Application of San Diego Gas & Electric Company(U 902 E) for Approval of Energy Storage and Energy Efficiency Contracts Arising from the Track IV Local Capacity Requirement All Source Request for Offers

Application 16-03-xxx
Exhibit No.: (SDG&E- ____)

PREPARED DIRECT TESTIMONY OF

SCOT ROLFE

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

*****PUBLIC REDACTED VERSION*****

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

March 30, 2016

TABLE OF CONTENTS

PREPARED DIRECT TESTIMONY OF
SCOT ROLFE
ON BEHALF OF SDG&E

I. INTRODUCTION

The purpose of my testimony is to describe the process used to evaluate and select the shortlisted offers in SDG&E's 2014 Track IV Local Capacity Requirement All Source Request for Offers ("Track IV All Source RFO").

II. TRACK IV ALL SOURCE RFO EVALUATION PROCESS

SDG&E utilized an evaluation methodology that ensured all of the resource types evaluated in the Track IV All-Source RFO were considered on a level playing field with consistent evaluation protocols. In accordance with D. 14-03-004, SDG&E used a Least-Cost, Best-Fit ("LCBF") methodology to value and award contracts in this RFO.[1]

A. Track IV RFO Background / Overview

As discussed in the Direct Testimony of Mr. Charles, the first step in the processing of the offers received in response to the Track IV All Source RFO was conformance checks. Once this step was complete, the conforming offers were then evaluated. SDG&E's offer evaluation process follows LCBF principles. This includes both quantitative and qualitative evaluation elements, which both impact the final offer ranking and shortlist selection. This methodology is consistent with evaluations performed by SDG&E in other solicitations including: Renewable Portfolio Standard ("RPS"), Combined Heat and Power ("CHP"), Energy Storage ("ES"), and All-Source RFO's.

The quantitative evaluation involves a Net Market Value ("NMV") analysis, which provides a net present value ("NPV") of the forecast of (1) the value of the contract benefits, (2) the value of the contract costs, and (3) the net value of (1) less (2).

SDG&E conducted a series of meetings with internal stakeholders and the Independent Evaluator ("IE") to identify and consider the qualitative aspects of each of

[1] D.14-03-004 (Decision Authorizing Long-Term Procurement for Local Capacity Requirements due to Permanent Retirement of the San Onofre Nuclear Generation Station ["Track 4 Decision"]) at Ordering Paragraph ("OP") 6 requires that all of the elements included in D.13-02-015 OP 4 be observed (item h. requires a least-cost, best-fit analysis be conducted).

the top-ranked offers, and determine their impact on the final shortlist. The qualitative evaluation involves any element that cannot be quantified. These elements included:

- Safety plan for construction and operation of facilities
- Developer experience
- Loading order ranking
- Development milestones
- Consideration of the flexibility of resources (track 1 decision requirement)
- Portfolio Fit
- Diverse Business Enterprise ("DBE") Status
- Risks associated with resource type
- Permitting and Interconnection
- Water usage

B. Track IV All Source RFO Evaluation Details

1. General (Locational Benefits)

Locational benefits were also considered by SDG&E while developing the evaluation methodology. SDG&E received a Locational Effectiveness Factors ("LEFs") study from the California Independent System Operator ("CAISO"), which attempted to differentiate the locational effectiveness of generation resources. The result of the LEF study, along with the CAISO 2016 Local Capacity Technical Analysis ("2016 LCT"), which states, "all units within this area have the same effectiveness factor,"[2] led SDG&E to conclude that no locational differentiation should be applied in this evaluation. Please refer to the Direct Testimony of Mr. Charles for a detailed description of the LEF study results.

2. Benefits

a.) Energy

(1) Energy Efficiency

Energy Efficiency ("EE") offers provided annual energy savings profiles for the term of the offer. The energy benefits were calculated by multiplying these profiles by

[2] 2016 Local Capacity Technical Analysis – Final Report and Study, available on the CAISO website at: https://www.caiso.com/Documents/Final2016LocalCapacityTechnicalReportApr302015.pdf ; the quoted statement is on page 100 of the report.

the forecasted energy forward price curve. EE benefits are gained from load reductions, so the energy benefits are then increased by SDG&E's distribution loss factor of 5.5% to reflect avoided line losses.

