

Application No: A.11-06-003
Exhibit No.: _____
Witness: Tony Choi

_____))
Application of San Diego Gas & Electric Company)
(U 902-E) for Approval of: (i) Contract)
Administration, Least Cost Dispatch and Power)
Procurement Activities in 2010, (ii) Costs Related to)
those Activities Recorded to the Energy Resource)
Recovery Account and Transition Cost Balancing)
Account in 2010 and (iii) Costs Recorded in Related)
Regulatory Accounts in 2010)
_____)

A.11-06-003
(Filed June 1, 2011)

SAN DIEGO GAS & ELECTRIC COMPANY
PREPARED REBUTTAL TESTIMONY OF
TONY CHOI

(PUBLIC VERSION)

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

FEBRUARY 10, 2012



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**PREPARED REBUTTAL TESTIMONY OF
TONY CHOI
ON BEHALF OF SDG&E**

I. INTRODUCTION

On December 16, 2011, the Division of Ratepayer Advocates (“DRA”) submitted its Report on San Diego Gas & Electric Company’s (“SDG&E’s”) 2010 Energy Resource Recovery Account (“ERRA”) Review Application (“A.11-06-003”), disputing SDG&E’s implementation of least-cost dispatch for the Palomar Energy Center (“Palomar”). In accordance with the schedule approved by Administrative Law Judge (“ALJ”) Stephen C. Roscow, SDG&E submits this rebuttal testimony to address DRA’s findings presented in Chapter 4 of the Report with respect to least-cost dispatch (“LCD”). No other parties submitted intervenor testimony in this proceeding.

In its Report, DRA recommends that the California Public Utilities Commission (“Commission”) disallow SDG&E recovery of \$7.2 million for what DRA alleges is a failure to achieve least-cost dispatch by under-utilizing Palomar during 2010 (the “Record Period”). DRA’s understanding of least-cost dispatch, however, is critically flawed, and leads to conclusions that are fundamentally at odds with the Commission’s objectives in establishing least-cost dispatch standards in the first place. Further, DRA’s recommendation is factually contrary to Commission-adopted least-cost dispatch standards, is inconsistent with the Commission-established standard of review for least-cost dispatch (as set forth, for example, in D.05-01-054) and contradicts the Commission’s approval of SDG&E’s prior ERRA compliance applications (e.g., D.11-10-029). Most troubling is that DRA’s recommendation, if adopted by the Commission, would undermine the California Independent System Operator’s (“CAISO’s”) ability to reliably operate the transmission system by reducing the flexibility of the generation fleet to meet real-time system requirements. As a final matter, DRA’s proposed disallowance of \$7.2 million is based on arbitrary and capricious assumptions that underscore the baseless nature of their recommendation.

1 In light of these facts, SDG&E urges the Commission to reject DRA’s recommendations
2 related to least-cost dispatch and utilization of Palomar in their entirety, and requests that the
3 Commission approve SDG&E’s ERRAs costs incurred during the Record Period as submitted.

4 **II. BACKGROUND**

5 SDG&E filed its ERRAs compliance application on June 1, 2011. In conjunction with this
6 filing, SDG&E served the Prepared Direct Testimony of Andrew Scates, among other testimony
7 supporting the application. Mr. Scates’ testimony thoroughly describes the process by which
8 SDG&E implemented least-cost dispatch during the Record Period. Soon thereafter DRA issued
9 its Master Data Request (“MDR”), which, among other things, contained questions pertaining to
10 SDG&E’s least-cost dispatch process. On July 1, 2011, SDG&E responded to the MDR and
11 provided actual cost and quantity data for the high, low and average load days that supported Mr.
12 Scates’ testimony on least-cost dispatch.¹

13 Approximately two months after receiving SDG&E’s responses to the MDR, DRA
14 requested a meet and confer session to discuss SDG&E’s implementation of least-cost dispatch.
15 SDG&E agreed to meet DRA in San Francisco on September 15, 2011, with several employees
16 responsible for the implementation of least-cost dispatch attending (Andrew Scates - Market
17 Operations Manager and Tony Choi - Market and Policy Analysis Manager), as well as
18 SDG&E’s attorney John Pacheco and Regulatory Case Administrator Jamie York. SDG&E led
19 the discussion and provided slides describing how it implemented least-cost dispatch. DRA was
20 represented by Mary Jo Stueve, DRA’s two attorneys (Matt Miley and Robert Haga) and Project
21 Coordinator Michael Yeo. SDG&E came away from the meet and confer with the understanding
22 that all DRA questions were satisfactorily answered and no outstanding issues concerning least-
23 cost dispatch process remained.

