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Witness: David T. Barker

Application of San Diego Gas & Electric Company (U 902 E) to Return Revenues from the Sale of Greenhouse Gas Allowances and to Recover Forecasted Costs Associated with California's Greenhouse Gas Emissions Reduction Program for 2013 and 2014.	Application 13-08-___ (Filed August 1, 2013)

PREPARED DIRECT TESTIMONY OF

DAVID T. BARKER

SAN DIEGO GAS & ELECTRIC COMPANY

*****Public Version*****

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA
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I. PURPOSE AND OVERVIEW

A. Purpose

The purpose of my testimony is to describe San Diego Gas & Electric Company's ("SDG&E") forecast of 2014 allowance auction revenues, the amount of revenue to be allocated for energy efficiency and clean energy investments, the magnitude of the allowance auction revenues to set aside for energy-intensive trade-exposed ("EITE") customers, and the forecast of total greenhouse gas ("GHG") costs, a step in determining the volumetric revenue return for small business and residential customers. In addition, my testimony summarizes the 2013 SDG&E forecast of GHG costs and GHG allowance auction revenues.

The combined 2013-2014 total GHG costs are forecast to be $152,075,000, while the combined total cap-and-trade allowance auction revenues across 2012-2014 are projected to be $199,902,000. SDG&E requests the Commission authorize recovery of forecasted 2013 and 2014 GHG costs, to be updated in SDG&E's 2014 Energy Resource Recovery Account ("ERRA") forecast application, prior to implementation in rates. SDG&E also requests approval to return forecasted 2013 and 2014 allowance auction revenues to customers, also to be updated in SDG&E's 2014 ERRA forecast application, prior to final rate implementation. SDG&E requests authorization to begin incorporating these costs and revenues in rates concurrent with its 2014 ERRA forecast rate adjustment.

B. Overview

As part of California's cap-and-trade program administered by the California Air Resources Board ("ARB"), investor-owned utilities ("IOUs") receive allowances that they are required to consign for sale in ARB's quarterly auctions. The Commission opened the GHG Order Instituting Rulemaking ("GHG OIR") 11-03-012 on March 24, 2011 to address the use of

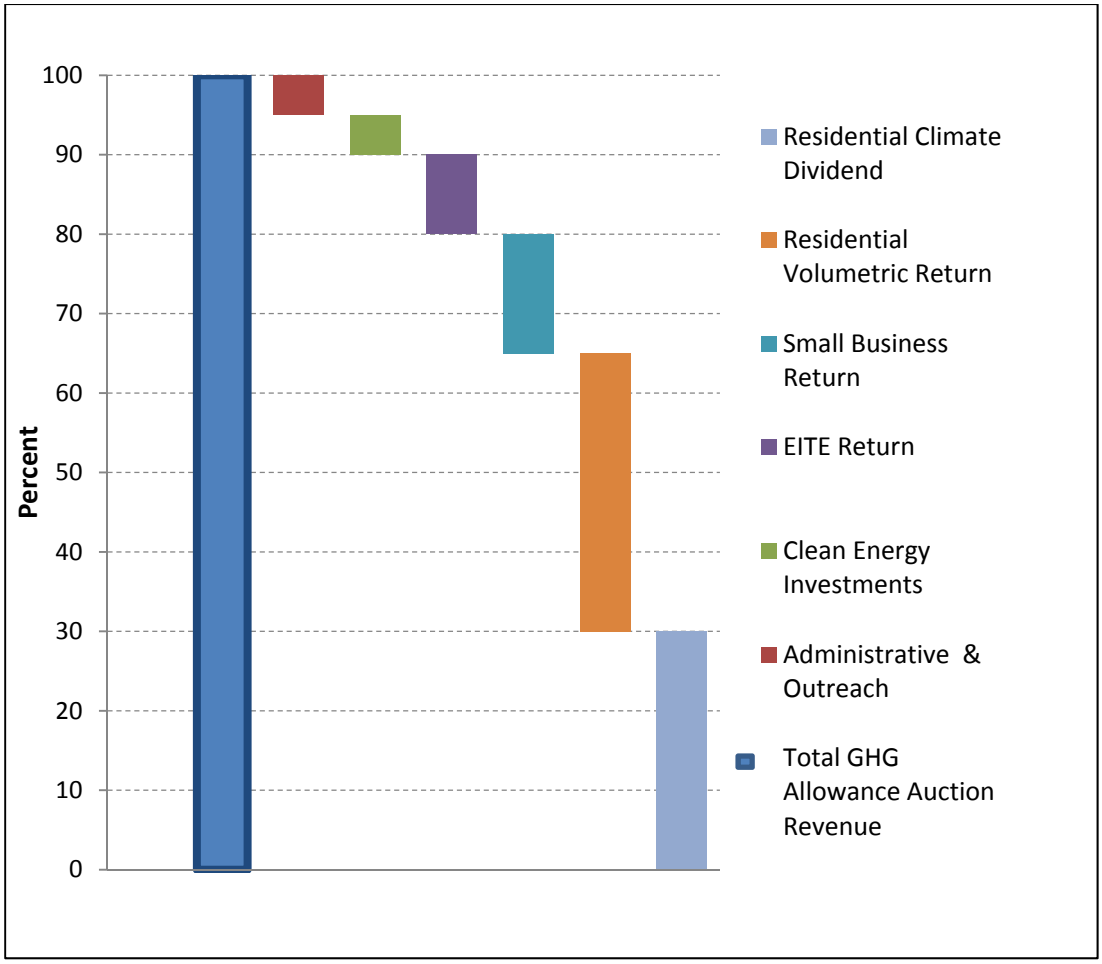
revenues that electric utilities would receive from the auction of allowances. In Decision ("D.") 12-12-033, the Commission directs the IOUs to file an application by August 1 of each year beginning in 2013 for the first three years of the cap-and-trade program, setting forth forecasted GHG costs for the subsequent year and estimating GHG revenues to be distributed to eligible customer classes. The decision also describes conceptually how GHG revenues should be allocated to utility uses and to customers and further describes a "waterfall" return of allowance auction revenue, with revenues first allocated to administrative and outreach costs, then to clean energy investments for up to 15 percent of the total revenues, and the remainder of allowance auction revenues to be returned to customers.