(2) Dispatchable Demand Response (including behind the meter storage)

For dispatchable demand response offers, energy benefits are calculated through a put option model that estimates the forecasted annual net revenues given the offer's variable costs and constraints (i.e., maximum events per day, maximum hours per day, hours available, variable energy costs). Demand response benefits are gained from load reductions, so the energy benefits are then grossed up by SDG&E's distribution loss factor of 5.5% to reflect avoided line losses.

(3) Energy Storage

To maintain consistency in valuations across different resource types, SDG&E adapted its approach to valuing dispatchable thermal resources for use in the valuation of ES. SDG&E worked with Financial Engineering Associates ("FEA") to develop an ES dispatch optimization model which calculates an optimized energy dispatch profile utilizing the unique resource constraints and operating characteristics of ES. Typical constraints included maximum energy output, maximum energy input, round-trip efficiency, and maximum cycles per day/month/year. Inputs include forecast energy prices and energy price volatilities, and contract terms, such as Variable Operations and Maintenance ("VOM"). The model also runs a set of price simulations that generates a variety of hourly price scenarios and charge/discharge combinations through a decision tree optimization. The resulting revenue outcomes are averaged to obtain a single net energy benefit.

(4) Baseload/Must-take resources

For baseload and must take resources, SDG&E calculated the energy benefits by multiplying the forecasted energy forward price curve by the offer's expected delivery profile.

b) Capacity

Capacity benefits are derived first by calculating the residual capacity value of a new-build flexible gas-fired resource using SDG&E's most recent executed Power Purchase agreements to determine an escalating annual residual capacity cost for long-

term new capacity. The resulting annual capacity cost is then allocated down to a hourly level using 2022 Loss-of-Load Probabilities ("LOLP"). The resulting hourly capacity costs are summed to a monthly level. Because the LOLP is zero in some months, and because SDG&E believes that the capacity still has value in these months (because it could be sold as system Resource Adequacy ["RA"]) SDG&E established a monthly "price floor" for the capacity value. This monthly price floor is established by using recent RA RFO results for system RA,[3] and this floor is applied to any month that is below the corresponding price floor. This assumes that any excess capacity can be sold as short-term system RA. The annual local capacity price is then re-allocated to the monthly level using the monthly price floors. The resulting monthly capacity prices are re-allocated down to the hourly level using the LOLP ratios as the final hourly capacity benefit.

(1) Energy Efficiency

The hourly capacity quantity for each offer is equal to the energy savings profile provided in each offer. This hourly quantity is multiplied by the hourly capacity values described above to determine the capacity benefit for EE resources.

(2) Dispatchable Demand Response

Demand response resources receive capacity value for each hour the program is available for dispatch during the year, with a capacity quantity equal to the hourly savings profile provided in the offer. The hourly quantity is multiplied by the hourly capacity cost curve to determine the capacity benefit.

(3) Energy Storage

Being fully dispatchable, ES resources receive their full offered contract capacity for all hours of the year. This capacity is multiplied by the annual capacity cost to determine the capacity benefit.

(4) Renewable resources

The capacity quantity for Renewable resources is determined by taking the lesser of the CAISO maximum resource capacity factor or the capacity factor derived from the expected delivery profile provided by the offer. This hourly profile is multiplied by the hourly capacity cost.

[3] RA RFO results for 2014-2015 were used in this calculation.

(5) Ancillary Services ("A/S")

A/S benefits are calculated by taking a historical ratio of the amount of revenue (for each of the A/S types) to the amount of energy revenue generated by SDG&E's existing portfolio of A/S capable resources. This approach encompasses both the bidding strategies utilized by SDG&E and the CAISO's dispatch of A/S versus energy, to determine the real benefit of A/S.

c) Costs

(1) Variable Energy Costs (dispatch costs, including Greenhouse Gas ["GHG"] compliance)

(a) Fuel

Fuels costs are calculated from the expected delivery profile for each resource.

