BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Policies, Procedures and Incentives for Distributed Generation and Distributed Energy Resources.	RULEMAKING 04-03-017 (Filed March 16, 2004) CEC Docket No. 04-DIST-GEN-1 and 03-IEP-1

REPLY COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) ON ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON STAFF SOLAR REPORT

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Pursuant to the June 14, 2005 Assigned Commissioner and Administrative Law Judge's Ruling Seeking Comment on Staff Solar Report (the Ruling), Southern California Edison Company (SCE) submits the following reply comments on the CPUC and CEC Joint Staff Proposal to Implement a California Solar Initiative (the Staff Report).

I.
INTRODUCTION AND SUMMARY

In response to the Ruling, fourteen parties filed comments addressing proposals in the Staff Report. In its opening comments, SCE expressed support for a number of the Staff's proposed program elements. These included the Staff's recommendations to:

- consolidate the current residential and commercial solar programs into one California Solar Initiative (CSI) under the auspices of the CPUC and administered by SCE in its service territory;

- allocate incentives based on system performance rather than system capacity; and
- adopt a declining incentive schedule.

In addition, SCE offered a number of recommendations to establish a sound foundation for an effective solar initiative program. These included recommendations that Staff:

- revise its cost-benefit analysis to reflect the multiple perspective cost-benefit framework recommended by a number of parties in another phase of this rulemaking;
- include a maximum program budget or cost cap to limit open-ended cost exposure to ratepayers; and
- incorporate a mid-term assessment of the program.

Because the themes addressed in these six proposals are central to a number of the filed comments, SCE has structured these reply comments around these six recommendations. SCE will also address the issue of creating hidden subsidies through rate design, including net metering, which was a topic mentioned in several comments. In Section II(A), SCE begins this discussion by noting that the Commission must set a sound foundation through a credible cost-benefit analysis before settling on a final program design. In this section, SCE points out the many flaws in Vote Solar's cost-benefit analysis. In Section II(B), SCE responds to comments on consolidating the solar programs, noting that a large majority of parties support the proposed consolidation. In Section II(C), SCE responds to comments on the subject of performance-based incentives. Again, SCE was pleased to see that a majority of parties, including many representing solar interests, support the Staff's proposal to move to performance-based incentives. In Section II(D) SCE responds to comments on the Staff's proposal to adopt a declining incentive schedule. In Section II(E), SCE addresses the need for a firm program budget and fair funding scheme. SCE highlights parties' concerns over the

estimated cost of the CSI and explains why it is appropriate to fund the CSI through both gas and distribution rates. In Section II(F), SCE reiterates its recommendation that the CSI include a midterm assessment and correction, if needed, noting the agreement of consumer groups and utilities. In Section II(G), SCE responds to the comments of parties seeking additional subsidies through rate design and the expansion of net metering. In this section, SCE responds to Vote Solar's argument that the Commission should eliminate the demand charge in its rates, and points out that rates must be cost-based.

II.
DISCUSSION

A. As a Foundation to Any Solar Incentive Program, the Commission Must First Understand the True Costs and Benefits of the Proposed Program, Including Costs to Non-Participating Customers.

In opening comments, a number of parties, including SCE, pointed out the serious flaws in the Staff's economic analysis and the related $1.02 billion in claimed benefits from a CSI. The most notable flaw is that the analysis fails to include any costs associated with the installation of the solar technologies. As discussed below, Vote Solar makes the same fundamental error and relies on a number of optimistic assumptions in its analysis.

The purported CSI analysis completed by Vote Solar shows net present value (NPV) benefits of between $4.9 and $12.9 billion. The analysis, however, ignores the cost to consumers of the solar electric systems. At $9.20/watt for 3,000 MW of solar panels, and assuming ongoing maintenance costs (inverters require replacement every 5-10 years), installing the solar electric systems will cost California approximately $31 billion. This substantial cost is entirely ignored in Vote Solar's analysis.