24 On November 9, 2011, close to two months after the meet and confer session, DRA
25 issued Data Request 5, which included a number of questions pertaining to Utility-Owned
26 Generation (“UOG”), specifically outages. Additional data requests regarding least-cost dispatch
27 and UOG were not issued until November 14, 2011 (Data Request 6) and November 22, 2011

¹ SDG&E’s Response to MDR 1.4.1 is attached hereto as Attachment A.

1 (Data Request 7). These data requests included questions regarding planned and actual
2 generation produced from UOG, including Palomar, but it remained unclear whether DRA had
3 any issues regarding SDG&E's least-cost dispatch during the Record Period.

4 Ultimately, on December 16, 2011, DRA issued its Report on SDG&E's ERRRA
5 compliance, in which DRA charged that "SDG&E failed to achieve least-cost dispatch by under-
6 utilizing utility-owned Palomar during the Record Period, which resulted in a less cost-effective
7 mix of portfolio use" and proposed an ERRRA disallowance of \$7.2 million.² DRA also claimed
8 that SDG&E did not adequately self-schedule the plant, which resulted in the alleged under-
9 utilization.

10 DRA's recommendation came as a surprise to SDG&E because DRA had not previously
11 expressed any concern or disagreement during the meet and confer session regarding SDG&E's
12 least-cost dispatch process or utilization of Palomar. In any event, as shown in detail below,
13 SDG&E believes DRA's Report improperly evaluates SDG&E's compliance with the
14 Commission's up-front standards for least-cost dispatch.

15 **III. DISCUSSION**

16 **A. DRA's Recommendation Is Based On A Flawed Understanding Of Capacity** 17 **Factors And Least-Cost Dispatch, And Would Result In Higher Costs To** 18 **Ratepayers**

19 The Commission should reject DRA's disallowance request because it is based on the
20 faulty premise that capacity factors for dispatchable plants are indicative of least-cost dispatch.
21 DRA contends that Palomar was under-utilized simply because the 2010 capacity factor was 9
22 percentage points lower than the 2008 capacity factor, and that SDG&E should have increased
23 the self-scheduling of Palomar to achieve a higher capacity factor. In making this argument,
24 DRA fails to recognize two key facts: 1) capacity factors change from year to year based on
25 market conditions and 2) blindly self-scheduling dispatchable resources to achieve a higher
26 capacity factor results in an economically *ineffective* mix of total resources, exactly opposite to
27 the intent of least-cost dispatch.

28

² DRA Report at p. 4-1, lines 12-16.

1 With respect to the capacity factor issue, market conditions changed significantly from
2 2008 to 2010, and resulted in a lower need for generation from dispatchable resources such as
3 Palomar. Namely, the total load within the CAISO market actually *fell* from 2008 to 2010 from
4 241,128 GWh to 224,922 GWh, a decline of 16,308 GWh.³ In addition, lower cost hydroelectric
5 generation *rose* by approximately 5,000 GWh from 2008 to 2010.⁴ The combination of a 16,000
6 GWh drop in CAISO demand and 5,000 GWh increase in hydroelectric generation essentially
7 dictated a decline of 21,000 GWh from other supply sources, including dispatchable plants like
8 Palomar, to meet CAISO load requirements. Furthermore, new resources, including Calpine’s
9 Otay Mesa Energy Center (a 600-MW combined cycle plant located in SDG&E’s service
10 territory), entered commercial operation following the 2008 Record Period and likely contributed
11 to lower prices observed during the 2010 Record Period. In light of these facts, the appropriate
12 analysis to evaluate adherence to least-cost dispatch is to assess whether Palomar operated when
13 it was cost effective to do so (*i.e.*, to examine if Palomar operated when it could recover its start-
14 up and variable operating costs). DRA fails to make this showing in spite of the cost data and
15 other information provided to it by SDG&E. DRA’s simple observation that the Palomar annual
16 capacity factor in 2010 was lower than in 2008 does not reasonably inform the determination of
17 whether SDG&E complied with the Commission’s least-cost dispatch standard.

