Proceeding No.: A.10-10-xxx
Exhibit No.: _____
Witness: Tony Choi

DIRECT TESTIMONY OF

TONY CHOI

SAN DIEGO GAS & ELECTRIC COMPANY

Redacted, Public Version

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA
October 1, 2010

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DIRECT TESTIMONY
OF
TONY CHOI
ON BEHALF OF SDG&E

I. INTRODUCTION

My testimony describes the resources San Diego Gas & Electric Company ("SDG&E") expects to use in calendar year 2011 to provide electric commodity service to its bundled service customers and the procurement costs that SDG&E expects to record in 2011 to the Energy Resource Recovery Account ("ERRA"). A summary of the proposed total 2011 ERRA revenue requirement is contained in the direct testimony of Yvonne M. Le Mieux.

Section II of my testimony describes the supply resources that SDG&E forecasts will be utilized to meet SDG&E's bundled customer load in calendar year 2011. These resources include SDG&E continuing obligations under various long-term power purchase contracts including Public Utility Regulatory Policies Act ("PURPA") contracts, contracts with conventional generators, contracts with renewable generators, SDG&E-owned generation, including 20% of the San Onofre Nuclear Generating Station ("SONGS"), and anticipated short-term market transactions. Section III of my testimony quantifies the costs associated with the resources described in Section II along with other electric procurement requirements that are recorded in ERRA, such as CAISO charges and portfolio hedging costs. My statement of qualifications is found at the end of my testimony.

My testimony makes reference to the following, which are attachments located at the end of the testimony: Attachment A: 2011 ERRA Expense Forecast; Attachment B: Forecast Volumes by Resource Type for 2011; Attachment C: Detail of Long Term Competitive Transition Charge ("CTC") and Qualifying Facility Contract Expense Forecast; and Attachment D: Detail of Renewable Expense Forecast.

II. 2011 FORECAST OF LOAD AND SUPPLY RESOURCES

On January 1, 2003, SDG&E resumed procurement of its Residual Net Short ("RNS") position and assumed operational control of various California Department of Water Resources ("CDWR") long-term contracts, which SDG&E dispatches along with its own supply resources as a single, integrated portfolio. The CDWR contracts allocated to SDG&E include bilateral "must take" contracts, as-available wind resource contracts and dispatchable resource contracts. Costs for these contracts are captured through CDWR's retail remittance rate. SDG&E-procures resources form a diverse portfolio that includes nuclear, renewable, Qualifying Facilities ("QFs") and dispatchable generation. Most of the costs for these resources are captured through the ERRA.

The results contained in this application were developed using the production cost model ProSym from Global Energy Decisions, a Ventyx Company. SDG&E and CDWR resources were modeled in ProSym, which produced generation forecasts for these resources based on contract requirements and forecasts of 2011 natural gas and electric prices. The price forecasts were based on a recent (September 1, 2010) assessment of 2011 market prices based on the average of forward prices over a 22-day period. In the new CAISO market structure following implementation of MRTU on April 1, 2009, SDG&E's bundled load requirements – primarily of energy and ancillary services ("A/S") – are purchased from the CAISO Day-Ahead and Real-Time Markets ("DAM" and "RTM") rather than directly supplied from SDG&E portfolio resources. Similarly, the output from SDG&E's portfolio of resources is sold into the CAISO DAM and RTM rather than directly scheduled to serve SDG&E's bundled load. SDG&E's ERRA forecast for 2011 addresses this new market structure by separating the expected purchase cost of energy and A/S for its bundled load from the expected sales revenue and supply cost of energy and A/S from its resource portfolio.

LOAD FORECAST

The forecast of SDG&E's 2011 bundled load requirement was derived from the California Energy Commission's ("CEC's") statewide forecast published in September 2010. Using the CEC's forecast and adjusting for direct access load, SDG&E projected that its bundled load for 2011 will be [redacted]. This forecast is [redacted]

higher than SDG&E's forecasted bundled load for 2010 ([redacted]). SDG&E's A/S obligations were forecasted to be 6% of load for operating reserves and 2.5% of load for regulation capacity based on the CAISO's historical levels of procurement for these products.

SUPPLY RESOURCE FORECAST

SONGS

SDG&E has a 20% ownership interest in SONGS Units 2 & 3 for a combined capacity of 450 MW.[1] SDG&E sells the output from SONGS into the CAISO market as baseload energy. The forecasted supply of SONGS energy for 2011 is [redacted] for both units, an increase of [redacted] from the forecast for 2010 ([redacted]). The lower forecast for 2010 was due to the steam generator replacement projects that reduced the availability of both units in 2010.

PORTLAND GENERAL ELECTRIC−BOARDMAN

SDG&E has a long-term power purchase agreement with Portland General Electric ("PGE") for 15% of the output of the Boardman coal-fired power plant. SDG&E's current share of plant output is nominally 86 MW at the plant and 83 MW after transmission losses delivered to the CAISO grid at Malin. Based on its variable cost of delivery to CAISO of about $16/MWh, the forecast supply of Boardman energy for 2011 is [redacted] about unchanged from the forecast for 2010 ([redacted]).

