid evaluation criteria remained the same during the evaluation process.

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?

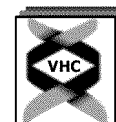
The CHP LCBF optimization is unique relative other types of RFOs, because the goal is find LCBF solution to meet the CHP Settlement goals, for both capacity and GHG reduction. VHC reviewed PG&E and SCE public documentation regarding their evaluation approaches. Their descriptions of the evaluation methodology were very general and, therefore, VHC cannot comment on the similarities and differences of their evaluation and ranking of offers. VHC believes that the other utilities must use an approach that is generally similar, because the most difficult challenge for all the utilities in California is to meet the GHG reduction goals and not the MW goals.

VHC believes that SDG&E's methodology can find an appropriate LCBF selection of offers, resulting in an LCBF solution that meets the CHP Settlement MW and GHG Reduction goals. However, SDG&E has opted not to select any offer in this RFO, based on its opinion that all the offers were too expensive and, in that light, SDG&E wanted to see if there would be lower cost offers in the next RFO.

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

No. The analysis captures the appropriate differences that influence the attractiveness of these offers relative to meeting the CHP Settlement MW and GHG reduction goals.

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



The portfolio fit in the context of meeting the CHP Settlement Goals is an interesting optimization. SDG&E concluded early on that achieving the GHG Reduction goals would very likely result in a large number of contracts that would greatly exceed the CHP MW goals. (It also seemed likely that such a large number of contracts and CHP MW might not be readily available, especially given that all three IOUs could be competing for the same projects offering GHG reduction credits.) For this RFO the best portfolio fit must be judged in the context of finding the lowest-cost solution to meet the GHG reduction goals. This would ultimately result in the best portfolio fit.

With respect to dispatch differences among offers, the value of producing energy at different times was captured in the economic evaluation, and no constraints were placed on acquiring resources with more dispatch flexibility compared to baseload facilities.

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 transmission information, subject to constraints imposed by FERC's Standards of Conduct?

In its evaluation of offers, SDG&E did not include costs for transmission system upgrades for existing facilities. VHC agrees that transmission upgrade costs are not relevant for existing facilities that are already connected to the grid.

The new, repowered and expanded CHP resources have the potential to result in system upgrade costs. *In this regard, 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.* Furthermore, a more useful TRCR could provide estimates of system transmission costs that could be used in the evaluation of offers. This would help to appropriately rank offers that are located at particularly bad and good transmission connection points.

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

As noted in the answer to C.2., the metric of the levelized cost<sup>52</sup> per tonne of GHG reduction credit was used as the key metric to rank and select offers, thus weighting

<sup>52</sup> This cost is the levelized above-market cost of the contract. This equals the difference between the levelized contract costs (capacity, energy, O&M and GHG allowance costs and any other costs associated with the offer) and the levelized benefits (system or local RA capacity value and time-differentiated energy values, including embedded GHG allowance costs).



was not necessary. VHC concurs that this is the appropriate metric, since selecting the offers with the lowest levelized cost/per tonne of GHG reduction credits leads most directly to the LCBF solution, while meeting both CHP Settlement MW and GHG reduction goals. The levelized above-market cost/MWh was examined to see if the above costs seemed reasonable. SDG&E did not develop a firm limit on the above-market cost it was willing to pay for contracts. However, SDG&E wanted to have this metric available.

f. What future LCBF improvements would you recommend?

The forecasting methodology needs to be refined to ensure internally consistent assumptions among the natural gas, electric and GHG allowance price forecasts. During the course of the evaluation, VHC and SDG&E went through multiple iterations to ensure consistency among these forecasts.

The flexible capacity value forecast needed to be developed during evaluation. VHC recommends having long-term system, local and flexible capacity values fully developed before bids arrive.

Although this may not be immediately possible, better approximations of system transmission upgrade costs could be included in the ranking of offers. In the future, SDG&E should show evaluations of new offers with and without the transmission system upgrade cap to show the potential impact of system transmission upgrade costs for the offer.

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

With respect to CHP, virtually all offers will be brownfield/repowering opportunities, because of the need for a thermal host. SDG&E contacted all existing CHP facilities in their service area to generate interest in this RFO.

6. Did the IOU consider contract viability?

SDG&E did not incorporate qualitative measures to assess contract viability in its rankings of supply offers. [REDACTED]

[REDACTED] No offer was shortlisted, and, hence, no contract was negotiated.

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

No.





**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?

As discussed above, qualitative factors were considered, but did not influence the ranking and selection of offers. SDG&E used the levelized cost per tonne of GHG reduction credits as the primary metric of to rank offers. The analysis identified the [REDACTED] as the most attractive offer.