(b) Variable Operating and Maintenance ("VOM")

VOM costs are provided in the offer forms for dispatchable resource types, if applicable, and calculated based on the expected delivery profile for these resource types.

(c) Start-up costs

Like fuel and VOM, start-up costs are provided in the offer forms for dispatchable resource types and are calculated based on the number of starts determined by the expected delivery profile. This expected delivery profile is determined by the energy benefit modeling described above.

(d) Round-trip efficiency (storage losses)

Round-trip efficiencies are provided for the energy storage product type within the offer forms and are used in calculating the expected delivery profile and associated storage losses. In short, not all the energy put into the storage resource is returned to the grid when the storage resource is discharged. These round trip losses are inherent to the ES product type and vary by storage technology and other factors. SDG&E gathered the round trip efficiency information from the offerors in the offer forms.

(e) GHG compliance costs

Any resource that must meet a GHG compliance requirement has a compliance cost calculated based on the fuel usage and SDG&E's forecasted compliance instrument forward prices.

(1) Capacity Payments

For each of the seven product types included in the Track IV All Source RFO, SDG&E included in the offer forms an explanation of the capacity payment information to be collected from the offerors. These included total fixed contract payments, including fixed O&M.

(2) Interconnection Costs

For resource types that require an electrical interconnection (that is, all resource types except EE and DR), SDG&E collected the reimbursable network upgrade costs from the offerors in the offer forms. These costs generally come from an interconnection study or upgrade cost estimates.

III. QUANTITATIVE EVALUATION RESULTS

Based on the foregoing evaluation methodology, the quantitative analysis resulted in a NMV in total dollars which was discounted back to the 2017 base year. This total NMV figure was then divided by the offer's total capacity (in megawatts) to arrive at a per megawatt ("MW") NMV which was rank ordered from the highest NMV/MW to the lowest NMV/MW. The results of this quantitative analysis are included in Confidential Attachment A.

IV. QUALITATIVE EVALUATION RESULTS / OVERALL EVALUATION RESULTS

Based on the quantitative ranking, SDG&E conducted three in-depth, cross departmental discussions, led by the Vice President of Electric and Fuel Procurement ("E&FP") to fully discuss the qualitative aspects of the ~40 highest ranked offers. Based on the outcome of those discussions and the quantitative ranking, SDG&E arrived at its recommended shortlist. The tables and chart below summarizes the outcome of the analysis and qualitative discussions. Note that Table SR-1 was provided as part of the specially convened CAM PRG presentation and discussion conducted on May 27, 2015:

Table SR-1, Top ~40 offers (NMV/MW), excluding conventional resources[4]

Note: Table SR-1 is Confidential

[redacted]

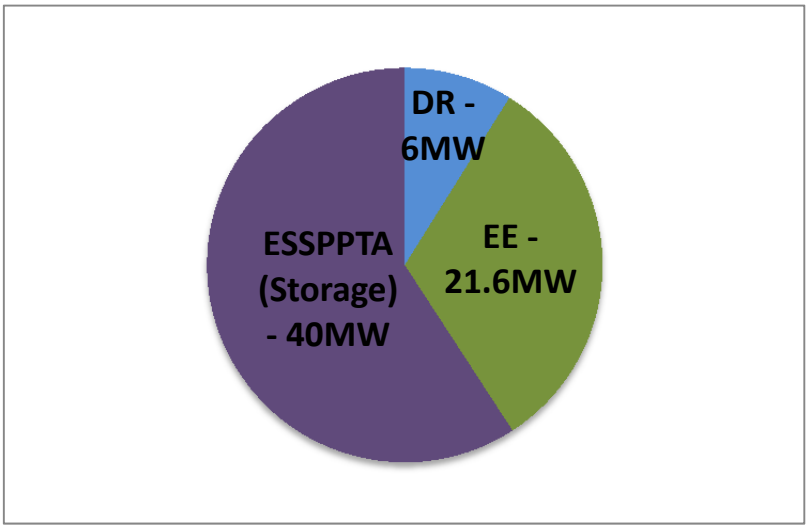
SDG&E chose to shortlist [redacted] offers (see Tables SR-2 and SR-3 below).

