

Decision 06-01-024 January 12, 2006

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)

**INTERIM ORDER ADOPTING POLICIES AND FUNDING
FOR THE CALIFORNIA SOLAR INITIATIVE**

The California Public Utilities Commission (CPUC or Commission) recently underscored its commitment to solar resources for assuring the reliability of the state's electricity system in Decision (D.) 05-12-044, which increased funding for incentives to solar projects by \$300 million in 2006. That order stated our intent to develop additional policies and program elements designed to promote solar development. This order accomplishes that, by making a commitment to provide \$2.8 billion of incentives toward solar development over 11 years. Of this, \$2.5 billion is for Commission-managed programs and the remainder is related to programs managed by the California Energy Commission (CEC). We also herein develop complementary policies and rules, set new incentive levels, and address program administration. We refer to the program as the "California Solar Initiative" (CSI).

I. Procedural Background

To explore ways to promote an expanded solar program, the Commission issued two rulings in this proceeding soliciting ideas regarding program design, funding levels and sources, and an implementation schedule. After receiving the comments, the Commission directed CPUC and the CEC staff to "draft a joint

report to the Commission on all related issues that will take into account the parties' comments." That report, issued in June 2005, developed an analysis of key issues related to implementing what the staff has called the CSI. In summary, their report proposed to consolidate existing and anticipated residential and commercial solar incentives into one program by June 2006. Eligible technologies would include photovoltaic (PV) and concentrated solar power up to one megawatt (MW), and solar water heaters. The report proposed that initially, Pacific Gas and Electric Company (PG&E), Southern California Edison (SCE), Southern California Gas Company (SoCalGas), San Diego Gas & Electric Company (SDG&E), and the San Diego Regional Energy Office (SDREO) would administer the CSI. The program would be funded through 2016 using gas and electric distribution rates. Tariff and metering requirements would be coordinated with the Commission's demand response and distributed generation proceedings.

The Assigned Commissioner and Administrative Law Judge (ALJ) subsequently issued a ruling soliciting comments on the staff's report and stated their intent to work together to propose a decision for the full Commission's consideration. We received comments from PG&E, SCE, SoCalGas, SDREO, the Office of Ratepayer Advocates (ORA), Energy Innovations, Inc., PV Now, Vote Solar, Americans for Solar Power (ASPv), California Large Energy Consumers Association (CLECA), California Manufacturers & Technology Association (CMTA), Southern California Generation Coalition, Environment California, S.O.L.I.D.US, Inc., and California Solar Energy Industries Association. The CEC has worked collaboratively in this proceeding on all of its aspects, co-authored the staff report on CSI, and consulted with the ALJ and the Assigned Commissioner on the issues resolved in this order.

Although the Commission received comments on the CEC/CPUC staff solar report in late July, the Commission delayed action on this matter while the California Legislature considered Senate Bill (SB) 1, which would have increased funding for solar technology incentives by \$1.8 billion over 10 years. The bill was not adopted by the Legislature, although the Governor has stated his commitment to increased incentives for solar energy development.

On December 15, 2005, the Commission issued D.05-12-044 increasing the budget for solar incentives as part of the Commission's Self-Generation Incentive Program (SGIP). The order modified existing solar incentive levels and directed our staff to provide recommendations on future program elements.

II. Program Background and Summary of Staff Report

Currently, PG&E, SCE, SDG&E, and SDREO administer the SGIP, which provides monetary incentives for non-utility parties to install distributed generation, including solar PV technologies with capacity of 30 kilowatts (kW) or more. This program, which we adopted in D.01-03-073 in response to Assembly Bill (AB) 970 and subsequently modified to comport with AB 1685, has so far been very successful, encumbering \$421 million in rebates to solar projects providing 113 MW of capacity installed or under construction since 2001.