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.) SDG&E used an energy value forecast derived from forward curves that had embedded GHG allowance costs.

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

N. A.

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

Four questions and answers were posted on SDG&E's RFO web site. Potential bidders also asked questions at the Pre-Bid Conference. SDG&E answered questions fairly and consistently.

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

The only clarifications were the questions that were asked and then posted on the SDG&E website.

e. Were economic evaluations consistent across bids?

Yes.



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 of assumptions and parameters used for the various evaluations done by SDG&E. Accepted information and data sources were used to calculate parameters used in the evaluation. The most complicated relationship among parameters was the interplay among the GHG allowance, natural gas and electric price forecasts. The initial evaluations showed a disconnect between the embedded GHG allowance prices in the energy forecast price and the GHG allowance forecast in the later years of the forecast. By estimating the implied marginal heat rate excluding embedded GHG allowances, SDG&E was able to adjust the energy and GHG allowance forecasts for internal consistency.

SDG&E also uses an appropriate differentiation of capacity values. Higher values are used for flexible capacity and capacity supporting its local area needs compared to system capacity value.

If there were a tight cluster of offers with comparable levelized costs per ton of GHG reduction credits, then VHC would have tested how various parameters could influence the ranking of offers.

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

The IE, Mike Katz, reviewed and critiqued the LCBF evaluation methodologies that SDG&E considered for its evaluation of CHP offers in its first CHP RFO. The current methodology is similar to the methodology that vetted offers in the first RFO.

VHC reviewed all the input assumptions to ensure that they were reasonable.

Finally, once the bids arrived, VHC reviewed the calculations and results to make sure the correct offer data were used in the model. VHC also reviewed the CHP settlement GHG reduction credit calculations derived from the CPUC Energy Division GHG reduction credit spreadsheet. Mike Katz participated in two meetings and conference calls with the Energy Division and SDG&E regarding the calculation of GHG reduction credits for the [REDACTED] offer. There were multiple emails with the Energy Division and SDG&E on the appropriate GHG reduction modeling of the [REDACTED] offer. Mike Katz and SDG&E both ran a host of cases in the Energy Division GHG reduction credit spreadsheet to calculate the GHG reduction credits for all offers to examine the GHG reduction credit calculations.

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 with respect to bid conformance. If a bidder provided incomplete bid forms, then the bid had the potential to be a non-conforming bid.

SDG&E did not reject any offer for non-conformance, even though some had missing information. In particular, [REDACTED]  
[REDACTED]  
[REDACTED] VHC concurred with this decision to keep as many offers as possible viable for selection in this first CHP RFO.

There were no pre-determined criteria for determining non-conformance, if there were portions of the bid forms that were not fully completed. In general, if all the pricing and performance data and the location of the project were given, then the offer was considered conforming.

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 determine the ranking of offers. VHC reviewed results of the analyses and the selection of offers. The parameters and inputs used were reasonable and unbiased for the selection process.

Quality control was conducted primarily through VHC checking the reasonableness of results and reviewing the spreadsheets used to calculate costs and benefits. On pages 12 and 13 of this report, VHC listed recommendations that VHC believes would improve the quality control of the economic evaluation process. VHC's further review provided additional checks for quality control, especially of the various spreadsheet models' logic, methods, calculations, inputs and results. The further reviews included comparing components of costs and of benefits, monthly variations in heat rates and in capacity factors for selected offers, escalation in prices, and amounts of generation.

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?

No parts of the analysis were outsourced.



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?

Some of the offers were from existing generation facilities and had no transmission costs, since they were already tied into the transmission grid. [REDACTED]

[REDACTED]

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?)

No additional criteria were used in ranking the offers.

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.

SDG&E provided updates to the PRG regarding the 2013 CHP RFO starting in April 2013 to January 2014. In the first presentation on April 19<sup>th</sup>, 2013, SDG&E provided an overview of the schedule for the CHP RFO. On October 18<sup>th</sup>, SDG&E provided the overview and pricing of the offers to PRG. On November 15<sup>th</sup>, SDG&E provided its preliminary ranking of offers [REDACTED]. On December 13<sup>th</sup>, SDG&E provided the following three tables and charts showing the final evaluation of offers on which SDG&E based its decision to reject all offers in this RFO. A key chart from this presentation shows the preliminary ranking of offers by above-market NPV and total GHG reduction credits provided.