A more complete assessment of the costs and benefits of solar installations is shown in SCE's Table 1 below. The example illustrates costs and benefits from three perspectives: the participant, the non-participant, and all ratepayers (or societal). The participating customer perspective shows the trade-offs a customer would face if considering installing a 3 kW solar unit. The non-participating customer perspective allows policy makers to address the direct cost shifts that occur as a result of explicit subsidies (*e.g.* CEC and tax incentives) and implicit subsidies that occur when the bill savings that result from a customer's lowered power usage exceed the utility's cost of supplying power to the customer. The all-ratepayer perspective provides an overall measure of cost effectiveness from the viewpoint of all affected members of our society. Extending this analysis showing a single home with a 3 kW solar panel to one million homes results in an overall cost to society (all-ratepayer perspective) of $28 billion.

Table 1

3 kW SOLAR COST-BENEFIT EXAMPLE			
	Participating Utility Customer Perspective	**Non-Participant Utility Customer Perspective**	**All-Ratepayer Perspective**
Benefits (One Home @ 3kW)	**$18,893**	**$6,448**	**$16,288**
Bill Savings[1]	$9,053		
CEC Rebate and Tax Incentive[2]	$9,840		$9,840
Avoided Gen Cost[3]		$6,329	$6,329
Avoided T&D Cost[4]		$118	$118
Costs (One Home @ 3kW)	**$31,696**	**$20,329**	**$44,412**
PV Investment Cost[5]	$31,696		$31,696
Meter Investment[6]		$794	$794
Meter Operating Cost[7]		$2,082	$2,082
Bill Savings		$9,053	
CEC Rebate and Tax Incentive[8]		$8,400	$9,840
Total (One Home @ 3kW)	**($12,802)**	**($13,882)**	**($28,124)**

NPV[1] Analysis Over 25 Years Using the Following Assumptions:

1. Calculated based on average Domestic (non-CARE) rate. Monthly electricity production is assumed to offset primarily upper tier usage. The winter credit is higher because the winter electricity production offsets usage in high tiers, while summer electricity production is greater and offsets both higher and lower tier usage. Customers are assumed eligible for net energy metering and waiver of standby and departing load charges. The benefit of a standby charge waiver is $1,950 and the benefit of a departing load waiver is $503. Assumes a rather aggressive 21% annual capacity factor shaped to reflect a south facing installation.
2. Based on 2005 CEC inventive values for the Emerging Renewables Program of $2.80 per watt and a tax credit of 7.5%.
3. Based on SCE's 2006 GRC marginal cost analysis.

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1 All numbers assume a 6.2% discount rate.

4. Reflects potential transformer capacity savings. This savings will only be achieved if the customer is able to provide "physical assurance" to prevent adverse consequences to the distribution system and to other customers pursuant to D.03-02-068.
5. Based on average 3 kW PV installed cost of $9.20/watt (R.04-03-017) and periodic costs for inverter replacement during the assumed 25-year panel life.
6. Based on SCE estimate of meter investment cost necessary for net energy metering service and time-of-use capability. The meter investment is assumed to be paid by all non-participating customers.
7. Based on SCE estimate of additional metering O&M cost associated with net energy metering service. The meter O&M is assumed to be paid by all non-participating utility customers.
8. Cost of CEC rebate is born by non-participating utility customers. Cost of the tax incentive is born by California tax payers and is only reflected in the all-ratepayer perspective.

It is important to point out that Vote Solar's analysis assumes that the incentives provided under the CSI will be sufficient to make solar installations cost-effective without further incentives by 2016. At this point, in Vote Solar's analysis, consumers would continue to install about 350 MW of new solar installations each year. This purported market transformation effect, however, is entirely speculative. For consumers to continue installing new solar panels after incentive payments end, their bill savings would have to be larger than the cost they are paying for the solar panel investment and on-going maintenance. Vote Solar has provided no evidence to suggest that the cost of solar panels will decline enough to make installations cost-effective or that the incentives funded by the solar homes program are necessary to produce such a decline.