18 With respect to the self-scheduling issue as it relates to dispatchable plants like Palomar,
19 it is the means of scheduling generation into the CAISO market as a price-taker. In effect, the
20 CAISO will dispatch the self-scheduled quantity regardless of price, subject to operational
21 constraints. The CAISO tariff defines “Self-Schedule” as follows: “The Bid component that
22 indicates the quantities in MWhs with no specification of a price that the Scheduling Coordinator
23 is submitting to the CAISO, which indicates that the Scheduling Coordinator is a Price Taker,
24 Regulatory Must-Run Generation or Regulatory Must-Take Generation, which includes ETC and
25 TOR Self-Schedules and Self-Schedules for Converted Rights.”⁵ Alternatively, *bidding*
26 generation into the CAISO market is the means of offering generation at a specified bid cost
27 (*e.g.*, the variable cost of generation). The CAISO tariff defines “Bid Costs” as follows: “The

³ CAISO’s 2010 Annual Report on Market Issues and Performance at p. 34. Link:
<http://www.caiso.com/Documents/2010AnnualReportonMarketIssuesandPerformance.pdf>

⁴ *Id.* at p. 45.

⁵ Appendix A, Master Definition Supplement of CAISO Fifth Replacement Tariff.

1 costs for resources manifested in the Bid components submitted, which include the Start-Up
2 Cost, Minimum Load Cost, Energy Bid Cost, Transition Costs, Pump Shut-Down Cost, Pumping
3 Cost, Ancillary Services Bid Cost and RUC Availability Payment.”⁶ In effect, the CAISO will
4 dispatch the generation if the market price is equal to or greater than the bid price.

5 In this regard, DRA is correct that self-schedules can be used to increase the utilization of
6 Palomar, since the CAISO would have dispatched generation regardless of the market price,
7 even if that price would have been lower than Palomar’s bid costs. However, dispatching
8 resources without consideration of bid costs leads to higher ratepayer costs. This fact is quickly
9 demonstrated with an example. Assume the total variable cost to operate Palomar at full output
10 during on-peak hours is \$200,000, and the total variable cost to operate Palomar at full output
11 during off-peak hours is \$100,000 (there are twice as many on-peak hours as off-peak hours).
12 These are costs for fuel and other variable operating costs. Also assume the cost of cycling the
13 plant (including startup costs) is \$30,000. Now, if the cost to supply the equivalent amount of
14 generation from the market is \$400,000 for on-peak and \$50,000 for off-peak, it is logical (and
15 consistent with least-cost dispatch) to run Palomar during on-peak hours and cycle Palomar off
16 during off-peak hours to minimize costs. The cost of doing so would be $\$200,000 + \$50,000 +$
17 $\$30,000 = \$280,000$. If SDG&E were to have simply self-scheduled Palomar as DRA suggests,
18 the cost would have been $\$200,000 + \$100,000 = \$300,000$. Thus, it is evident that self-
19 scheduling with no regard for the cost of alternative market supply is a suboptimal strategy and
20 leads to higher cost for customers.

21 **B. DRA’s Report Does Not Actually Dispute SDG&E’s Use of Cost-Based Bids To**
22 **Comply With Least-Cost Dispatch Standards**

23 In his Prepared Direct Testimony, Mr. Scates describes SDG&E’s least-cost dispatch
24 methodology and the use of actual operating or contract costs to bid its resources into the market.
25 Several excerpts from Mr. Scates’ testimony are provided here as reference:

- 26 • “Scheduling and bidding enables the CAISO markets to dispatch resources in line
27 with variable operating costs in real-time. Performance of these functions
28 essentially embodies the least cost principles established by the Commission.”⁷
29

⁶ Appendix A, Master Definition Supplement of CAISO Fifth Replacement Tariff.

⁷ Prepared Direct Testimony of Andrew Scates at p. AS-3, lines 25-27.