This contract contains curtailment provisions whereby SDG&E can reduce its schedule on an hourly basis. The implementation of MRTU allows SDG&E to bid in Boardman energy into the CAISO market at a price to ensure that SDG&E receives revenues sufficient to offset the delivery cost for Boardman. While the relatively low energy price suggests that the contract will be fully scheduled for most available hours, economic bids may result in the amount of energy supplied by Boardman to the CAISO being lower than forecast.

[1] Capacity ratings provided in this testimony are the maximum operating levels defined in the CAISO Resource Data Template for each resource.

QUALIFYING FACILITIES

In 2011, SDG&E will have about 227 MW of capacity under contract with 12 QFs.[2] The five largest QF contracts account for 213 MW or 93% of total QF capacity. All QFs are located in the SDG&E service area except for the Yuma Cogeneration Associates plant ("YCA"), a 56.5 MW natural gas-fired plant in Arizona whose output is imported into the CAISO.

QF contracts are must-take resources. SDG&E is obligated to pay the contract price for all delivered QF generation and schedule it into the CAISO market, with the exception of limited price replacement rights in the YCA and Goal Line contracts. To the extent allowed in these contracts, SDG&E exercises these rights during low-priced hours to maximize ratepayer savings. Typically, these plants will choose to shut down during these hours to avoid operating at a loss. Accounting for these economic curtailments and forecast availability, the forecast of QF energy supply in 2011 is [redacted] (a decrease of [redacted] from the forecasted amount for 2010 [[redacted])]), reflecting the observed reduction in actual QF output during 2010 due to economic self-curtailment.

RENEWABLE ENERGY CONTRACTS

SDG&E procures renewable energy through competitive solicitations and bilateral agreements to meet the Renewable Portfolio Standard ("RPS")[3] established by Senate Bill ("SB") 1078, *et seq*.[4] The forecast of renewable energy supply from Commission-approved contracts for 2011 is 2,190 GWh, which includes 934 GWh of Renewable Energy Credits ("RECs") quantities that are delivered to SDG&E in conjunction with existing non-renewable imports. This forecast is an increase of 349 GWh from the forecast for 2010 (1,841 GWh).

In addition to the renewable energy included in the forecast, SDG&E also expects to receive the following in 2011 towards meeting its RPS target:

[2] The actual number of active QF contracts is over 50, but many of these QF resources only serve on-site load and do not deliver net energy to SDG&E. As a result, these are not included in the production cost model run. The 12 QFs referenced above deliver net energy to SDG&E and are modeled in ProSym.
[3] Some renewable resources have QF contracts and also qualify to meet the Renewable Portfolio Standard. Those resources are reported in the QF sections of this testimony.
[4] *See* e.g., D.03-06-071; D.04-07-029; D.05-07-039; D.06-10-019.

- 21 GWh of renewable energy under existing QF agreements. The quantity and ERRA cost associated with these contracts was included under QFs for the purposes of this testimony.
- 934 GWh of anticipated renewable energy credits from the various wind contracts. The renewable energy credits are delivered using physical deliveries of energy that SDG&E has already accounted for in its 2011 forecast. However, costs associated these renewable energy credits are incremental to ERRA and were included in the ERRA cost forecast.

SDG&E did not include renewable energy quantities or costs under contract from a large solar project in its 2011 forecast. Based on current information, energy deliveries from this contract during 2011 appear unlikely. SDG&E also did not include renewable energy quantities or costs associated with the Sustainable Communities PV program because costs for this program are not charged to ERRA.

SDG&E continues to pursue new renewable energy resources to add to its portfolio for 2011, which will increase ERRA-related quantities and costs. A detailed table of the renewable contracts discussed above is provided in Attachment D.

SDG&E-OWNED DISPATCHABLE GENERATION

SDG&E owns the following power plants: the 565 MW Palomar Energy Center ("Palomar") combined cycle power plant that commenced commercial operation in April 2006, the 48 MW Miramar Energy Facility ("MEF I") peaking combustion turbine that commenced commercial operation in July 2005, and the second 48 MW Miramar peaker ("MEF II") that commenced commercial operation in August 2009. These units are dispatched for generation and A/S awards based on economic merit and SDG&E's requirements. For the 2011 forecast, SDG&E's dispatch model considered only generation dispatched for energy rather than for A/S. The rationale for this approach is that the CAISO co-optimizes market awards between energy and A/S based on the opportunity cost of capacity and, therefore, the economic benefit (and ERRA contribution) of using capacity for generation is equivalent to using capacity for A/S.

The forecasted generation for Palomar in 2011 is [redacted], an increase of [redacted] from the forecast for 2010 ([redacted]). The forecasted generation for MEF 1 & 2

in 2011 is [redacted], higher than the forecast for 2010 ([redacted]). The significant increases in these forecasts reflect improved price modeling that used actual CAISO day-ahead market prices under the new market design. More importantly, the 2011 forecasts better match the observed generation quantities achieved by these units following MRTU implementation.

