



BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA

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Application of Southern California Edison)
Company (U 338-E) for Authority to Implement)
and Recover in Rates the Cost of its Proposed)
Solar Photovoltaic (PV) Program.)

A.08-03-015
(Filed March 27, 2008)

SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) REPLY BRIEF

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SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) REPLY BRIEF

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Pursuant to Rule 13.11 of the California Public Utilities Commission's ("Commission") Rules of Practice and Procedure and the procedural schedule set by Administrative Law Judge Maryam Ebke,¹ Southern California Edison Company ("SCE") respectfully submits its reply brief supporting Commission authorization to implement its proposed Solar Photovoltaic ("PV") Program ("Reply Brief"), without any changes proposed by intervenor parties.²

I.

INTRODUCTION AND SUMMARY OF RECOMMENDATIONS

Various intervenor parties recommend rejection of or incompatible changes to the Solar PV Program that the Commission should reject.³ The Commission should ignore these recommendations because they would not provide SCE's customers or the State, as a whole, the

¹ ALJ Ebke, Tr. 4/530, lines 11-15.

² This Reply Brief responds to the Opening Briefs submitted by intervenor parties on November 25, 2008 ("Opening Briefs"). SCE received Opening Briefs from First Solar, Inc. ("First Solar"), Division of Ratepayer Advocates ("DRA"), The Utility Reform Network ("TURN"), Recurrent Energy, Inc. ("Recurrent"), Coalition of California Utility Employees ("CUE"), Californians for Renewable Energy ("CARE"), Solar Alliance, and Greenlining Institute ("Greenlining").

³ See, DRA Opening Brief, p. 2; TURN Opening Brief pp. 2-3; Recurrent Opening Brief p. 2; CARE Opening Brief p. 3; Solar Alliance Opening Brief p. 1; Greenlining Opening Brief p. 1.

significant benefits associated with SCE's proposal. The Solar PV Program consists of 250 megawatts (MW) of 1 to 2 MW⁴ solar PV installations on commercial and industrial rooftops in SCE's service territory. SCE proposes to complete these installations at a rate of about 50 MW per year over five years for a total of 250 MW. SCE's innovative Solar PV Program is necessary to fill the programmatic gap between projects of 1 MW or less initiated under the California Solar Initiative (CSI) and the larger Renewable Portfolio Standard (RPS) projects that are typically greater than 2 MW and are not designed for rooftops.⁵ As proposed, the Solar PV Program will develop the unserved market of 1 to 2 MW solar rooftop PV installations, drive down installation costs for solar PV, transform the solar PV generation market, and provide information about the effect of large-scale implementation of this technology on SCE's distribution grid.

Rejection of SCE's request, as proposed in the Opening Briefs of DRA, TURN, Recurrent, CARE, and Greenlining, would eliminate all of the potential benefits of the Solar PV Program including cost efficiencies, market transformation efficiencies, and information on the effect of large-scale implementation of these installations on SCE's distribution system. The modifications of SCE's proposal, as proposed in the Opening Briefs of TURN, Solar Alliance, and CARE would significantly reduce the benefits of the Solar PV Program by reducing cost efficiencies, market transformation efficiencies, the amount of information available on the effect of these installations on SCE's distribution system, and imposing unreasonable burdens on SCE's shareholders. SCE therefore respectfully requests that the Commission approve its application, without modification.

⁴ Unless otherwise specified, references to energy output follow the common convention within the PV industry of referring to output as PV panel direct current (dc) output. Additionally, SCE proposes using installed dc output in reasonableness reviews because installation occurs in dc panels. Based on sample calculations, the conversion factor of 0.90 will convert from MW dc to MW alternating current (ac) using the California Energy Commission's ac MW conversion (i.e., multiply MW dc by 0.90 to obtain MW CEC-ac Rating).

⁵ Exhibit SCE-2, M. Nelson, p. 1.

II.

SOLAR PV PROGRAM DESIGN

A. No Intervenor Provides A Viable Basis For Rejecting SCE's Solar PV Program

The recommendations of DRA, TURN, CARE, Recurrent, and Greenlining to reject SCE's Solar PV Program should be rejected.⁶ DRA and Greenlining contend that the answer to the State's request for increased renewable energy begins and ends with California's ("State") CSI and RPS programs.⁷ The State has implemented these aggressive renewable energy programs to encourage renewable supplies of electricity. SCE's interpretation of the State's ambitious efforts is that all that can be done to spur renewable energy development, should be done, especially if it helps meet the State's rooftop solar goals as well.⁸

As explained in SCE's Opening Brief,⁹ medium-scale rooftop installations of 1 to 2 MW are not widely being developed by the CSI and RPS programs. The State has supported increased use of solar PV resources primarily through CSI, which was designed to develop 3,000 MW of rooftop solar PV installations by 2016.¹⁰ The State's CSI goal of 3,000 MW by 2016 is based on an average PV installation size of 3 kW, yielding one million rooftops.¹¹ CSI is geared toward solar PV installations of up to 1 MW, primarily for residential applications. SCE purposefully designed the Solar PV Program to target installations between 1 and 2 MW on rooftops that are incompatible with net energy metering and, therefore, are unable to take advantage of the State's CSI incentives. In CSI terms, the Solar PV Program has the potential to

⁶ See, DRA Opening Brief, p. 2; TURN Opening Brief, p. 2; CARE Opening Brief, p. 3; Recurrent Opening Brief, p. 2; Greenlining Opening Brief, p. 1.

⁷ DRA Opening Brief, pp. 1-2; Greenlining Opening Brief, pp. 5-7.

⁸ SCE, M. Nelson, Tr. 3/376, lines 4-10.

⁹ SCE Opening Brief pp. 2-3.

¹⁰ Exhibit SCE-1, M. Nelson, p. 3.

¹¹ A "rooftop equivalent" is 3 kW. SCE's program goal of 250 MW installed by 2013 yields 83,333 rooftop equivalents.

yield over 80,000 “rooftop equivalents”¹² in five years or about 10 percent of the overall CSI goal of one million rooftops.

While the primary purpose of the program is to help meet the State’s Million Solar Rooftops goal, the Solar PV Program will also add to SCE’s renewable portfolio.¹³ The RPS facilitates development of solar projects, along with other renewable resources. Most RPS projects are larger than 2 MW and have not been designed to be placed on rooftops.

The CSI and RPS programs have left the market segment of 1 to 2 MW solar rooftop PV facilities essentially untapped. Further development of this unserved market through the Solar PV Program will contribute in the near term to achieving the State’s CSI Million Solar Rooftop goals.¹⁴ It will also contribute to meeting renewable goals by providing renewable attributes to SCE’s customers.¹⁵ The Solar PV Program is a direct and considered response to the State’s call to increase renewable energy development that is not currently being encouraged by other solar programs.

Recurrent “agree[s] that a California policy and program gap has discouraged development of PV systems larger than 1 MW on commercial rooftops.”¹⁶ Recurrent contends, however, that the programmatic gap should be addressed by policymakers and regulators, not by independent utility actions.¹⁷ DRA similarly contends that “there is no reason to believe that the market transformations that are already occurring won’t continue and ultimately fill this [1-2 MW] niche.”¹⁸ To the contrary, there is no reason to believe that the southern California solar PV market can be transformed by existing programs. In response to the question of whether the

¹² SCE, S. Hemphill, Tr. 1/12, lines 19-26: “Most applications are 3 kilowatts in size. So 3 kilowatts is a whole lot of small systems in order to meet 3,000 megawatts. In fact, a million of them.”

¹³ SCE Opening Brief, p. 5.

¹⁴ SCE has no present intent to seek funding for the Solar PV Program from revenues currently allocated by the Commission for incentive payments under the CSI. *See* SCE, M. Nelson, Tr. 2/267, lines 6-11.

¹⁵ SCE, M. Nelson, Tr. 3/383, line 28 – 3/384, lines 2-6; *see also* SCE Opening Brief, p. 2.

¹⁶ Recurrent Opening Brief, p. 2; *see also* Solar Alliance Opening Brief, p. 8 [“In sum, neither the CSI nor the RPS programs are aimed at 1 to 2 MW solar projects, and neither is attracting a significant number of such projects.”]