- 1 • “The CAISO operates the day-ahead and intraday markets that establish
2 commitment, energy and A/S obligations on resources in the system. These
3 markets derive generation awards from supply and demand bids and self-
4 schedules submitted by market participants. The results reflect a least cost
5 dispatch solution across the entire system because the CAISO selects the mix of
6 resources with the lowest total variable cost (as represented by their bids) to meet
7 load requirements, subject to reliability and operational requirements.”⁸
- 8 • “As noted, SDG&E submitted day-ahead generation bids that reflected actual
9 operating costs used in LCD modeling.”⁹
- 10 • “SDG&E’s primary objective with respect to schedules and bids for dispatchable
11 resources was to maintain adherence to least-cost dispatch principles. This
12 objective was met through two strategies – bidding generation into the DAM at
13 costs consistent with the LCD modeling, or self-scheduling resources that LCD
14 modeling forecasted to clear the DAM economically.”¹⁰

15 In addition to such testimony, SDG&E provided DRA detailed cost and dispatch information for
16 its resources for the high, low and average load day in the Record Period¹¹ showing that Palomar
17 was dispatched in accordance with cost-based bids.

18 Significantly, DRA does not dispute the fact that SDG&E followed a cost-based bidding
19 methodology for Palomar, a practice that DRA itself states is consistent with least-cost dispatch:

- 20 • “The CAISO market clearing price is thus a mix of cost-based bidding prices,
21 which the CPUC jurisdictional utilities should follow to adhere to least-cost
22 dispatch, and profit-margin based bidding prices, which the CAISO market
23 allows.”¹²
- 24 • “Thus the IOUs purchase capacity and energy in the market under the CAISO’s
25 “least-cost-as-bid” from all suppliers, which is largely profit-based, versus the
26 Commission’s least-cost mandate, which is cost-based.”¹³

27 These DRA admissions are consistent with the Commission’s approval of SDG&E’s
28 Long-Term Procurement Plan (“LTPP”), which establishes that SDG&E will consider variable
29 costs in its dispatch decision: “The load that has not been filled by must-take energy is met

⁸ *Id.* at p. AS-4, lines 11-17.

⁹ *Id.* at p. AS-17, lines 12-13.

¹⁰ *Id.* at p. AS-17, lines 1-6.

¹¹ SDG&E’s Response to MDR 1.4.1 is attached hereto as Attachment A.

¹² DRA Report at p. 4-3, lines 25-28.

¹³ DRA Report at p. 4-4, lines 4-7.

1 through a combination of dispatchable units and market purchases. The relative quantities of
2 each are determined through economic dispatch, which compares market prices to variable costs
3 of generation to make the ‘generate or buy’ decision.”¹⁴

4 Nevertheless, DRA still charges that SDG&E’s use of self-schedules “or lack there-of”
5 resulted in the under-utilization of Palomar and a failure to achieve least-cost dispatch.
6 However, nothing in the Commission’s decisions regarding least-cost dispatch requires self-
7 scheduling of dispatchable plants or a particular utilization rate to comply with least-cost
8 dispatch. And as discussed above, self-schedules do not consider variable costs. The notion that
9 it is proper to self-schedule Palomar absent economic justification is DRA’s alone and marks a
10 significant departure from the Commission’s up front standards regarding least-cost dispatch and
11 SDG&E’s LTPP.

12 DRA also asserts that operation of Palomar “as load following in 2010 versus base load
13 and peaking load is not consistent with the Commission’s intent in D.04-06-011 when it
14 approved SDG&E’s purchases and usage of Palomar as a *500 MW/base load, 555 MW/peak load*
15 *power plant.*”¹⁵ However, this interpretation of D.04-06-011 is off the mark. The
16 characterization of Palomar as a “*500 MW/base load, 555 MW/peak load power plant*” is
17 actually in reference to its operational configuration, not how it should be dispatched. That is,
18 the plant can generate up to 500 MW in combined cycle mode (“base load”) and can also
19 generate an incremental 55 MW in duct-firing mode (“peak load”). As the decision states,
20 “Palomar is a turn-key 500/555 MW combined-cycle power plant.”¹⁶ The decision never opines
21 on the plant’s annual utilization rate, and does not establish any principles related to least-cost
22 dispatch.

23 To restate for emphasis, DRA does not dispute that SDG&E followed a cost-based
24 bidding methodology, or that such methodology is consistent with the up-front least-cost

¹⁴ Original Sheet No. 3 of SDG&E’s LTPP. For purposes of this proceeding, the relevant LTPP was approved in D.07-12-052. Note that a conformed version of this LTPP (conforming to modifications ordered in D.07-12-052) was originally filed as part of Advice Letter 1983-E, which was approved in Resolution E-4189. Subsequent Advice Letters were filed to reflect changes to the LTPP and approved by the Director of the Energy Division. The most current version of this LTPP can be found within Advice Letter 2067-E.

