Application of SAN DIEGO GAS & ELECTRIC COMPANY (U 902 E) For Authority To Implement Optional Pilot Program To Increase Customer Access To Solar Generated Electricity

Application 12-01-___
Exhibit No.: _____

PREPARED DIRECT TESTIMONY OF

CHRIS YUNKER

CHAPTER 3

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

JANUARY 17, 2012

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CHAPTER 3

***Connected…..to the sun*.**

I. OVERVIEW AND PURPOSE

With respect to the "*connected..... to the sun*"[1] options proposed in this Application, my testimony describes how the procurement and use of solar energy in these programs fits within SDG&E's portfolio of resources. It also addresses how bundled customers are protected from cost shifts from these programs through the calculation of an "indifference amount" which allows for sustainable growth of solar energy. Specifically, my testimony outlines the methodology used to calculate the price adjustments to the solar commodity cost (calculated as an indifference amount for non-participating customers) and the contracting and pricing mechanisms for securing solar energy for these programs.

[1] As described in the prepared testimony of James P. Avery and Dawn Osborne submitted with this Application, *connected…..to the sun* is the umbrella term under which SDG&E will offer its customers two tariffed options to access solar electricity. The options are "*SunRate*," under which customers may elect to have a portion of their electric commodity costs derived from the portfolio of local solar generating projects under contract to SDG&E, and "*Share the Sun*," which gives customers the opportunity to contract directly with solar providers for electricity to be delivered to the customer by SDG&E. Citations to testimony herein will be to the prepared testimony submitted in support of this Application, unless otherwise indicated.

II. *SUNRATE* RESOURCE PROCUREMENT, PRICING, AND REC TREATMENT

SDG&E proposes to utilize a limited quantity of in-service territory solar RPS resources[2] to support a tariff providing customers with access to local solar generation. This pilot service will offer customers access to pricing advantages over rooftop solar provided by economies of scale and locations with maximum sun exposure, while protecting bundled ratepayers from exposure to cross-subsidies. Additionally, the renewable attributes of solar generation subscribed under the tariff will be retired by SDG&E on behalf of the customer and not counted towards RPS compliance. This REC treatment reinforces the customer's "solar experience, *i.e.,* that the customer, not SDG&E, is financially responsible for the customer's solar procurement under the program. In addition, this REC treatment will ensure that the program results in renewable procurement above and beyond RPS mandates.

A. Basis for *SunRate* pricing

The pricing for *SunRate* starts with a rate for solar generation equal to the estimated cost of local solar plus the *SunRate* customer's portion of the bundled portfolio costs, net of the value of local solar energy relative to that of the balance of bundled resources. This pricing is fixed at the time of customer's application for the customer's selected contract term. The estimated cost of local solar in *SunRate* is equal to the then current average cost of local solar from projects delivering in SDG&E's portfolio.

The figure below illustrates how the *SunRate* customer's solar energy cost is fixed over the subscription term as compared to SDG&E's energy cost from the balance of resources that can vary up or down.