¹⁷ Recurrent Opening Brief, p. 2.

¹⁸ DRA Opening Brief, p. 3.

market transformational effects of the CSI would extend to projects of the size proposed under the Solar PV Program, SCE witness, Mr. Nelson, explained that SCE “through a structured program [can] move into that particular area and transform the market and the processes and the products. It’s not clear to me if the CSI would get there or not at this stage.”¹⁹ Rather than await the implementation of a State program aimed at encouraging medium-scale solar installations or hope that the market eventually fills the niche without utility-owned generation, SCE has taken the initiative to develop this unserved market segment now.²⁰ Recurrent is simply wrong in asserting that policymakers and regulators should address every solar niche before this Commission approves independent utility action.²¹

Recurrent complains that SCE will use ratepayer-funded resources that it enjoys as a regulated distribution utility.²² As explained in its Opening Brief²³ and in Section VI., below, SCE proposes to simply apply industrial engineering and process improvement methods to reduce costs and improve efficiency. The public release of information gained from the program will benefit all customers and the solar PV industry by helping to lower future costs.

TURN asserts that the Solar PV Program is not necessary to boost the rooftop solar PV market and there is no evidence that it will unilaterally drive down the costs of other private solar installations.²⁴ While solar installations have experienced growth in California, the Solar PV Program still “has a valuable place in meeting California’s goals of 3,000 megawatts of rooftop PV.”²⁵ SCE witness, Mr. Nelson, explained that

The Solar PV Program is not just to help the CSI program. It’s a market transformational program in order to bring costs down for these large solar installations. Right now, if you look at the CSI

¹⁹ SCE, M. Nelson, Tr. 2/243, lines 10-14.

²⁰ See also First Solar Opening Brief, p. 3 [“California must meet its renewable energy goals, reduce greenhouse gas emissions and meet peak demand. The SPVP presents a clear opportunity to advance these goals. The Program is feasible; it can be done, and done now.”]

²¹ Recurrent Opening Brief, p. 3.

²² Recurrent Opening Brief, p. 7.

²³ SCE Opening Brief, pp. 24-26.

²⁴ TURN Opening Brief, p. 14.

²⁵ SCE, M. Nelson, Tr. 2/239, lines 2-3.

data and take a look at the sort of 1-megawatt-size roofs, they are coming in around \$7,000 a kilowatt, which is about 200 percent of what we are proposing.

And so we believe that by having a concerted focus on Southern California on products and processes and developing a larger labor force that we can bring those costs down to benefit all customers. And that in and of itself I believe would be accelerating and cost reducing to CSI. So there should be a benefit to CSI as well beyond simply the benefit of adding more megawatts to rooftop solar.²⁶

The Commission should disregard the unfounded recommendations of DRA, TURN, CARE, Recurrent, and Greenlining to reject SCE's Solar PV Program.

B. Reducing The Size Of The Solar PV Program Is Inconsistent With SCE's Application And Is Unworkable

1. TURN's Proposal

TURN alternatively recommends that the Commission authorize only one-fifth of SCE's proposed project – 10 MW per year for five years, for a total of 50 MW of solar installations.²⁷ TURN contends that this smaller project may be better suited to promote engineering design efficiencies and to train installation contractors without overheating the market.²⁸ As explained in Exhibit SCE-2, the 250 MW program proposed “is paced enough to assure steady supplies of equipment and avoid overheating the market. To protect our customers and support public policy favoring solar PV, SCE will diligently monitor market conditions and adjust the Solar PV Program, as needed.”²⁹ SCE witness Mr. Nelson further explained that SCE has diligently “attempted a priori to make this a program that, again, does not have negative impacts, doesn't raise costs. That said, as a

²⁶ SCE, M. Nelson, Tr. 2/242, lines 2-18.

²⁷ TURN Opening Brief, p. 3.

²⁸ TURN Opening Brief, p. 3.

²⁹ Exhibit SCE-2, M. Nelson, p. 11.

program if we find ourselves facing shortages or increasing costs, it is within our purview to delay or reschedule the program in order to avoid that.”³⁰

Further, although TURN recognizes that installed costs of its proposed 50 MW project may be higher due to lower volume discounts, it contends that the lower total cost completely justifies the small premium on a unit basis.³¹ TURN contends that a “multi-year project would provide both greater opportunities for volume discounts by providing manufacturers with a long-term assured revenue stream. At the same time, a five-year project might also better capture efficiencies of scale in design, since early system installations would pave the way for more efficient design engineering of subsequent system[s].”³² As a result, TURN states that it “is willing to assume that a 50 MW project (one-fifth SCE’s size) could result in a 17% increase in installed costs, increasing average installed costs from \$3.50 per watt to \$4.10 per watt. This increase would result in additional costs of \$400,000 per megawatt.”³³ TURN’s estimated increase in installed costs resulting from an 80 percent reduction in the program finds no support in the record.³⁴ The Commission should disregard it.

Moreover, TURN’s claim that engineering design would be positively impacted by a smaller project lacks any foundation. Engineering design is impacted by repetition in manufacturing and installation, *i.e.*, volume, not timeframe. As stated by First Solar, the Solar PV Program’s “‘big buy’ would . . . provide visibility into a pipeline of demand that could efficiently load solar manufacturers’ module production factories. This would give solar manufacturing companies the ability to design and procure standard balance of plant mounting equipment at lower cost due to economies of scale.”³⁵

³⁰ SCE, M. Nelson, Tr. 3/303, lines 23 and 26.

³¹ TURN Opening Brief, p. 3.

³² TURN Opening Brief, p. 19.

³³ TURN Opening Brief, p. 21.

³⁴ See concurrently filed Motion to Strike Portions of the Opening Briefs of Greenlining Institute, Recurrent Energy, and The Utility Reform Network, p. 4.

³⁵ First Solar Opening Brief, p. 12.

TURN also completely ignores the other benefits supporting the size of SCE's program. For example, SCE's solar PV facilities will interconnect at the utility distribution level, thus obviating the need to plan, permit, and construct new transmission lines.³⁶ Further, SCE's technical expertise will allow it to immediately assess the impact of various solar PV technologies on the distribution system. The program is specifically targeted at gathering information about the installation, operation and maintenance of the various solar PV facilities, analyzing that information, and disbursing it to the public to increase access to solar technologies.³⁷ TURN's proposed reduction to the size of the program would significantly diminish these benefits.³⁸

TURN asserts that the unit cost increase "is entirely warranted in order to reduce total ratepayer cost risk [*i.e.*, the cost of proceeding with the program as proposed]."³⁹ While it is true that customer costs for the Solar PV Program would go down, it is also true that customers would not realize some of the most important benefits of the Solar PV Program. One of the key benefits of the Solar PV Program is that it will transform the market through a significant purchase of 50 MW of 1-2 MW solar PV installations each year. This will benefit all customers by reducing the costs of solar PV installations and improving solar PV system design.

TURN also quibbles with SCE's calculation of elasticity of supply.⁴⁰ TURN contends that "the actual increase in world panel prices due to any reduction (or elimination) of SCE's project will be *de minimis*."⁴¹ SCE never claimed an impact on

³⁶ Exhibit SCE-1, M. Nelson, p. 4.

³⁷ SCE Opening Brief, pp. 8-9; SCE, M. Nelson, Tr. 2/279, lines 25-28.

³⁸ See also Solar Alliance Opening Brief, p. 17 ["TURN's proposal to eliminate 80% of the SPVP is ill-considered and counterproductive. SCE's testimony credibly explains how the creation of significant demand for 1-2 MW solar PV rooftop installations will generate significant and valuable information about the construction of such facilities and the interrelationship of such distributed rooftop generation facilities with the operation of SCE's distribution circuits. . . . All of these benefits will be significantly diminished quantitatively and qualitatively if the program is shrunk by 80%."]

³⁹ TURN Opening Brief, p. 21.

⁴⁰ TURN Opening Brief, pp. 16-17.