Table 2 identifies the hypothetical point at which solar panels become cost-effective and no longer a cost burden to California's utility customers and taxpayers. In this example, the cost of such systems would need to fall from the current $9.20/watt to $2.63/watt to break even over a 25-year lifecycle analysis. To create a value proposition for utility customers and taxpayers, the cost would need to fall much further to cover the $1 billion that has already been committed to encourage solar installations, and to justify paying out the upfront cost of incentives over the

first 10 years. However, even achieving the break-even point in 2016 is unlikely. This suggests a 71% decline in the cost of solar panel installations. Since installation cost is a significant percentage of the overall cost of installed systems, this is simply not likely unless there is a substantial decline in the cost of the installation along with the reduction in solar panel costs. Taking the Japanese example of a mature PV industry, it is not at all clear that the long term trend of continued decline in system installation costs will continue. Noting the relatively stable 2001-2003 system cost, it is possible that the industry has already reached a technologically stable price point.[2]

Table 2

	Today's Marketplace	To Achieve a Break-Even Point
Total Benefits	**$18,893**	**$9,053**
NPV of Bill Savings	$9,053	$9,053
CEC Rebate & Tax Incentive	$9,840	$0
Total Costs	**$31,696**	**$9,053**
Break-Even Point	**($12,803)**	**$0**

$/watt Cost Needed to Achieve a Break-Even Point	
% Drop in Cost to Break Even	-71.44%
Current Cost/Watt	$9.20
$/Watt to Achieve a Break-Even Point	**$2.63**

ASPv and PV Now also include a flawed analysis in their joint comments by relying on a "waterfall" of alleged benefits but neglecting to include the high cost of installing photovoltaic (PV) solar panels and inverter replacements. The only costs reflected in ASPv and PV Now's analysis is the cost of incentive payments. A valid method for calculating costs and benefits must include all quantifiable costs and all quantifiable benefits associated with the project. Only in this way can the

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2 *See* Staff Report, p. 9, Figure 3.

Commission achieve a credible cost-benefit evaluation, which must be at the foundation of any program design.

It is SCE's position that the Commission should adopt a multi-perspective framework in the DG OIR (R.04-03-017) as reflected in Table 1 and as proposed for the Self Generation Incentive Program (SGIP) by ITRON. This type of framework is an excellent tool for investigating public policy choices because it allows policy makers to understand costs and benefits from three critical perspectives. Contrary to ASPv and PV Now's argument, a multi-perspective framework is quite robust and can include any quantifiable PV benefit or market transformation effects of a PV program. SCE agrees in concept that market transformation effects should be considered when they can be credibly identified and quantified. However, no party has suggested a way of estimating with any accuracy when – or if – the market transformations will occur, or how much the market will actually transform. The Commission should first analyze PV costs and benefits excluding market transformations to test the quantifiable costs and benefits and evaluate the potential impacts on non-participating customers. If incentives result in non-participating customers subsidizing PV, then the Commission can evaluate whether the potential "market transformation effects" justify this subsidy.

B. <u>There is Broad Support for the Staff's Proposal to Consolidate the Current Residential and Commercial Solar Incentives into One Program.</u>

The overwhelming majority of parties support consolidation of current residential and commercial solar incentive programs into one program. The investor-owned utilities,[3] solar stakeholders,[4] and consumer groups[5] agree that such

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[3] *See* SCE Comments, pp. 5-6; PG&E Comments, pp. 3-4; SDG&E Comments, p. 8. In addition, the San Diego Regional Energy Office (SDREO), administrator of the Self Generation Incentive Program in San Diego Gas & Electric's territory, supports a consolidated solar program ("SDREO