Among customer classes, the revenues are similarly allocated under a waterfall method. The first customers to receive the revenue will be customers in EITE industries. This group was defined in D.12-12-033 as the EITE industries defined by ARB in the cap-and-trade program. The Commission left open whether EITE customers with smaller direct emissions would be eligible for receipt of allowance auction revenue. Likewise, the methodology for calculating the revenue return to this group was not finalized, but was determined to be based on the methodology adopted through a workshop process. A proposed decision clarifying these issues is expected in September 2013. The EITE revenue return is projected to be a relatively small amount compared to the total amount of allowance revenues returned to other customers, so any forecast variance for 2013 and 2014 can be trued-up in future years.

The next groups to receive revenue return will be small business customers and residential customers, who will receive their allowance auction revenue returns volumetrically. This revenue return will be calculated based on (1) total forecasted cap-and-trade costs, and (2) the allocation of expected GHG costs to each applicable customer group, and (3) a unit cost for each applicable customer group to determine appropriate adjustment to rates. The first element will be presented in this testimony, while the remaining elements are further described in the testimony of SDG&E witness Yvonne Le Mieux.

Any remaining revenues not yet allocated will be returned to all residential customers in the form of a semi-annual on-bill credit also known as the Climate Dividend. The general waterfall allocation of allowance auction revenues is summarized in Chart 1 below.

Chart 1. Allocation of Allowance Auction Revenues



This testimony is organized as follows:

Section II – Calculation of Allowance Auction Revenues for 2014. This section supports SDG&E's forecast of revenue from the consignment and sale of allowances in ARB's quarterly auctions.

Section III – Calculation of total GHG costs for 2014. This section calculates GHG costs for use as an input into the calculation of the volumetric return of allowance auction revenues to small business and residential customers.

Section IV – Calculation of the level of set-aside for energy efficiency and clean energy investments. This section details the requested dollar amount to set aside

for potential use of the allowance auction revenues to fund incremental clean energy investments approved in their separate respective proceedings.

Section V – Calculation of the level of set-aside for EITE customers. This section outlines the methodology for determining the amount of allowance auction revenues to set aside for EITE customers.

Section VI – Summary of 2013 forecasted GHG costs and GHG allowance auction revenues. This section presents data similar to 2014, as covered in prior sections.

Section VII – Statement of Qualifications.

II. CALCULATION OF ALLOWANCE AUCTION REVENUES FOR 2014

A. Forecasted Revenue

SDG&E will be allocated cap-and-trade allowances by the ARB for 2014 and is required to place all of these allowances for sale in ARB's 2014 quarterly auctions. The revenues generated from the sale of the allowances will depend on the amount of allowances allocated to SDG&E by ARB, the amount of allowances allocated by SDG&E to each of the four auctions, whether all auctioned allowances are sold, and the clearing price of each respective auction.

The forecast of allowance revenues is calculated by multiplying the total number of allowances allocated to SDG&E for consignment that are forecasted to be sold, by a forecast price for the allowances. Given the limited number of auctions (three) and the limited time the auctions have been in place (9 months), SDG&E has not forecasted the market clearing price in each auction, but instead utilizes an overall average annual 2014 price.

1. Allowances Consigned

The amount of allowances allocated by the ARB to SDG&E that must be consigned to the ARB's quarterly auction is determined by sections 95870(d), and 95892(a), of ARB's cap-and-trade regulation, which provide, in pertinent part:

§ 95870. Disposition of Allowances.

(d) Electrical Distribution Utility Sector Allocation. Allowances available for allocation to electrical distribution utilities each budget year shall be 97.7 million metric tons multiplied by the cap adjustment factor in Table 9-2 for each budget year 2013-2020. . . .

Table 9.2 (Excerpt)

Budget Year	Cap Adjustment Factor (c) for All Other Direct Allocation
2014	0.963

§ 95892. Allocation to Electrical Distribution Utilities for Protection of Electricity Ratepayers.

(a) Allocation to Individual Electrical Distribution Utilities. The allowances allocated to each electrical distribution utility from each budget year shall be the electrical distribution utility sector allocation calculated pursuant to section 95870(d) for the budget year multiplied by the percentage allocation factors specified in Table 9-3. . . .

