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Witness: David T. Barker

Application of San Diego Gas & Electric Company)
(U 902 E) for Approval of its Greenhouse Gas)
Forecasted Costs and Allowance Revenues for 2015)
and Reconciliation of its Allowance Revenues)
for 2013.)

Application 14-04-_____
(Filed April 15, 2014)

PREPARED DIRECT TESTIMONY OF
DAVID T. BARKER
ON BEHALF OF
SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

April 15, 2014

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1 **PREPARED DIRECT TESTIMONY OF**
2 **DAVID T. BARKER**
3 **ON BEHALF OF**
4 **SAN DIEGO GAS & ELECTRIC COMPANY**

5 **I. PURPOSE AND OVERVIEW**

6 **A. Purpose**

7 The purpose of my testimony is to describe San Diego Gas & Electric Company’s
8 (“SDG&E”) forecast of 2015 greenhouse gas (“GHG”) allowance auction revenues, the amount
9 of revenue to be allocated for energy efficiency and clean energy investments, and the magnitude
10 of the allowance auction revenues to set aside for energy-intensive trade-exposed (“EITE”)
11 customers.

12 **B. Overview**

13 As part of California’s cap-and-trade program administered by the California Air
14 Resources Board (“ARB”), investor-owned utilities (“IOUs”) receive allowances that they are
15 required to consign for sale in ARB’s quarterly auctions. The California Public Utilities
16 Commission (“Commission”) opened the GHG Order Instituting Rulemaking (“R.”) 11-03-012
17 (“GHG OIR”) on March 24, 2011 to address the use of revenues that electric utilities would
18 receive from the auction of allowances. In Decision (“D.”) 12-12-033, the Commission
19 describes conceptually how GHG revenues should be allocated to utility uses and to customers
20 and further describes a “waterfall” return of allowance auction revenue, with revenues first
21 allocated to administrative and outreach costs, then to energy efficiency and clean energy
22 investments for up to 15 percent of the total revenues, and the remainder of allowance auction
23 revenues to be returned to customers.

24 Among customer classes, the revenues are similarly allocated under a waterfall method.
25 The first customers to receive the revenue will be customers in EITE industries. This group was
26 defined in D.12-12-033 as the EITE industries identified by ARB in the cap-and-trade program.
27 The Commission left open whether EITE customers with smaller direct emissions would be

1 eligible for receipt of allowance auction revenue. Likewise, the methodology for calculating the
2 revenue return to this group was not finalized, but the Commission determined that it would be
3 based on the methodology adopted through a workshop process. A Commission decision
4 clarifying these issues has not yet been received. The EITE revenue return is projected to be a
5 relatively small amount compared to the total amount of allowance revenues returned to other
6 customers, so forecast variances for 2013, 2014, and 2015 can be trued-up in future years.

7
8 This testimony is organized as follows:

9 Section II – Calculation of Allowance Auction Revenues for 2015. This section
10 supports SDG&E’s forecast of revenue from the consignment and sale of
11 allowances in ARB’s quarterly auctions.

12 Section III – Calculation of the level of set-aside for energy efficiency and clean energy
13 investments for 2015. This section details the requested dollar amount to
14 set aside for potential use of the allowance auction revenues to fund
15 incremental clean energy investments approved in their separate respective
16 proceedings.

17 Section IV – Calculation of the level of set-aside for EITE customers. This section
18 outlines the methodology for determining the amount of allowance auction
19 revenues to set aside for EITE customers for 2015.

20 Section V – Statement of Qualifications.

21 **II. CALCULATION OF ALLOWANCE AUCTION REVENUES FOR 2015**

22 The ARB allocates cap-and-trade allowances to SDG&E for 2015. SDG&E is required
23 to place all of these allowances for sale in ARB’s 2015 quarterly auctions. The revenues
24 generated from the sale of these allowances will depend on: 1) the amount of allowances ARB
25 allocates to SDG&E, 2) the amount of allowances SDG&E enters in each of the four auctions, 3)
26 whether all auctioned allowances are sold, and 4) the clearing price of each respective auction.

27 The forecast of allowance revenues is calculated by multiplying the total number of
28 allowances allocated to SDG&E for consignment by a forecast price for the allowances.¹

29

¹ It is assumed all allowances are sold in the auction process. This assumption is consistent with the
assumption that the market-clearing price is above the price floor.