Continued on the next page

consolidation is "the best way to coordinate incentives and maximize the benefits of program participation for customers, ratepayers, and solar providers."[6] As PG&E notes, a consolidated CSI administered by PG&E, SCE, SoCalGas, and SDREO will "enhance marketing and communications with customers about solar programs, efficiency of program administration, and integration with energy efficiency and other demand response programs."[7]

Nevertheless, a few parties shun the expertise, efficiency, and proven track record of the SGIP Program Administrators, and ask that the Commission employ some other unknown third parties to administer the CSI. For instance, Environment California Research and Policy Center (EC) claims – without support – that investor-owned utilities (IOUs) have "limited effectiveness" and "relatively high administration costs . . . ."[8] However, according to Itron's Self-Generation Incentive Program Administration Comparative Assessment 2003, "[i]n the area of cost effectiveness, the average result of the utility administrative approach was found to be more effective as compared to the non-utility result, as measured by percentage of administrative costs per total program budget, administrative cost per application, and administrative cost per kW of rated system capacity."[9] Thus, contrary to EC's unsupported statements, IOU administration of the SGIP has been, on average, more cost effective than third-party administration. SCE anticipates that such performance would continue with the CSI program as well.

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strongly favors consolidation of all solar programs including residential and commercial, and photovoltaics and solar water heating.")

4 *See, e.g.*, ASPv/PV Now Comments, pp. 5-6; CalSEIA Comments, p. 2 ("CalSEIA strongly supports the Joint Staff recommendation 'to consolidate existing and anticipated residential and commercial solar incentives into one program by June 2006.")

5 *See* ORA Comments, p. 1; CLECA Comments, p. 4; CMTA Comments, p. 3.

6 ASPv Comments, p. 6.

7 PG&E Comments, p. 3.

8 EC Comments, p. 4.

9 Self-Generation Incentive Program Administrator Comparative Assessment, September 2, 2003, pg ES-6.

Certain parties also comment that SCE has a conflict of interest (or the appearance of one).[10] These concerns are likewise without merit. As noted by the Joint Staff, PG&E, SCE, and SoCalGas, already successfully administer the SGIP, and coordinate with other ratepayer-funded energy efficiency, demand response, and educational outreach programs. The Commission has recently determined that administration of energy efficiency and demand response programs should reside with the utilities.[11] It is due to this expertise and successful track record that the Joint Staff has appointed SCE and other IOUs to administer and implement the CSI.

Finally, Vote Solar comments that the CEC would be better at administering the CSI because of the CEC's experience processing large numbers of applications.[12] However, Vote Solar fails to note that the SGIP administrators have facilitated the installation of more photovoltaic capacity than the CEC under its Emerging Renewables Program, and within a shorter period of time. Moreover, Vote Solar appears to concede that the utilities are good administrators of these types of programs by saying "utilities have done a commendable job administering the SGIP Program, providing rebates in a timely manner and providing good customer service."[13]

SCE rejects the notion that a third-party administrator would serve its ratepayers better than SCE. First, SCE has available resources and the ability to manage the risk, to borrow forward, and to mitigate "phantom" projects better than

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10 *See, e.g.*, ASPv/PV Now Comments, p. 17. ASPv requests that "administrative tasks should to the extent possible be assigned to an independent non-profit entity (such as the San Diego Regional Energy Office) rather than to the utilities." Notably, SDREO makes no such request itself and defends the current administrative configuration in its comments.

11 Notably, parties raised similar concerns regarding an alleged conflict of interest with respect to energy efficiency programs. The Commission nevertheless affirmed that the utilities should administer those programs.

12 Vote Solar Comments, p. 10.

13 *Id.*

a smaller third-party administrator. Second, SCE (and other IOUs) are in the best position to coordinate the CSI with current and future energy efficiency and demand reduction programs, as proposed by the Staff.[14] Third, only SCE can coordinate customer service, metering, and interconnection for CSI participants in its territory.