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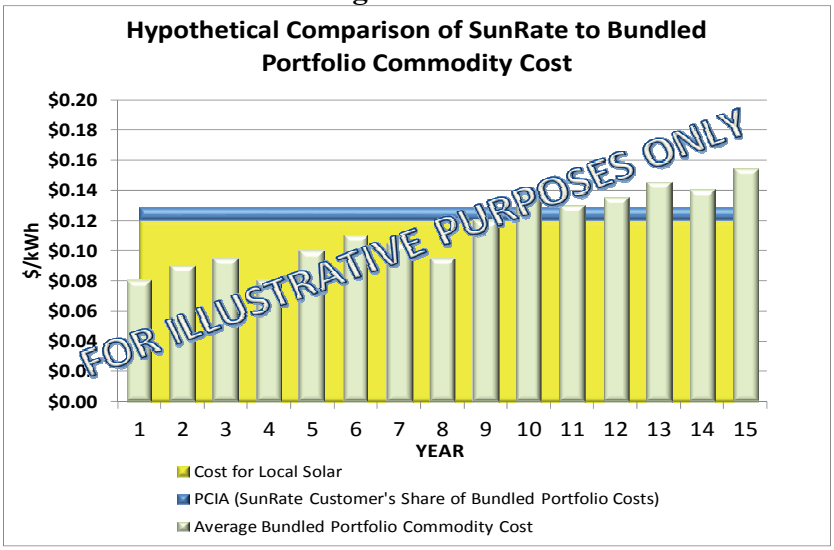
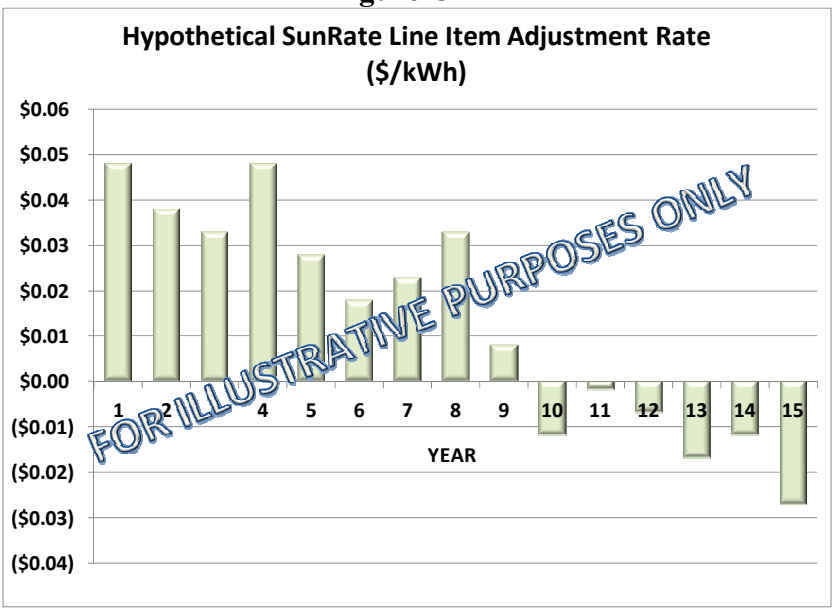
[2] "RPS refers to California's "Renewables Portfolio Standard" established pursuant to Public Utilities Code § 399.11, under which California investor-owned utilities are obliged to procure 33% of their electric energy from renewable resources by 2020.

Figure CY-1[3]



The *SunRate* customer's line item adjustment is the difference between that fixed local solar energy cost with adjustments and the variable energy cost from SDG&E's balance of resources on a $/kWh basis (*See* Figure CY-2).

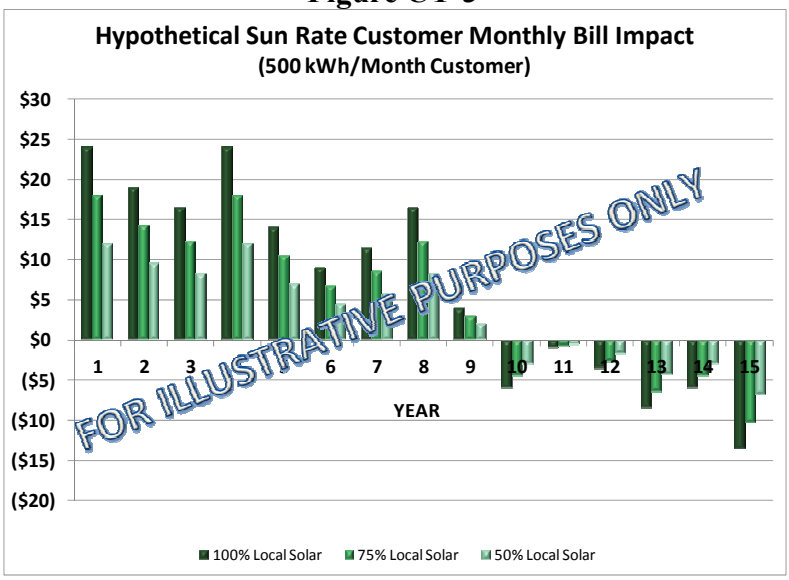
Figure CY-2



[3] The commodity costs for solar and SDG&E's remaining balance of resources are illustrative and provided to demonstrate the dynamics of the *connected…..to the sun* programs. They **do not** represent a forecast of commodity costs for either local solar or bundled portfolio resources.

Depending upon how total electric commodity costs compare to the cost of local solar the line item adjustment under *SunRate* can result in a premium or discount to the otherwise applicable bill (See Figure CY-3).

Figure CY-3



B. Procurement Sourcing of Local Solar Energy for *SunRate*:

For the purposes of providing bundled customers the *SunRate*, SDG&E proposes to allocate up to approximately 21,900 MWh per year (10 MW at an implied capacity factor of 25%) of solar energy procured and approved by the Commission as part of the Eligible Renewable Energy Resources SDG&E must procure pursuant to the California RPS (Public Utilities Code §§ 399.11 *et seq*.), Decision ("D.") 03-06-071, or other applicable law.