In addition to this Commission's program, the CEC administers the Emerging Renewables Program (ERP), which provides incentives for solar PV projects of less than 30 kW, most of which are installed by or for residential customers. The program, authorized by AB 1890 in 1996, has allocated \$378 million and has provided incentives to over 60 MW of installed systems since 1998. Both the CEC's and the Commission's solar incentives programs have often exhausted their funding allocations, which together have topped almost \$1 billion, all funded through utility rates in one form or another.

The objectives of these existing programs, and the one we adopt today, are to add clean energy to peak demand resources, to reduce risk by diversifying the state's energy portfolio, and to reduce the demand for transmission and distribution system additions. Significantly, the benefits of solar technologies also motivate us to transform the existing market in a way that makes solar products cost-effective without incentives. The Energy Action Plan, signed by members of the Commission and the CEC, recognizes the benefits of solar technologies for meeting California's energy needs in the future and anticipates additional incentives for solar development.

The parties who commented on the CSI proposal generally expressed strong support for solar project development, for an explicit preference for solar projects that complement other energy strategies, and for a commitment to program performance and cost-effectiveness.

Pursuant to our directive in D.05-12-044, Commission staff and CEC staff developed a project proposal, which we attach as Appendix A. The report reflects our policy concerns and describes the type of program which we believe will accomplish our program objectives. We therefore adopt it, with the understanding that the collaborative CEC portion of the proposal requires action by that agency and that our joint program may require modification as we gain more experience with it and as circumstances change.

Our decision today is informed by our view that a common sense program of monetary incentives, combined with technical assistance, could promote less expensive and more efficient technologies. We also approach our task here with the understanding that solar technologies may not be as cost-effective as other clean alternatives, in particular energy efficiency efforts and certain other renewable distributed generation technologies. However, a solar incentive

program will aid California's transition to an affordable clean energy portfolio. We are convinced that a cost-effective and sustainable solar market is unlikely to develop without a commitment for market support that is both long-term and finite. For that reason, we state our intent to monitor the progress in the market place, and to modify the program on the basis of ongoing evaluation.

This order addresses the following issues:

1. Program elements and relationship to existing programs;
2. Funding levels and sources;
3. Structure of incentives and incentive levels, initially and over time;
4. Low-income programs;
5. Interface with energy efficiency programs and activities;
6. Metering;
7. Project evaluation and cost-benefit applications;
8. Program Administration; and
9. Funding for research and development efforts.

In general and consistent with the staff report attached as Appendix A, we adopt a program to provide up to \$2.8 billion in incentives for solar project of all types and sizes over 11 years. Our objective is to bring on line or displace 3,000 MW of power. We state our intent to fund the program by directing the utilities to use revenues from gas and electric distribution rates. Incentives are currently set at \$2.80 per kW. We state our intent to reduce this level annually or more frequently, according to market conditions. We require 10% of the funds to be used for projects for low-income residential customers and affordable housing projects. We find that third party administration of the program by one or more nonprofit organizations, initially for the residential retrofit market, is most likely to accomplish our objectives and will not compromise utility operations. Finally,

we state our intent to establish performance-based incentives, explore low or no-cost financing for certain projects, and assess the viability of requiring energy efficiency retrofits on existing buildings as a condition of receiving solar incentives.

III. Summary of Program Funding

Consistent with the attached staff report, we adopt a budget for the CSI program in the amount of \$2.5 billion over 10 years, beginning in 2007. The utilities may recover associated revenues in applicable ratemaking proceedings. As the staff report suggests, we set annual CSI budgets so that they are relatively high in the early years, and decline in later years as rebate levels fall and, hopefully, as the market’s need for financial support decreases. We will also provide for funding flexibility between program years in recognition of actual demand for funding. Table 1 provides a schedule describing the utilities’ collection of revenue requirement, although expenditures may be higher or lower in any given year according to number and nature of project proposals.