C. There is Broad Support for the Staff's Proposal to Utilize Performance-Based Incentives.

There is also broad support for the Staff's proposal to adopt performance-based incentives (PBI).[15] Vote Solar, for example, agrees "emphatically that the incentive should be phased in to become a performance-based incentive. It is simply the best way to ensure that quality systems are installed throughout the state for decades to come."[16] CLECA notes that they "strongly support the installation of advanced metering so that solar owners are paid for the value of energy produced at times of system peak demand."[17] Additionally, the City of San Diego (CSD) indicates that a PBI mechanism "should help insure that owners maintain their systems and keep them producing."[18] SCE concurs with these statements.

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14 In particular, the Staff proposes that CSI program administrators "conduct solar education and outreach, and coordinate CSI marketing with existing statewide and localized efforts, such as Flex Your Power and energy efficiency outreach." Staff Report, p. 18.

15 Most parties agree that the CSI should move to a PBI-funding mechanism (ASPv/PV Now, Vote Solar, City of San Diego, CLECA, CMTA, Environment California Research and Policy Center, PG&E, SCE, and SDG&E). Only Cal SEIA and Energy Innovations, Inc. voiced strong opposition to PBI, with Energy Innovations, Inc. stating that they agree that California should work toward that structure. SCE finds it interesting that many of those who tout the peak production benefits of photovoltaics and argue for higher avoided cost inputs are hesitant to link incentives to system performance.

16 Vote Solar Comments, p. 8.

17 CLECA Comments, p. 3. SCE agrees, but believes the burden of guaranteeing and proving system performance and benefits must be borne by the solar industry and those installing the systems, not by taxpayers or utility ratepayers through increased program costs that would result from extensive metering and data collection.

18 City of San Diego Comments, p. 3.

Parties cannot escape the fact that with a capacity-based incentive structure, once the capital investment is paid for up-front, the owner has less incentive to maintain and clean the systems. In fact, Itron noted in its 4th Year Impact Report that 1/3 of the system owners did not clean their systems, and of those that did clean their systems, the cleaning schedule ranged from twice a week to once a year. As SCE pointed out in its Opening Comments, the size of a unit is not an accurate predictor of system output sufficient to assure ratepayers that they will receive an adequate return on their incentive investment. Paying for actual output will help ensure that the incentive a system receives is commensurate with the benefit that it provides.

SCE is receptive to the idea of paying out the incentives over a shorter period of time than proposed in the CSI, as suggested by both Vote Solar and PG&E, if it will serve to enhance a performance-based program. Vote Solar suggests that incentives through a PBI mechanism should be paid out over a shorter time-frame – possibly over a 5-year period – to allow those investing in solar generation "to recover their costs in a reasonable time, while also ensuring that the solar system is delivering the promised power."[19]

D. There is Broad Support for the Staff's Proposal to Adopt a Declining Incentive Schedule.

A broad spectrum of parties also support the Staff's proposal for declining rebates, with some seeing it as the only way to fulfill the program's goal of a self-sustaining solar industry, existing without subsidies. For example, ASPv and PV Now, in their joint filing, "strongly support" the approach of a declining, ten-year program.[20] Two respondents (CSD and SDREO) even note that the declining

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19 Vote Solar Comments, p. 8.
20 ASPv/PV Now Comments, p. 2.

rebates would send "appropriate signals" to the industry to reduce their prices.[21] CSD notes that a CSI program must incorporate this "weaning" from subsidies, as it will "force the market to be more competitive and cost-effective in order to persevere."[22] SCE concurs that a fixed declining rebate schedule should be established.