¹⁵ DRA Report at p. 4-8 lines 9-12 (emphasis in original).

¹⁶ D.04-06-011 at p. 2.

1 dispatch standards established by the Commission. Rather, DRA charges that SDG&E did not
2 comply with least-cost dispatch because SDG&E failed to sufficiently self-schedule Palomar to
3 achieve a satisfactory utilization rate determined solely by DRA in hindsight. The Commission
4 should reject DRA's analysis and find that SDG&E's cost-based bids complied with least-cost
5 dispatch standards and that the resulting utilization of Palomar based on those cost-based bids
6 was also consistent with least-cost dispatch standards.

7 **C. DRA's Position Is Contrary To Commission-Established Least-Cost Dispatch**
8 **Standards**

9 In its Report, DRA states:

10 SDG&E could have increased Palomar output as a price taker (without a price
11 attached), or at cost-based prices, especially during the summer peak to achieve
12 lower cost implications for ratepayers.¹⁷

13 DRA further states:

14 SDG&E ratepayers pay Palomar's fixed and variable costs, including cost of
15 capital regardless of whether Palomar is used or not and to what degree it is used.
16 Performing at a higher capacity would spread these costs over greater output,
17 benefiting ratepayers and in line with the Commission's least-cost mandate (SOC
18 4).¹⁸

19 These statements are factually incorrect as shown by the numerical example described above.
20 Ratepayers pay the same dollar total in fixed costs for Palomar regardless of the utilization of the
21 plant. Thus, spreading these costs over a higher level of utilization does not lower cost to
22 customers.

23 The notion that SDG&E should have increased its self-scheduling of Palomar as a price-
24 taker simply to increase its capacity factor is also in direct conflict with Commission rulings
25 related to least-cost dispatch. Indeed, such a practice would have violated Commission decision
26 D.02-12-069, which provides that "[p]rohibited utility conduct under this standard includes any
27 action that results in preference to URG resources or the utility's own negotiated contracts."¹⁹

¹⁷ DRA Report at p. 4-10, lines 5-7.

¹⁸ DRA Report a p. 4-8, lines 12-17.

¹⁹ D.02-12-069 at p. 62-63.

1 Mr. Scates' testimony cites several Commission decisions on least-cost dispatch that
2 demonstrate that DRA's arguments are misguided. Those references are restated below, with
3 emphasis added:

- 4 • D.02-09-053 states: "[E]conomic dispatch entails analysis of the marginal costs
5 of the available energy and dispatching the least-cost incremental resource. **An
6 important element of least cost dispatch is that the fixed costs associated with
7 resources are considered sunk for dispatch purposes. Variable costs are the
8 only ones that are incurred or avoided as a result of operating decisions.**"²⁰

9 Here, the Commission explicitly requires the consideration of only variable operating cost for
10 least-cost dispatch and in fact rules out fixed costs. DRA's recommendation that fixed costs
11 (such as cost of capital) be included in dispatch decisions conflicts with this ruling.

- 12 • "Prudent contract administration includes administration of all contracts within
13 the terms and conditions of those contracts, to include dispatching dispatchable
14 contracts when it is most economical to do so. In administering contracts, the
15 utilities have the responsibility to dispose of economic long power and to
16 purchase economic short power in a manner that minimizes ratepayer costs."²¹

17 Here, the Commission explicitly requires that SDG&E purchase economic short power to
18 minimize ratepayer costs. DRA's position that Palomar should be self-scheduled "without a
19 price attached"²² precludes SDG&E's ability to purchase economic short power to minimize
20 ratepayer costs when the cost of such power is lower than the variable cost of Palomar
21 generation.

- 22 • "Finally, with regard to review of LCD transactions in ERRAs proceedings, the
23 Commission determined in D.05-01-054 (SDG&E's 2004 ERRA compliance
24 decision) that the scope of LCD review should cover the dispatch of resources in
25 the day-ahead, hour-ahead and real-time markets. The Commission reiterated this
26 scope of review in D.05-04-036 (PG&E's 2004 ERRA compliance decision)."²³

27 If Palomar were blindly self-scheduled in either the day-ahead or real-time markets simply to
28 increase its capacity factor as DRA suggests, it would preclude the CAISO from dispatching the
29 plant in the day-ahead or real-time markets based on cost-based bids. This practice would
30 therefore violate this Commission decision.