**Table 1: IOU Annual Revenue Requirements for CERB Portion of CSI
(in millions of dollars)**

Year	PG&E	SCE	SDG&E	SoCalGas	Total
2006 ¹	\$132	\$102	\$39	\$27	\$300
2007	\$154	\$119	\$45.5	\$31.5	\$350
2008	\$154	\$119	\$45.5	\$31.5	\$350

¹ Funding for 2006 is pending in another draft decision before the CPUC in Rulemaking 04-03-017 (Agenda ID 5104 for December 15, 2005) and is in addition to existing SGIP solar-related budget of approximately \$42 million.

2009	\$154	\$119	\$45.5	\$31.5	\$350
2010	\$121	\$93.5	\$35.75	\$24.75	\$275
2011	\$121	\$93.5	\$35.75	\$24.75	\$275
2012	\$121	\$93.5	\$35.75	\$24.75	\$275
2013	\$77	\$59.5	\$22.75	\$15.75	\$175
2014	\$77	\$59.5	\$22.75	\$15.75	\$175
2015	\$77	\$59.5	\$22.75	\$15.75	\$175
2016	\$44	\$34	\$13	\$9	\$100
Total²	\$1,100	\$850	\$325	\$225	\$2,500

If the difference between program expenditures and the amounts the utilities collect in rates is substantial, we will consider adjusting the collection of the revenue requirement. Table 2 illustrates the allocation of total program revenue requirement by utility.

Table 2: IOU Share of CSI Costs

	% Total budget	Budget (in millions)
PG&E	44%	\$1,100
SCE	34%	\$850
SDG&E	13%	\$325
SoCalGas	9%	\$225
Total	100%	\$2,500

² Totals do not include 2006 funding.

We also allocate up to 10% of the total budget funding of \$2.5 billion to administrative costs, which includes program evaluation, and marketing and outreach efforts. Table 3 illustrates maximum utility administrative budgets.

Table 3: Administrative and Evaluation Budgets by Utility Territory

Utility	Administrative Budget
PG&E	\$110.0
SCE	\$85.0
SDG&E	\$32.5
SoCalGas	\$22.5
Total	\$250.0

We herein direct each utility to collect the revenue requirement established in this order according to the schedule we adopt for each of the program years unless a subsequent order modifies this schedule. We also direct the utilities to utilize a similar cost recovery mechanism for SGIP costs. SGIP program costs, include any unrecovered costs from 2005, including revenue requirements for program year 2006 and the increased 2006 SGIP allocation authorized for solar projects in D.05-12-044, and the revenue requirements for program year 2007. These costs should be tracked in the existing SGIP memorandum accounts established by each utility. Beginning in 2007, CSI revenue requirements should be tracked in a separate account. We authorize the utilities to collect the funds during the relevant program year, for both programs, rather than requiring them to wait until the end of the funding cycle to collect amounts in the relevant accounts. We emphasize that we retain authority to audit or otherwise review spending and accounting for these programs whether or not the funds have been collected in the relevant period.

IV. Adopted CSI Program Elements

In this section, we elaborate somewhat on the positions of the parties and the reasoning for our program design. Overall, we are encouraged by the parties' expressions of support for an expanded program to motivate solar development. Because we believe solar technologies hold some promise of becoming a cost-effective, reliable source of energy in California, we adopt a solar incentive program that builds on the existing SGIP and the CEC's ERP.

Relationship to existing solar incentive programs. Currently, the CPUC oversees a program that provides incentives for solar PV of 30 kW capacity or more through the SGIP, which is funded by distribution rates. The CEC administers a program that provides incentives for smaller solar PV through the ERP, which is funded by the public goods charge according to AB 1890. The CEC's program targets PV projects under 30 kW capacity and funding is scheduled to end by 2011. The programs contain similar eligibility rules and project standards. Almost all parties commented that all solar incentive programs should be consolidated, believing that a single program would be customer-friendly, simpler to navigate and more consistent in its management approaches than a program that is divided between two agencies. SB 1 also envisioned a single program administered and overseen by the CEC. (We distinguish program oversight from program administration in this regard. We use the term program oversight to mean those activities that involve formal decision-making on program elements, funding levels and ratemaking, which are the lawful obligations of the Commission or, in the case of the ERP, the CEC. Program administration involves day-to-day operations requiring little discretion and in compliance with state rules and decisions. Such activities are

described in more detail in the section of this order that addresses program administration.)