E. The Commission Should Establish a Fair and Firm Program Budget and Funding Scheme.

1. The Potential Impact on Ratepayers and the Uncertainty Surrounding Program Costs Call for a Firm Program Budget.

A number of parties express concern over the estimated cost of the CSI, especially given that there is still no cost-benefit analysis to justify the level of investment contemplated by the Staff Report. As CMTA notes: "While CMTA continues to be concerned about the overall price tag and cost-effectiveness of this ambitious California Solar Initiative (CSI), we recognize that solar power has a role to play in the resources mix . . . ." CMTA goes on to note that "[a]lthough the staff report presents some justification for the investment, clearly there is much more that needs to be done to economically justify investments in the amounts contemplated."[23] This is especially true given that some believe it will take much more than $1.8 billion to secure 3,000 MW[24] of new solar power while others argue for an even greater increase in program funding.[25] Given the uncertainty as to how much a CSI will cost to achieve the program goals, and the fact that IOU ratepayers have been singled out to shoulder this burden, it is essential that the Commission

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[21] SDREO Comments, p. 9.
[22] CSD Comments, pp. 4-5.
[23] CMTA Comments, p. 4.
[24] PG&E Comments, p. 12.
[25] *See, e.g.*, Energy Innovations Comments, p. 2; SDREO Comments, p. 3.

set a firm program budget to limit the potential exposure to ratepayers. As PG&E notes in its opening comments:

> "While many solar advocates argue that the CPUC should simply ignore the rate impact on nonparticipating customers in evaluating the proposed solar programs, and simply accept the premise that PV will soon become cost-effective, PG&E believes that it is absolutely essential for the Commission to include a firm limit on the amount of rate increases for non-participating customers resulting from a new solar program."[26]

SCE concurs.

2. Funding Should Come From Both Gas and Electric Rates.

According to the Ruling, two of the objectives of the CSI are (1) "to significantly increase the amount of renewable generation and distributed generation in California and thereby decrease GHG emissions, improve air quality, and diversify California's energy portfolio . . ." and (2) to "[l]ower the burden of expanding and maintaining the State's transmission, pipeline, and distribution systems for electricity and natural gas."[27] With these stated goals in mind, many parties agree with Staff's proposal to "[f]und the program through 2016 via gas and electric distribution rates . . . ."[28]

The Southern California Generation Coalition (SCGC), however, disagrees on the basis that SB 1 contemplates that funding for the Million Solar Roofs Initiative is to be recovered exclusively through electricity rates. SCE need not engage in a debate over what SB 1 says – the legislation speaks for itself. More importantly, no exclusive incentive scheme has yet been adopted by the Legislature or the Commission, and the Commission and interested parties are free to discuss and debate the merits of alternative schemes, including one funded in part through gas

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[26] PG&E Comments, p. 12.
[27] Ruling, p. 4.
[28] *See, e.g.,* ORA Comments, p. 1; ASPv Comments, p. 3; CalSEIA Comments, p. 3.

distribution rates. As articulated in the Staff Report, the CSI is a program directly related to energy and is non-specific as to which, if any, solar technology is preferred.

The intent of the CSI is to further the public policy preferences of the CPUC/CEC by funding renewable energy sources. Therefore, the Commission should seek funding from all ratepayers, including gas customers. Moreover, all forms of solar generation proposed to be funded by the CSI (*i.e.*, photovoltaics, solar-thermal electric, and solar hot water heaters as eligible technologies, installed to offset customer load on site) displace gas-fired generation.[29] Another advantage to extending CSI funding requirements to gas customers is the larger footprint they enjoy across California. By limiting the CSI funding to CPUC jurisdictional electric customers only, municipal electric utility customers enjoy the public policy benefits of a solar initiative without paying any of the costs. With nearly 30% of all California electric sales being served by municipalities, extending the CSI contribution to include CPUC jurisdictional gas utilities ensures a nearly 100% California ratepayer contribution.[30] For these reasons, SCE concurs with the Staff's recommendation that the CSI be funded by all electric and gas ratepayers.