[4] *Note that he numbering at left in the below chart reflects hidden rows that are associated with the conventional offers that were included on this listing. Upon conditional approval of the Carlsbad Energy Center agreement via D.15-05-051 on May 21, 2015, the conventional portion of SDG&E's overall need was fulfilled, and the conventional offers received in response to the 2014 All Source RFO were no longer considered.*

Table SR-2, Resulting Shortlist
Note: Table SR-2 is Confidential

[redacted]

Table 3-SR, Shortlisted Resources by Resource Type



Of the remaining [redacted] offers:

[redacted]

[redacted]

Ultimately, SDG&E began negotiations with each of the [redacted] short-listed offers. However, as described in the Direct Testimony of Emily Shults, Pat Charles and George Katsufrakis, only 2 of the [redacted] negotiations resulted in executed contracts (Hecate ES and Willdan EE).

V. QUALITATIVE DISCUSSION SUMMARY FOR WILLDAN (EE) AND HECATE (ES) CONTRACTS

A. Willdan – EE Resource

Willdan Energy Solutions ("Willdan") is an experienced EE provider that has provided capacity reduction and energy efficiency resources to public and private utilities for over 25 years. [redacted] Although this is a larger than typical EE program (18.5 MW), SDG&E believes Willdan has presented a viable program design that targets previously hard to reach customers, which

enhances its status as an incremental EE resource. Please refer to the Direct Testimony of Mr. Katsufrakis for further details on the Willdan proposal.

B. Hecate – ES Resource

Hecate is a developer of solar power plants, natural gas–fired power plants, wind power plants, and energy storage solutions. Founded in 2012, Hecate Energy has over 2,400 MW of power plants under development. [redacted]

The Bancroft project is sited in Spring Valley, CA – interconnection to the 69kV Spring Valley substation.

This concludes my prepared direct testimony.

VI. SUMMARY OF QUALIFICATIONS

I, Scot Rolfe, have never testified before this commission. I have been employed by SDG&E for 3 years in the role of Principal Business Analyst in the Origination group of Electric & Fuel Procurement ("EF&P"). Prior to this position, I spent 5 years in the Scheduling group of EF&P performing real-time and day-ahead trading, scheduling, and analysis of generation resources. I have an additional 15 years of experience, prior to my employment with SDG&E, in various roles in the wholesale energy trading industry, including Risk Management, Generation Dispatch, both Electric and Natural Gas Portfolio Optimization, and both Electric and Natural Gas Trading.

Attachment A

Quantitative Evaluation Results Table
(Entire Document Considered Confidential)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

DECLARATION OF SCOT ROLFE REGARDING CONFIDENTIALITY OF CERTAIN DATA

I, Scot Rolfe, do declare as follows:

1. I am a Principal Business Analyst in the Electric & Fuel Procurement Department for San Diego Gas & Electric Company ("SDG&E"). I have reviewed my prepared direct testimony submitted in support of SDG&E's Application for Approval of Energy Storage and Energy Efficiency Contracts Arising from the Track IV Local Capacity Requirement All Source Request for Offers (A.16-03-xxx), submitted concurrently herewith (the "Track IV Testimony"). In addition, I am personally familiar with the facts and representations in this Declaration and, if called upon to testify, I could and would testify to the following based upon my personal knowledge and/or belief.