⁴¹ TURN Opening Brief, p. 17.

world panel prices due to the Solar PV Program. Exhibit SCE-2 explains that a reduction in the size of the program will likely eliminate SCE’s ability to meet program objectives due to the impacts on scale economies.⁴² As explained by SCE witness, Mr. Nelson, the “intent in calculating a price elasticity of supply was to calculate a factor for the price relationship of supply of solar on the margin to quantity, and then apply that to the change in quantity on the program to get a percentage change in supply for the program.”⁴³ Mr. Nelson then made the assumption “that the relationship between price and quantity in the forecast that we are using for worldwide supply results in a price elasticity that is the best available price elasticity I have in order to look at my local – my ability in the market to purchase when I have a smaller target.”⁴⁴ The calculation used “the larger world market data, extract[ed] that and then appl[ied] it to the smaller supply and demand that I’m going to see as a part of the SPVP.”⁴⁵

Finally, TURN, DRA, and Recurrent erroneously contend that SCE is essentially proposing a feed in-tariff.⁴⁶ Other proceedings are addressing feed-in tariffs. The issue is irrelevant to this proceeding.⁴⁷

2. Solar Alliance’s Proposal

Solar Alliance agrees that the solar programs currently in operation in California are not designed to pursue the solar market of 1 to 2 MW installations targeted by SCE’s Solar PV Program.⁴⁸ Unfortunately, Solar Alliance then develops a new and different program to fill this market niche.⁴⁹ Solar Alliance proposes that SCE be required to

⁴² Exhibit SCE-2, M. Nelson, p. 3.

⁴³ SCE, M. Nelson, Tr. 2/284, line 24 – 2/285, line 1.

⁴⁴ SCE, M. Nelson, Tr. 2/284, lines 2-9.

⁴⁵ SCE, M. Nelson, Tr. 2/287, lines 1-5. Section II.B.2., below, explains this price elasticity concept in greater detail.

⁴⁶ TURN Opening Brief, p. 27; DRA Opening Brief, p. 16; Recurrent Opening Brief, p. 7.

⁴⁷ Exhibit SCE-2, S. Hemphill, p. 32.

⁴⁸ Solar Alliance Opening Brief, p. 1.

⁴⁹ Solar Alliance Opening Brief, pp. 2, 17.

purchase the output of half the program's targeted MW (125 MW) through a competitive RFO process open to non-utility solar companies.⁵⁰ As explained in Exhibit SCE-2 and in SCE's Opening Brief, Solar Alliance's proposal would likely eliminate SCE's ability to achieve its estimated costs due to the qualitative impacts of a 50 percent reduction in scale economies.⁵¹

In its Opening Brief, Solar Alliance argues that SCE witness Mr. Nelson did not correctly analyze the price elasticity of the market for solar PV units.⁵² Solar Alliance misstated Mr. Nelson's assumptions. Mr. Nelson assumed that the slope, or price elasticity, of the world wide PV market was the same as the price elasticity of an average individual firm.⁵³ That price elasticity of an average individual firm increases when demand for solar PV decreases. Mr. Nelson concludes that SCE's Solar PV Program costs will increase to approximately five dollars if the Program is reduced by half.⁵⁴

Solar Alliance asserts that if the Solar PV Program is modified so that SCE builds 125 MW and third parties build 125 MW, "there will be NO impact on price."⁵⁵ Exhibit SCE-5 page 3 shows that as SCE's Solar PV Program gets smaller and SCE's buying power gets less, the price would rise.⁵⁶ A Solar PV Program that allows third parties to procure half (*i.e.*, 125 MW over five years), and SCE to procure half (*i.e.*, 125 MW over five years) will increase program costs. The Commission should minimize customer costs by approving the Solar PV Program as proposed.

⁵⁰ Solar Alliance Opening Brief, pp. 2, 17.

⁵¹ Exhibit SCE-2. M. Nelson, p. 3; SCE Opening Brief, p. 21.

⁵² Solar Alliance Opening Brief, pp. 19-20.

⁵³ SCE, M. Nelson, Tr. 3/379, line 21 – 3/381, line 6.

⁵⁴ SCE, M. Nelson, Tr. 3/381, lines 15-17.

⁵⁵ Solar Alliance Opening Brief, p. 19.

⁵⁶ SCE, M. Nelson, Tr. 3/382, lines 6-10.

III.

THE RECORD SUPPORTS SCE'S COST AND PERFORMANCE ESTIMATES

A. SCE's Cost Estimates Are Reasonable And Are Fully Supported By The Record

TURN argues, without any basis in the record, that it is “unclear why the DAS monitoring costs should be based on a per MW, rather than a per project basis. . . . The size of the project should in no way influence DAS O&M costs.”⁵⁷ TURN’s contention that DAS monitoring costs should be on a per MW basis is wholly without support in the record and the Commission should disregard it entirely.⁵⁸

TURN further recommends that SCE be held accountable for its O&M forecast by adopting a cap on authorized O&M costs that can be subsequently recovered in the ERRA proceedings.⁵⁹ SCE will only be able to recover from customers’ O&M and capital expenditures for program costs that the Commission finds reasonable.⁶⁰ TURN’s attempts to impose further hurdles for cost recovery are unwarranted and lack evidentiary support.

DRA’s cost concerns relate to the program’s cost-competitiveness to RPS projects.⁶¹ As explained in more detail in Section IV.B., the Solar PV Program’s elements are outside of the parameters that SCE would consider when evaluating the benefits, cost-effectiveness and viability of a renewable project RPS. As stated in SCE’s rebuttal testimony, the Solar PV Program would not even have been developed if RPS was the only focus.⁶²

DRA also argues that SCE has not shown that a reduction in the program would make it difficult, if not impossible, to reach the proposed reasonableness price target of \$3.83.⁶³ DRA

⁵⁷ TURN Opening Brief, pp. 24-25.

⁵⁸ See concurrently filed Motion to Strike Portions of the Opening Briefs of Greenlining Institute, Recurrent Energy, and The Utility Reform Network, p. 4.

⁵⁹ TURN Opening Brief, p. 25.

⁶⁰ Exhibit SCE-2, D. Snow, p. 26.

⁶¹ DRA Opening Brief, p. 8.

⁶² Exhibit SCE-2, S. Hemphill, p. 14.

⁶³ DRA Opening Brief, p. 11.

refers the Commission to SCE’s witness Mr. Perez’s testimony in support of its argument that the price target of \$3.50/W can be achieved in 2009 without the long-term component of the Solar PV Program.⁶⁴ In the cited testimony, Mr. Perez confirms that there are currently no binding contracts for the entire 250 MW of this project. DRA conveniently excludes the immediately preceding testimony where Mr. Perez states that “[p]art of making that \$3.50 cost target does involve . . . [a] larger commitment towards . . . volume discounts for -- for equipment, for example.”⁶⁵ SCE has consistently advised this Commission that the estimated costs are based on economies of scale achieved through volume discounts. As explained in Section II.B.1-2., the reductions to the Solar PV Program proposed by TURN and Solar Alliance would likely have the effect of significantly increasing the installed costs and making it virtually impossible for SCE to meet its cost projections.

B. SCE’s Estimated System Output Is Reasonable And Supported By The Record

DRA argues that SCE overstates the system performance expected which leads to unrealistic levelized cost calculations and estimated power output.⁶⁶ DRA states that:

Industry experience shows solar PV system losses to be much greater. Specifically:

| | |
|-------------------------------|-----------|
| DC to AC inverter conversion. | .90 |
| Production tolerance derate | .95 |
| Temperature derate | .89 |
| Dirt and dust derate | .93 |
| Mismatch & wiring derate | .95 |
| <hr/> Total derate | <hr/> .67 |

If actual SPVP system losses are more along the lines of a 0.67 conversion factor, this would have the effect of substantially increasing the levelized cost of the program and substantially decreasing the expected output (MWh) of the program.⁶⁷

⁶⁴ DRA Opening Brief, p. 11, *citing* SCE, R. Perez, Tr. 2/145, lines 16-22 and 5-8.

⁶⁵ SCE, R. Perez, Tr. 2/145, lines 16-18.

⁶⁶ DRA Opening Brief, p. 15.

⁶⁷ DRA Opening Brief, p. 15.