**Table 5. Top Counterparties and RFO Offers**

Counterparty Name	Facility Name	Vintage	Capacity (MW)	Term (years)	COD	Contract Type	Capacity Price (\$/kW-yr) Incl. FOM	Energy Pricing Heat Rate Shown, MMBtu/kWh	Variable O&M (\$/MWh)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]



**Table 6. Top Offer Valuation Metrics**

Counterparty Name	Levelized Contract Costs (\$/MWh)	Total Contract Costs (NPV \$/ Nameplate MW)	Levelized Net Market Value (\$/MWh)	Net Market Value (NPV \$/ Nameplate MW)	GHG Reduction Benefits (MT/yr)	Levelized Net Market Value of GHG Benefits (\$/MT)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]



**Figure 5. Bid Evaluation Results: Above-Market Cost/GHG Reduction Benefit**

*This figure is redacted.*



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One focus of the discussion at the PRG December 13, 2013 meeting was on the [REDACTED] offer which had the lowest cost per tonne of GHG reduction credits at a levelized [REDACTED]<sup>53</sup>.

[REDACTED]

Mike Katz pointed out that the levelized above-market value in \$/MWh was not an appropriate metric to use for a peaking resource. The better metric as discussed earlier in the report is the Net Market Value (NPV \$/ Nameplate MW). The evaluation showed that not only did the [REDACTED] offer have the lowest cost per tonne of GHG reduction credits, but also, the lowest above-market costs NPV \$/Nameplate MW basis.

<sup>53</sup> [REDACTED]



[Redacted text block]

[Redacted text block]

i. Discuss any problems and solutions.

As noted before, VHC believes the best offer from this RFO should have been short-listed.

ii. Identify specific bids if appropriate.

There were no problems regarding the ranking of any of the bids.

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 its decision with a focus on minimizing cost to ratepayers. VHC believes that in order to meet the CHP Settlement goals the most attractive offer from this RFO would have been part of the LCBF solution.

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

No action was 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?

In general, the RFO process was conducted in the same manner as other RFOs. SCE had a more complex process in which participants were able to refresh bids for offers after all terms and conditions were agreed to. SCE also required transmission studies to be completed by the CAISO, while SDG&E typically capped the maximum upgrade costs in the contract.

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

No comparisons have been made. VHC is not aware of CHP-specific solicitations outside of California.

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.

**E. Discussion of project-specific negotiations**

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

There were no negotiations since no offers were selected.

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

N. A.

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?)

N. A.

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

N. A.

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

N. A.



## 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.

N. A.

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

There were no UOG bids in this RFO.

## 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 and IOU bids were received. The CHP offer form has an entry to notify SDG&E if the offer were an affiliate bid. In this case, the IOU has no opportunity or intention to develop UOG cogeneration projects. Therefore, safeguards and evaluation methodologies were not developed for this type of offer.

If there were to be an affiliate offer, the IE would monitor all communication between the affiliate and SDG&E, including emails, meetings and conference calls. The IE would attend meetings and be on all calls. The evaluation criteria and models applied to affiliate offers would be carefully reviewed to ensure the same criteria and applications were done as for the other bids.



2. Describe compliance with the safeguards.

Mike Katz received an electronic copy of the offers at the same time the utility received bids which were delivered electronically by 1:00 PM Pacific Time, September 23, 2013. Later on the same day, Mike Katz, the IE, was on a call with Scot Rolfe of SDG&E to confirm that 1) all bids met the deadline for submittal, 2) no affiliated bids were received, and 3) submitted bids complied with the RFO requirements.

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.

N. A.

**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.)

N. A.

b. Portfolio Fit

N. A.

c. Project Viability

i. Technology

N. A.

ii. Bidder Experience (financing, construction, operation)

N. A.

iii. Credit and Collateral



N. A.

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

N. A.

v. Fuel status

N. A.

vi. Transmission upgrades

N. A.

d. Any other relevant factors

N. A.

2. Based on the complete bid process:

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

Yes, but barely. The 2013 CHP RFO was moderately competitive relative to the 50 MW of CHP sought in this RFO. SDG&E received offers from [REDACTED] providing over [REDACTED] facility MW. In general, VHC believes this number bids reflects a functioning market for the RFO contracts with caveats noted in earlier discussion.

With respect to new projects, [REDACTED] In addition, [REDACTED]  
[REDACTED]

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

N. A. No offers were selected.

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

N. A.



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.

N. A.

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

N. A.

### **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 its 2013 CHP RFO. There were no 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?

VHC would recommend that SDG&E issue its RFOs at the same time or before the other utilities to ensure market participants consider bidding in SDG&E's CHP RFOs in addition to larger solicitations from PG&E and SCE.

VHC's specific recommendations, listed in Section III.C. of this report, are intended to enhance the efficacy of the evaluation process.