SDG&E-CONTRACTED GENERATION

SDG&E will have a number of generation units under contract in its resource portfolio in 2011. SDG&E's Power Purchase Agreement ("PPA") for Otay Mesa Energy Center ("OMEC"), a combined-cycle plant, is expected to provide a significant quantity of generation to the CAISO market. The primary benefit of the other contracts will be to offset SDG&E's load requirements from a capacity standpoint. The larger of these contracts are described below:

The OMEC tolling agreement between SDG&E and Calpine began in October 2009. OMEC is an air-cooled 2x1 combined cycled plant that provides up to [redacted] of efficient, gas fired generation capacity. The forecasted generation from OMEC for 2011 is [redacted], an increase of 59 GWh from the forecast for 2010 ([redacted]).

The Orange Grove contract provides [redacted] of peaking capacity and is forecasted to generate [redacted] during 2011.

The Wellhead contract provides [redacted] of peaking capacity and is forecasted to generate about [redacted] during 2011. The difference in forecast between the Wellhead and Orange Grove contracts is due primarily to a higher fuel transportation cost for Wellhead.

SDG&E's 2011 portfolio assumes a [redacted] This extension would [redacted] the loss of this capacity from the existing Encina PPA which will expire at the end of 2010. This contract is forecasted to provide [redacted] of generation in 2011.

MARKET PURCHASES AND SURPLUS SALES

Under MRTU, quantities purchased from the CAISO for SDG&E's load are based on load schedules and economic bids. Quantities sold to the CAISO from SDG&E's resource portfolio are based on completely separate generation schedules and economic bids. Therefore, there is no requirement that load and generation quantities that clear the market must balance.

If in any hour, the quantity of SDG&E's bundled load requirements purchased from the CAISO is greater than SDG&E-controlled generation sold to the CAISO, the difference may be viewed as equivalent to a market purchase. If in any hour, the quantity of SDG&E's bundled load requirements purchased from the CAISO is less than SDG&E-controlled generation sold to the CAISO, the difference may be viewed as equivalent to a market sale.

SDG&E forecasts that the quantity of equivalent market purchases will be [redacted] in 2011, an increase of [redacted] from the forecast for 2010 ([redacted]). This increase is due primarily to the expiration of the Bear Energy B&C DWR must-take contracts that will provide approximately 1,596 GWh in 2010. Likewise, the loss of this contract caused the forecasted quantity of market sales to decline by [redacted] in 2011: ([redacted]) from 2010 ([redacted]).

CDWR ALLOCATION

CDWR contracts will supply an estimated [redacted] of energy to the CAISO in 2011, a decrease of [redacted] from 2010's expected CDWR energy volumes ([redacted]). This decrease is due to the expiration of the must-take contracts described above. SDG&E's resource portfolio will supply an estimated [redacted] of energy to the CAISO in 2011 (excluding REC quantities), an increase of [redacted] from 2010's expected energy volumes ([redacted]). For 2011, the CDWR share of load is projected to be [redacted] (less than the [redacted] projected for 2010), also due to the expiration of the must-take contracts.

III. 2011 FORECAST OF ERRA EXPENSES

Electric procurement expenses incurred by SDG&E to serve bundled load are recorded to the ERRA. These expenses include, but are not limited to, costs and revenues for energy and capacity cleared through the MRTU markets, power purchase contract costs, generation fuel costs, market energy purchase costs, CAISO charges, brokerage fees and hedging costs. Deviations between forecast and actual costs for any of these items will create variances between forecast and actual ERRA costs.

Expenses associated with CDWR resources, including contract costs, gas tolling expenses, and gas hedging expenses are recovered by CDWR through its retail remittance rate and not recorded as an ERRA expense. The ERRA balance may be impacted by CDWR resources, however. For example, lower-than-forecast generation from CDWR contracts would require additional supply from SDG&E's portfolio that is paid by ERRA funds.

SDG&E expects to incur $778 million of ERRA costs in 2011, before FF&U costs (see Attachment A). This forecast is $40 million less than the $818 million forecast for 2010. The key drivers behind the decrease are lower prices for fuel and market purchases. These savings are offset by higher costs for capacity and renewable energy.

The remainder of this testimony will discuss the cost of specific ERRA items in more detail.

LOAD

Under MRTU, the CAISO supplies and sells all energy and A/S to SDG&E to meet SDG&E's bundled load requirement. Based on expected prices for energy and A/S, SDG&E expects to incur charges totaling [redacted] for load requirements in 2011 from the CAISO.

SUPPLY ISO REVENUES

Under MRTU, all generation from SDG&E's resource portfolio is sold to the CAISO. Based on expected prices for energy, SDG&E expects to receive revenues totaling [redacted] for generation produced in 2011. These revenues are largely offset

by costs incurred for generation fuel & variable O&M, contracted energy purchases and generation capacity. These costs are described in more detail below.