As explained in SCE's Opening Brief,⁶⁸ Exhibit SCE-1 listed the expected output per MW dc installed as 1,576.8 MWh ac per year.⁶⁹ This figure assumes a 20 percent system capacity factor and the California Energy Commission's (CEC) ac conversion ratio of 0.90 dc to ac. SCE agrees with DRA that the derating factors are valid. However, SCE cannot precisely determine the actual conversion factors without knowing the actual PV systems and roof locations.⁷⁰ SCE witness, Mr. Perez, explained "[t]his report is intended for residential systems, which in my opinion is not reflective of large-scale, rooftop installations that SCE is proposing."⁷¹ Derating factors work differently in a commercial application.⁷²

Vendors provided the support for SCE's expected output per MW dc installed of 1,576.8 MWh ac per year during the procurement process for the first 3 installation sites. This assumes production of 6,800 W-hrs/m²/day which is typical for the Inland Empire area.⁷³ As stated in SCE's Opening Brief, the "number of 1576.8 was calculated using the CEC expected performance-based buy-down calculator and a 20 percent capacity factor for the . . . solar system. These numbers . . . have been supported by quotes received from PV vendors themselves, stating that their average annual output for the Fontana area would be actually at or above the numbers that Edison stated."⁷⁴ As stated by First Solar, "the solar panel performance estimates can be supported by First Solar product warranties. First Solar, as the manufacturer of the PV modules at the pilot Fontana site, offers materials and workmanship warranty on modules, and a power output warranty."⁷⁵ Of course, any estimate of actual PV system output depends upon various factors, including: (1) PV technology used (crystalline, thin-film), (2) local solar insolation and cloud cover, (3) atmospheric conditions (temperature, wind speed and direction, etc.), (4) DC wiring layout (length and gage of wiring), (5) system DC voltage (600 V

⁶⁸ SCE Opening Brief, pp. 13-14.

⁶⁹ Exhibit SCE-1, M. Nelson, p. 1, fn. 1 and p. 4, fn. 7.

⁷⁰ SCE Opening Brief, p. 13.

⁷¹ SCE, R. Perez, Tr. 2/150, lines 4-6.

⁷² SCE, R. Perez, Tr. 2/150, lines 7-10.

⁷³ Exhibit SCE-2, R. Perez, p. 18.

⁷⁴ SCE, R. Perez, Tr. 2/154, lines 14-24.

⁷⁵ First Solar Opening Brief, p. 14, *citing* TURN Exhibit 105C.

vs. higher voltage), (6) actual inverter efficiency, (7) system layout (tilted, tracking, etc.), (8) panel cleanliness, (9) system degradation over time. SCE will report actual system output as the Solar PV Program systems come on-line.⁷⁶

C. The Stated Effect Of The Investment Tax Credit On The Solar PV Program Is Appropriate And Fully Supported By The Record

DRA states that it “is disappointed to find that Edison is not planning on passing the entire 30% Investment Tax Credit (ITC) benefit to ratepayers, but only 10%. Edison offers little explanation as to why its shareholders should receive the majority of the ITC benefit instead of its ratepayers. Surely this was not what the U.S. Congress intended.”⁷⁷ DRA has not read correctly SCE’s testimony, the tax law attached to SCE’s testimony, or the tax law cited in its testimony. As SCE indicated, it is passing through to customers everything that it is permitted to pass through consistent with Federal tax law.

First, as indicated in Exhibit SCE-3, when the ITC is claimed, the taxpayer is required to reduce its tax basis in the property by 50% of the ITC claimed.⁷⁸ Internal Revenue Code (IRC) section 50(c)(3)(A). This rule applies to all parties claiming the Solar ITC. Thus, while there is a credit equal to 30%, the net effect on tax expense is significantly less, as 15% of the cost of the property is no longer eligible for federal tax depreciation. This is a permanent loss.

Second, as SCE also indicated in SCE-3, it has followed the rules of IRC section 46(f)(2). This is mandated by Act section 103(f)(4).⁷⁹ This requires that the ITC be flowed through to customers over the book life of the property; this is commonly referred to as the Normalization Rules. Failure to comply with these rules results in a loss of the entire ITC. The Commission has stated in its seminal tax decision, OII 24, that it intends to comply with the Normalization Rules of the Internal Revenue Code. While this precludes SCE from flowing through the ITC

⁷⁶ Exhibit SCE-2, R. Perez, p. 18.

⁷⁷ DRA Opening Brief, p. 13.

⁷⁸ Exhibit SCE-3, D. Klun, p. 1.

⁷⁹ See Exhibit SCE-3, Attachment A.

immediately, thus reducing its net present value, SCE has flowed through everything that it is allowed to flow through.

While DRA may not like the rules that the U.S. Congress has enacted, if SCE wishes to take advantage of the newly available ITC, and thereby reduce the revenue requirement associated with these projects, it must comply with the tax laws as enacted.⁸⁰

CARE also comments on SCE's ITC. It states that "SCE's proposal only gives one-third of the ITC to the ratepayers because the tax-life of the PV panels is twenty years while the SCE Program is only seven years. . . . If the Commission adopts SCE's proposed ratemaking procedures, CARE recommends that the full ITC be credited to ratepayers during the period authorized for the Program. Thus, if the ITC is spread over the twenty-year tax life of the Project, the ratemaking should give ratepayers the full credit during the period approved for the Program."⁸¹

SCE makes two points in response to CARE's statement. First, the federal tax life used to depreciate the property and compute income tax expense is five years not the 20 years mentioned by CARE.⁸² Second, the Internal Revenue Code allows the ITC to be credited to customers only ratably over the book life of the property not the tax life. Thus, as the customers are charged for depreciation, they are credited with ITC; the two work in tandem. Any crediting of ITC at a faster rate than the book depreciation rate will cause a normalization violation and a total recapture of the ITC – resulting in no ITC at all for customers.

⁸⁰ See also TURN Opening Brief, p. 8 ["Regrettably, legal requirements do not allow ratepayers to get all the benefits of federal tax credits."]

⁸¹ CARE Opening Brief, p. 3.

⁸² Exhibit SCE-1, D. Klun, p. 55.

IV.

POTENTIAL COMPARISONS

A. The Solar PV Program Effectively Supplements California Solar Initiative (CSI)

Goals

TURN questions SCE's testimony that the Solar PV Program will assist in meeting the Million Solar Roofs goals primarily identified with the CSI, arguing that SCE witnesses on the issue have only a rudimentary understanding of CSI goals.⁸³ SCE's Opening Brief explains that SCE's Solar PV Program is designed to *supplement* CSI by deliberate design.⁸⁴ As explained by SCE witness, Mr. Nelson, the Solar PV Program targets buildings that are not CSI compatible because of limited on-site loads that makes those buildings poor candidates for net energy metering.⁸⁵ As a supplemental program, the Solar PV Program is intended to contribute to the CSI Million Solar Roofs.⁸⁶

TURN further alleges that SCE witness Mr. Hemphill provided misleading information by maintaining that CSI would not meet its goals because most of the applications coming in were for small installations.⁸⁷ TURN wrongly alleges that only upon further cross-examination did SCE admit that most CSI installations by number are residential, but most CSI installations by MW are commercial.⁸⁸ This assertion is contradicted by the record. In written testimony and at the evidentiary hearing, SCE witnesses confirmed that most CSI applications "are about 3 kilowatts for residential. A very large installation might be 10 kilowatts or higher. There are some as high as a megawatt, but those are extremely rare."⁸⁹ SCE's cost comparisons have

⁸³ TURN Opening Brief, p. 4.

⁸⁴ SCE Opening Brief, pp. 17-19.

⁸⁵ SCE, M. Nelson, Tr. 2/243, lines 1-5; Exhibit SCE-2, M. Nelson, p. 10.

⁸⁶ Exhibit SCE-2, S. Hemphill, p. 14 ["SCE developed the project structure and purpose with the express objective of helping the state meet its Million Solar Roof goals, while filling a gap in the market and demonstrating the viability and options available for installing and operating commercial solar PV."]

⁸⁷ TURN Opening Brief, p. 4.