Table 9.3 (Excerpt)

Utility Name	Utility Type	Annual % of Total Electric Sector Allocation to Utility	
		2013	2014
SDG&E	IOU	7.21940%	6.96087%

The total allowances allocated to SDG&E for 2014 based on the ARB cap-and-trade regulation can then be calculated as follows:

2014 SDG&E Allocated Allowances = 97,700,000 x 0.963 x 6.96087% = 6,549,142

SDG&E forecasts that [redacted] allowances will be sold in the 2014 ARB auctions. [redacted]

2. 2014 Average Allowance Price Forecast

Because the allowances must be consigned to the auctions, the amount of allowance auction revenue will depend on the forecasted price for allowances. SDG&E has used a single forecasted average annual price for both the estimation of auction revenues and the calculation of expected 2014 indirect GHG costs. For 2014, SDG&E forecasts an average annual allowance price of [redacted], yielding a total revenue amount of [redacted] (rounded). This price forecast will be updated in conjunction with SDG&E's annual Energy Resource Recovery Account ("ERRA") forecast filing, as described in the Amended Joint Implementation Plan.

The basis of the price forecast for 2014 vintage allowances is [redacted] The forecasted price is based on [redacted]

[1] [redacted]

Chart 2. [redacted]

Chart 3. [redacted]

3. Allowance Auction Revenue Forecast

Calculation of the 2014 allowance auction revenue forecast is completed by multiplying the forecasted price by the number of allowances consigned to the ARB auctions that are expected to be sold.

2014 Forecasted Revenues = [redacted] (rounded)

B. Allowance Auction Revenue True-Up

Because the full allowance auction revenue for 2013 has not yet been received, there is no true-up proposed for 2014. The 2015 revenue forecast will contain a true-up for 2013 deviations of 1) actual revenues from forecasted revenues and 2) actual revenues provided to customers from forecast revenues to be distributed. Actual revenues will deviate from forecasted revenues because the actual auction prices will be different than the forecasted prices. Deviations in actual revenues returned to customers from forecast revenues will occur because of variations in sales versus forecast and EITE customer actual returns versus the EITE set-aside forecast.

III. CALCULATION OF FORECASTED GHG COSTS IN 2014 FOR USE IN DEVELOPING REVENUE RETURN FOR SMALL BUSINESS AND RESIDENTIAL CUSTOMERS

The purpose of this section is to describe the cost forecast for GHG compliance obligations under the ARB cap-and-trade program. The total 2014 GHG costs are a key determinant of the forecasted volumetric return to small business and residential customers as further discussed in the testimony of SDG&E witness Yvonne Le Mieux.

The cap-and-trade system provides that compliance obligations in the electricity sector are applicable to "first deliverers of electricity."[2] Generally, first deliverers of electricity in 2014 are electricity generators inside California that emit more than 25,000 metric tons ("MT") of GHG and importers of electricity from outside of California. The cap-and-trade regulation requires that first deliverers of electricity, except publicly-owned utilities and small generators (less than 25,000 MT of emissions), purchase all of the allowances and offsets needed to meet their compliance obligations.[3] SDG&E is the first deliverer for both its owned generation in California and imports of electricity into California. This type of cost is a direct cost. The first section below addresses direct GHG compliance costs associated with SDG&E utility-owned generation plants, including the Palomar combined-cycle generation facility and the peaking generation located at the Miramar facility, procurement of electricity from third parties under tolling agreements, including the Otay Mesa and Orange Grove facilities, and electricity imports attributed to SDG&E, such as from Yuma Cogeneration in Arizona and the SDG&E-owned Desert Star facility in Nevada.

SDG&E customers also face a second type of GHG compliance cost, indirect costs. Indirect costs are costs embedded in market electricity prices, or charged by third parties to SDG&E under contract. The party selling the power is responsible for the GHG allowance acquisition, but either explicitly or implicitly charges for the cost of acquiring allowances. The second section below addresses indirect GHG costs. The third section describes the calculation of 2014 GHG costs in detail.

A. Direct GHG Emissions

Each first deliverer of electricity within California must surrender to ARB one allowance or offset for each MT of carbon dioxide emissions or its equivalent (CO_2e). Under ARB's first

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[2] ARB, Article 5: California Cap on Greenhouse Gas Emissions and Market-based Compliance Mechanisms, Section 95811(b).

[3] ARB, Article 5: California Cap on Greenhouse Gas Emissions and Market-based Compliance Mechanisms, Section 95851.

deliverer approach, SDG&E will have a direct compliance obligation for GHG emissions from burning natural gas at its facilities, including carbon dioxide, methane, and nitrous oxide. Forecasting SDG&E's expected direct GHG compliance costs starts with the SDG&E production simulation model.[4] The model forecasts hourly dispatch of SDG&E-owned and contracted resources based on forecasted hourly electric prices (which implicitly include a GHG price component), natural gas prices, GHG prices, bundled utility load, and expected operation of SDG&E variable renewable generation delivering into the California Independent System Operator ("CAISO") market. Based on the output of the model, SDG&E has a forecast of the next year's expected production from (1) SDG&E-owned resources, (2) SDG&E contracted-for specific resources including renewables, (3) contracted Combined Heat and Power ("CHP") facilities, (4) imports of electricity, and (5) an estimate of market purchases that will either be directly contracted for or net CAISO market purchases that are needed to meet expected load, net of energy efficiency, demand response, and behind-the-meter self-generation.[5]

Once the model run is complete, the amount of fuel needed for each plant is provided as an output based on the expected operation of the plant, including fuel associated with starts and fuel combusted to produce electricity. The fuel volume is then multiplied by an emissions factor of 0.05307 MT of CO_2e per MMBtu to calculate direct emissions obligation for each plant. The forecast of GHG emissions from SDG&E facilities in 2014 is included in Table 1 below.