Drawing from existing contracts for the *SunRate* program also provides some cost relief for bundled customers in the event of over-procurement of RPS resources that could result from events such as sales below forecasts or higher than expected RPS contract success rate.

To measure progress towards the pilot program's cap, the sum of participating customer's prior years weather-adjusted annual energy use will be the point of comparison to the program's cap of 21,900 MWh. The weather adjustment will assist in planning the procurement of

renewable energy and to ensure adequate resources are available to meet *SunRate* commitments. If at the end of the year customer energy use exceeded the 21,900 MWh cap, SDG&E expects to have sufficient volumes of delivering local solar resources to provide the needed energy for the pilot program.[4]

C. Pricing of Local Solar Commodity for *SunRate*

SDG&E will calculate the price per kWh at the estimated average cost of energy delivered to SDG&E from local solar projects. The estimated average cost is used to provide an accurate price of providing local solar energy which in turn mitigates cost shifts from the program.

The options will include fixed solar prices for 1, 5, 10 and 15 year subscription billed on a monthly basis. The estimated average price for each term will be the levelized price based on the contractually expected deliveries from all RPS contracts meeting qualifying criteria. The price is levelized so that the costs for any subscription term are representative of the costs that are incurred to procure local solar energy over that term. The methodology for establishing pricing in the pilot program will be reviewed with any future expansion of *SunRate* to ensure that the methodology is maintaining bundled customer indifference.

D. Adjustment to Bundled Ratepayers' RPS Responsibility

Share the Sun customers will meet all, or as customer elects, a portion, of their energy needs with RPS-eligible power. Therefore when calculating SDG&E's RPS requirements, retail sales through the *SunRate* program will be subtracted from bundled retail sales numbers prior to calculating SDG&E's RPS compliance requirements. There is an adjustment for *SunRate*

[4] At the time of this filing, SD&E has contracted for over 200 MW of solar capacity from solar projects located within its service territory that will be delivering in 2013 when the *SunRate* program is expected to begin.

customers through the renewable premium adjustment in the indifference calculation (described at Section III, *infra*) to account for their proportional share of RPS requirements through the *SunRate* program. This is done to ensure that the cost responsibility for meeting RPS requirements is properly apportioned among *SunRate* and bundled customers.

E. RPS Penalty Accommodations for Increased Level of Renewables

SDG&E intends to manage its portfolio to take into account a reasonable project failure rate and the capacity needed to serve *SunRate* customers. If SDG&E fails to meet RPS requirements because of volumes allocated to Sun Rate customers, it requests that the Commission waive the application of any associated penalties or other enforcement action[5] related to the level of energy provided under the SunRate program. SDG&E will voluntarily retire RECs equivalent to the shortfall within a three year period to ensure the goal of an increase in renewable energy serving San Diego is met. Three years will provide enough time to ensure additional projects can get built to meet customer demands.

Waiving enforcement is appropriate as if approved, *connected….. to the sun* will ultimately raise SDG&E's total renewable procurement, consistent with the goal of the California legislature's renewables policy. The proposed programs will increase access to local solar energy as well as the total percentage of renewable energy serving San Diego. SDG&E would ultimately be responsible for meeting this increased level of renewable energy deliveries. This is an optional program that increases the uncertainty in the targeted levels of procurement for RPS eligible solar energy, a product which requires long term commitments by SDG&E through power purchase agreements ("PPAs") in order to get built.

[5] Cal. Pub. Util. Code § 399.11, §§ 2100 *et al*, SB 2(1X) (Stats. 2011, Ch. 1).

To the extent that the *SunRate* pilot requires that SDG&E sign additional contracts for RPS compliance, then SDG&E will use RPS procurement criteria to replace those contracts to satisfy any regulatory requirements, as well as consumer demand.

F. *SunRate*'s Impact on Procurement Planning

For the *SunRate* program SDG&E will estimate total MWhs needed to serve *SunRate* customers based on their previous year's weather-adjusted energy use or, if such information is not available, a reasonable methodology. SDG&E will then use this estimate to ensure that the total volume of energy needed to serve *SunRate* customers does not exceed the 10 MWs set aside for the pilot program. Actual energy use at the end of the year, however, may exceed this 10 MW allocation. SDG&E expects to have a robust reserve of solar projects within its service territory to be able to fulfill any unanticipated increase in customer energy usage.[6] However, as the program expands, SDG&E would need to manage this risk. SDG&E will study this during the pilot and address it if and when the program expands.