⁸⁸ TURN Opening Brief, p. 4.

⁸⁹ SCE, S. Hemphill, Tr. 1/33, lines 2-5.

confirmed the understanding that most installations by MW are commercial.⁹⁰ TURN's request to the Commission should be ignored.

Greenlining contends that the Solar PV Program is a more costly and less certain means of achieving progress toward the Million Solar Roofs goal, as compared to CSI.⁹¹ Greenlining and DRA argue that a comparison of costs of installation under the Solar PV Program and the CSI is irrelevant because the customer is not responsible for the entire cost of installations under CSI.⁹² To the contrary, a comparison of the costs of CSI and the Solar PV Program highlights the benefits of the Solar PV Program, which has capital costs that are about half of the capital costs of CSI.⁹³

TURN also asserts that SCE's "capital" cost forecast threshold for *per se* reasonableness, including the 10% contingency, of \$3.85/W must be grossed up for return and taxes, resulting in an installed cost of between \$4.60 and \$5.00/W.⁹⁴ Not so. SCE's installed cost is correctly calculated at \$3.50/W (\$3.85/W including 10% contingency). Grossing up the capital costs for return and taxes is done in the revenue requirement calculation. Comparing revenue requirements with installed costs is like comparing apples to oranges. Revenue requirements are the total costs charged to utility customers. Exhibit SCE-3, Table II-1 developed a revenue requirement using returns and taxes. Capital costs are the direct costs of any capital projects. Revenue requirements and capital costs are not comparable. TURN's gross up of the \$3.50/W capital costs of the Solar PV Program is meaningless. It is not comparable to the installed costs of CSI projects. As explained in SCE's Opening Brief, societal savings of the Solar PV Program, when compared to CSI installations, are \$3.28/watt which is 48% of total costs.⁹⁵

⁹⁰ Exhibit SCE-1, M. Nelson, p. 8 ["The chart compares total installed costs for residential (3 kW nominal size) and large commercial (900kw to 1 MW size) solar PV projects." (Referring to Tables II-1 and II-2 on p. 9.)]

⁹¹ Greenlining Opening Brief, p. 7.

⁹² Greenlining Opening Brief, p. 7; DRA Opening Brief, p. 9.

⁹³ TURN Opening Brief, p. 10.

⁹⁴ TURN Opening Brief, p. 10.

⁹⁵ SCE Opening Brief, p. 18.

TURN also argues that SCE's program will produce electricity that is more expensive than existing rooftop subsidies.⁹⁶ This is not true. The average installed cost of a large (900 kW) non-residential size PV project in California is \$6.78/watt.⁹⁷ In comparison, SCE's customers pay \$3.50/watt for large rooftop PV systems installed under the Solar PV Program. The lower costs of installations under the Solar PV Program are a result of scale economies, market transformation, and improved processes.⁹⁸ Therefore, contrary to Greenlining and DRA's arguments, the Solar PV Program is a more cost-effective and efficient means of reaching the State's CSI goals.

SCE has proposed the Solar PV Program as one response to the State's call for increased solar energy. SCE has never contended that this project supplants the viability of the State's other solar programs at work. SCE submits that its proposed program is one means, among many, of advancing solar technology in accordance with stated policy.

B. The Solar PV Program Is Not Comparable To A Renewable Portfolio Standard (RPS) Project

Both TURN and Greenlining in their Opening Briefs inappropriately attempt to compare the Solar PV Program with RPS projects.⁹⁹ TURN attempts to compare the costs of SCE's Solar PV Program with the costs of utility-scale solar projects contracted for through the 2008 RPS solicitation.¹⁰⁰ This comparison is entirely inapt because it is comparing 1-2 MW solar rooftop PV projects with typically larger RPS solar projects that may or may not use PV technology. Comparing utility-scale solar projects using technology other than PV is inappropriate because it does not meet the objectives of the Solar PV Program. As SCE stated in its Opening Brief:

The focus of the Solar PV Program is to: (1) assist in meeting the State's Million Solar Rooftops goal; (2) achieve economies of

⁹⁶ TURN Opening Brief, p. 13.

⁹⁷ SCE Opening Brief, p. 18.

⁹⁸ Exhibit SCE-2, M. Nelson, p. 13.

⁹⁹ TURN Opening Brief, pp. 8-10; Greenlining's Opening Brief, pp. 5-6.

¹⁰⁰ TURN Opening Brief, pp. 8-10.

scale and train a large workforce familiar with Solar PV installation work; and (3) gather information about the effect of a large-scale program of Solar PV on SCE's distribution grid.¹⁰¹

Many large-scale RPS solar projects do not even use solar PV technology. For this reason, they do not assist in meeting the state's million solar rooftop goals, do not achieve economies of scale in solar PV market, and do not gather information about the effect of a large-scale program of 1-2 MW solar PV on SCE's distribution grid. Meeting the objectives of the Solar PV Program is outside the parameters that SCE considers when evaluating the benefits, cost-effectiveness, and viability of a new RPS project.

TURN also attempts to compare the Solar PV Program with "medium-sized (20-70MW) ground-mounted solar PV projects."¹⁰² These RPS projects likewise do not meet the objectives of the Solar PV Program. First, they cannot assist in meeting the Million Solar Roofs goals because they are not located on roofs. They also do not provide information about the effect of a number of 1-2 MW solar PV projects at different locations on SCE's distribution grid near its load centers. Typical RPS projects are not located near load centers, and therefore, would have different effects on SCE's distribution grid.¹⁰³

Greenlining attempts to have the Commission require SCE to use RPS criteria to evaluate the Solar PV Program. It asserts that: "If Edison intends to claim RPS credit for the SPVP, the Commission should require Edison to conform to the RPS program's performance standard of least-cost and best-fit."¹⁰⁴ Greenlining assumes that SCE can rank and select Solar PV Program projects using the same least-cost, best-fit criteria as it does in an RPS competitive solicitation.

The objectives of the Solar PV Program are to: (1) assist in meeting the state's Million Solar Roofs goals, (2) achieve economies of scale and train a large workforce familiar with solar PV installation work and (3) gather information about the effect of solar PV on SCE's

¹⁰¹ SCE Opening Brief, pp. 16-17.

¹⁰² TURN Opening Brief, p. 8.

¹⁰³ Exhibit SCE-1, M. Nelson, pp. 4, 11.

¹⁰⁴ Greenlining Opening Brief, p. 5.

distribution grid. These are not the objectives that SCE would consider when evaluating an RPS project. As SCE states in its Opening Brief, “. . . this project would never have been initiated if the goal was limited to only RPS procurement.”¹⁰⁵ So, applying least-cost and best-fit criteria to the Solar PV Program makes no sense. The Solar PV Program is not comparable to projects reviewed through the RPS competitive solicitation. Just because deliveries from the proposed Solar PV Program would count toward SCE’s RPS goals does not mean that it is comparable to RPS projects. The Solar PV Program should not be subject to criteria that SCE uses to rank and select RPS projects.

Both the quantitative comparison utilized by TURN and the proposed review criteria comparison proposed by Greenlining are meaningless. These comparisons do not take into account the very different objectives of the Solar PV Program and the RPS.

C. Utility-Owned Renewable Generation Is Not Comparable To Contracted-For Generation Through A Power Purchase Agreement (PPA)

Solar Alliance and Recurrent both attempt direct comparisons of Power Purchase Agreements (PPAs) with independent power producers with the utility-owned Solar PV Program.¹⁰⁶ Solar Alliance admits that “‘apples-to-apples’” comparison of utility-owned generation to PPAs is “difficult.”¹⁰⁷ Then, contradicting its own statement, Solar Alliance boldly asserts that “by allowing independent ownership of 50 percent of SPVP systems, the Solar Alliance proposal will provide a competition ‘yardstick’ against which SCE’s portion of the program can be assessed.”¹⁰⁸ Both Solar Alliance and Recurrent attempt to compare the Solar PV Program with PPAs. SCE’s Opening Brief describes in detail why the Solar PV Program, as utility-owned generation (UOG), is not comparable to a 20-year PPA.¹⁰⁹ For the reasons set

¹⁰⁵ SCE Opening Brief, p. 16.