Similarly, the estimated emissions for tolling agreements like Otay Mesa are estimated by multiplying the forecast of MMBtu burned from the production simulation by the emission factor of 0.05307 MT of CO_2e per MMBtu. The forecast of GHG emissions from generators under tolling agreements in 2014 is also shown in Table 1.

In addition, SDG&E delivers out-of-state electricity to a delivery point inside California and is thus responsible for the GHG emissions attributed to generation of that electricity. There

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[4] *See* the Workpapers of David T. Barker for a description of the production cost model and relevant inputs.

[5] "Net CAISO purchases" are purchases from the CAISO market in excess of SDG&E resources sold into the CAISO electricity market on an annual basis.

are four categories of GHG emissions associated with imports. First, there are imports from "specified sources" (i.e. imports where the source of the power is known), either a specific plant or from an asset-controlling supplier. For example, power from SDG&E's Desert Star combined-cycle generation plant in Nevada is included on the same basis as SDG&E's other utility-owned facilities—multiplying the forecast of MMBtu burned from the production simulation by the emission factor of 0.05307 MT of CO_2e per MMBtu.[6]

Second, for imported power from "unspecified sources," the ARB default emission rate, set for 2014 at 0.428 metric tons of CO_2e per MWh, is multiplied by a transmission loss factor of 1.02 to estimate GHG emissions related to electricity imports of unknown origin at 0.437 MT per MWh.

Third, for the Yuma cogeneration plant in Arizona, the GHG emissions are calculated based on 0.428 MT per MWh, the same factor as for unspecified power, since the emissions rate, net of the useful thermal energy, is unknown. The transmission loss factor is not applied, since output is measured at the plant.

Fourth, electricity from out-of-state renewable resources that are not imported can be used to offset the emissions of imports under the ARB "Renewable Portfolio Standard ("RPS") adjustment." Specifically, the RPS adjustment is equal to the default emission rate multiplied times the MWh from the eligible renewable resources, as measured at the point of generation.[7] Both the emissions of imported power and the offsetting RPS adjustment are shown in Table 1.

B. Indirect GHG Emissions

In addition to the direct GHG costs described above, the cap-and-trade program results in GHG compliance cost being embedded in the market price of electricity procured in the wholesale market and from third parties. The cost to purchase electricity from the wholesale

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[6] SDG&E currently does not have any contracts with asset-controlling suppliers such as BPA or Powerex. ARB assigns an emissions factor based on the entire portfolio for these suppliers.

[7] ARB, Article 5: California Cap on Greenhouse Gas Emissions and Market-based Compliance Mechanisms, Section 95852(b)(4)(C).

market, as well as from suppliers under contracts that include market-based prices, will have these embedded costs of compliance with the cap-and-trade program built into the electricity price. The compliance instrument will be procured by the first deliverer, and will not be procured by SDG&E.

Forecasting SDG&E's expected indirect GHG compliance costs also begins with the SDG&E production simulation model. Once the model is run, SDG&E performs its calculation based on a simplifying assumption that all power sold by SDG&E-controlled assets are used by SDG&E customers, up to the forecasted SDG&E load.[8] If the total CAISO market purchases exceed the MWh from SDG&E-controlled generation, then the assumption is that SDG&E entered into market purchases to cover this difference. To estimate the GHG emissions embedded in these net CAISO market purchases, SDG&E used the default emissions rate from the ARB, 0.428 MT per MWh. This level of emissions is a reasonable estimate in light of CAISO's recent study of the market price of electricity in the first quarter of 2013. The CAISO study showed that the average market price of GHG allowances sold in daily markets in the first quarter of 2013 was $14.55 and that the embedded cost of GHG in market prices over the same time period was $6.15 per MWh.[9] These two figures imply a marginal emissions rate of 0.423 MT per MWh ($6.15/$14.55), well within statistical limits of the 0.428 MT per MWh figure from the ARB.

In addition to market purchases, contracts with some CHP facilities are included in indirect costs. Specific CHP contracts require payments based on a market electricity price (with embedded GHG costs), or a fixed heat rate with the GHG cost based on the contract heat rate, or in other cases, a reimbursement of GHG expenditures incurred by the CHP facility associated

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[8] In fact, however, the generation is bid into the CAISO market and dispatched by CAISO to meet statewide needs. The simplifying assumption is used to calculate net CAISO market purchases – all CAISO purchases less all resources that are forecasted to successfully bid into the CAISO market by SDG&E, including imports.