GENERATION FUEL & VARIABLE O&M

SONGS:

Only SONGS nuclear fuel expense and fuel carrying charges are booked to ERRA. Other SONGS costs, such as O&M and capital addition, are recorded in the Non-fuel Generation Balancing Account ("NGBA"). The projected ERRA expense for SONGS nuclear fuel and carrying charge expenses for 2011 is [redacted].

PALOMAR, EL DORADO & MIRAMAR (fuel expenses that are recovered through ERRA):

In 2011, the ERRA expense for generation fuel purchased by SDG&E for Palomar, Miramar 1 & 2 and the to-be owned El Dorado plant is forecasted to be [redacted]. SDG&E expects that SDG&E will become the owner of El Dorado on October 1, 2011, per Decision 07-11-046. Capital and non-fuel operating costs for these plants are recovered through the NGBA as required by D.05-08-005 and Resolution E-3896.

CONTRACTED ENERGY PURCHASES

PGE BOARDMAN CONTRACT:

The costs incurred under the PGE Boardman long term PPA include energy, capacity, transmission losses, and transmission capacity from the plant to the CAISO, and include SDG&E's share of any capital additions to the unit. The contract energy payment is based on an energy price ([redacted]) which is applied to SDG&E's share of the plant output. However, the high capacity payment for this contract causes this contract to be a CTC contract; therefore the expense recorded to the ERRA is determined by multiplying the forecast energy production by the proposed market benchmark price of $58.54/MWh. The 2011 ERRA expense for this contract is projected to be [redacted].

QUALIFYING FACILITIES:

All QFs are under contract with SDG&E through as-available capacity or firm capacity PURPA contracts. These contracts include provisions for both energy and capacity payments. The energy payment is determined using the SDG&E Short-Run Avoided Cost ("SRAC") formula[5]. QF contracts are eligible for CTC recovery due to their high capacity payments. Like the PGE Boardman contract, the ERRA expenses for CTC QF contracts are based on delivered energy multiplied by the market benchmark price. Any costs, including capacity payments, greater than the market benchmark price are booked to the Transition Cost Balancing Account ("TCBA"). For the purposes of ERRA accounting, ERRA expenses for CTC QF contracts are recorded on Line 31 of Attachment C, "Qualifying Facilities (Up To Market)," and are forecast to be [redacted] in 2011. Any gas hedging costs incurred to mitigate SRAC-priced QF contracts would also be recovered in ERRA, but those expenses are captured in Line 48 of Attachment A, "Hedging Costs." Attachment C details the breakdown of all the units discussed in this section and shows the associated costs, both ERRA and TCBA, and the forecast energy deliveries.

RENEWABLE ENERGY CONTRACTS:

SDG&E's renewable energy contracts usually contain an energy payment only and no capacity payment. There are some slight differences between renewable contracts regarding energy payments based on schedules or metered energy, and the treatment of CAISO imbalance charges, depending on the type of resource. In 2011, SDG&E's renewable energy portfolio will include a cost for the renewable energy credits described in Section II under "Renewable Energy Contracts." None of the renewable energy contracts in the SDG&E portfolio are CTC contracts. All costs associated with these contracts are booked as an ERRA expense and are forecast to be $27 million for 2011. Attachment D details the renewable projects by fuel type, their costs and forecasted energy deliveries.

[5] The derivation of the SRAC price for QF contracts is posted monthly on an SDG&E website (URL: http://www2.sdge.com/SRAC/).

OTHER PURCHASED POWER CONTRACTS:

SDG&E's forecast of total costs for non-renewable power purchase contracts in 2011 is [redacted]. These costs cover capacity payments and variable generation costs for OMEC, Encina, Boardman, QFs and several peakers. The largest components in this category are capacity and generation costs for the OMEC unit, expected to be [redacted], and capacity and generation costs for [redacted], expected to be [redacted].

INTER-SCHEDULING COORDINATOR TRADES ("ISTs"):

Under MRTU, SDG&E may transact ISTs bilaterally with counterparties to hedge long or short positions. Under an IST purchase, SDG&E would pay the counterparty the contracted energy price and in return receive payment from the CAISO based on the MRTU market clearing price. Under an IST sale, SDG&E would receive payment from the counterparty based on the contracted energy price and in return pay to the CAISO the MRTU market clearing price. For IST purchases and sales, the payment to, or revenue from, the counterparty would be largely offset by the respective credit from, or payment to, the CAISO. Because ISTs are used as a hedge against unknown MRTU prices, SDG&E does not include a forecast of net cost or benefit from these transactions.

CAISO RELATED COSTS

SDG&E forecasts CAISO grid management charges ("GMCs") that are allocated to load and resources, which include energy usage charges, energy transmission service charges, and reliability services costs. The forecast of these charges is based on historical data. SDG&E's forecast of these CAISO costs is expected to be [redacted] in 2011.