F. The Program Should Include Opportunities for Periodic Assessments and Course Corrections.

SCE renews its recommendation for a mid-term assessment or other scheme that would allow for a periodic review of the CSI and opportunities for mid-course corrections. SCE is not alone in this recommendation. As CMTA notes, "[i]f the

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29 As CalSEIA notes, "[A] great deal of natural gas is combusted in California to generate electricity, and utilizing solar technologies to reduce that consumption in thermal end-use applications only makes sense." CalSEIA Comments, p. 3.

30 *See* http://www.energy.ca.gov/naturalgas/utility_retail_deliveries.html; http://www.energy.ca.gov/electricity/utility_sales.html; http://www.energy.ca.gov/electricity/electricity_consumption_utility.html

performance is less than expected and solar capacity has to be derated during the load forecasting exercise, then ratepayers will be on the hook for redundant resources during summer peak periods, reducing system benefits significantly. Therefore, there may be a need for some type of 'off-ramp' review whereby the performance of the installed units can be periodically reevaluated and appropriate corrections can be made."[31] PG&E concurs with CMTA and recommends that the program should include continuing evaluation of program results and the possibility of off-ramps and changes if these reviews indicate that change is needed. For as PG&E points out, "the CPUC and CEC should not create a program that calls for continuation even if it is demonstrably failing."[32]

G. The Commission Should Resist the Urge to Provide Additional Cross-Subsidies Through Rate Design.

Although the primary focus of the CSI is on direct incentive payments, some parties look to secure additional subsidies through rate design and the expansion of net metering. SCE believes that as a general matter, rates should be cost-based and not artificially reduced to promote one particular generation technology over another. The Commission should understand fully the long-term cost implications on other ratepayers before it makes any change to SCE's rate design. In fact, SCE believes that its current rate structure is already designed to reflect the benefits of solar power.

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31 CMTA Comments, p. 6. SCE further notes that the program design should include the necessary metering and data collection to ensure a robust mid-course assessment is possible.

32 PG&E Comments, p. 28.

1. **SCE's Rate Structure is Designed to Capture the Benefits of Solar Power.**

Notwithstanding the arguments of Vote Solar, SCE's existing electricity cost structure is well aligned to capture the benefits of solar generation. Electricity demand and prices (both for energy and capacity components) are highest during hot summer afternoons, when solar generating stations should be at or near their peak power output. Thus, SCE believes that customers with solar installations are prime candidates for time-of-use (TOU) rates, which are currently an option available to all rate groups. Since generation capacity costs under a TOU pricing structure are allocated to demand charges during the summer on-peak period, where solar capacity would be steady and at its highest capacity factor, the TOU energy price structure provides sufficient compensatory pricing signals to the customers with solar units.

Vote Solar suggests that SCE should not include a demand charge in its rates, claiming that demand charges serve as a disincentive for onsite generation. This argument, however, ignores basic cost-causation and ratemaking principles, and is nothing more than a blatant attempt to secure one more ratepayer funded subsidy – this time hidden in rates.

The most basic rate design principle uses cost to serve as a basis to send appropriate price signals to customers to encourage efficient consumption. The level of sophistication available in metering today allows for a combination of both TOU energy charges and demand charges to allocate these costs in proportion to customer costs to meet this basic rate design principle. While TOU energy rates are typically used to compensate for the energy price differentials between different TOU periods (i.e. lower costs for 24-hour a day base load units and higher on-peak prices for more expensive "peaker" units), and TOU demand components are used to recover generation capacity costs, utilities use non-time differentiated demand

charges to recover the costs associated with providing sufficient distribution-related infrastructure adequate to provide power to the customer regardless of when that consumption actually occurs. Vote Solar's own comments illustrate the reason for a demand charge, notwithstanding the presence of an on-site solar installation.

