

**San Diego Gas & Electric Company**

**Exhibit No. SDG-1**

**Prepared Direct Testimony of**

**Christian A. Soderlund**

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**San Diego Gas & Electric Company**

**Docket No. ER13-\_\_-000**

**SUMMARY OF  
PREPARED DIRECT TESTIMONY OF CHRISTIAN A. SODERLUND ON  
BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

Mr. Soderlund provides a forecast of the charges SDG&E expects to incur in the year 2013 for Reliability Services (“RS”) invoiced through the California Independent System Operator Corporation (“CAISO” or “ISO”) pursuant to its ISO Tariff. He also describes how the California Public Utilities Commission’s Resource Adequacy requirements and ISO Market Redesign and Technology Update affect SDG&E’s RS cost.

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1 **II. PURPOSE**

2 **Q5: What is the purpose of your testimony?**

3 A5: The purpose of my testimony is to provide a forecast of the charges SDG&E expects to  
4 incur in the year 2013 for Reliability Services ("RS") from the California Independent  
5 System Operator) Corporation ("CAISO") pursuant to the CAISO Tariff. Additionally, I  
6 describe how the RS costs are affected by Resource Adequacy ("RA") requirements,  
7 mandated by the California Public Utilities Commission ("CPUC") to ensure that each  
8 public utility procures adequate resources to meet their peak demands and planning and  
9 operation reserves, and the CAISO's Market Redesign and Technology Update  
10 ("MRTU"), implemented on April 1, 2009.

11 **Q6: Please summarize SDG&E's 2013 RS Forecast.**

12 A6: As shown in Exhibit SDG-1-1, SDG&E's 2013 RS forecast is equal to \$3,120 thousand,  
13 consisting of \$ 2,506 thousand for RMR and \$ 615 thousand for Exceptional Dispatch.

14 **III. COMPONENTS OF RS COSTS**

15 **Q7: What are the primary components that make up the RS costs charged to SDG&E by**  
16 **the CAISO?**

17 A7: There are two primary cost components of SDG&E's RS charges:

- 18 1) Reliability Must Run ("RMR");  
19 2) Exceptional Dispatch

20 **Q8: Did MRTU eliminate any types of costs historically embedded in RS charges?**

21 A8: Yes, MRTU eliminated Out of Market ("OOM") Costs and Must Offer ("MO")-related  
22 Minimum Load Costs ("MLC"). Accordingly, these types of costs are no longer included  
23 in RS charges.

24 **Q9: How does the CAISO quantify and allocate RS RMR costs?**

25 A9: Annually, the CAISO conducts Local Capacity Requirement ("LCR") studies to identify  
26 generating units whose availability and operation is required to ensure the local reliability  
27 of the grid. The CAISO contracts with generation owners or operators of these  
28 generating units, which are designated as RMR units, to ensure that the CAISO can  
29 dispatch the units to meet minimum requirements for local grid reliability. In addition,  
30 the CAISO Tariff Section 41.7 states that RMR units can provide reliability benefits in

1 contiguous Participating Transmission Owner (PTO) Service Territories, and in that case,  
2 each PTO would have a share of those RMR costs. Needed units that have a RA contract  
3 (see RA discussion below) will not be contracted under RMR if the RA contract provides  
4 equivalent reliability services. The costs of the RMR units located within SDG&E's  
5 service territory or non-service area RMR units in the case that the CAISO has  
6 determined a RS benefit to SDG&E are billed to SDG&E by the CAISO. The 2013  
7 RMR cost forecast is found in Exhibit SDG-1-1 Line 4.

8 **Q10: How does SDG&E currently recover the RS costs and ensure that customers pay no**  
9 **more or no less than actual costs?**

10 A10: Pursuant to SDG&E's Transmission Owner ("TO") Tariff, SDG&E records all RS costs  
11 and revenues in its Reliability Service Balancing Account ("RSBA"). The RSBA tracks  
12 the cumulative differences between revenues billed by SDG&E for Reliability Services  
13 and SDG&E's costs from the CAISO for such services. The difference between the  
14 revenues collected from customers and costs incurred result in an over or under-  
15 collection. This under or over-collection will be included in the next RS filing, thus  
16 ensuring that customers pay no more or no less than SDG&E's actual RS costs. For  
17 example, if SDG&E forecasts 2013 RS Costs of \$100 and is charged \$110 by the CAISO,  
18 it would create an under-collection in the RSBA of \$10. The \$10 under-collection will be  
19 collected in the subsequent RS filing.

