

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**  
**EMILY C. SHULTS**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**BEFORE THE PUBLIC UTILITIES COMMISSION**  
**OF THE STATE OF CALIFORNIA**

**March 30, 2016**



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1 electrical capacity in its territory to meet long term local capacity requirements by the end of  
 2 2021.<sup>1</sup> Such procurement must include at least 25 MW of energy storage resources and at least  
 3 175 MW of preferred resources consistent with the Loading Order of the Energy Action Plan.<sup>2</sup>

4 **III. SUMMARY OF RFO RESULTS**

5 As noted above, the Track IV All Source RFO resulted in the execution of one EE  
 6 contract and one ES contract. A summary of the selected contracts is provided in Table 1 below  
 7 and details are provided in the Direct Testimony of Patrick Charles (who discusses the ES  
 8 contract) and George Katsufrakis (who discusses the EE contract).

9 **Table 1**

10 **Track IV All Source RFO Contracts**

<b>Product Category</b>	<b>Counterparty</b>	<b>Commercial Operation Deadline</b>	<b>End Date</b>	<b>Term (yrs.)</b>	<b>MW (Avg. Contract Capacity)</b>
Energy Efficiency	Willdan	4/1/2017	12/31/2022	5.8	18.5
Energy Storage	Hecate Energy Bancroft LLC	1/1/2019	20 years after the commercial operation start date	20	20
<b>Total Preferred Resources and Energy Storage</b>					<b>38.5</b>

11 In conjunction with the conditional approval of the Carlsbad Energy Center, SDG&E has  
 12 procured 538.5 MW towards its Track IV authorization as modified by the Carlsbad Energy  
 13 Center conditional approval decision.<sup>3</sup> A summary of the amount procured to date under the  
 14 Track IV authorization and remaining amounts are provided in Table 2 below.

<sup>1</sup> D.14-03-004, Ordering Paragraphs (“OPs”) 2 and 3.

<sup>2</sup> *Id.* at OP 2.

<sup>3</sup> D.15-05-051, Decision Conditionally Approving San Diego Gas & Electric Company’s Application for Authority to Enter into Purchase Power Tolling Agreement with Carlsbad Energy Center, LLC.

1 **Table 2**

2 **SDG&E’s Remaining Track IV Authorization**

<b>Resource Type</b>	<b>Track IV Authorization Target (MW)</b>	<b>Procured (MW)</b>	<b>Remaining Track IV Authorization Target (MW)</b>
Preferred Resources and Energy Storage	200 (minimum)	38.5	161.5 - 261.5*
Conventional	600 (maximum)	500	0*
<b>Total</b>	<b>800</b>	<b>538.5</b>	<b>161.5 - 261.5*</b>

3 \*NOTE: The Commission approved SDG&E’s proposed tolling agreement with the Carlsbad  
 4 Energy Center, but reduced the authorized capacity of the plant from 600 MW to 500 MW and  
 5 stated that “all of the 100 megawatts in residual procurement authority resulting from the  
 6 reduction of the purchase power tolling agreement must consist of preferred resources and  
 7 energy storage.”<sup>4</sup>

8 As shown in Table 1, SDG&E has executed 38.5 MW of EE and ES contracts. SDG&E  
 9 acknowledges that the 38.5 MW procured through its Track IV All Source RFO is less than the  
 10 200 MW Track IV authorization target, and the amount of energy storage procured by SDG&E  
 11 in the Track IV All Source RFO is less than the 25 MW energy storage minimum. However,  
 12 SDG&E has until the end of 2021<sup>5</sup> to procure these preferred resources, and while the 38.5 MW  
 13 (20 MW of which is ES) is less than the total Track IV authorization shown in Table 2 and the 25  
 14 MW energy storage minimum, SDG&E believes a deliberate and measured approach in the

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<sup>4</sup> D.15-05-051 at p. 37, OP 2.

<sup>5</sup> D.14-03-004, OP 2, “San Diego Gas & Electric Company is authorized to procure between 500 Megawatts (MW) and 800 MW of electrical capacity in its territory to meet long-term local capacity requirements *by the end of 2021*.” (emphasis added).

1 Track IV All Source RFO was prudent and reasonable for several reasons as further  
2 highlighted below.<sup>6</sup>

3 First, the uniqueness of the Track IV All Source RFO presented various challenges,  
4 including; (1) developing an evaluation approach that puts all resources on as equal footing as  
5 possible,<sup>7</sup> (2) determining energy efficiency incrementality,<sup>8</sup> and (3) development of a robust  
6 energy storage contract.<sup>9</sup> As a result of these challenges, there have been lessons learned which  
7 SDG&E has utilized and incorporated in its preferred resources LCR RFO, which issued on  
8 February 26, 2016. For example, due to a more robust energy efficiency and energy storage  
9 contract as a result of the contract negotiation process brought about by the Track IV All Source  
10 RFO, SDG&E is now better prepared to more efficiently acquire, in the pending preferred  
11 resources LCR RFO, preferred resources and energy storage capacity in its territory to meet long  
12 term local capacity requirements.