²⁰ Prepared Direct Testimony of Andrew Scates at p. AS-2, lines 7-11, citing D.02-09-053 at pp. 30-31.

²¹ *Id.* at p. AS-2, lines 22-26, citing D.03-06-076 at p. 23.

²² DRA Report at p. 4-17, lines 4-5.

²³ *Id.* at p. AS-3, lines 12-16.

1 **D. DRA’s Disallowance Proposal Violates The Standard Of Review Established By**
2 **The Commission In D.05-01-054**

3 DRA recommends that SDG&E’s utilization of Palomar be judged against an arbitrary
4 target established on an after-the-fact basis, backed by no prior notification or Commission
5 ruling. As SDG&E noted in its ERRA application, regarding the standard of review of the
6 utility’s least-cost dispatch, contract administration, and URG costs, the Commission reiterated
7 in D.05-04-036 that its review is not a “reasonableness review,” but is instead a “compliance
8 review:”

9 ORA has not presented any new arguments in this proceeding that would
10 cause us to reconsider the standard of review that we adopted for SCE in D.05-01-
11 054. Accordingly, the same standard of review for least cost dispatch that we
12 adopted in D.05-01-054 for SCE should also apply to the standard of review of
13 PG&E’s least cost dispatch in its ERRA proceedings, i.e., a compliance review.

14 The standard of review of the contract administration is also that of a
15 compliance review. As noted in D.05-01-054 at page 8, “SOC 4 is the upfront
16 standard in a utility’s procurement plan regarding prudent contract administration
17 and energy dispatch decisions.” Since §454.5(d)(2) provides that an approved
18 procurement plan shall eliminate the need for after-the-fact reasonableness
19 reviews, the standard of review is to determine whether the utility’s contract
20 administration complied with the approved procurement plan.²⁴

21 Thus, even if utilization or capacity factors were aspects of Commission-approved least-
22 cost dispatch standards, the DRA-deemed threshold levels were not known to SDG&E up front.
23 The Commission has expressly ruled that SOC 4 is the *upfront* standard of least-cost dispatch.
24 Therefore, the Commission should reject DRA’s recommended disallowance because it relies on
25 an after-the-fact reasonable analysis based on a standard that was unknown to SDG&E and, as
26 note above, not required by SDG&E’s approved LTPP. Indeed, Public Utilities Code Section
27 454.5(d) provides that (emphasis added):

28 A procurement plan approved by the commission shall accomplish each of the following
29 objectives:

- 30 a. Enable the electrical corporation to fulfill its obligation to serve its customers at
31 just and reasonable rates.
32 b. ***Eliminate the need for after-the-fact reasonableness reviews of an electrical***
33 ***corporation’s actions in compliance with an approved procurement plan,***

²⁴ D.05-04-036 at p. 27-28.

1 including resulting electricity procurement contracts, practices, and related
2 expenses. . . .

3 c. Ensure timely recovery of prospective procurement costs incurred pursuant to an
4 approved procurement plan.

5 **E. DRA Contradicts Prior Commission Decisions Approving SDG&E’s**
6 **Compliance To The Same Least-Cost Dispatch Methodology**

7 Mr. Scates testimony describes SDG&E’s least-cost dispatch process during the Record
8 Period, which was substantively identical to that followed in the 2009 Record Period and
9 described in the testimony I submitted in support of SDG&E’s 2009 ERRRA compliance
10 application. DRA did not object to SDG&E’s least-cost dispatch for 2009, and ultimately, it was
11 approved in D.11-10-029, where the Commission stated that “SDG&E has reasonably
12 administered its Non-QF contracts, QF contracts, and Least Cost Dispatch, and should recover
13 the requested associated costs.”²⁵

14 **F. Self-Scheduling Undermines CAISO’s Ability to Reliably Operate The**
15 **Transmission System**

16 DRA also fails to recognize that self-scheduling dispatchable resources such as Palomar
17 at maximum output effectively makes them non-dispatchable. Preventing these resources from
18 contributing to ancillary service requirements, system ramping capability and integration of
19 intermittent generation (*e.g.*, solar and wind) would increase costs for SDG&E’s customers, as
20 the CAISO market would procure more of these critical services from more costly resources.