#### 20 **IV. RA AND MRTU IMPACTS ON RS COSTS**

21 **Q11: Do RA and RMR both address local transmission reliability issues?**

22 A11: Yes. RA requirements address both local and total system capacity source requirements.  
23 The LCR portion of RA overlaps with much of the RMR requirements related to  
24 maintaining local transmission reliability. Both LCR and RMR provide the CAISO with  
25 local capacity to maintain transmission reliability. The LCR was designed to supply at  
26 least as much local capacity as do RMR contracts. Thus, LCR has the potential to  
27 eliminate all RMR contracts. However, RMR contracts may still be needed, if RA  
28 contracts don't provide adequate quick start, load following, or other features needed to  
29 assure local transmission reliability. Finally, the CAISO can rely on the dispatch of

1 either a RA unit or of a RMR unit to provide the real-time energy needed to maintain  
2 reliability.

3 **Q12: How has RA affected reliability costs?**

4 A12: RA has tended to move capacity-related reliability costs from the RS tariff to the Load  
5 Serving Entities (“LSE”) directly contracting for the units. Energy-related reliability  
6 costs, however, will remain in RS. More particularly, RA requirements, which the CPUC  
7 establishes for each LSE subject to its jurisdiction, have caused LSEs to enter into new  
8 RA contracts with owners of units that previously had operated under a RMR contract.  
9 The new RA contracts have resulted in some units that were previously RMR Condition 2  
10 (with full cost recovery) to switch to Condition 1 (with partial cost recovery). The  
11 CAISO forgoes placing other units under a RMR contract since some RA contracts  
12 supply similar levels of reliability services to the local transmission system. The RA  
13 contract capacity payments to the generation owner by the LSE will flow through  
14 bundled retail rates rather than through the RS rates. These effects reduce the capacity  
15 payment portion of the RMR contracts currently in the RS rates. Energy costs for RMR  
16 units will not be as affected by RA since the units will still be under RMR contracts and  
17 the uneconomic energy costs when units are dispatched by the CAISO will continue to  
18 flow through the RMR contract. However, total RMR energy cost will decrease since  
19 many units are no longer under RMR contracts because of displacement by RA contracts.  
20 The former RMR energy costs for these RA units stay in the RS rate under the  
21 Exceptional Dispatch category.

22 **Q13: What is the principle effect of the MRTU on RS costs?**

23 A13: Primarily, MRTU uses a Full Network Model to ensure only feasible schedules are  
24 accepted. This minimizes real-time congestion and the resulting reliability related costs.

25 **Q14: How has MRTU Exceptional Dispatch Authority affected RS Costs?**

26 A14: Under MRTU, reliability requirements that cannot be resolved through the CAISO  
27 market software will be met by manually issued Exceptional Dispatches. Initially, the  
28 CAISO expected that the frequency and duration of Exceptional Dispatches would be  
29 very limited under MRTU. During the initial months under MRTU, however, this was  
30 not the case. Although the CAISO has taken steps to reduce the need for exercising

1 Exceptional Dispatch, the potential cost of Exceptional Dispatch could be significant if  
2 these measures are not successful. The estimate for these Exceptional Dispatch costs for  
3 2013 is found in Exhibit SDG-1-1 Line 8.

4 **V. RELIABILITY SERVICES RATE SCHEDULE COST FORECAST**

5 **Q15: How have RS costs changed for 2013?**

6 A15: The CAISO has released Dynege South Bay 1, 2, and the Combustion Turbine (“CT”),  
7 the last remaining local units, from RMR, but certain costs resulting from ER10-166-000,  
8 the Settlement for Dynege South Bay, are forecast to occur in 2013. For 2013, these  
9 remaining Dynege South Bay RMR costs forecast to occur relate to Termination Fees for  
10 pollution control equipment capital additions for South Bay 2&3, as described more fully  
11 in the Response in A.17. In addition, as described more fully in the Response in A.18,  
12 SDG&E is also forecasting its share of RMR costs in 2013 related to the conversion of  
13 AES Huntington Beach Generating Station Units 3 and 4 (HB 3&4) to RMR voltage  
14 support service. In 2013 total fixed RS costs are forecast to increase because of the HB  
15 3&4 conversion. For RS variable energy costs, SDG&E forecasts an increase due to a  
16 slightly higher Exceptional Dispatch forecast. For the 2013 RMR forecast, SDG-1-2 has  
17 Line 1 for Dynege Power while Line 2 is AES Huntington Beach. SDG-1-2 Line 4 is the  
18 2013 Exceptional Dispatch forecast.