> "[I]f an industrial facility has a demand spike at 0800 when employees arrive and turn on major equipment, this peak demand will set the demand charge for the month. The fact that the solar system produces peak power throughout the system peak period that day . . . . will have no impact on the monthly demand charge for the facility."[33]

This is exactly how an equitable and efficient rate design is supposed to work. Perfectly functioning solar equipment producing power mid-day does nothing to avoid the distribution costs required to serve the industrial customer whose power spikes at 8:00 a.m. Since no distribution costs are avoided, no distribution compensation is warranted. The peculiar nature of Vote Solar's argument against demand charges is best illustrated in its own words:

> "[TOU] rates without demand charges should be utilized by the Commission to help move the industry away from an incentive based market."[34]

Notwithstanding this statement, Vote Solar's proposal does nothing to move the industry away from an incentive-based market as it would simply add one more subsidy – this time embedded in a TOU rate. Thus, the proposed elimination of demand charges would merely expand the existing subsidy provided under current net metering rules.

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[33] Vote Solar Comments, p. 4.
[34] *Id.*, p. 5.

2. Net Metering

The Staff Report does not mention whether net energy metering (NEM) should be considered in the CSI proposal. SCE agrees with San Diego Gas & Electric that "significant issues such as net metering cannot be overlooked and must be part of any complete understanding of the program's costs and benefits."[35] NEM would add substantial infrastructure costs to ensure the proper metering, interconnections, and billing. In addition, with NEM there is a substantial subsidy that ratepayers would be expected to shoulder. Due to the cost-shifting impacts that an NEM subsidy would create for ratepayers, SCE believes that any mandated subsidy should not be more than the generation costs that NEM displaces.[36] SCE agrees with PG&E that "compensation at generation rates is a better reflection of the true value of the electricity that is exported to the grid."[37] To avoid any cost shifting, any power produced by the solar generating units should only offset the generation components of rates and not be netted against the full retail rate. If NEM is a potential option for the CSI, the costs, benefits, and operational considerations should be thoroughly evaluated and debated among all interested parties.

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35 SDG&E Comments, p. 6.

36 Under current tariffs, this customer would only pay the $2 minimum charge and would not contribute at all to the distribution or other non-bypassable delivery charges whose benefits they would still enjoy. Expanding this individual inequity to the state-wide program, if we assume a full 3,000 MW of installed capacity at a 21% capacity factor and an average delivery rate of $0.07/kWh, an additional cross subsidy of about $386 million would be paid annually by non-participants in California.

37 PG&E Opening Comments, p. 24. PG&E continues to state that while this is better than full retail credit, a "gen to gen" credit on retail rates is still higher than the avoided costs. "[T]he generation component of retail rates are still higher than the actual generation avoided costs for two reasons: because generation rates include the above-market costs of DWR and QF contracts; and because a generation rate typically reflects electricity that is scheduled, predictable and available on demand, whereas exports from customer generation is generally unpredictable, unscheduled and as available. However, generation rates are closer to actual value than are retail rates."

III.

CONCLUSION

Based on the comments above, as well as those submitted on July 7, 2005, SCE respectfully requests that the Staff and Commission incorporate SCE's recommendations in the proposed CSI. In particular, SCE asks that the Commission:

- conduct a credible cost-benefit analysis before settling on a final program design;
- maintain aspects of the proposed program which call for consolidation, performance-based incentives, and a declining rebate structure;
- protect ratepayers by establishing a fair funding scheme, a maximum budget, and a midterm assessment; and
- reject efforts by parties to move from cost-based rates and establish further hidden subsidies.

Respectfully submitted,

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July 21, 2005

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 **REPLY COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) ON ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON STAFF SOLAR REPORT** 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.

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☐ Placing copies in properly addressed sealed envelopes and depositing such copies in the United States mail with first-class postage prepaid to all parties.

☒ Directing Prographics to place the copies in properly addressed sealed envelopes and to deposit such envelopes in the United States mail with first-class postage prepaid to all parties.

Executed this **21st day of July, 2005**, at Rosemead, California.

Vicki Carr-Donerson

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