¹⁰⁶ Solar Alliance Opening Brief, pp. 6, 22-25, Recurrent Opening Brief, pp. 7-8.

¹⁰⁷ Solar Alliance Opening Brief, p. 23.

¹⁰⁸ Solar Alliance Opening Brief, p. 25.

¹⁰⁹ See SCE Opening Brief, pp. 9-11.

forth in SCE's Opening Brief, the Solar PV Program, as UOG, is fundamentally different from a PPA. The Request for Offers (RFOs) advocated by Solar Alliance and Recurrent cannot provide the same benefits to utility customers and the state, as a whole, as the Solar PV Program.

Solar Alliance asserts that "the risks/rewards of a utility-owned project versus a PPA" is apparently comparable, "as established on the record of this proceeding."¹¹⁰ To the contrary, the extensive testimony in Exhibit SCE-2,¹¹¹ establishes that the risks/rewards of a UOG, like the Solar PV Program, are not comparable to a PPA. As discussed in Section II.B.2., above, Solar Alliance's proposal to cut SCE's Solar PV Program in half and put half of the program out to bid for 20-year PPAs is not consistent with SCE's proposal and does not meet SCE's objectives. As previously explained, SCE is unlikely to be able to achieve its cost targets with a smaller program. Moreover, the debt equivalence and possible collateral requirements associated with the 125MW of additional PPAs may create an unreasonable burden for SCE's ratepayers.¹¹²

Solar Alliance asserts that after two years the Commission could compare "the costs of utility-owned system versus those of the independents, as well as the efficiency of such systems."¹¹³ Such an assessment, comparing the costs of utility-owned systems versus those of independents, is impossible because of the very different risks associated with UOG and PPAs.

Recurrent attempts to compare the California Renewable Energy Small Tariff (CREST) adopted pursuant to AB 1969 with Solar PV Program.¹¹⁴ The CREST Program provides a standard offer contract to certain renewable independent power producers of projects up to 1.5 MW.¹¹⁵ As Exhibit SCE-2 explains, SCE plans to expand its standard contracts for solar PV and all eligible renewables up to 20MW in 2009.¹¹⁶ "Importantly, these standard contracts were established in the context of the State's renewables program, while SCE's rooftop proposal was

¹¹⁰ Solar Alliance Opening Brief, p. 23.

¹¹¹ Exhibit SCE-2, J. Nelson/P. Hunt, pp. 4-9.

¹¹² Exhibit SCE-2, J. Nelson, p. 7.

¹¹³ Solar Alliance Opening Brief, p. 25.

¹¹⁴ Recurrent Opening Brief, p. 7.

¹¹⁵ Exhibit SCE-2, S. Hemphill, p. 32.

¹¹⁶ Exhibit SCE-2, S. Hemphill, p. 32.

established to help meet the Million Solar Roofs goal.”¹¹⁷ The standard offer contracts that are and will be offered to solar PV producers in 2009 are simply not comparable to the Solar PV Program.

Contrary to assertions of Solar Alliance and Recurrent, PPAs are not comparable to the Solar PV Program. Solar Alliance at least acknowledges that it is difficult to compare PPAs to UOG, like the Solar PV Program. That being said, neither Solar Alliance’s proposed PPAs nor the standard contracts discussed by Recurrent meet the objectives of Solar PV Program. For this reason alone, in addition to the issues raised in extensive testimony in Exhibit SCE-2,¹¹⁸ they are not comparable to the Solar PV Program. The Commission should reject any attempt to compare PPAs or standard contracts with the Solar PV Program, or to replace any portion of the Solar PV Program with PPAs.

V.

PROPOSED ALTERNATIVES OF OTHER PARTIES

Alternatives proposed by the intervenor parties are discussed in Sections II.A. and B.

VI.

THE SOLAR PV PROGRAM IS CONSISTENT WITH PUBLIC UTILITIES CODE

§ 2775.5

Contrary to the assertions of Greenlining, DRA, and Recurrent, the Solar PV Program is not anticompetitive.¹¹⁹ Greenlining correctly contends that the Commission must find and determine that it is in the ratepayers’ interest to pass the cost and expense of implementing a program of solar energy development to the ratepayers under Public Utilities Code Section 2775.5.¹²⁰ The Solar PV Program does just that.

¹¹⁷ Exhibit SCE-2, S. Hemphill, pp. 32-33.

¹¹⁸ Exhibit SCE-2, J. Nelson/P. Hunt, pp. 4-9.

¹¹⁹ Greenlining Opening Brief, pp. 7-8; DRA Opening Brief, pp. 6, 17; Recurrent Opening Brief, p. 1.

¹²⁰ Greenlining Opening Brief, p. 7.

It is in SCE's customers' best interest to pay the lowest reasonable cost possible for rooftop solar energy. SCE's cost advantages are a direct result of (1) diligent market study, (2) improvements in design and methods, and (3) scale economies.¹²¹ SCE has studied rooftop solar technologies, polled PV solar manufacturers, and made independent assessments of market needs. SCE determined that the Solar PV Program could reduce costs of Solar PV projects quickly.¹²² To the extent SCE uses the assets and resources it employs by virtue of its regulated utility status, it does so in a manner that is not detrimental to the market. Indeed, the Solar PV Program is designed to transform the market, by bringing solar PV installation costs down.¹²³

Recurrent cites a line of testimony by SCE witness, Mr. Perez, on the issue of SCE resources.¹²⁴ Recurrent was repeatedly informed that Mr. Perez was not the appropriate witness to direct questions to concerning policy.¹²⁵ Moreover, Mr. Perez's affirmative responses to questions concerning the information possessed by field engineers and customer service representatives at SCE, while correct, do not take the leap assumed by Recurrent, *i.e.*, that all stated capabilities of SCE personnel would be utilized in its development of the Solar PV Program. Recurrent's reference to testimony on this point is therefore irrelevant to its argument that SCE's Solar PV Program does not compete on its merits, but only by employing utility resources.

As explained more thoroughly in SCE's Opening Brief, the Solar PV Program will increase competition by accelerating expansion of the market for 1 to 2 MW rooftop solar PV facilities through reduced costs resulting from improved installation methods, increased labor force, and increased public access to information.¹²⁶ Moreover, SCE's program would expand the solar PV industry because the size of the program is likely to increase long term supply by

¹²¹ Exhibit SCE-2, M. Nelson, p. 10.

¹²² Exhibit SCE-2, M. Nelson, p. 10.

¹²³ Exhibit SCE-2, M. Nelson, p. 10.

¹²⁴ Recurrent Opening Brief, pp. 5-6, *citing* various testimony from SCE witness R. Perez in Vol. 2 of the hearing transcript.

¹²⁵ *See, e.g.*, SCE, C. Schmid-Frazer, Tr. 2/163, lines 6-9.

¹²⁶ SCE Opening Brief, p. 24.

increasing labor productivity and improving system design, thereby reducing the costs of solar PV installations.¹²⁷ Furthermore, because the installations under the Solar PV Program are a small fraction of the available rooftop and total PV for the State, there is significant additional room for competition to enjoy the benefits of reduced installation costs and design improvements.¹²⁸ Recurrent's unsupported calculation of the technical potential of the PV market in the Inland Empire has not been introduced as evidence in this proceeding and is unsubstantiated. Therefore, pursuant to the concurrently filed Motion to Strike, SCE requests that this Commission dismiss Recurrent's arguments in this regard.¹²⁹

Finally, Solar Alliance gratuitously contends that the Solar PV Program proposed is inconsistent Section 2775.5 if the Commission fails to require SCE to purchase 125 MW of the 250 MW Solar PV Program through a competitive RFO process open to non-utility solar companies.¹³⁰ Solar Alliance refers the Commission to D.07-12-052 in arguing that SCE has not presented the unique/extraordinary circumstances that permit the program to go forward as a UOG project without a requirement that a portion of the power be acquired from independent companies using competitive solicitations.¹³¹ Recurrent also argues that the principles in D.07-12-052 apply.¹³² The Commission's decision in D.07-12-052 is irrelevant to the Commission's approval of SCE's application. As SCE witness, Mr. Nelson explained:

[T]his is coming into an unserved market need. It's not being brought forth -- while it is in fact utility-owned generation, UOG, it is being brought forward as a market transformation program as part of our view and our interpretation of state policy.¹³³

* * *

¹²⁷ SCE Opening Brief, p. 25.