URG HEDGING COSTS

SDG&E's resource portfolio has substantial exposure to gas price volatility as a result of fuel requirements for its gas-fired resources as well as the gas price-based pricing formula for its QF contracts. To manage this exposure, SDG&E expects to continue its hedging activity, and to book the resulting hedging costs and any realized gains and losses from hedge transactions to ERRA. The current estimate of hedging costs for 2011 is [redacted], calculated as the marked-to-market profit/loss of hedges

already in place plus expected broker fees. The profit/loss of these and future hedges placed will rise and fall with market prices. Therefore, the final cost or savings will not be known until the settlement process has been completed for the hedge transactions.

SDG&E may also trade short-term financial power products to hedge its long or short position against potentially volatile MRTU market clearing prices. Similar to ISTs described above, SDG&E does not include a forecast of net cost or benefit from these power hedges due to the unpredictability of market prices relative to the price of the hedges.

CONVERGENCE BIDS

SDG&E has requested authorization from the Commission to utilize convergence bids when the CAISO launches this product in February 2011. A decision is expected after October 2010. As described in the request for authorization, SDG&E's primary use of convergence bids would be to hedge certain operational risks in the day-to-day management of its portfolio. Whether or not approval is granted, it is not possible to forecast the gains or losses associated with potential convergence bidding activity because of the unpredictable relationship between day-ahead and real-time prices. Therefore SDG&E did not forecast an ERRA revenue/charge for convergence bids.

CONGESTION REVENUE RIGHTS

The CAISO day-ahead market establishes a market clearing price (which may include a congestion charge component) at each price node ("Pnode"). If congestion occurs where a generator is located, the market clearing price will be lower at that Pnode and the CAISO will consequently pay a lower price for energy delivered there. If congestion occurs where a load is located, the market clearing price will be higher at that Pnode and the CAISO will consequently charge a higher price for load served there.

Market participants, including SDG&E, were allocated Congestion Revenue Rights ("CRRs") for which they can nominate source and sink Pnodes to match those in their portfolio. If congestion arises between the source and sink Pnodes, the CAISO will pay the market participant holding the CRR the congestion charges to offset the congestion costs incurred. SDG&E expects its CRRs to generate revenues from the

CAISO to offset congestion costs incurred within its portfolio. However, expected revenues were not forecast for the 2011 ERRA forecast because SDG&E assumed congestion-free clearing prices to develop forecasts for load requirement costs and generation revenues. A forecast of CRR revenues would have required SDG&E to forecast offsetting market-congestion prices at various Pnodes over the 2011 period, which would have introduced complexity and additional uncertainty into the forecast.

This concludes my direct testimony.

IV. QUALIFICATIONS

My name is Tony Choi. My business address is 8315 Century Park Court, San Diego, California, 92123-1548. I am currently employed by SDG&E as Market Operations Manager. My responsibilities include overseeing a staff of schedulers involved in scheduling and bidding the SDG&E bundled load portfolio of supply assets for the benefit of retail electric customers. This includes operational administration of CDWR contracts, transacting in the real-time wholesale market and managing scheduling activities in compliance with CAISO requirements. I assumed my current position in March 2007.

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

I previously managed the Electric Power and Generation Fuel trading desks for SDG&E, primarily managing day-ahead and forward dispatch and procurement of energy in compliance with least-cost dispatch. Prior to joining SDG&E in 2002, my experience included two years as a power plant engineer, four years as an energy trader and three years as a wholesale energy transaction structurer.

I have previously testified before the CPUC.

Attachment A

ATTACHMENT A - SDG&E 2011 ERRA EXPENSES

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2011
1	EXPENSES													
2	Load ISO Charges (Energy & A/S Costs)													
3	Supply ISO Revenues													
4	Contract Costs (non-CTC)													
5	Contract Costs (CTC up to mkt)													
6	Generation Fuel													
7	Other ISO Related Costs (GMC & Other)													
8	Hedging Costs (inc. Broker Fees)													
9	OMEC/Calpine PPA Equity Re-Balancing Costs													
10	**Total Balancing Account Expenses**	$ 70,177,038	$ 54,679,134	$ 57,057,043	$ 53,855,279	$ 55,175,942	$ 67,060,029	$ 77,579,653	$ 82,895,075	$ 73,380,688	$ 59,800,499	$ 58,717,135	$ 67,591,072	$ 777,968,587

Line 4 Contract Costs (non-CTC)

Otay Mesa Energy Center PPA payment	
Otay Mesa Energy Center Energy Costs	
Lake Hodges	
Celerity	
Kelco	
Wellhead Peaker Costs	
Orange Grove Peaker Costs	
NRG Capacity Costs	
NRG Energy Costs	
Renewable Energy	
Line 6 Total	

Line 5 Contract Costs (CTC up to mkt))

Portland General Electric (Up To Market)	
Qualifying Facilities (Up To Market)	
Line 7 Total	