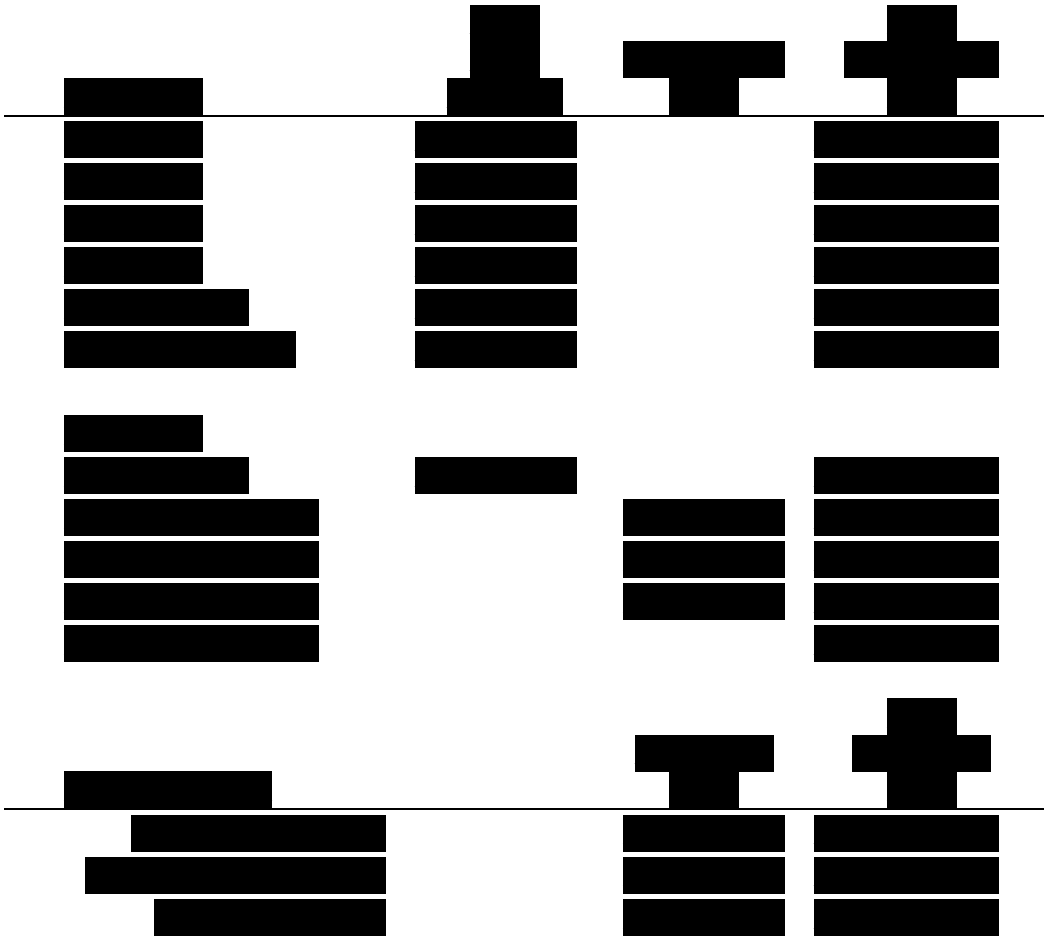
[9] Department of Market Monitoring, CAISO, "Q1 2013 Report on Market Issues and Performance," May 29, 2013, at 41.

with sales to SDG&E. These contracts represent a second source of indirect GHG costs in that the CHP owner acquires GHG compliance instruments.

Contractual GHG costs are not a good estimate of actual GHG costs. Determining actual GHG costs is difficult, however, because it requires knowledge of confidential counterparty data and the choice of method used to split the GHG emissions between electricity production and useful thermal energy. For simplicity, SDG&E estimates GHG costs associated with CHP on the assumption that the CHP units, on average, are as efficient as unspecified power, assigning a 0.428 MT per MWh emissions rate to all purchases of power from CHP facilities.

The GHG emissions from indirect sources are summarized in Table 1 below.[10]

Table 1. 2014 GHG Forecast



[10] This table may be updated or replaced in its entirety when SDG&E files its 2014 ERRA Forecast Application, which includes a forecast of GHG prices and emissions.

Conversions

Natural Gas	0.0531	MTons/MMBtu
Market Purchases	0.4280	MTons/MWh
Imports measured at busbar	0.4280	MTons/MWh
Unspecified Imports	0.4366	MTons/MWh

C. 2014 GHG Costs

1. GHG Cost Forecast

SDG&E's accounting practice in 2012 was to include all allowances acquired in 2012 as costs to be recovered in 2013. These costs include the cost of 2013 allowances for 2013 compliance, [redacted], and the forward purchase of 2015 vintage allowances. All of these costs were included in the forecast of 2013 GHG costs.

Beginning in January, 2013, the SDG&E accounting practice for allowances of future vintages was changed. Allowances of future vintage and banked allowances are no longer included in the current year GHG cost forecast, but are inventoried and included in the GHG cost forecast for the compliance year. Thus, for 2014, the costs of procuring 2017 vintage allowances will not be included in 2014 GHG cost forecasts and any purchase of 2014 allowances in excess of expected compliance obligation for 2014 will not be included in the 2014 GHG cost forecast. [redacted]

[11] [redacted]

Finally, a portion of the GHG costs are expected to be filled by the purchase of offsets, which trade at a discount to the auction price. [redacted]

The expected 2014 GHG costs presented in Table 2 is based on the accounting methodology outlined in the paragraph above.[13]

Table 2. 2014 SDG&E GHG Costs

[redacted]

[12] [redacted]

[13] Table 2 may be updated or replaced in its entirety when SDG&E files its 2014 ERRA Forecast Application, which includes an estimate of GHG costs.

2. 2013 GHG Cost Review

Because 2013 is not yet complete, SDG&E is unable to compare the 2013 forecast of GHG costs with a 2013 estimate of actual GHG costs for the purpose of making a potential adjustment to the small business and residential volumetric return. SDG&E's forecast of 2013 GHG costs will differ from an estimate of 2013 actuals primarily due to (1) inaccuracies in forecasting the expected GHG market price for 2013, (2) volume adjustments due to weather, (3) a different mix of resources than forecast, and (4) potential differences between the Commission's method of calculating indirect GHG emissions, when developed, and the method used by SDG&E in the 2013 GHG emissions forecast.