3. Any other relevant information.

No.



### V. APPENDIX: RFO BID AND EVALUATION DATA

This section provides more detailed confidential information and confidential discussion regarding the economic evaluation of the offers and the key assumptions that influence the results.

**Table 7. Top CHP Offers Overview**

Counterparty Name	Facility Name	Vintage	Capacity (MW)	Term (years)	COD	Contract Type	Capacity Price (\$/kW-yr) Incl. FOM	Energy Pricing Heat Rate Shown, MMBtu/kWh	Variable O&M (\$/MWh)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]



The above summary table comes from the SDG&E's December 13, 2013 presentation to the Procurement Review Group (PRG). Note that two capacity and Variable Operating and Maintenance (VOM) prices are shown for most offers. One offer is where SDG&E would be responsible for the costs of acquiring GHG allowances, and the other is where the Offeror would be responsible for the costs of acquiring GHG allowances.

[Redacted text block]

54 [Redacted text block]

[Redacted text block]

55 [Redacted text block]

[Redacted text block]

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54 [Redacted text block]

55 [Redacted text block]



[Redacted text block]

**Table 8. Offer Evaluation Results (Used By SDG&E for Decision Making)**

[Redacted table content]





[Redacted]

[Redacted]

56

[Redacted]

[Redacted]

[Redacted]

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<sup>56</sup> At the time of the economic evaluation, the Jasmin offer was considered pending. As noted before, the contract has been terminated.



[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted] This offer was the most attractive offer in this RFO. Key assumptions that were used in the evaluation were as follows:

Capacity Value – [Redacted]

[Redacted text block]

57

Energy Value – [Redacted]

[Redacted text block]

Fuel costs – [Redacted]

[Redacted text block]

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<sup>57</sup> “On April 1, 2011 the ISO implemented a new capacity procurement mechanism to replace the Interim Capacity Procurement Mechanism, updated the price paid for capacity and extended bid mitigation applicable to exceptional dispatches. The ISO also added new features to procure capacity needed for reliability when a resource is at risk of retirement, as well as criteria to select resources to help manage variability. The new capacity procurement mechanism procures capacity that is not already designated as resource adequacy capacity and is obligated to be available to the ISO for scheduling and dispatch comparable to the obligations of resource adequacy capacity.”

<http://www.caiso.com/informed/Pages/StakeholderProcesses/CompletedStakeholderProcesses/CapacityProcurementMechanism.aspx>



[Redacted text block]

Dispatch capacity factor – [Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]



[Redacted text block]

During the process of writing up this report, the IE noticed different inputs for the historical fuel consumption data on SDG&E's evaluation worksheet and GHG reduction credit worksheet. However, this error did not change the relative ranking of the offers. As discussed previously, VHC listed a host of refinements (primarily modeling and process documentation) needed to improve SDG&E's evaluation process, which the IE believes will reduce the chance of making future errors in the evaluations. This is especially important as different people perform these economic evaluations and when SDG&E personnel changes occur. These CHP evaluations are complex, due to the large valuation differences that can occur for various types of offers as a function of location, vintage (new, repowered, UPF conversion or existing), fuel switching, operational changes for existing units, dispatch flexibility, GHG reduction calculations, etc.



**Table 9. Updated Offer Evaluation Results from 2/10/2014**

The content of Table 9 is completely redacted with a large black rectangular box covering the entire area where the table would be displayed.



**CHP Settlement GHG Reduction Calculations**

The CPUC Energy Division spreadsheet titled “CHP Reporting Template V3.3.3.c” was used to estimate the GHG reduction benefits for the various offers. A host of assumptions and data inputs are required to calculate the GHG reduction credits for the offers that generated these credits. Table 10 provides the results summary. After Table 10, key assumptions and issues with GHG reduction credits for the various offers are discussed.

**Table 10. Summary of GHG Reduction Results (Used for Decision-Making)**

The content of Table 10 is completely redacted with a large black rectangular block covering the entire table area.

**GHG Discussion**

The text under the 'GHG Discussion' heading is redacted with multiple black bars of varying lengths. A small box containing the number '58' is visible near the bottom of the redacted area.

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58



[Redacted text block]

[Redacted text block]

**Other Offers**

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]



[Redacted text block]

As noted in the recommendation section of the report, much more documentation of the SDG&E economic evaluation models would help reduce the probabilities of errors occurring in future economic evaluations of CHP offers. VHC views the SDG&E model as challenging to use, modify and update. This can lead to a host of problems, particularly when new analysts need to run and change this model.

**Table 11. Summary of GHG Reduction Results (2-10-2014 Update)**

[Redacted table content]