G. *SunRate* Billing Calculations

The *SunRate* billing calculations are designed to maintain bundled customer indifference. The line item adjustment on a *SunRate* customer's bill reflects the cost to be served by local solar relative to SDG&E's average bundled portfolio commodity cost.

1. Line Item for Incremental *SunRate* Cost

A participating customer's bill will show a line item multiplying the incremental cost for the *SunRate* by the participant's monthly energy consumption and participation level, 50, 75 or 100 percent.

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[6] SDG&E has signed contracts that would provide over 200 MW of local solar capacity by 2013, when this pilot program is expected to begin. SDG&E will only offer subscriptions up to the level of what is delivering or the program cap of 10 MW with consideration for variability in customer energy consumption.

2. Incremental *SunRate* Cost

The incremental *SunRate* cost is calculated as the then applicable fixed solar price established in Section C above, plus the levelized Procurement Cost Indifference Adjustment ("PCIA") and adjustments for the differential in the value of solar energy relative to the bundled portfolio[7] less the bundled portfolios average commodity cost. What is captured is the difference in the cost of solar relative to the commodity cost underlying SDG&E's electric rates (See Figures CY-1 through CY-3).

III. *SHARE THE SUN* RESOURCE PROCUREMENT, PRICING, REC TREATMENT

SDG&E proposes to contract for a limited quantity of in-service territory solar resources to support *Share the Sun.* This program is intended to provide an additional solar alternative for customers and to expand the potential customer base for solar developers.

A. How the *Share the Sun* Rate is Adjusted to Maintain Bundled Customer Indifference

This program uses the same fundamental pricing structure as *SunRate,* with adjustments for the solar commodity cost and customer credits for a participating customer's solar energy subscription level. Another difference between the two programs is that the solar energy allocated to *Share the Sun* customers can vary independent of a customer's actual annual energy use. The amount of energy customers will receive will depend on each customer's agreement with their respective *Share the Sun* developer/providers.

In terms of the line item adjustment calculation for *Share the Sun*, the only difference is that the cost of local solar, as shown in Figure CY-1, is the then-applicable SB32 FiT pricing.

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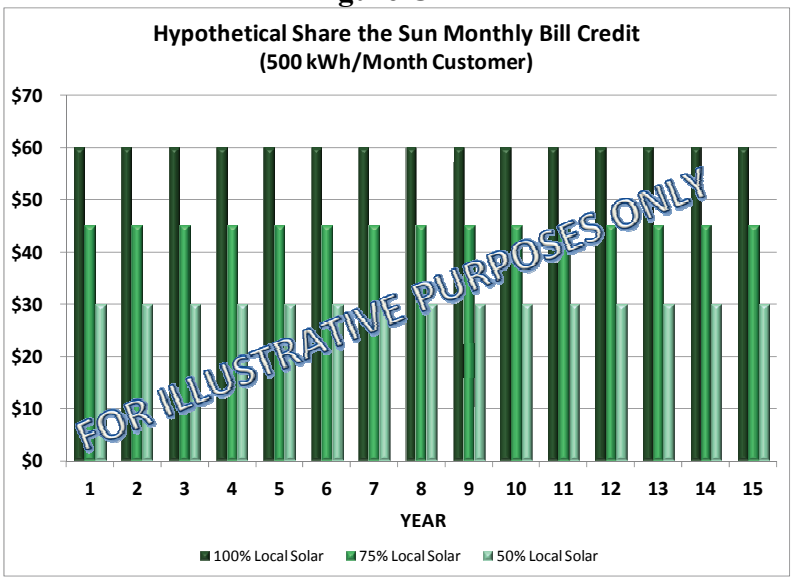
[7] *See* section IV at pp. 15-16, *infra,* for a discussion of the calculation of PCIA in the context of protecting bundled customers from subsidizing program participants as part of the "indifference" calculation.