2. I hereby provide this Declaration in accordance with D.06-06-066, *et seq.*, to demonstrate that the confidential information ("Protected Information") provided in the Track IV Testimony submitted concurrently herewith (described below) falls within the scope of data protected as confidential pursuant to the IOU Matrix attached to the Commission's confidentiality decision, D.06-06-066 (the "IOU Matrix") and/or under relevant statutory provisions.[1/]

[1/] The Matrix is derived from the statutory protections extended to non-public market sensitive and trade secret information. (*See* D.06-06-066). The Commission is obligated to act in a manner consistent with applicable law. The analysis of protection afforded under the Matrix must always produce a result that is consistent with the relevant underlying statutes; if information is eligible for statutory protection, it must be protected under the Matrix. (*See Southern California Edison Co. v. Public Utilities Comm.* 2000 Cal. App. LEXIS 995, *38-39) Thus, by claiming applicability of the Matrix, SDG&E relies upon and simultaneously claims the protection of applicable statutory provisions including, but not limited to, Public Utilities Code §§ 454.5(g) and 583, Govt. Code § 6254(k) and General Order 66-C.

3. In D.06-06-066, the Commission adopted rules governing confidentiality of certain categories of electric procurement data submitted to the Commission by investor owned utilities ("IOUs") and energy service providers ("ESPs"). The Commission established two matrices – one applicable to IOUs, the other to ESPs – setting forth categories and sub-categories of data and providing a confidentiality designation for each.[2/]

4. To the extent information matches a Matrix category, it is entitled to the protection the Matrix provides for that category of information. In addition, the Commission has made clear that information must be protected where "it matches a Matrix category exactly . . . or consists of information from which that information may be easily derived."[3/] In order to claim the protection afforded by the relevant Matrix, the party seeking confidential treatment must establish:

1) That the material it is submitting constitutes a particular type of data listed in the Matrix,
2) Which category or categories in the Matrix the data correspond to,
3) That it is complying with the limitations on confidentiality specified in the Matrix for that type of data,
4) That the information is not already public, and
5) That the data cannot be aggregated, redacted, summarized, masked or otherwise protected in a way that allows partial disclosure.[4/]

2/ *See*, D.06-06-066, as amended by D.07-05-032, *mimeo*, Appendices 1 and 2.
3/ *See*, *Administrative Law Judge's Ruling on San Diego Gas & Electric Company's April 3, 2007 Motion to File Data Under Seal*, issued May 4, 2007 in R.06-05-027, p. 2 (emphasis added).
4/ D.06-06-066, as amended by D.07-05-032, *mimeo*, p. 81, Ordering Paragraph 2.

5. SDG&E's Protected Information: The Protected Information, consisting of the information described below, is protected pursuant to the following Matrix categories:

Data at Issue	Matrix Requirements	How Moving Party Meets Requirements
Highlighted / shaded portions of my Track IV Testimony on the following pages / line numbers: - SR-7: Table SR-1 - SR-7: line 5 - SR-8: Table SR-2 - SR-8: lines 20-23 - SR-9: lines 1-15 and line 17 and lines 24-29 - SR-10: lines 6-8 And The entirety of Attachment A, the Quantitative Evaluation Results Table (the "Results Table")	Demonstrate that the material submitted constitutes a particular type of data listed in the IOU Matrix	The redacted data in includes bid information and/or specific quantitative analysis related to those bids, and / or contractual terms
	Identify the Matrix category or categories to which the data corresponds	Matrix categories VII B, VIII A and VIII B
	Affirm that the IOU is complying with the limitations on confidentiality specified in the Matrix for that type of data	SDG&E requests that the information listed be kept confidential in accordance with the guidelines included in the IOU Matrix, Public / Confidential Treatment column. This states that contract terms be kept confidential for a period of three (3) years from the date the contract begins deliveries or until one (1) year following expiration, whichever comes first; that protected bid information be kept confidential for no specified term, and that quantitative analysis information be kept confidential for three (3) years after winning bidders are selected.
	Affirm that the information is not already public	SDG&E has not publicly disclosed this information and is not aware that it has been disclosed by any other party.
	Affirm that the data cannot be aggregated, redacted, summarized, masked or otherwise protected in a way that allows partial disclosure.	The information is provided in manner suitable for Commission evaluation. The data cannot be further aggregated, redacted, further summarized, masked or otherwise protected in a way that allows partial disclosure.

6. SDG&E intends to comply with the limitations on confidentiality specified in the Matrix for the type of data that is provided herewith.