1 **A. Allowances Consigned**

2 The amount of allowances allocated by the ARB to SDG&E that must be consigned in
3 the ARB’s quarterly auctions is determined by sections 95870(d) and 95892(a) of ARB’s
4 cap-and-trade regulation.² Allowances available for allocation to electrical distribution utilities
5 each budget year shall be 97.7 million metric tons (“MT”) multiplied by the cap adjustment
6 factor, 0.944 (for 2015), and SDG&E’s share of electric sector allowances, 6.96792% (for
7 2015).³

8 The total allowances allocated to SDG&E for 2015 based on the ARB cap-and-trade
9 regulation can then be calculated as follows:

10 11 12 2015 SDG&E Allocated Allowances $97,700,000 \text{ MT} \times 0.944 \times 6.96792\% = 6,426,429 \text{ MT}$

13 **B. 2015 Average Allowance Price Forecast**

14 Because the allowances must be consigned to the auctions, the amount of allowance
15 auction revenue will depend on the forecasted price for allowances. SDG&E has used the same
16 proxy price as used in the calculation of GHG costs, \$12.242/MT. This figure was derived using
17 a recent (March 3, 2014) assessment of 2015 GHG market prices based on the average of
18 forward prices on the Intercontinental Exchange (“ICE”) over the previous 22-day period,
19 consistent with the period used for forecasting natural gas and electricity prices associated with
20 the forecast of electricity procurement in SDG&E’s annual Energy Resource Recovery Account
21 (“ERRA”) forecast filing.

22 **C. Allowance Auction Revenue Forecast**

23 Calculation of the 2015 allowance auction revenue forecast is completed by multiplying
24 the forecasted price by the number of allowances consigned to the ARB auctions.

25 26 2015 Forecasted Revenues $6,426,429 \text{ MT} \times \$12.242/\text{MT} = \$78,672,300 \text{ (rounded)}$

² The ARB cap-and-trade regulations are set forth in 17 CCR § 95800 et seq.
³ ARB, cap-and-trade regulation, Section 95891 at Tables 9-2 and 9-3.

1 **III. USE OF ALLOWANCE AUCTION REVENUES FOR CLEAN ENERGY**
2 **INVESTMENTS IN 2015**

3 SDG&E proposes to set aside allowance auction revenues for potential incremental
4 energy efficiency and clean energy investments in 2015 consistent with its current proposal in
5 Phase 2 of the 2014 GHG Revenue Forecast proceeding.⁴ Consistent with D.12-12-033, Finding
6 of Fact 140, which provides that “[t]he appropriate venue for deciding the manner in which GHG
7 allowance revenues should be allocated toward energy efficiency and clean energy programs is
8 within the various proceedings specifically opened to make such decisions,” SDG&E does not
9 request approval of energy efficiency and clean energy investment programs and projects in this
10 proceeding, only approval of the cap and authority to transfer funds from the cap-and-trade
11 auction revenue balancing account to the projects’ accounts, once approved in other proceedings
12 in 2014 and 2015.⁵ SDG&E proposes that the allowance auction revenues be used to fund the
13 approved incremental energy efficiency and clean energy programs up to \$11 million, an amount
14 equal to 14% of expected cap-and-trade allowance auction revenue.⁶ In order to have funds
15 available, SDG&E further proposes to set aside \$11 million for potential programs and projects
16 approved in other proceedings in 2014 and 2015. If the set aside funds are not transferred to
17 approved programs or projects, they should be returned to customers in 2017.

18 To be eligible to receive funding through emissions allowances revenues, energy
19 efficiency and clean energy investments must meet the following requirements laid out in
20 D.12-12-033:
21

⁴ See A.13-08-002 et al., Phase 2 Joint Utility Proposal Matrix, dated March 25, 2014.

⁵ Approval of such programs will occur in different proceedings including a finding that the project or program is consistent with the requirements of D.12-12-033.

⁶ \$11 million is 14% of expected allowance revenues of \$78.6723 million and slightly lower than 15% of the minimum revenue expected if all allowances are sold at the floor price for 2015 (6,426,429 MT x \$11.34 x 1.05 x 15% = \$11.48 million). Price floor in 2015 is at least 5% higher than the 2014 floor price per the cap-and-trade regulation.