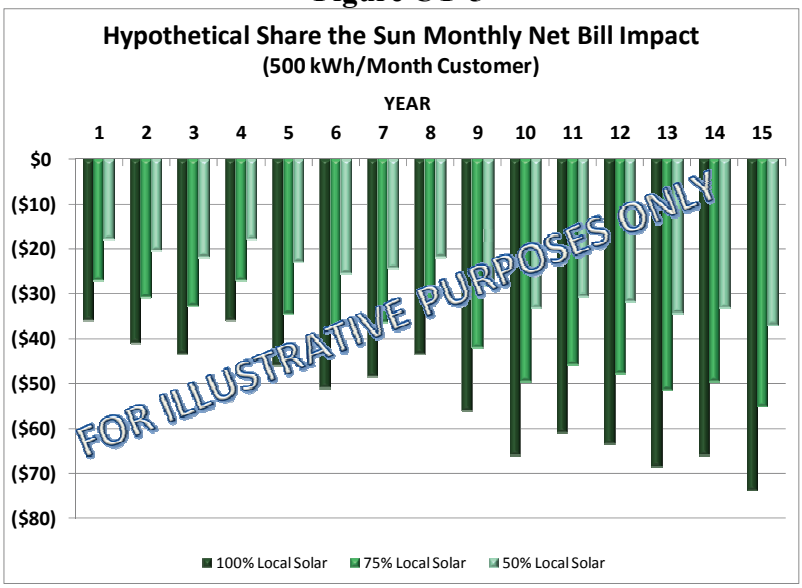
Using the contracted FiT pricing for a particular project is appropriate as it represents what the utility pays for any unsubscribed energy associated with that project. In addition to the bill adjustments as noted in Figure CY-3 above, *Share the Sun* participants also receive a bill credit for the value of their solar energy subscription assigned from their *Share the Sun* developer, as set by the SB 32 FiT pricing. For comparison purposes, the bill credit, assuming the subscription level of the *Share the Sun* customer is the same as those in the 50, 75 and 100 percent examples in Figure CY-3 above, is shown in Figure CY-4 below.

Figure CY-4



The *Share the Sun* line item adjustment is the same as the *SunRate* line item adjustment shown in CY-3 above. Combining Figures CY-3 and CY-4 results in the net bill impacts for the hypothetical *Share the Sun* customer shown in Figure CY-5 below.

Figure CY-5



B. Procurement Sourcing of Local Solar Energy for *Share the Sun*

For the purposes of providing bundled ratepayers renewable energy through *Share the Sun*, SDG&E will procure up to 10 MW of solar energy from new projects located within SDG&E's service territory. SDG&E will execute a power purchase agreement ("PPA") with these developers and commit to interconnecting with, and purchasing all output from, the project in order to facilitate project financing and construction. Once the project achieves commercial operation, the developer will work to subscribe the capacity to customers. To the extent that those projects are not fully subscribed by customers, SDG&E will take any unsubscribed energy and use it to meet its RPS requirements, including any unfulfilled capacity required under the then applicable renewable FiT, or other applicable law.

C. Developer/Provider Relationship with SDG&E

The developer relationship with SDG&E as it pertains to the project's ability to be utilized in SDG&E's portfolio of resources is provided below. *Share the Sun* is designed to facilitate contracting and interconnection with participating solar providers/developers in the same way SDG&E procures resources for its electric portfolio. Additional requirements for

developer participation relating to customer protections are outlined in the testimony of Dawn Osborne.

(i) Developers will be able to sign a standard Share the Sun contract on a first come first serve basis[8] as long as two sets of eligibility criteria are met; one set pertaining to the developer's ability to build a renewable facility and another set pertaining to the developer's ability to successfully interact with SDG&E's customers.

(ii) The eligibility criteria pertaining to the developer's ability to successfully interact with customers is located in the testimony of Dawn Osborne.

The proposed eligibility criteria pertaining to the developer's ability to build a renewable facility will likely include:

Resource:

1. Resources must be CEC-certifiable as an eligible renewable resource;
2. Resources must utilize a commercially proven technology;
3. Resources must be new facilities;
4. Resources must deliver their entire output to SDG&E. Delivering partial output from a large system shall not be permitted.

Project Size: 3 MWs, with a less than 1 MW limit until at least 80% of that project's capacity is subscribed by customers.[9]

Location/Site Control:

1. Project must be located within the service territory of SDG&E;

[8] SDG&E will use reasonable judgment to limit developer concentration if necessary.

[9] The current renewable FiT capacity limit is 1.5 MW but SDG&E expects it to increase to 3 MWs as required by SB32 during the first part of 2012.

2. The Respondent must have site control for the duration of 10, 15 or 20-year power purchase agreement. Site control may be evidenced by documentation of:
    a. direct ownership
    b. a lease
    c. an option to lease or purchase.

Interconnection:

1. Respondents must have completed a System Impact Study, or have passed WDAT[10] Fast Track screens. Evidence of the most recent completed study or equivalent results from the Fast Track process must be provided.

Developer Experience:

1. The Respondent and/or members of the project development team must have experience. Respondents and/or members of the project development team must provide evidence of having completed, or begun construction, of a project using a technology similar to the offered technology, that is at least the same size as the project being proposed.
2. The Respondent will own the facility, have contractual control of the operation of the facilities and be responsible for development, land acquisition, permitting, financing and construction for the facilities.