Line 6 Generation Fuel

SONGS, Fuel	
Nuclear Fuel Carrying Cost	
Total SONGS	
Palomar	
El Dorado	
Miramar	
Miramar 2	
Line 8 Total	

Attachment B

ATTACHMENT B - SDG&E 2011 URG DELIVERY VOLUMES

URG Deliveries (GWh)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2011
SONGS 2													
SONGS 3													
TOTAL SONGS													
PGE (Boardman)													
CTC QF													
Non-CTC QF													
TOTAL QF													
Renewable - Bio Gas	16	15	17	16	16	16	19	19	18	17	16	16	200
Renewable - Bio Mass	32	27	32	31	32	30	35	35	35	31	30	32	381
Renewable - Geothermal	18	16	18	17	18	17	19	19	18	18	17	18	211
Renewable - Other	1	1	1	2	1	2	2	3	3	1	1	1	20
Renewable - Solar Thermal	-	-	-	-	-	0	1	2	5	8	9	10	35
Renewable - Wind	25	27	38	42	42	41	38	34	35	38	27	24	409
Renewable - Wind REC	79	71	87	91	95	93	65	54	67	73	75	82	934
TOTAL NON-QF RENEWABLE	171	157	192	199	204	199	178	165	181	185	175	183	2,190
Miramar													
Miramar 2													
Palomar													
Otay Mesa Energy Center													
Encina													
El Dorado													
Celerity													
Kelco													
Lake Hodges													
Wellhead													
Orange Grove													
TOTAL GENERATION													
Economic RNS - On Peak													
Economic RNS - Off Peak													
TOTAL Market Purchase													
TOTAL URG DELIVERIES													
Surplus Energy Sold													
LOAD REQUIREMENT (GWh)													

Note 1: Total URG deliveries do not include Wind REC
Note 2: Load Requirement is SDG&E bundled load including load served by CDWR contract energy and transmission losses.

Attachment C

ATTACHMENT C - SDG&E 2011 LONG-TERM POWER PURCHASE, CTC & QUALIFYING FACILITY DETAIL

URG Deliveries (GWh)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2011
Long Term Power Purchase CTC													
PGE Boardman													
SRAC Priced CTC QF													
Goal Line QF													
Naval Station QF													
North Island QF													
Navy Training Center QF													
San Marcos Landfill (SO4)	0.83	0.73	0.86	0.75	0	0	0	0.0	0.0	0.0	0.0	0.0	3.2
Sycamore Landfill (SO4)	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0
Yuma Cogen Associates QF													
Otay Landfill 2	1.1	0.9	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
Navy Training Center QF - Steam Turbine													
Aggregation of Hydro Units (SO1)	0.9	0.6	0.9	0.6	1.0	0.5	1.7	1.7	1.4	0.9	0.7	0.9	11.7
Badger Filteration Plant	0.2	0.1	0.2	0.1	0.2	0.1	0.3	0.3	0.3	0.2	0.1	0.2	2.1
Subtotal													

ERRA Expenses (K$)

Long Term Power Purchase CTC (to Line 33 of Attachment A)	
CTC QF (to Line 34 of Attachment A)	
Non CTC QF	

TCBA Expenses (K$)