- 1 2. The program must be administered by the electrical corporation and not
2 otherwise funded by another funding source.⁷
- 3 2. Any funding of clean energy or energy efficiency by GHG allowance
4 revenues should not be used for programs or projects funded prior to 2013
5 through general ratepayer funds.⁸
- 6 3. A primary goal must be the reduction of GHG emissions, requiring that
7 GHG emissions reductions be a stated and measurable goal of a project.⁹

8 Since the clean energy and energy efficiency projects potentially funded out of this
9 \$11 million set aside would not be approved in this proceeding, SDG&E offers the following
10 examples of the types of projects that might be funded by these cap-and-trade allowance auction
11 revenues. To reiterate, none of the examples below have been approved in their respective
12 proceedings by the Commission.

13 ***Example 1: Electric Vehicle Charging Infrastructure and Grid-Benefitting Energy Rate***

14 SDG&E has requested authority to conduct a pilot program to investigate, quantify and
15 demonstrate the benefits to be achieved through integration of electric vehicle charging and grid
16 utilization through a vehicle charging price related to grid capacity conditions. This project
17 would construct, own and operate electric vehicle charging stations at various workplace and
18 multi-unit dwelling sites. Equipment installation and maintenance will be competitively bid by
19 SDG&E, and the host site will facilitate employee/resident participation in the program designed
20 to spur electric vehicles sales to customers living in underserved multi-unit dwellings. The pilot
21 program will also assess customer preference and lay out a roadmap for further steps to be taken
22 in the vehicle-grid charging market. The development of vehicle charging infrastructure is
23 similar to that contained in the ARB Cap-and-Trade Auction Proceeds Investment Plan,
24 demonstrating this project would be incremental and GHG-reducing.¹⁰ SDG&E has requested in
25 that application that cap-and-trade revenues be transferred to the project upon approval.

⁷ D.12-12-033 at 191 (Conclusion of Law 7).

⁸ *Id.* at 194 (Conclusion of Law 24).

⁹ *Id.* at 135.

¹⁰ ARB, Cap-and-Trade Auction Proceeds Investment Plan: Fiscal Years 2013-14 through 2015-16, at B-10.

1 ***Example 2: Payments Under the Bioenergy Feed-in Tariff***

2 Senate Bill (“SB”) 1122 added sections 399.20(f)(2-4) to the California Public Utilities
3 Code (“P.U. Code”) in 2012, after the passage of SB 1018. The Commission is currently
4 considering the structure of this feed-in tariff in R.11-05-005. Once in effect, IOUs will have a
5 standard contract and a streamlined contracting process to acquire an incremental 250 MW of
6 bioenergy, of which SDG&E will have an obligation to acquire contracts totaling roughly 22
7 MW. This program is incremental, would provide reductions in GHG emissions, and energy
8 payments could be paid to bioenergy facilities by a transfer of funds from this set-aside once the
9 bioenergy program details are finalized in R.11-05-005, contracts are approved by the
10 Commission, and bioenergy facilities in San Diego begin delivering renewable energy under SB
11 1122 contracts.

12 ***Example 3: Water-Energy Nexus Initiative***

13 Currently the 2014 SDG&E’s Energy Efficiency (“EE”) programs support the: (1)
14 installation of water-energy efficiency appliances and equipment (e.g., low flow showerheads,
15 energy efficiency clothes washers, energy efficiency dishwashers, etc.); (2) installation of EE
16 equipment and measures that improve the energy efficiency of water-conveyance processes (e.g.,
17 motors, water pumps, process improvements); and (3) water-leak detection programs. Working
18 with local water agencies and water utilities, potential programs or projects in 2015 could go
19 beyond existing SDG&E programs to develop more aggressive programs to reduce GHG
20 emissions related to water supply, use, and conveyance (e.g., renewable energy, more efficient
21 pumps, water use efficiency/conservation) once the Commission rules, regulations, and
22 guidelines addressing water-energy nexus issues are resolved in R.13-12-011.