Project Start Date: Developers must be able to bring the project on line within 18 months of contract execution.

Other Incentives Not Permitted for the Project Being Offered:

[10] SDG&E's FERC Wholesale Distribution Access Tariff.

1. Respondents shall not have sought California Solar Incentives ("CSI") for the projects being offered and shall not plan to seek CSI for the entire term of the contract;
2. Respondents shall not have participated in the Net Energy Metering ("NEM") Program for the projects being offered and shall not plan to participate in the NEM Program for the projects being offered for the entire term of the contract.

D. SDG&E Pricing of Local Solar Energy from *Share the Sun* Projects

The pricing of contracts for *Share the Sun* projects is intended to mitigate gaming issues from projects between SB32 FiT and *Share the Sun* program. Using the same pricing for the two pilot programs mitigates gaming that could arise from two different price signals for the same solar project.

i. The contract pricing for eligible *Share the Sun* projects will be set at the then applicable SB32 FiT pricing – the MPR - established in connection with SB32 for both subscribed and unsubscribed portions of *Share the Sun* projects. This is appropriate as it is a Commission-established price for like resources. Since unsubscribed portions of the *Share the Sun* projects are purchased by bundled ratepayers using the same price for like projects will avoid gaming issues between the two programs because of price differentials.

ii. Unsubscribed Solar Energy Purchases from *Share the Sun* Projects to be used for Unfulfilled SDG&E RPS requirements: SDG&E purchases the unsubscribed output from *Share the Sun* projects and intends to use such output to meet any unfulfilled RPS requirements, including any renewable FiT obligations. If SDG&E has fulfilled all current RPS requirements, this energy could be: 1) banked by SDG&E for future RPS compliance requirements; or 2) sold in the open market to, for example, utilities

that are under-subscribed for RPS. SDG&E has minimized the potential need to purchase unsubscribed energy by: 1) limiting developer projects to no more than 1 MW of capacity until such capacity is near fully subscribed; and 2) requiring developers to provide proof of their ability to market to customers as an eligibility requirement for the program.

E. *Share the Sun* Billing Calculations

The billing calculations for the *Share the Sun* program are designed to create bundled customer indifference and mitigate cost shifts from the *Share the Sun* program. The bill for *Share the Sun* would show two additional line items, 1) "Energy Payments" line item and 2) the bill credit for energy generated from the participant's solar project.

i. Line Item for Incremental *Share the Sun* Cost: The bill would show a line item multiplying the incremental cost for the Share the Sun energy by the subscribed level of energy delivered through Share the Sun.

ii. The incremental *Share the Sun* $/kWh cost is calculated as the then-applicable SB32 FiT pricing plus the levelized PCIA and adjustments for the differential in the value of solar energy relative to the bundled portfolio less the average bundled portfolio commodity cost.

iii. Bill Credit – The credit is based on the SB32 FiT pricing identified in Section C above multiplied by the energy delivered under the Share the Sun subscriptions and is applied to the customer's total bill, after applicable taxes and franchise fees. Any remaining credit will be carried forward to the customer's next monthly SDG&E bill.

F. Bundled Ratepayer Protections from Developer Program Project Default

The SDG&E power purchase agreement with the *Share the Sun* developer will be modeled after the final approved FiT template. It shall contain all provisions contained in that template which protect SDG&E if the developer fails to perform, including failing to provide the unsubscribed capacity paid for by customers.

IV. BUNDLED CUSTOMER PROTECTIONS – THE "INDIFFERENCE" CALCULATION

The appropriate determination of avoided cost is crucial to maintaining bundled customer indifference to the allocation of solar generation under these programs. This assures that costs of the proposed programs are not shifted to non-participants. Holding non-participants indifferent is critical to putting a structure in place that would allow solar adoption to grow in a sustainable manner, that is, without market-distorting and unfair cross-subsidies.

In order to build such a sustainable platform, the programs must provide participants the benefits that solar energy provides. Correspondingly, participant costs must not be shifted to bundled customers who choose not to participate in the program. The *connected…..to the sun* programs avoid any cost shifts through two adjustments. First, there is an adjustment to recover the participant's share of any above-market costs associated with the balance of SDG&E's resources that had been procured to serve them. That is accomplished by applying the Procurement Cost Indifference Adjustment ("PCIA") as set forth in the Commission's decision adopting Direct Access ("DA") reforms (D.07-05-025), with additional adjustments to levelize the PCIA over the various program subscription durations. This levelization is done for the proposed pilot programs to simplify customer participation choice. If and when the programs expand, the effect of levelizing the PCIA will be reviewed to determine if any adjustments are necessary for a larger offering.