Long Term Power Purchase CTC	

Attachment D

ATTACHMENT D - SDG&E 2011 RENEWABLE RESOURCE DETAIL

URG Deliveries (GWh)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2011
BIO GAS													
GRS Sycamore Landfill Plant	1.6	1.4	1.6	1.5	1.6	1.5	1.7	1.6	1.7	1.5	1.6	1.5	18.7
MM Prima Deshecha Energy LLC	3.8	3.6	3.8	3.9	3.7	3.9	4.3	4.5	4.3	3.9	3.8	3.8	47.2
MM San Diego LLC - Miramar Landfill	2.2	2.0	2.2	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2.2	25.9
MM San Diego LLC - North City Bio Plant	0.6	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.6	7.3
Covanta Otay 1	1.0	0.8	1.0	0.9	1.0	0.9	1.2	1.2	1.2	1.0	0.9	1.0	12.2
Covanta Otay 3	2.0	1.8	2.1	1.9	2.1	1.9	2.2	2.2	2.0	2.1	1.9	2.0	24.0
San Diego MWD	1.8	1.4	1.9	1.4	1.9	1.3	2.6	2.5	2.3	1.8	1.7	1.7	22.3
GRS Coyote Canyon	3.4	3.2	3.4	3.4	3.5	3.4	3.8	3.9	3.9	3.5	3.4	3.4	42.2
Subtotal	16.3	14.7	16.6	15.7	16.4	15.7	18.7	18.8	18.2	16.6	15.9	16.3	199.8
BIO MASS													
Covanta Delano	24.3	20.4	24.0	23.9	24.5	22.9	26.4	26.9	27.1	23.2	22.9	24.8	291.2
Blue Lake	7.5	6.7	7.5	7.1	7.5	7.1	8.2	8.2	7.9	7.5	7.3	7.4	89.9
BullMoose	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	31.8	27.1	31.5	31.0	32.0	30.0	34.6	35.0	35.0	30.7	30.2	32.2	381.1
GEOTHERMAL													
Calpine Geysers	17.7	16.0	17.6	17.4	17.6	17.1	18.5	18.6	18.0	17.8	17.0	17.9	211.2
Subtotal	17.7	16.0	17.6	17.4	17.6	17.1	18.5	18.6	18.0	17.8	17.0	17.9	211.2
OTHER													
Rancho Penasquitos	1.4	1.4	1.2	1.6	1.3	1.6	2.4	2.6	2.7	1.4	1.4	1.4	20.1
Subtotal	1.4	1.4	1.2	1.6	1.3	1.6	2.4	2.6	2.7	1.4	1.4	1.4	20.1
SOLAR													
Stirling Solar	0.0	0.0	0.0	0.0	0.0	0.5	1.1	1.9	5.1	7.7	8.6	10.2	35.1
Subtotal	0.0	0.0	0.0	0.0	0.0	0.5	1.1	1.9	5.1	7.7	8.6	10.2	35.1
WIND													
Glacier Wind	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shell Energy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kumeyaay	14.2	14.5	14.7	15.2	10.4	9.2	6.0	6.2	9.9	14.4	12.1	10.6	137.3
Oasis Power Partners	0.0	0.0	0.0	0.0	0.0	0.0	6.1	5.8	5.1	4.5	1.9	1.5	24.9
PacifiCorp	6.3	7.0	12.1	14.3	17.8	17.3	15.1	11.3	9.6	10.2	8.3	8.3	137.4
PPM Energy	3.3	4.1	8.4	10.0	11.1	11.5	8.3	8.1	8.1	7.1	3.5	2.4	85.8
WTE Monecito	0.9	1.1	2.7	2.5	3.0	3.2	2.5	2.4	2.1	1.9	0.8	0.6	23.7
Subtotal	24.8	26.6	37.9	41.9	42.3	41.1	37.9	33.8	34.7	38.0	26.5	23.5	409.1

Total Power Purchase Costs (K$)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2011
BIO GAS	$ 1,030	$ 919	$ 1,049	$ 975	$ 1,038	$ 973	$ 1,200	$ 1,206	$ 1,159	$ 1,044	$ 997	$ 1,035	$ 12,626
BIO MASS	$ 2,521	$ 2,156	$ 2,503	$ 2,456	$ 2,540	$ 2,378	$ 2,744	$ 2,778	$ 2,768	$ 2,443	$ 2,394	$ 2,552	$ 30,233
GEOTHERMAL	$ 2,024	$ 1,824	$ 2,006	$ 1,961	$ 2,029	$ 1,938	$ 2,120	$ 2,120	$ 2,052	$ 2,006	$ 1,961	$ 2,032	$ 24,074
OTHER	$ 98	$ 99	$ 83	$ 114	$ 91	$ 113	$ 174	$ 186	$ 198	$ 99	$ 99	$ 99	$ 1,453
SOLAR	$ -	$ -	$ -	$ -	$ -	$ 52	$ 124	$ 216	$ 568	$ 865	$ 961	$ 1,147	$ 3,932
WIND	$ 1,257	$ 1,349	$ 1,914	$ 2,109	$ 2,117	$ 2,060	$ 2,282	$ 2,065	$ 2,067	$ 2,206	$ 1,461	$ 1,287	$ 22,174
WIND (REC)	$ 2,150	$ 1,947	$ 2,508	$ 2,648	$ 2,782	$ 2,781	$ 1,916	$ 1,587	$ 1,957	$ 2,071	$ 2,029	$ 2,198	$ 26,573
Subtotal	$ 9,079	$ 8,294	$ 10,064	$ 10,262	$ 10,596	$ 10,295	$ 10,560	$ 10,156	$ 10,769	$ 10,734	$ 9,902	$ 10,351	$ 121,063

BEFORE THE PUBLIC UTILITIES
COMMISSION OF THE STATE OF CALIFORNIA

DECLARATION OF TONY CHOI

A.10-10-XXX
Application of San Diego Gas & Electric Company (U 902 E)
For Adoption of its 2011 Energy Resource Recovery Account (ERRA) Forecast Revenue Requirement and Review of its Power Procurement Balancing Account

I, Tony Choi, do declare as follows:

1. I am a Market Operations Manager for San Diego Gas & Electric Company ("SDG&E"). I included my Prepared Direct Testimony ("Testimony") in support of SDG&E's October 1, 2010 Application for Adoption of its 2011 Energy Resources Recovery Account (ERRA) Forecast Revenue Requirement and Review of its Power Procurement Balancing Account. Additionally, as Market Operations Manager, I am thoroughly 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.