IV. USE OF ALLOWANCE AUCTION REVENUES FOR CLEAN ENERGY INVESTMENTS IN 2014

SDG&E proposes to set aside allowance auction revenues for potential incremental energy efficiency and clean energy investments in 2014. Consistent with D.12-12-033, Finding of Fact 140, which provides that "[t]he appropriate venue for deciding the manner in which GHG allowance revenues should be allocated toward energy efficiency and clean energy programs is within the various proceedings specifically opened to make such decisions," SDG&E does not request approval of energy efficiency and clean energy investment programs and projects in this proceeding. Approval of such programs will occur in different proceedings, but if funding is approved in those proceedings, SDG&E proposes that the allowance auction revenues fund approved incremental energy efficiency and clean energy programs up to $11 million.[14] In order to have funds available, SDG&E further proposes to set aside $11 million for those potential 2014 programs and projects. If the set aside funds are not used, they should be returned to customers in 2015.

[14] Based on 15% of the minimum revenue expected - 6,549,142 x $10.71 x 1.05 x 15% = $11.05 million.

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

1. The program must be administered by the electrical corporation and not otherwise funded by another funding source.[15]
2. Any funding of clean energy or energy efficiency by GHG allowance revenues should be in addition to funding already provided through general ratepayer funds.[16]
3. A primary goal must be the reduction of GHG emissions, requiring that GHG emissions reductions be a stated and measurable goal of a project.[17]

Since the clean energy and energy efficiency projects potentially funded out of this $11 million reserve would not be approved in this proceeding, SDG&E offers the following examples of the types of projects that might be funded by these cap-and-trade allowance auction revenues. If projects or programs are not approved by the Commission, the set-aside funds would be returned to customers in 2015 in the allowance auction revenue true-up process.

Example 1

Payments Under the Bioenergy Feed-in Tariff – Senate Bill 1122 added sections 399.20(f) (2-4) to the Public Utilities Code in 2012, after passage of SB 1018. The California Public Utilities Commission ("CPUC") is currently considering the structure of this feed-in tariff in Rulemaking 11-05-005. Once in effect, investor-owned utilities will have a standard contract and a streamlined contracting process to acquire an incremental 250 MW of bioenergy, of which SDG&E will have an obligation to acquire contracts totally roughly 22 MW. This program is incremental, would provide reductions in GHG emissions, and annual payments could be paid from this set-aside if approved in R.11-05-005.

[15] D.12-12-033 at 191 (Conclusion of Law No. 7).
[16] *Id*. at 194 (Conclusion of Law number 24).
[17] *Id*. at 135.

Example 2

Water-Energy Nexus Initiative - Currently the 2013-2014 SDG&E's Energy Efficiency ("EE") programs support the (1) installation of water-energy efficiency appliances and equipment, e.g., low flow showerheads, energy efficiency clothes washers, energy efficiency dishwashers, etc.; (2) installation of EE equipment and measures that improve the energy efficiency of water-conveyance processes, e.g., motors, water pumps, process improvements; and (3) water-leak detection programs. Working with its local water agencies and water utility, a potential program would go beyond existing SDG&E programs to develop more aggressive programs to reduce GHG emissions related to water supply, use, and conveyance (e.g., renewable energy, more efficient pumps, water use efficiency/conservation). While these activities may be similar to funding proposed by ARB in its AB 32 Cap-and-Trade Auction Proceeds Investment Plan, SDG&E does not expect any funding from this source in 2014 since the State has borrowed the funds.[18]

Example 3

High Global Warming Potential ("GWP") Gas Reductions – This type of program would work with customers to find and repair leaks for fluids with high GWP. The program would target refrigerants with global warming potential thousands of times more powerful than carbon dioxide. By repairing these leaks, the equipment would have the proper refrigerant charge and operate at peak efficiency, thereby reducing GHG emissions. High GWP gases are expected to double by 2020 without the type of mitigation as proposed under this program.

Example 4

Street Light Initiative - This type of project would be a joint effort with city government customers to upgrade around street lights to advanced and high energy efficient LED lighting. This initiative has the potential to save substantial energy with GHG reductions of thousands of metric tons per year. By upgrading street lights, SDG&E would also have the opportunities to

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

add pilots for advanced lighting features for demand response, enhancing grid reliability by reducing load and ramp as solar shifts the net peak to the 6-8 pm period, and emergency response, where battery systems would provide lighting during blackout periods improving community safety.

Example 5

Online Energy Efficiency Marketplace - This type of project would provide energy efficiency information to customers in order to increase their adoption of products, programs, and offerings available to them. It is often difficult for customers to find access to the full range of energy efficiency-related solutions, so this type of project would develop an internet platform that would act as an aggregator of all energy efficiency-related solutions to assist customers in reducing their overall GHG emissions via creating awareness and access to what they can do in their home or business.

V. EITE ALLOWANCE AUCTION REVENUE SET ASIDE

The first customer group to receive an allocation from the allowance auction revenue is comprised of industrial customers in EITE industries. This group is defined in D.12-12-033 as those firms counted as EITE by ARB, as listed in Table 8.1 of the cap-and-trade regulation, and in the cap-and-trade program for opt-in entities. The Commission left open the issues of whether customers in the same industrial classifications with smaller direct emissions (less than 25,000 MT CO_2e) may receive allowance auction revenue through this process.[19] In addition, the methodology for potentially calculating the revenue return to this group was not finalized, but was determined to be based on a methodology to be developed through the workshop process.[20]

Because there is not yet a final Commission decision resolving outstanding EITE customer allocation methodology issues as of August 1, 2013, SDG&E relies on the Energy Division's "Greenhouse Gas Allowance Revenue Allocation Methodologies for Emissions

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[19] *See* D.12-12-033 at 207 (Ordering Paragraph No. 6).