19 **Q16: What factors drive RS fixed and variable costs?**

20 A16: RMR fixed costs are driven by four main factors:

- 21 (1) The total capacity costs of all the RMR units;
- 22 (2) The RMR unit owner’s election of Condition 1 or Condition 2
- 23 (3) The RMR unit’s actual performance for the year (including any penalties); and
- 24 (4) Capital additions like pollution control equipment (major projects must be  
25 approved by CAISO).

26 RMR variable costs are driven by three factors:

- 27 (1) Local reliability management;
- 28 (2) Congestion management on non-competitive paths; and
- 29 (3) RMR Condition 2 Units following Exceptional Dispatch instructions

30 These categories correspond to the three reasons RMR units can be dispatched.

1 RA units, when dispatched for reliability, are done under the CAISO's Exceptional  
2 Dispatch Authority.

3 **Q17: Are there Termination Fees due Dynegy related to the release of South Bay Unit**  
4 **3&4 at the end of 2009, and the release of the remaining units at the end of 2010?**

5 A17: With the release of Dynegy South Bay Unit 3&4 at the end of 2009, and the remaining  
6 units at the end of 2010, Dynegy submitted two Termination Fees pursuant to Section 2.5  
7 of the RMR Agreement. A Termination Fee for South Bay 3 was submitted in May 2010  
8 and for South Bay 2 in December 2010. Both of these Termination Fees relate to  
9 pollution control equipment capital additions, approved in 2001 but not fully recovered  
10 under the RMR Agreement. The CAISO agreed to the South Bay 3 amount of \$1.552  
11 million, which is recovered through the Termination Fee provisions over a 36 month  
12 period, ending May 2013. The South Bay 2 amount of \$400 thousand has been submitted  
13 to the CAISO. The total annual amounts for these Termination Fees are included in  
14 Exhibit SDG-1-1 on Line 4. No further Termination Fees related to South Bay are  
15 forecast.

16 **Q.18 Please explain why SDG&E is including RMR costs in 2013 related to the**  
17 **conversion of AES Huntington Beach (AESHB) Generating Station Units 3 and 4 to**  
18 **RMR service.**

19 A.18 As a result of the unexpected long-term outage of San Onofre Nuclear Generating Station  
20 ("SONGS") Units 2 and 3, the CAISO Board of Governors, in September 2012,  
21 authorized CAISO Management to designate Huntington Beach Generating Station Units  
22 3 and 4 for RMR service as necessary to provide voltage support in the Los Angeles  
23 Basin and San Diego/Imperial Valley local areas by the conversion of Units 3 and 4 to  
24 synchronous condensers. Based on extensive negotiations between AESHB, CAISO,  
25 Southern California Edison (SCE), SDG&E, along with other interested Parties,  
26 agreement was reached. On November 9, 2012, AESHB and the CAISO jointly filed a  
27 Reliability Must-Run Service Agreement with the Commission in ER13-351-000. As a  
28 result, SDG&E is also including its 20% share of AESHB RMR costs forecast to occur in  
29 2013 in Exhibit SDG-1-1 on Line 4.

30 **Q19: Could other RMR costs not being forecast for 2013 occur in 2013?**

1 A19: Yes. The RMR Agreement, in section 2.4 - Effect of Expiration or Termination, states:  
2 “Expiration or termination of this Agreement shall not affect the accrued rights and  
3 obligations of either Party, including either Party's obligations to make all payments to  
4 the other Party pursuant to this Agreement or post-termination audit rights under Section  
5 12.2.”. Later, in Section 9.1 (b) states that the “Owner will submit to CAISO RMR  
6 Invoices for each Month during the term of this Agreement, which are defined in this  
7 Section 9.1(b) as follows: (i) Estimated RMR Invoice; (ii) Revised Estimated RMR  
8 Invoice; (iii) Adjusted RMR Invoice; and (iv) Revised Adjusted RMR Invoice.” Either  
9 or both of these sections could result in RMR invoices being submitted to the CAISO  
10 well beyond the service month in which they occurred. If these RMR costs occur, they  
11 will be charged to the RSBA.