21 SDG&E offers Palomar capacity at cost-based bids to ensure that the full operational
22 capability of the plant (in Palomar’s case, load following, spinning reserve and regulation) is
23 made available to the CAISO to reliably operate the transmission system. Self-scheduling would
24 not only undermine the basic premise of dispatching Palomar in a least-cost manner, but also
25 limit its ability to fully support grid operations.

26 The CAISO warned against engaging in excessive self-scheduling in its 2010 Market
27 Issues & Performance Annual Report because it can negatively impact the market: “Extremely
28 high levels of self-scheduled supply can decrease market efficiency by reducing the degree to

²⁵ D.11-10-029 at Conclusion of Law 5.

1 which the market software is free to optimize supply resources based on their bid costs. These
2 levels also hinder the ability to manage congestion in the most cost-effective manner.”²⁶

3 DRA’s recommendation that SDG&E engage in more self-scheduling ignores these and
4 other significant system impacts such as reduced system ramping capability and potential over-
5 generation scenarios, and should be rejected.

6 **IV. DRA’S PROPOSED PENALTY IS BASED ON ARBITRARY AND CAPRICIOUS** 7 **ASSUMPTIONS AND METHODOLOGY**

8 DRA’s proposed disallowance calculation of \$7.2 million is based on a DRA-deemed
9 deficiency in utilization and “damage amount.”²⁷ The alleged utilization deficiency is based on
10 two arbitrary “checkpoints” of Palomar’s capacity factor.²⁸ The first checkpoint is the difference
11 in the plant’s capacity factor between 2008 and 2010, which completely ignores changes in
12 market conditions, as discussed above. The second checkpoint is the difference in capacity
13 factor between Palomar and the average of the 95th, 99th and 100th percentile “default capacity
14 factors” from a 10-page EPA report entitled “Capacity Factors Analysis for New Units, July
15 2010.”²⁹ The following excerpt and data table, taken from that analysis, summarizes EPA’s
16 methodology and results:

17 EPA determined the default capacity factors for new units in Table 1 based on
18 analysis of capacity factors using data reported to EPA by source owners and
19 operators as part of EPA’s emissions trading programs. These programs require
20 industry sources to report hourly emissions data each quarter.

21 Using the reported data, for coal boilers EPA calculated an annual capacity factor
22 for each unit for each full year of operation between the years 2000 and 2009. For
23 combustion turbines, EPA calculated an annual capacity factor for each unit for
24 each full year of operation between 2004 and 2009. For this analysis, we
25 removed any partial years from the data sets.³⁰

²⁶ CAISO’s Annual Report on Market Issues and Performance at p. 61,
(<http://www.caiso.com/2b66/2b66baa562860.pdf>).

²⁷ DRA Report at p. 4-14, lines 5-9.

²⁸ DRA Report at p. 4-13, line 4, p. 4-14, line 6 and p. 4-16, line 10.

²⁹ DRA Report at p. 4-15, line 1 and footnote 43.

³⁰ EPA’s Technical Support Document (TSD) for the Transport Rule, Docket ID No. EPA-HQ-OAR-2009-0491:
Capacity Factors Analysis for New Units at p.3,
(http://www.epa.gov/airtransport/pdfs/TSD_capacity_factors_analysis_for_new_units_7-6-10.pdf).

1 EPA's report also provides the following summary table³¹:
2

3 **Table 2. Summary of Annual Capacity Factors**

Percentile	Coal Steam Boiler	Simple Cycle Combustion Turbine	Combined Cycle Combustion Turbine
50 th	0.76	0.02	0.26
67 th	0.79	0.03	0.37
75 th	0.80	0.05	0.43
90 th	0.83	0.09	0.57
95th	0.84	0.15	0.66
99 th	0.86	0.42	0.73
100 th	0.87	0.63	0.78

4 SDG&E questions why DRA chose to use data from 2004 through 2009 (presumably
5 from resources across the country) to determine the “reasonableness” of Palomar’s utilization in
6 2010. SDG&E also questions why DRA deemed a utilization rate between the 95th to 100th
7 percentile range as a reasonable benchmark for Palomar, rather than any other percentile range.
8 SDG&E further questions DRA’s interpretation of the table – is the 50th percentile capacity
9 factor of a combined cycle combustion turbine only 26%? These questions highlight the
10 unsubstantiated, arbitrary and capricious nature of DRA’s analysis that, in any case, is neither
11 relevant to achieving the most cost-effective mix of resources nor complies with the
12 Commission’s standard for determining least-cost dispatch. SDG&E therefore urges the
13 Commission to ignore DRA’s calculation of any alleged “under-utilized” quantity.