[20] *Id*. at 215-16 (Ordering Paragraph No. 25).

Intensive and Trade Exposed Entities and Small Businesses" (Staff Report), dated July 10, 2013 to determine the EITE customer revenue set-aside. For the forecasted return of revenues to EITE customers, SDG&E estimates the amount based on Table 2 of the Staff Report and total throughput of customers in the North American Industry Classification System (NAICS) codes of Table 8-1 of the ARB cap-and-trade regulation. Specifically, SDG&E projects EITE customers' usage of 250,580,178 kWhs[21] multiplied by the SDG&E emissions factor associated with consumption from Table 2 of the Staff Report, 0.331 MT/MWh.[22] This formula is consistent with the energy-based allocation formula in equation 12 of the Staff Report.[23] The dollar conversion factor is $13.82, the weighted average of ARB's 2013 vintage allowances sold in 2013 as stated on the Staff Report.[24] The total EITE allocation is then calculated as follows:

250,580.2 MWh x 0.331 MT/MWh x $13.82/MT = $ 1,146,000 (rounded)

The EITE revenue return is less than [redacted] percent of the total amount of allowance revenues returned to customers in 2014.[25] EITE customers will receive the allowance revenues that they are entitled to each year, based on the revenue amounts provided to the IOUs by the CPUC and ARB, regardless of how much revenue is projected in this forecast set aside. Any forecast variance or differential for years 2013 and 2014 can be trued-up in future years once the CPUC-approved calculations are established (i.e., if the set-aside of EITE revenues based on this

[21] Provided to Energy Division in a data request response on June 24, 2013.
[22] 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.
[23] *Id*. at 72.
[24] *Id.* at 67.
[25] This level of funding does not consider expanding the EITE group similar to ARB's July 15, 2013 proposed cap-and-trade revisions. ARB has proposed to expand provision of free allowances to include smaller firms opting-in in the same NAICS codes as the first three digits as the industries listed in Table 8.1 and exempting military installations.

forecast is higher than the actual revenues required to compensate EITE customers, the revenue return to all customers for the following year will be increased for the difference).

VI. 2013 FORECAST OF GHG COSTS AND ALLOWANCE AUCTION REVENUE

Pursuant to D.12-04-046, approving a decision resolving issues in Tracks I and III of the Long-Term Procurement Plan ("LTPP") proceeding, and Advice Letter ("AL") 2387-E, SDG&E was granted the authority to recover costs associated with the cap-and-trade program through its ERRA. Expected GHG direct and indirect costs were detailed in the amended direct testimony of Ryan A. Miller in that proceeding, filed January 8, 2013. Subsequently, in order to allow costs to be offset by revenues generated from the sale of allowances allocated to the investor-owned utilities, D.12-12-033 authorized the utilities to defer recovery of GHG compliance costs until the Commission finalized the methodology for the return of revenues. This testimony presents the same 2013 GHG cost forecast as presented in the Ryan A. Miller testimony.

To forecast the GHG-related costs, SDG&E used the carbon price as publicly reported on the ICE. Specifically, it is the average settled price for the last 22 trading days in August, 2012 for 2013 allowances. This methodology yields a price forecast for the 2013 period of [redacted] per MT. This information is supplemented with the results of the first ARB auction in November 2012, where the market clearing price was $10.09.

The total amount of SDG&E direct costs were on purchases in the 2012 ARB allowance auction plus additional purchases in 2013. The direct GHG purchase costs were estimated to be [redacted] million, which consisted of [redacted] million of direct GHG costs for 2013 and [redacted] million of direct future GHG costs for 2014 – 2016 (banked 2013 allowances plus 2015 and 2016 vintage allowances). The forecast is based on actuals from allowance procurement in the November 2012 auction and a forecast of additional procurement of allowances in 2013.

The cost of GHG emissions will also affect market purchases and contracts based on the price of energy because the price of energy will change in tandem with the change in the GHG allowance prices, as sellers of electricity require higher revenues to offset the costs related to

GHG. The indirect GHG costs are estimated at [redacted] million based on the projected 2013 average allowance auction price of [redacted]/MT. [redacted]

While SDG&E has not calculated a 2013 GHG revenue return, such a forecast can be made using identical assumptions as the 2013 GHG cost forecast. ARB allocated 6,919,340 allowances to SDG&E for 2013. Of those allowances, SDG&E placed 2,307,000 in the November, 2012 auction and received the market clearing price of $10.09. The remaining 4,612,340 allowances are being placed in the ARB auctions for sale in 2013. SDG&E assumes that all the allowances will be sold and estimates the revenues based on [redacted]/MT, the same as was used in the GHG cost forecast in January, 2013. The expected allowance auction revenue for 2013 is then the sum of revenue from the 2012 auction revenues of $23,277,630 plus expected allowance auction revenue in 2013 of [redacted], based on the [redacted] per MT price used in the GHG cost forecast, or a total of [redacted] (rounded).

The set aside for EITE return for 2013 would be calculated in the same manner as for 2014, except using the 2012 auction price of $10.09.

250,580.2 MWh x 0.331 MT/MWh x $10.09/MT = $ 837,000 (rounded)

VII. QUALIFICATIONS

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

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

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

I have previously testified before the Commission on economic analysis issues and have actively participated in workshops on greenhouse gas issues at both the CPUC and the ARB.

This concludes my Prepared Direct Testimony.