12 **Q20: Please explain Exceptional Dispatch.**

13 A20: The Exceptional Dispatch portion of RS energy costs is driven by three main factors:

- 14 1) Responding to or preventing a CAISO System Emergency, or a situation that  
15 threatens System Reliability;
- 16 2) Responding to a CAISO “Other Exceptional Dispatch” situation, such as  
17 providing Voltage Support, or responding, preventing, or minimizing a Market  
18 Disruption;
- 19 3) Responding to a Transmission-Related Modeling Limitation due to, *e.g.*,  
20 transmission maintenance, lack of voltage support, system conditions, including  
21 threatened or imminent reliability conditions for which the CAISO’s Market or  
22 System modeling is too slow or incapable of resolving.

23 **Q21: How is Exceptional Dispatch priced?**

24 A21: Resources that are exceptionally dispatched are paid at either the Resource-Specific  
25 Settlement Interval LMP, their Energy Bid cost, the Default Energy Bid cost, or the  
26 Energy Bid cost at a negotiated price, consistent with Section 11 of the CAISO Tariff.

27 **Q22: What are the challenges in forecasting Exceptional Dispatches for RS costs?**

28 A22: At a local level, the Exceptional Dispatch portion of RS costs is affected by five main  
29 factors:

- 30 1) SDG&E total load level;

- 1 2) Minimum local generation level (25% of total load);
- 2 3) RMR and RA unit start times and cycling restrictions;
- 3 4) Import limitations; and
- 4 5) Planned and forced transmission reconfigurations.

5 The first three local level items can be reasonably modeled, but the last two are difficult  
6 to predict. So only a rough forecast can be made for reliability related RS energy.

7 In sum, Exceptional Dispatch is typically driven by either unforeseen or  
8 unplanned events or market participant schedules that SDG&E does not and cannot have  
9 access to because the CAISO treats this data as confidential. Since the energy price data  
10 and the units that could be exceptionally dispatched are not known ahead of time, the  
11 2013 forecast is based on Exceptional Dispatch costs recorded in 2012. Any differential  
12 between the forecasted and actual amount of Exceptional Dispatch costs for the 2013  
13 period will be reflected in the RSBA. The estimate for these Exceptional Dispatch costs  
14 for 2013 is found in Exhibit SDG-1-1, Line 8.

15 **Q23: What other factors make forecasting the variable energy component of RS costs**  
16 **difficult for 2013?**

17 A23: As explained previously, it is a challenge to forecast RS energy. Moreover, an additional  
18 assumption, i.e., the net contractual cost per MWh, is needed to turn the forecasted  
19 energy into an RS cost. For Exceptionally Dispatched units, this net cost per MWh  
20 described in A.22 is based on market participant schedules that SDG&E does not and  
21 cannot have access to because the CAISO treats this data as confidential.

22 **Q24: Could other Exceptional Dispatch costs not forecast for 2013 occur in 2013?**

23 A24: Yes. In the current CAISO Tariff, section 11.29.7, it states that the CAISO will publish:  
24 (i) Initial Settlement Statements T+3B on the third (3) Business Day from the relevant  
25 Trading Day (T+3B), (ii) Recalculation Settlement Statements T+12B on the twelfth (12)  
26 Business Day from the relevant Trading Day (T+12B), (iii) Recalculation Settlement  
27 Statements T+55B on the fifty-fifth (55) Business Day from the relevant Trading Day  
28 (T+55B), (iv) Recalculation Settlement Statements T+9M on the one-hundred and ninety-  
29 fourth (194) Business Day after the Trading Day, which is approximately nine (9) months  
30 after the Trading Day (T+9M) if necessary, (v) Recalculation Settlement Statements

1 T+18M on the three hundred and eighty third (383) Business Day after the Trading Day,  
2 which is approximately eighteen (18) calendar months from the relevant Trading Day  
3 (T+18M) if necessary, (vi) Recalculation Settlement Statements T+35M on the seven  
4 hundred and thirty-seventh (737) Business Day after the Trading Day, which is  
5 approximately thirty-five (35) calendar months from the relevant Trading Day (T+35M)  
6 if necessary, (vii) Recalculation Settlement Statements T+36M on the seven hundred and  
7 fifty-ninth (759) Business Day after the Trading Day, which is approximately thirty-six  
8 (36) calendar months from the relevant Trading Day (T+36M) if necessary, and (viii) any  
9 Unscheduled Recalculation Settlement Statement issued pursuant to CAISO Tariff  
10 Section 11.29.7.3. To the extent the CAISO produces any additional RS costs according  
11 to the settlement cycle above, these RS costs will be charged to the RSBA.