2. I am providing this Declaration to demonstrate that the confidential information ("Protected Information") in my Testimony falls within the scope of data provided confidential treatment in the IOU Matrix ("Matrix") attached to the Commission's Decision ("D.") 06-06-066 (the Phase I Confidentiality decision). Pursuant to the procedure set forth in D.08-04-023 for testimony in a formal proceeding, I am addressing each of the following five features of Ordering Paragraph 2 of D.06-06-066:

- that the material constitutes a particular type of data listed in the Matrix;
- the category or categories in the Matrix the data correspond to;
- that SDG&E is complying with the limitations on confidentiality specified in the Matrix for that type of data;
- that the information is not already public; and

- that the data cannot be aggregated, redacted, summarized, masked or otherwise protected in a way that allows partial disclosure.

3. The Protected Information contained in my testimony constitutes material, market sensitive, electric procurement-related information that is within the scope of Section 454.5(g) of the Public Utilities Code.[1] As such, the Protected Information is allowed confidential treatment in accordance with the Matrix, as follows:

- Page TC-3: redacted items on lines 2 through 3 are protected under Matrix category V.C and confidential for "the front three years"; redacted items on lines 12 through 13 are protected under Matrix category IV.A and confidential for three years; redacted items on line 23 are protected under Matrix category IV.E and confidential for three years
- Page TC-4: redacted items on lines 14 through 15 are protected under Matrix category IV.B and confidential for three years
- Page TC-5: redacted items on lines 30 through 31 are protected under Matrix category IV.A and confidential for three years
- Page TC-6: redacted items on line 1 are protected under Matrix category IV.A and confidential for three years; redacted items on lines 15 through 21 are protected under Matrix category IV.F and confidential for three years; redacted items on lines 24 through 27 are protected under Matrix category IV.F and confidential until January 1, 2011.
- Page TC-7: redacted items on lines 12 through 13 are protected under Matrix category IV.J and confidential for the "front three years"; redacted items on lines 16 through 17 are protected under Matrix category IV.K and confidential for the "front three years"; redacted items on lines 20 through 26 are protected under Matrix category V.G and confidential for the "front three years"
- Page TC-8: redacted items on lines 21 and 27 are protected under Matrix category II.B.1 and confidential for three years

[1] In addition to the details addressed herein, SDG&E believes that the information being furnished in my Testimony is governed by Public Utilities Code Section 583 and General Order 66-C. Accordingly, SDG&E seeks confidential treatment of this data under those provisions, as applicable.

- Page TC-9: redacted items on lines 6 and 11 are protected under Matrix category II.B.1 and confidential for three years; redacted items on lines 21 and 26 are protected under Matrix category II.B.4 and confidential for three years
- Page TC-10: redacted item on line 7 is protected under Matrix category II.B.3 and confidential for three years; redacted item on line 28 is protected under Matrix category II.B.4 and confidential for three years
- Page TC-11: redacted items on lines 1 through 2, line 19 and line 27 are protected under Matrix category II.B.4 and confidential for three years
- Page TC-12: redacted item on line 4 is protected under Matrix category II.B.4 and confidential for three years
- Attachment A, spreadsheet "SDG&E 2011 ERRA Expenses" is protected under Matrix category XI and confidential for three years
- Attachment B, spreadsheet "SDG&E 2011 URG Delivery Volumes" is protected under Matrix category IV. Specifically, SONGS, Palomar, El Dorado and Miramar data are protected under Matrix category IV.A and confidential for three years; PGE-Boardman data are protected under Matrix category IV.E and for three years; QF data are protected under Matrix category IV.B and confidential for three years; Otay Mesa, Celerity, Kelco, Lake Hodges, Wellhead and Orange Grove data are protected under Matrix category IV.F and confidential for three years; Encina data are protected under Matrix category IV.F and confidential until January 1, 2011; Market Purchase data are protected under Matrix category IV.J and confidential for the "front three years"; Surplus Energy Sold data are protected under Matrix category IV.K and confidential for the "front three years"; Load Requirement data are protected under Matrix category V.C and confidential for the "front three years"
- Attachment C, spreadsheet "SDG&E 2011 Long-Term Power Purchase, CTC and Qualifying Facility Detail" is confidential and protected under Matrix categories IV.B and IV.E. Specifically, PGE-Boardman data are protected under Matrix category IV.E and confidential for the "front three years"; individual QF data are protected under Matrix category IV.B and confidential for the "front three years"; Long Term Power Purchase CTC data are protected under Matrix category II.B.4 and confidential for three years; CTC QF & Non CTC QF data are protected under Matrix category II.B.3 and

confidential for three years; TCBA Expenses data are protected under matrix categories II.B.3 and II.B.4 and confidential for three years

4. I am not aware of any instances where the Protected Information has been disclosed to the public. To my knowledge, no party, including SDG&E, has publicly revealed any of the Protected Information.

5. I will comply with the limitations on confidentiality specified in the Matrix for the type of data that is provided herewith.

6. The Protected Information 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.

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 October, 2010, at San Diego, California.

Tony Choi
Market Operations Manager
San Diego Gas & Electric Company