14 Regarding the “damage amount”³² of \$20/MWh, DRA describes its rationale as follows:
15 “As noted by DRA in its Opening Testimony in SCE’s 2010 ERRA Compliance (A11-04-001),
16 SCE assesses as much as \$50/MWh, thus DRA’s use of \$20/MWh is conservative.”³³ Similar to
17 the analysis described above, this rationale is arbitrary and capricious. DRA’s \$20/MWh
18 damage figure is unrelated to bid costs, market prices or any other data pertaining to least-cost

³¹ EPA’s Technical Support Document (TSD) for the Transport Rule, Docket ID No. EPA-HQ-OAR-2009-0491: Capacity Factors Analysis for New Units, Table 2 at p. 4, (http://www.epa.gov/airtransport/pdfs/TSD_capacity_factors_analysis_for_new_units_7-6-10.pdf).

³² DRA Report at p. 4-12, line 9.

³³ DRA Report at p. 4-12, foot note 38.

1 dispatch. Consistent with the upfront standards described above, SDG&E used variable costs
2 and cost-based bids to dispatch Palomar to achieve the most cost-effective mix of resources. In
3 contrast, DRA's damage analysis is based on an after-the-fact application of a methodology with
4 no link to facts relevant to Palomar. Accordingly, SDG&E requests the Commission to ignore
5 DRA's recommended disallowance.

6 **V. CONCLUSION**

7 DRA's recommendation to disallow SDG&E recovery of \$7.2 million in procurement-
8 related ERRA costs based on an alleged under-utilization of Palomar is fundamentally flawed on
9 several fronts. It is factually contrary to Commission decisions adopting upfront least-cost
10 dispatch standards, inconsistent with the Commission-established standard of review for least-
11 cost dispatch and contradicts the Commission's approval of SDG&E's prior ERRA compliance
12 applications. The approach suggested by DRA with respect to resource utilization would lead to
13 an unnecessary rise in ratepayer costs and undermine the CAISO's ability to reliably operate the
14 transmission system. Moreover, the factors DRA used to evaluate Palomar utilization and the
15 methodology DRA used to calculate its proposed disallowance amount were arbitrary and
16 capricious. The testimony and data request responses by SDG&E, on the other hand,
17 demonstrate adherence to its LTPP and the upfront least-cost dispatch standards approved by the
18 Commission. Indeed, DRA did not dispute that SDG&E's use of cost-based bids reflecting
19 variable costs comply with these upfront standards.

20 In light of these facts, SDG&E urges the Commission to reject DRA's recommendations
21 related to least-cost dispatch and utilization of Palomar in their entirety, and requests the
22 Commission approve SDG&E's ERRA costs incurred during the Record Period as submitted.

23 This concludes my prepared rebuttal testimony.
24

1 **VI. QUALIFICATIONS**

2 My name is Tony Choi. My business address is 8315 Century Park Court, San Diego,
3 CA 92123. I am currently employed by SDG&E as Market & Policy Analysis Manager. My
4 current responsibilities include representing SDG&E in CAISO stakeholder proceedings,
5 overseeing analyses related to the SDG&E's resource portfolio and wholesale power market and
6 coordinating implementation of front-office solutions to meet new CAISO requirements. I
7 assumed my current position in January, 2011.

8 I previously managed the Market Operations and Power and Fuels Trading desks for
9 SDG&E. Prior to joining SDG&E in 2002, my experience included two years as a power plant
10 engineer, four years as an energy trader and three years as a wholesale energy transaction
11 originator.

12 I hold a Bachelors degree in Chemical Engineering and a Masters degree in Business
13 Administration from the University of California, Berkeley.

14 I have previously testified before the Commission.

ATTACHMENT A

**Response and Attachments to MDR 1.4.1 Are
Confidential/Privileged Pursuant to Applicable Provisions of
D.06-06-066, G.O. 66-C and PUC Code Sec. 583 and
Sec. 454.5 (g).**