Second, there is an adjustment to account for any differences in the value of the solar energy allocated to the programs and the value of the energy from the balance of SDG&E resources including, for example, any Resource Adequacy value that the project provides. This is done to ensure that any incremental value associated with the solar energy from *connected…..to the sun* projects goes to the program participants. The appropriate calculation of the bundled customer indifference adjustments will avoid cross-subsidies among customers and permit long-term, sustainable growth of these programs.

The following sections detail how the indifference amount is calculated for the proposed pilot programs.

A. The PCIA as updated in D.07-05-025 is an appropriate proxy for the indifference amount associated with the procurement of program solar energy in lieu of energy from SDG&E's remaining balance of resources

While neither *connected…..to the sun* program is a DA function, the PCIA derived in the Direct Access context provides the appropriate proxy to ensure that non-participating customers are held indifferent to the commodity costs related to the programs. D.07-05-025 states (at 7 and 8) that:

> The indifference amount is designed to ensure that… DA customers that have departed from bundled IOU procurement service remain responsible for paying any IOU costs incurred on their behalf. In other words, remaining bundled customers must be protected from any cost shifting and left economically indifferent as the result of DA customers leaving the system.
>
> ****
>
> ….[i]n D.02-11-022, the Commission established a cost responsibility surcharge (CRS) methodology which incorporated an indifference amount. … The indifference principle involves the interaction of three elements;
>
> a) A non-bypassable surcharge which DA customers pay to offset any cost impacts on bundled customers associated with their departure from or return to bundled service;
> b) Switching rules which govern the movement of customers between DA and bundled service; and

c) Transition Bundled Service (TBS) rates which accommodate customer movement while allowing the utility to adjust its generation portfolio without cost impacts on bundled customers.

As noted in item "a" above, the CRS establishes the indifference amount to recover costs associated with a utility's bundled service when a customer elects to procure commodity from a source other than the utility's balance of resources (*i.e.*, other than the blend of all resources used in SDG&E's portfolio). Therefore, this established methodology is a reasonable method to protect bundled customers from the cost impacts of certain customers choosing to procure energy other than from the utility's balance of bundled resources in the context of the proposed program.

Given that SDG&E is proposing fixed terms and an early termination fee as a component of the *connected.....to the sun* programs (*see* Section IV.H, *infra*), the items b. and c. in the above quote do not apply to the proposals in this Application. These items were designed to avoid gaming opportunities where a customer might choose to stop DA service to take advantage of spot prices when they are below the utility portfolio price and then return to utility service when spot prices increase above the utility portfolio price. These items therefore do not apply to the proposed programs.

B. The ratio of on and off peak energy to account for solar energy's value relative to SDG&E's balance of resources is consistent with the calculation of the bundled customers' indifference amount.

The PCIA, as updated in D.07-05-025, includes a ratio of on-peak and off-peak energy based on SP15 prices to establish the energy value in SDG&E's balance of resources for the Market Price Benchmark ("MPB") used in the PCIA calculation. It is therefore consistent with the indifference amount calculation to make an adjustment to account for the energy value of solar for *Share the Sun* relative to the energy in the bundled portfolio. The $/kWh adjustment can made by calculating the difference of the energy value in SDG&E's portfolio and energy

value from the solar projects used to serve the *Share the Sun* participants using the same SP15 prices and on-peak and off-peak energy ratios.

C. The methodology to determine the Resource Adequacy ("RA") capacity value in the PCIA is the appropriate adjustment for the difference in RA value between SDG&E's balance of resources and the solar energy used to serve *connected…to the sun*.

The PCIA as updated in D.07-05-025 includes a methodology for establishing a $/MWh value of RA capacity included within SDG&E's balance of resources. The same calculation will be used to establish any incremental difference in RA value associated with the solar energy used to serve *connected…..to the sun* programs and SDG&E's balance of resources. This is done to pass the incremental value that *connected…..to the sun* solar energy provides on to program participants.

D. Differences in Line Losses between SDG&E's and *connected….. to the sun* Resources

For the pilot program no line loss adjustment is made to account for any difference there may, or may not be, in line losses from program projects and line losses from SDG&E's balance of resources. Additional analysis is needed to determine what, if any, material difference there is in any potential reduction in transmission line losses relative to any potential increase in distribution line losses those same projects may incur. The issue of line losses will be reviewed based on experience under the pilot if and when the *connected….. to the sun* program is expanded in order to determine if a calculable difference in line losses can be identified.