12 **Q25: Could other RS costs occurring prior to the Go Live date of MRTU, April 1, 2009 be**  
13 **invoiced in 2013?**

14 A25: Yes. Although not anticipated, in the event the CAISO determines or is required to rerun  
15 a period that occurred prior to the April 1, 2009, which could involve RS charges, the  
16 CAISO's Business Practice Manual (BPM) for Settlements & Billing, 3.3.2-Historic  
17 Rerun PTBs (Pass Through Bill), provides a process for billing these Historic Rerun  
18 charges in 2013. To the extent these RS costs occur, they will be charged to the RSBA.

19 **Q26: What is the expected fixed component of RS costs for 2013?**

20 A26: The fixed component of RS costs for 2013 is found in Exhibit SDG-1-1 Line 11.

21 **Q27: What is the expected variable component of RS costs for 2013?**

22 A27: The variable component of RS costs for 2011 is found in Exhibit SDG-1-1 Line 12.

23 **Q28: What are the expected total RS costs for 2013?**

24 A28: The expected total RS costs for 2013 are found in Statement BK (Cost of Service), as  
25 sponsored by SDG&E witness, Jeffrey Shaughnessy (Exhibit SDG-2). Statement BK  
26 includes the over-collected RS balance as of November 30, 2012, as found in Exhibit  
27 SDG-1-1, Line 15, and the total 2013 RS Forecast, as found in Exhibit SDG-1-1, Line 13.

28 **Q29: Does this conclude your testimony?**

29 A29: Yes, it does.

# SDG&E 2013 Costs Included in RS Rate (Exhibit SDG-1-1)

Line #	Description	2013 Projected Costs 000's	
1	<b>RMR (Reliability Must-Run) Costs</b>		1
2	Fixed (Capacity)	2,506	
3	Variable (Energy)		
4	<b>Sub-total RMR</b>	<b>2,506</b>	
5			
6	<b>MRTU Exceptional Dispatch</b>		2
7	Variable (Energy)	615	
8	<b>Sub-total Exceptional Dispatch</b>	<b>615</b>	
9			
10	<b>Total RS</b>		
11	Fixed (Capacity)	2,506	
12	Variable (Energy)	615	
13	<b>2013 RS Forecast</b>	<b>3,120</b>	
14			
15	<b>RSBA November 2012 Ending Amount</b>	<b>(2,759)</b>	
16	<b>2013 RS Amount Before FFU (Line 13 Plus Line 15)</b>	<b>362</b>	3
17			
18	Franchise Fees @ 1.0275% (line #16 X 1.0275%)	4	
19			
20	Uncollectibles Rate @ .141% (line #16 X .141%)	1	
21			
22	<b>Total 2013 RS Revenue Requirement (Line 16+18+20)</b>	<b>366</b>	
23			
24			

**Footnotes**

- 1 The fixed RMR costs are the South Bay Power Plant termination fees associated with closure of South Bay 2 and 3 under ER10-166-000 and the planned conversion of AES Huntington Beach Units 3&4 to Synchronous Condensers in ER13-351-000
- 2 Exceptional Dispatch (Variable Energy) based on SDG&E forecast for 2013.
- 3 FFU is Franchise Fees and Uncollectibles

**SDG&E 2013 Costs Included in RS Rate (Exhibit SDG-1-2)**

Line #	<u>Unit(s) Owner</u>	<u>Cost by Owner</u>
1	Dynegy Power (RMR)	\$ 457
2	AES Huntington Beach (RMR)	\$ 2,048
3	RMR Subtotal	\$ <u>2,506</u>
4	Exceptional Dispatch	\$ 615
5		
6		
7		
8	Capacity RS Costs	\$ 2,506
9	Energy RS Costs	\$ <u>615</u>
10	Total RS	\$ 3,120

VERIFICATION

STATE OF CALIFORNIA )  
 )  
COUNTY OF SAN DIEGO ) ss.

Christian A. Soderlund, being duly sworn, on oath, says that he is the Christian A. Soderlund identified in the foregoing prepared direct testimony; that he caused to be prepared such testimony on behalf of San Diego Gas & Electric Company; that the answers appearing therein are true to the best of his knowledge and belief; and that if asked the questions appearing therein, his answers would, under oath, be the same.

*Christian A. Soderlund*  
Christian A. Soderlund

STATE OF California,  
CITY/COUNTY OF San Diego, to-wit:

On this 18<sup>th</sup> day of December, 2012 before me, Rosalinda Rossi, a Notary Public, personally appeared Christian A. Soderlund, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

*Rosalinda Rossi*