¹²⁸ SCE Opening Brief, pp. 25-26.

¹²⁹ See concurrently filed Motion to Strike Certain Portions of the Opening Briefs of Greenlining Institute, Recurrent Energy, and The Utility Reform Network, p. 3.

¹³⁰ Solar Alliance Opening Brief, pp. 2-3, 26-27.

¹³¹ Solar Alliance Opening Brief, pp. 4-5.

¹³² Recurrent Opening Brief, pp. 19-20.

¹³³ SCE, M. Nelson, Tr. 3/376, lines 4-9.

I don't believe that this falls into the extraordinary circumstances because, A, there are RFOs for renewables that are open almost continuously where companies could bid in. So there are RFOs. Secondly, the Commission has numerous times asked the utilities to consider . . . bringing renewable generation forward. And third, this really is, again, it's a program. It's a market transformation program. So we're bringing it forward as such. So I don't necessarily think that I need to clear the extraordinary hurdle because I have RFOs available.¹³⁴

The arguments of intervenor parties on the issue of Section 2775.5 lack merit and should be disregarded. SCE estimates that the scale economies, market transformation, improved processes and public dissemination of information obtained through the installation and maintenance of the Solar PV Program will significantly lower costs. This is consistent and supportive of adopted state policy to expand solar PV. SCE intends to utilize the information, workforce, and analyses that the Commission authorizes in each General Rate Case to “accelerate the development and use of solar energy systems in this state for the duration of the program,” in furtherance of the policy directly stated in Public Utilities Code Section 2775.5. This ordinary course activity on behalf of our customers will help to achieve the goals of the Million Solar Roofs goals and Section 2775.5.¹³⁵

VII.

SCE'S PROPOSED COST RECOVERY FROM CUSTOMERS IS REASONABLE

A. Traditional Cost Of Service Ratemaking Assures That Customers Pay Only Reasonable Solar PV Program Costs

Greenlining contends that that any approved rate increases would have a disproportionate impact on low-income ratepayers.¹³⁶ This assertion is false. At the evidentiary hearings in this proceeding, SCE presented evidence on the impact of rate increases on CARE customers. As

¹³⁴ SCE, M. Nelson, Tr. 3/376, lines 19-28 through p. 377, lines 1-2.

¹³⁵ Exhibit SCE-2, M. Nelson, p. 13.

¹³⁶ Greenlining Opening Brief, pp. 9-11.

explained in response to data requests by Greenlining and in oral testimony by SCE witness,

Doug Snow:

The cost associated with the SPVP will be allocated as a generation cost. The residential rate class allocation will be embedded in the generation component of energy rates, with total tier 1 and tier 2 rates kept at their ABIX rate cap levels. The cost of the program will only be reflected in rates that apply to usage above 130% of baseline usage. On average, the total residential rate impact of the SPVP is expected to range from 0.02% in year 1 to 1.08% in year 7 which is less than the system average rate impacts. The attached file illustrates current rates and rates that include SPVP funding.¹³⁷

The impact on CARE customers is even less dramatic. Mr. Snow explained that:

Rate impacts to low-income ratepayers are mitigated by maintaining ABIX restrictions on residential rates below 130 percent baseline usage. Customers participating in the CARE Program will continue to receive at least a 20 percent discount on Tiers 1, 2 and 3 rate level, with Tier 4 and 5 CARE rates capped at the CARE Tier 3 level, resulting in a discount well in excess of 20 percent. The attached filed to Question 4, which is the attachment that was just handed out -- of this data request illustrates the relative impact to the solar program to residential CARE customers. They would be highlighted by the row that says CARE. Residential customers would be impacted less than non-CARE residential customers, while residential customers are impacted less than average customer systemwide. The net result is that CARE group of customers is among the least impacted of the program.¹³⁸

Greenlining additionally makes assertions concerning the percentage of income spent by low-income households on energy costs, CARE penetration rates in SCE's service territory, and enrollment in the Low Income Energy Efficiency Program.¹³⁹ As these topics were not addressed in prior written or oral testimony, SCE has not had an opportunity to present evidence on these matters. Post-hearing briefing is not the appropriate forum to introduce new evidence.

¹³⁷ Exhibit Greenlining-300; SCE, D. Snow, Tr. 1/67, lines 16-28.

¹³⁸ SCE, D. Snow, Tr. 1/91, lines 16-28 through p. 92, lines 1-5.

¹³⁹ Greenlining Opening Brief, pp. 9-11.

As such, SCE requests that the Commission ignore and strike these arguments in Greenlining’s Opening Brief as requested in the concurrently filed Motion to Strike.¹⁴⁰

B. The Proposed Scope And Timing Of Reasonableness Reviews Is Appropriate

Greenlining asserts that the risk of underperformance or failure should be borne by SCE through cost-efficiency, cost-effectiveness, and performance components in SCE’s annual Energy Resources Recovery Account (ERRA) Reasonableness proceedings.¹⁴¹ The well established process for reviewing system performance of SCE’s owned generation units takes place in SCE’s annual ERRA proceedings.¹⁴² In the ERRA Reasonableness proceedings, SCE must prove that the dispatch of generation resources and related spot market transactions comply with SCE’s Assembly Bill 57 Procurement Plan,¹⁴³ and SCE’s other plant operations subject to Commission review were reasonable. Therefore, in the ERRA Reasonableness proceedings, the Commission annually determines if SCE has effectively managed its generating units in order to achieve appropriate system performance. In future ERRA proceedings, if the solar PV rooftop generation is demonstrated to have not operated in a prudent manner, the Commission can authorize a disallowance of recovery of the replacement power costs (*i.e.*, to be borne by SCE’s shareholders rather than customers) that were incurred as the result of this imprudent operation. So, there already exists a process consistent with how the Commission evaluates the performance of all SCE-owned generation that will ensure prudent system performance or SCE’s shareholders are at risk for the disallowance.¹⁴⁴

¹⁴⁰ See concurrently filed Motion to Strike Certain Portions of the Opening Briefs of Greenlining Institute, Recurrent Energy, and The Utility Reform Network, p. 3.

¹⁴¹ Greenlining Opening Brief, pp. 3-5, pp. 12-13

¹⁴² Exhibit SCE-2, D. Snow, pp. 26-27.

¹⁴³ See Exhibit SCE-2, D. Snow, p. 27, fn. 30 [“The Commission clarified the scope of review application to least-cost dispatch decisions in D.05-01-054.”]

¹⁴⁴ Exhibit SCE-2, D. Snow, p. 27.

C. SCE Should Receive The Full 100 Basis Points Of Additional Rate Of Return On The Solar PV Program

DRA and TURN both object to SCE's proposed initial rate of return of 9.75 percent for the Solar PV project.¹⁴⁵ DRA and TURN argue that the Solar PV project should be denied this rate of return because the project uses technology that has been used elsewhere before. This is a bit like claiming that the first electric cars were not experimental because they employed wheels. SCE's Solar PV project complies with Section 454.3(c) of the Public Utilities Code in the following ways: (1) the Solar PV program is targeted at the untapped resource of commercial and industrial rooftop space in SCE's service territory and it will bridge the gap between small and large scale solar installations;¹⁴⁶ (2) it will refine the production of solar PV system parts, related equipment, and the interconnection process;¹⁴⁷ and (3) the Solar PV project will decrease environmental pollution and reduce fossil fuel costs.¹⁴⁸ The Commission is permitted to grant SCE's requested rate of return by Public Utilities Code section 454.3, and it should do so to maximize SCE's incentive to complete the full scope of SCE's solar PV project and any similar future projects.¹⁴⁹

D. The Commission Should Reject TURN's Proposal For 80/20 Sharing Of Cost Overruns

TURN proposes that capital cost overruns of up to 20% be split 80/20 between ratepayers and shareholders.¹⁵⁰ The primary defect of TURN's proposal is that it does not stand alone, but must be considered in the context of TURN's companion proposal that SCE's project be limited to installing only 50 MW of generation.¹⁵¹ In this context, TURN's cost sharing proposal

¹⁴⁵ DRA Opening Brief, pp. 13-15; TURN Opening Brief, pp. 25-26.