E. Vintaging resources underlying indifference amount calculations is consistent with the PCIA

SDG&E proposes to "vintage" PCIA charges consistent with D.07-05-025. This ensures that participants are responsible for the cost of those resources, and only those resources, that

were procured prior to the customer's participation in *connected…..to the sun*. This includes renewable contracts that have been contracted for but will begin deliveries at a future date.

F. Levelizing the PCIA allows participants to have cost certainty when electing to procure solar energy through these programs

Levelizing the PCIA calculation for the pilot program over the elected subscription durations so that participants have price certainty will help simplify a customer's participation choice. This accommodation for the pilot program is reasonable in that it is a program that expands the amount of renewable energy serving San Diego.

1. Levelizing adjustment to account for currently contracted RPS resources with future on-line dates

Adjustments required to levelize above market costs of renewable contracts shifts the renewable forecasting risk on to bundled customers. However, the proposed method for forecasting renewables energy deliveries reasonably protects bundled customers from cost shifts to them.

Bundled customers are protected as using the forecasted energy deliveries and pricing included in all the PPAs approved by the Commission does not contemplate future attrition of renewable contracts. Therefore incorporating all renewable contracts incorporates a conservative level of above market costs into the PCIA from bundled customer's perspective. The risk associated with using the expected deliveries stated in the PPAs is a shared risk that is equal for both participants and bundled customers. The market price benchmark, from which the above market costs are established, will use the implied escalations in Henry Hub natural gas price forecasts.[11] For outer years the average escalation of the last five years of the forecast will be used.

[11] *Global Insight*'s latest forecast of Henry Hub spot gas prices will be used in the calculation.

2. Levelizing above-market costs associated with non-renewable resources

For the pilot program a simplifying assumption is made that all non-renewable assets are assumed to maintain the same spread between the bundled portfolio and the MPB. This is reasonable as both face similar fuel cost pressures.

Both the participant's and bundled customer's risk proposition is reasonable as participants are provided greater certainty in their costs while bundled customers benefit from a conservative estimate of renewable energy above market costs. The issue of levelizing will be reviewed with any expansion of the pilot *connected…..to the sun* programs.

G. Return to Bundled service at end of contract duration

Because the *connected…. to the sun* participant is an SDG&E customer, there are negligible planning cost impacts in the return of that customer to bundled service at the pilot program level of 20 MW (10 MW for *SunRate* and 10 MW for *Share the Sun*). SDG&E remains the customer's Load Serving Entity and plans to meet it requirements utilizing its entire body of resources, bundled portfolio as well as resources procured under *connected…. to the sun*.

H. The Calculation of Early Termination Fees

The calculation of the early termination fee is composed of the above-market costs associated with the participant's subscription of solar energy plus any administrative costs. For the pilot program, the above market costs are calculated as the present value of the forecasted difference between the cost of local solar and the sum of the market price benchmark ("MPB") in the PCIA calculation, the renewable premium in the PCIA, the adjustments made in Section II to account for the value of solar energy and any administrative costs. The forecast uses the following assumptions:

1) The MPB is escalated with Henry Hub natural gas prices;

2) The renewable premium is set at that years vintage value in the PCIA and fixed over the remaining subscription term;

3) The solar adjustments are set at that year's values and fixed over the selected term;

4) The discount rate used to calculate the present value is the then applicable SDG&E rate of return.

A table of fixed termination costs by year and contract duration will be provided with each year's vintage. This is done to ease the participation decision by creating greater cost certainty for customers.

This concludes my prepared direct testimony.

V. STATEMENT OF QUALIFICATIONS

My name is Christopher F. Yunker. My business address is 8330 Century Park Court, San Diego, California, 92123.

I have been employed as the Rates & Analysis Manager in the Strategic Pricing & Analysis group of San Diego Gas & Electric Company since 2010. Prior to that I was employed as Strategic Planning Manager from 2009 to 2010 in the same department. Before that I was employed in various positions at SDG&E as a Principal Financial Analyst, Technology Development Advisor, Resource Planner and Sr. Business Analyst. I began work with Sempra Energy in 2002, working as a Financial Analyst with Sempra Connections. Prior to my work with Sempra Energy, I worked for GEA Power Cooling Systems, Inc., as an Application Engineer and Project Development Engineer.

I received a B.S. in Mechanical Engineering from the University of California, San Diego and a Masters in Business Administration from the University of Southern California. I am a Professional Engineer in Mechanical Engineering in the State of California.

I have previously provided testimony to the Commission.