7. I am not aware of any instance of public disclosure of the Protected Information.

8. The Protected Information cannot be provided in a form that is further aggregated, redacted, or further summarized and still provide the level of detail requested and expected by the Commission.

9. As an alternative basis for requesting confidential treatment, SDG&E submits that the confidential information provided in the Track IV Testimony is material, market sensitive, electric procurement-related information protected under§§ 454.5(g) and 583, as well as trade secret information protected under Govt. Code § 6254(k), and that the disclosure of this information would place SDG&E at an unfair business disadvantage, thus triggering the protection of G.O. 66-C.[5/]

10. Public Utilities Code § 583 establishes a right to confidential treatment of information otherwise protected by law.[6/]

11. Public Utilities Code § 454.5(g) provides:

The commission shall adopt appropriate procedures to ensure the confidentiality of any market sensitive information submitted in an electrical corporation's proposed procurement plan or resulting from or related to its approved procurement plan, including, but not limited to, proposed or executed power purchase agreements, data request responses, or consultant reports, or any combination, provided that the Office of Ratepayer Advocates and other consumer groups that are nonmarket participants shall be provided access to this information under confidentiality procedures authorized by the commission.

12. Under the Public Records Act, Govt. Code § 6254(k), records subject to the privileges established in the Evidence Code are not required to be disclosed.[7/] Evidence Code § 1060 provides a privilege for trade secrets, which Civil Code § 3426.1 defines, in pertinent part, as information that derives independent economic value from not being generally known to the public or to other persons who could obtain value from its disclosure.

[5/] This argument is offered in the alternative, not as a supplement to the claim that the data is protected under the IOU Matrix. California law supports the offering of arguments in the alternative. *See, Brandolino v. Lindsay*, 269 Cal. App. 2d 319, 324 (1969) (concluding that a plaintiff may plead inconsistent, mutually exclusive remedies, such as breach of contract and specific performance, in the same complaint); *Tanforan v. Tanforan*, 173 Cal. 270, 274 (1916) ("Since . . . inconsistent causes of action may be pleaded, it is not proper for the judge to force upon the plaintiff an election between those causes which he has a right to plead.")

[6/] *See*, D.06-06-066, *mimeo*, pp. 26-28.

[7/] *See also* Govt. Code § 6254.7(d).

13. In addition, Commission General Order 66-C protects "[r]eports, records and information requested or required by the Commission which, if revealed, would place the regulated company at an unfair business disadvantage."

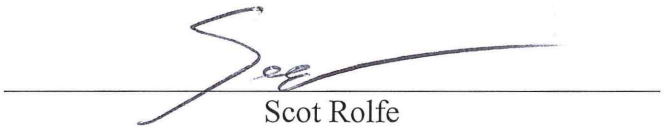
14. If disclosed, the Protected Information could provide parties with whom SDG&E is currently or will soon be negotiating insight into SDG&E's procurement needs, which would unfairly undermine SDG&E's negotiation position and could ultimately result in increased cost to ratepayers. In addition, if developers mistakenly perceive that SDG&E is not committed to assisting their projects or keeping Protected Information secure, disclosure of the Protected Information could act as a disincentive to developers for offering projects into SDG&E's request for offers or negotiate higher prices based on knowledge of the Protected Information. Accordingly, pursuant to P.U. Code § 583, SDG&E seeks confidential treatment of this data, which falls within the scope of P.U. Code § 454.5(g), Govt. Code § 6254(k) and General Order 66-C.

15. Developers' Protected Information: The Protected Information provided in the Track IV Testimony may also constitute confidential trade secret information of the involved projected developers that SDG&E is obligated to protect. The project status information set forth in the Track IV Testimony relates directly to the pricing and contractual terms of the Hecate Contract. Disclosure of this extremely sensitive information could harm developers' ability to negotiate necessary contracts and/or could invite interference with project development by competitors.

16. In accordance with the statutory provisions described herein, SDG&E hereby requests that the information set forth in the Track IV Testimony be protected from public disclosure.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge.

Executed this 28th day of March, 2016, at San Francisco, California.



Scot Rolfe
Principal Business Analyst