23 **IV. EITE ALLOWANCE AUCTION REVENUE SET ASIDE**

24 The first customer group to receive an allocation from the allowance auction revenue is
25 comprised of industrial customers in EITE industries. This group is defined in D.12-12-033 as

1 those firms counted as EITE by ARB, as listed in Table 8-1 of the cap-and-trade regulation,¹¹
2 and in the cap-and-trade program or opt-in entities. The Commission left open the issues of
3 whether customers in the same industrial classifications with smaller direct emissions (less than
4 25,000 MT carbon dioxide equivalent (“CO₂e”)) may receive allowance auction revenue through
5 this process.¹² In addition, the methodology for potentially calculating the revenue return to this
6 group was not finalized, but was determined to be based on a methodology to be developed
7 through the workshop process in R.11-03-012.¹³

8 Because there is not yet a final Commission decision resolving outstanding EITE
9 customer allocation methodology issues as of April 2014, SDG&E estimates the EITE set aside
10 amount based on the total sales to customers in the North American Industry Classification
11 System (“NAICS”) codes of Table 8-1 of the ARB cap-and-trade regulation, an estimate of the
12 SDG&E GHG intensity of its portfolio from Table 2 of Energy Division’s “Greenhouse Gas
13 Allowance Revenue Allocation Methodologies for Emissions Intensive and Trade Exposed
14 Entities and Small Businesses” (“Staff Report”), and the GHG proxy price. Specifically,
15 SDG&E projects 2015 EITE customers’ total usage of 237,248 megawatt-hours (“MWh”) based
16 on actual 2013 usage multiplied by the SDG&E emissions factor associated with consumption,
17 0.331 MT/MWh.¹⁴ This formula is consistent with the energy-based allocation formula in
18 equation 12 of the Staff Report.¹⁵ The dollar conversion factor of \$12.242 is the proxy GHG
19 price for 2015 described previously. The total EITE allocation is then calculated as follows:

$$237,248 \text{ MWh} \times 0.331 \text{ MT/MWh} \times \$12.242/\text{MT} = \$ 961,200 \text{ (rounded)}$$

¹¹ ARB, cap-and-trade regulations, Section 95870, Table 8-1.

¹² See D.12-12-033 at 207 (Ordering Paragraph 6).

¹³ *Id.* at 215-16 (Ordering Paragraph 25).

¹⁴ Jason Houck, Adam Langton, and Damon Franz, “Greenhouse Gas Allowance Revenue Allocation Methodologies for Emissions Intensive and Trade Exposed Entities and Small Businesses,” dated July 10, 2013, at 54.

¹⁵ *Id.* at 72.

1 EITE customers will receive the allowance revenues that they are entitled to each year,
2 based on the revenue amounts provided to the IOUs by the Commission, regardless of how much
3 revenue is projected in this forecast set aside. Any forecast variance or differential for 2015 can
4 be trued-up in future years once the Commission-approved calculations are established (i.e., if
5 the set-aside of EITE revenues based on this forecast is higher than the actual revenues required
6 to compensate EITE customers, the revenue return to all customers will be increased for the
7 difference).

8 This concludes my prepared direct testimony.
9

1 **V. QUALIFICATIONS**

2 My name is David T. Barker. My business address is 8330 Century Park Court, CP-32F,
3 San Diego, California, 92123.

4 I have been employed as an economist in the Resource Planning group of SDG&E since
5 2007. Prior to that, I was employed as an economist in the Regulatory Affairs Department of
6 Sempra Energy Utilities for five years from 2002 to 2007. Before 2002, I was employed at
7 Southern California Gas Company in various staff positions including Economist (1991-1995
8 and 1998-2002), Market Consultant (1988-1989 and 1995-1998), Electric Energy Analyst
9 (1990-1991), and Demand Forecasting Supervisor (1989-1990).

10 I received a B.S. in Mathematics from New York State University, a Masters of
11 Economics degree from North Carolina State University, and a joint Ph.D. in Economics and
12 Statistics from North Carolina State University. I taught undergraduate economics and statistics
13 courses for four years on a full-time basis in Oregon, and then worked in the private sector for
14 five years as an economist at Merrill Lynch prior to joining Southern California Gas Company.

15 I have previously testified before the Commission on economic analysis issues, have
16 actively participated in workshops on greenhouse gas issues at both the Commission and the
17 ARB, and testified in SDG&E's 2013-2014 GHG Revenue Application.