¹⁴⁶ Exhibit SCE-1, M. Nelson, p. 4.

¹⁴⁷ Exhibit SCE-1, M. Nelson, pp. 12-14.

¹⁴⁸ Exhibit SCE-1, M. Nelson, pp. 6, 15-17.

¹⁴⁹ Exhibit SCE-2, P. Hunt, p. 30.

¹⁵⁰ TURN Opening Brief, p. 22.

¹⁵¹ Exhibit TURN-110, M. Hawiger, p. 20.

becomes punitive, because SCE cannot possibly reach its target installation cost with such a limited project.¹⁵² As explained in Section II.B.1. and Exhibit SCE-2,¹⁵³ a 50 MW project would not enable SCE to achieve an average capital cost below \$3.86 per watt because of insufficient economies of scale. In addition, it is unclear whether TURN's proposal contains any adjustment for general price inflation. So under TURN's proposal, SCE would not only take the risk of not achieving economies of scale, SCE could also be harmed if the average capital cost increases due to general price inflation in the economy.¹⁵⁴

The second major defect of TURN's proposal is that it specifies an arbitrary 80/20 split of any capital costs between \$3.86 and \$4.62 per watt.¹⁵⁵ There is no discussion in TURN's testimony of why this split is reasonable for the Solar PV Program. In fact, during cross-examination of SCE witness Mr. Snow, TURN's attorney specified a hypothetical situation where an 80/20 split would be *unreasonable*:¹⁵⁶

Q [I]f the Commission authorizes your project as proposed, and you subsequently issue some request for offers and find that your lowest bid for capital equipment is 10 percent higher than your benchmark, your threshold, is there any reason why the Commission would not find that to be reasonable?

A We certainly would have to put forth testimony as to why it is reasonable.

Q Would you agree that there is very little risk on Edison that the Commission would disallow those costs if they are the lowest bid that Edison gets?

A I have no reason to believe that it is little risk or a lot of risk. I mean we are saying our proposal is that we are at risk if we go over these threshold amounts. We must find and support that the amounts above this are reasonable.

¹⁵² Exhibit SCE-2, P. Hunt, p. 28.

¹⁵³ Exhibit SCE-2, P. Hunt, p. 28.

¹⁵⁴ Exhibit SCE-2, P. Hunt, p. 28.

¹⁵⁵ Exhibit TURN-110, M. Hawiger, p. 23.

¹⁵⁶ SCE, D. Snow, Tr. 1/99, lines 24-28 through p. 100, lines 1-12.

The point of this exchange was that if the lowest bid for capital equipment was 10 percent above SCE's benchmark (or TURN's \$3.86 per watt threshold), the Commission might reasonably find that SCE's conduct was reasonable, and allow the increased cost. But under TURN's proposal, 20 percent of the increased cost would be automatically disallowed, reasonable or not. TURN's cost sharing proposal should be rejected.

E. CARE's Proposal For A Cost Incentive Mechanism

Somewhat incomprehensibly, CARE asserts that ratemaking adopted for Comprehensive Environmental Response Compensation and Liability Act (CERCLA) hazardous waste sites in D.94-05-020 should be adopted for the Solar PV Program.¹⁵⁷ First and foremost, D.94-05-020 adopts a settlement agreement which, pursuant to Rule 12.5 of the Commission's Rules of Practice and Procedure, provides no precedent for future ratemaking. That being said, clean-up expenses associated with hazardous waste sites are very different from the costs to install and operate new solar PV generating facilities. CERCLA imposes absolute liability on all holders of property contaminated with hazardous waste.¹⁵⁸ SCE must pay cleanup costs pursuant to CERCLA. SCE's Solar PV Program is an initiative to assist the state in meeting its Million Solar Roofs goal.¹⁵⁹ There is no obligation on SCE's part to go forward with the Solar PV Program.

This is an important distinction. D.94-05-020 assigns five to ten percent of the costs of hazardous waste cleanup to shareholders.¹⁶⁰ In D.94-05-020, the Commission explained that it adopted this cost allocation because "[i]n doing so we emphasize our desire to have the utilities aggressively pursue recovery from their respective insurers on behalf of themselves and the ratepayers. We believe the primary responsibility for paying for hazardous substance expenses

¹⁵⁷ CARE Opening Brief, pp. 2-3.

¹⁵⁸ 42 U.S.C. §9607 (See http://www.law.cornell.edu/uscode/pdf/uscode42/lii_usc_TI_42_CH_103_SC_I_SE_9607.pdf).

¹⁵⁹ Exhibit SCE-1, M. Nelson, p. 1.

¹⁶⁰ D.94-05-020, pp. 5-6.

should fall on the insurers under the policies issued by them to the utilities over the years.”¹⁶¹ In the case of hazardous waste cleanup cost, the Commission endorsed a cost allocation that it thought would provide a strong incentive for the utilities to pursue cost recovery from a third party.

In the case of SCE’s Solar PV project, the Commission should be creating incentives for SCE to aggressively pursue project construction and completion. CARE’s proposal would create the opposite result. It is an inequitable and confiscatory policy to take five to ten percent of the capital costs of new solar generating facilities built for the benefit of ratepayers in the state as a whole and assign them to shareholders. SCE opposes this proposal as inconsistent with the regulatory compact. To understand the regulatory compact, it is helpful to start with the Commission’s famous “Yellow Book,”¹⁶² issued in the period immediately before the Commission deregulated the California electricity market. The Yellow Book describes the “regulatory compact” between regulators and electric utilities:¹⁶³

Building on the compact’s legal and economic foundations, the actions of this Commission, California legislature, the courts, state and federal agencies, and Congress have combined to form four oft-cited elements of what has come to be referred to as the “traditional regulatory compact.” Under that compact an investor-owned public utility in California was granted 1) an exclusive retail franchise to serve a specific geographic region; 2) *an opportunity to recover prudently incurred expenses*; 3) *an opportunity to earn a reasonable return on investment*; and 4) powers of eminent domain. In return for these privileges, the utility was subject to cost and price regulation by the Commission, and *required to provide safe and reliable service to all customers in its service area on a nondiscriminatory basis*. This latter feature of the compact is commonly called the utility’s “duty,” or “obligation” to serve.

¹⁶¹ D.94-05-020, p. 10.

¹⁶² Division of Strategic Planning, California Public Utilities Commission, “California’s Electric Services Industry: Perspectives on the Past, Strategies for the Future,” February 1993. Available online at <http://docs.cpuc.ca.gov/published/report/3822.htm>.

¹⁶³ Id., pp. 9-10.

The Commission fulfills its obligations under the compact through a decisionmaking process which attempts to *balance the interest of current and future consumers and the financial interest of the utility accepting the duty to serve*. (Emphasis added; footnotes omitted.)

The regulatory compact described here has been modified to some extent through the process of deregulating and re-regulating the electric utility industry in California. But the italicized portions of the quotation are still in effect and they are significant. CARE proposes a significant departure from the regulatory compact that is entirely unwarranted in this case.

VIII.

OTHER ISSUES

This section intentionally left blank.

IX.

CONCLUSION

SCE respectfully requests that Commission authorize SCE to implement its Proposed Solar Photovoltaic PV Program, without any changes proposed by intervenor parties.

Respectfully submitted,

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December 10, 2008

CERTIFICATE OF SERVICE

I hereby certify that, pursuant to the Commission's Rules of Practice and Procedure, I have this day served a true copy of SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) REPLY BRIEF on all parties identified on the attached service list(s). Service was effected by one or more means indicated below:

Transmitting the copies via e-mail to all parties who have provided an e-mail address. First class mail will be used if electronic service cannot be effectuated.

Executed this **10th day of December, 2008**, at Rosemead, California.

/s/ Melissa Schary
Melissa Schary
Project Analyst
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