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

DECLARATION OF DAVID T. BARKER

Application 13-08-xxx

Application of SDG&E to Return Revenues from the Sale of Greenhouse Gas Allowances and to Recover Forecasted Costs Associated with California's Greenhouse Gas Emissions Reduction Program for 2013 and 2014.

I, David T. Barker, declare as follows:

1. I am an economist for San Diego Gas & Electric Company (SDG&E). As such, I prepared SDG&E's forecast of 2013 and 2014 allowance auction revenues and the 2013 and 2014 forecasts of total Greenhouse Gas ("GHG") costs. I am 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 personal knowledge, except for those matters expressly stated to be based on information provided to me, and as to those matters, I believe them to be true.

2. The data described in the table below is market sensitive information designated as confidential under the Matrix of Allowed Confidential Treatment of Investor Owned Utility Data, adopted as Appendix 1 to D.06-06-066 (the Matrix), and is entitled to confidential treatment under Public Utilities Code section 454.5(g), D.06-06-066 and D.08-04-023:

Confidential Information	Matrix Category	Matrix Category Description	Limitations of Confidentiality
Page DTB - 13, Table 1	I.A.4	Long-term fuel (gas) buying and hedging plans	3 years

3. The data described in the table below does not expressly fall within any category of the Matrix, is market sensitive information analogous to Procurement Costs, Category XI in the Matrix, and is entitled to confidential treatment under D.06-06-066, D.08-04-023, Public Utilities Code section 454.5(g) and General Order 66-C:

Confidential Information	Facts Showing the Consequence of Release
GHG Cost Forecasts Page DTB - 15, Table 2	Providing these forecasts to market participants would allow them to know SDG&E's GHG market holding position, thereby compromising SDG&E's contractual bargaining power such that customer costs are likely to rise. Thus, the release of this non-public confidential information will unjustifiably allow market participants to use this information to the disadvantage of SDG&E's customers.
GHG Cost Forecasts, Page DTB – 21, lines 20 – 21; Page DTB - 22, line 1; Page DTB - 22, lines 3-4	Providing these forecasts to market participants would allow them to know SDG&E's GHG market holding position, thereby compromising SDG&E's contractual bargaining power such that customer costs are likely to rise. Thus, the release of this non-public confidential information will unjustifiably allow market participants to use this information to the disadvantage of SDG&E's customers.

4. All information on past or future bidding strategies, current cap-and-trade allowance market holdings, and GHG price expectations are required to be kept confidential pursuant to the rules of the Air Resources Board as promulgated in Article 5, the Cap-and-Trade Regulation, section 95914 (d). The following sections are designated as confidential to comply with the ARB rules and regulations:

Confidential Information	Facts Showing the Consequence of Release
GHG price expectations Page DTB – 5, lines 37-40	Would provide information on SDG&E GHG price expectations contravening ARB regulations and compromising SDG&E's contractual bargaining power
GHG price expectations Page DTB – 6, line 6	Would provide information on SDG&E GHG price expectations contravening ARB regulations and compromising SDG&E's contractual bargaining power
GHG bidding strategy Page DTB - 6, line 9; Page DTB -7, line 10	Would provide information on SDG&E allowance auction bidding strategy contravening ARB regulations
GHG price expectations Page DTB - 8, line 6	Would provide information on SDG&E GHG price expectations contravening ARB regulations and compromising SDG&E's contractual bargaining power
SDG&E allowance holdings Page DTB - 14, line 5 and lines 13–15	Would provide information on SDG&E's allowance holdings contravening ARB regulations and compromising SDG&E's contractual bargaining power
GHG price and SDG&E market holdings Page DTB - 14, lines 16-20	Would provide information on SDG&E GHG price expectations and allowance holdings contravening ARB regulations and compromising SDG&E's contractual bargaining power
GHG price expectations Page DTB - 15, lines 2-5	Would provide information on SDG&E GHG price expectations contravening ARB regulations and compromising SDG&E's contractual bargaining power
GHG price and SDG&E market holdings Page DTB - 15, Table 2	Would provide information on SDG&E's GHG price expectations and allowance holdings contravening ARB regulations and compromising SDG&E's contractual bargaining power
GHG price expectations Page DTB - 20, line 14	Would provide information that could be used to determine on SDG&E's GHG price expectations contravening ARB regulations and compromising SDG&E's contractual bargaining power
GHG price expectations Page DTB - 21, line 15; Page DTB - 22, line 2	Would provide information that could be used to determine on SDG&E's GHG price expectations contravening ARB regulations and compromising SDG&E's contractual bargaining power

Confidential Information	Facts Showing the Consequence of Release
GHG price expectations Page DTB - 22, lines 10, 13-14	Would provide information that could be used to determine on SDG&E's GHG price expectations contravening ARB regulations and compromising SDG&E's contractual bargaining power

5. I am aware of one instance where the confidential information from page 22, line 4 of my testimony was inadvertently disclosed to the public. I am not aware of any instances where the confidential information described above in Paragraphs 2, 3, and 4 was intentionally disclosed to the public.

6. The confidential information described in Paragraphs 2, 3, and 4 above cannot be provided in a form that is aggregated, partially redacted, or summarized, masked or otherwise protected in a manner that would allow further disclosure of the data while still protecting confidential information, except for what has already been provided.

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

Executed this 1st day of August, 2013, at San Diego, California.

/s/ David T. Barker

David T. Barker
Regulatory Policy Manager
San Diego Gas & Electric Company