13 Second, given the fact that the resources authorized by the Track IV Decision are not  
14 required to be in place and delivering until year-end 2021, there is sufficient time for  
15 procurement of additional preferred resources, especially when considering potential price  
16 declines in preferred resources and SDG&E's numerous other procurement opportunities as

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<sup>6</sup> As indicated at p. 6 of SDG&E's LTPP/Track 4 Procurement Plan (Preferred Resources) dated July 18, 2014, which the Energy Division approved on July 22, 2014, "Evaluating multiple resources through one solicitation will lead to better understanding of how preferred resources can meet LCR needs in a cost-effective way. However, many of the preferred resource product types that SDG&E will solicit involve emerging technologies or hybrids that are new to the market. Also, SDG&E's smaller service territory may impact the volume, and correspondingly, the competitiveness of bids for preferred resources. SDG&E will closely monitor how these issues impact the cost and effectiveness of these bids. If SDG&E is unable to procure the targeted 200 MW of preferred resources through this solicitation, it will consider one or more of the following opportunities: (1) utilize existing preferred resource programs in an effort to fulfill any remaining LCR need; (2) hold additional solicitations for preferred resources to meet LCR needs; or (3) continue working towards bilateral arrangements. SDG&E will also strive to learn more about which resources best meet local reliability needs so that LCR procurement can be more targeted."

<sup>7</sup> Scot Rolfe's Direct Testimony describes how SDG&E addressed this challenge.

<sup>8</sup> George Katsufraakis' Direct Testimony describes how SDG&E addressed this challenge.

<sup>9</sup> Patrick Charles' Direct Testimony describes how SDG&E addressed this challenge.

1 further discussed below. By way of example, it became clear during this Track IV All Source  
2 RFO that battery storage projects do not need the same lengthy development and construction  
3 periods as conventional generation. In fact, the major project permits for a battery project may  
4 require several months, not several years, and construction can be completed in several months.  
5 Furthermore, SDG&E learned that battery technologies are quickly evolving such that bidders  
6 may not issue their own requests for offers for Engineering, Procurement and Construction  
7 (“EPC”) bids to obtain battery pricing until more than twelve months after California Public  
8 Utilities Commission approval of the contract. The project descriptions contained in the bid and  
9 the contract may also be antiquated and need to be amended by the time project construction  
10 commences.

11 Third, similar to the solar photovoltaic market, several of the all source product types  
12 (e.g., energy storage) are emerging technologies that are expected to decline in costs (and  
13 ultimately price) over time due to manufacturing efficiencies and design/engineering  
14 improvements. By taking a measured approach to contract execution, allowed by the fact that  
15 the Track IV resources are not required to be in place and delivering until year-end 2021,  
16 SDG&E’s customers will likely benefit from better pricing in the future.

17 Finally, in conjunction with its deliberate and measured approach, SDG&E plans to  
18 optimize its overall power portfolio where appropriate by counting resources towards more than  
19 one procurement target and utilizing ongoing procurement mechanisms to meet its LCR need.

20 This approach is consistent with SDG&E’s approved Track IV Preferred Resources Plan,<sup>10</sup> and

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<sup>10</sup> “Many of SDG&E’s existing preferred resource procurement programs already encourage participation from local projects. For example, the RAM program prioritizes local projects through its evaluation process and the Renewable Market Adjusting Tariff (“ReMAT”) is restricted to local projects. SDG&E may identify resources through its existing programs that could contribute to meeting its LCR need.” See p. 8 of SDG&E’s approved LTPP/Track IV Procurement Plan dated July 18, 2014, which the Energy Division approved on July 22, 2014.

1 maximizes the numerous additional preferred resource procurement opportunities SDG&E has  
2 through its various procurement programs. A non-exhaustive list of additional opportunities for  
3 preferred resources procurement to meet SDG&E's LCR need include: SDG&E's Combined  
4 Heat and Power ("CHP") RFO, Renewable Market Adjusting Tariff ("ReMAT"), Bioenergy  
5 Market Adjusting Tariff ("BioMAT"), Forest Fuelstock Bioenergy Facilities Renewable Auction  
6 Mechanism ("BioRAM"), Green Tariff Shared Renewables ("GTSR"), Demand Response  
7 Auction Mechanism ("DRAM"), and bi-annual Energy Storage solicitations. In the present case,  
8 SDG&E will count the energy storage procured in its Track IV All Source RFO towards both its  
9 Track 4 authorization targets as well as its 165 MW energy storage target in D.13-10-040.<sup>11</sup> In  
10 doing so, SDG&E is meeting both targets and is ultimately saving its ratepayers money by  
11 optimizing its procurement where possible.

12 This concludes my prepared direct testimony.  
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<sup>11</sup> D.13-10-040 at p.15.



1 **IV. WITNESS QUALIFICATIONS**

2 My name is Emily C. Shults. My business address is 8330 Century Park Court, San  
3 Diego, California 92123. I am employed by SDG&E as Vice President – Electric and Fuel  
4 Procurement and have been in my current position since August 2015.

5 My responsibilities include overseeing the company’s electric and gas procurement,  
6 operations and trading, and settlements. Prior to my current role and responsibilities, I served as  
7 Director – Construction Services. In that role, I was responsible for the work of third party  
8 contractors on SDG&E’s transmission and distribution system in the roles of construction,  
9 vegetation management, and aviation services.

10 I joined SDG&E in April 2015 and have deep experience in all aspects of origination,  
11 trading, portfolio optimization, and settlements. During my thirteen year career with the non-  
12 utility Sempra Energy family of companies, I served as managing director, director gas and  
13 power trading, director gas and power marketing, manager of origination and portfolio  
14 optimization and various other roles. Prior to joining Sempra, I worked with the John Zink  
15 Company, Williams Energy Marketing and Trading and Deloitte and Touche LLP. I hold a  
16 Bachelor’s degree in accounting from the University of Tulsa.

17 I have not previously testified before the California Public Utilities Commission.