We certainly understand the logic of having the two agencies combine their programs into a single incentive program for all qualifying solar technologies. Existing law, however, limits our options in this regard and could compromise our ability to fashion a program that is responsive to the goals articulated by the Governor, the Legislature and according to our own Energy Action Plan. This is because the CEC does not have independent authority to order the utilities to fund an expanded solar program, which we believe would be required. Also limiting the CEC's formal decisionmaking role is the fact that this Commission cannot legally delegate our authority to the CEC to oversee a utility-funded program. Therefore, our choices are to oversee a solar program that is comprehensive and overseen by this Commission or to limit some elements of the program to whatever the CEC is authorized to administer according to existing legislation.

Rather than limit the program parameters, we move ahead with a comprehensive program. That is, we authorize funding and establish guidelines for a program that provides incentives to large and small solar projects for all types of qualifying technologies. The CEC has stated its interest in focusing on programs aimed at solar installations on new construction, as described in the attached staff report.

A related issue is whether we continue to include solar projects or some subset of them as part of the SGIP or initiate a completely independent program for all solar projects. In order to focus our efforts on solar technologies, permit administrative flexibility and simplify program administration for customers, we state our intent that the CSI will be managed and administered separately from

the SGIP. The SGIP will continue to be administered as it is today with the exception that it will not provide incentives to solar projects starting in 2007.

CSI Program objectives. The Governor's proposal and SB 1 presume a solar program that would provide 3,000 MW of capacity within 10 years. The staff report used this capacity goal as a foundation for its analysis but does not analyze whether the goal is the appropriate or only achievable goal. Several parties raise concerns that a 3,000 MW goal for the CSI program may be more expensive than policy makers have presumed and that it may not be realistic in any event. Some suggest the Commission cap spending on CSI and consider other ways of reaching the 3,000 MW goal.

We do not have definitive information in this proceeding to determine whether a 3,000 MW goal is attainable with the program funding level proposed by SB 1. However, based on our staff analysis presented in the attached staff report, we believe it is a reasonable starting point and that our adopted program budget is sufficient to meet this goal. However, at this time, we do not adopt an absolute goal based on installed capacity. Instead, we determine a reasonable level of funding, state a commitment to developing a variety of program elements designed to reward efficient project performance and promote cost-effective investment, and state our intent to monitor the program's progress. We may reconsider whether to adopt a capacity goal at a future date, depending on the market's evolution and the impacts of our CSI program on investment and technological development.

CSI Program Duration. The staff report envisions a 10-year program, consistent with SB 1 and the Governor's public statements, and consistent with our desire to promote a stable, sustainable approach to a solar program. No party objected to our adoption of a 10-year program, although several suggested

that the Commission monitor program results to assure funds are spent wisely during all program years. SDREO and a number of solar industry representatives advocated in favor of a 10-year program in order to motivate production of solar equipment and improvements to it.

The development of solar energy projects is consistent with state policies generally that support environmentally sound energy resources and an energy infrastructure that is diverse and disbursed. We state our commitment to a 10-year program because we believe it is necessary to move solar markets in the direction of becoming self-sustaining and, as SDREO observes, we believe it will send a signal to manufacturers that will motivate innovation and efficient production. As we discuss further in other sections, we also state a commitment to monitoring the progress of solar technologies and markets during the program period, and making adjustments where necessary to promote cost-effective and otherwise responsible use of program funds.

Qualifying Technologies. The staff report recommends expanding the incentive program now in the SGIP to include solar water heating in the program. CLECA, SDG&E/SoCalGas and PG&E support this expansion of the program and no party explicitly opposes it. SDG&E/SoCalGas caution that incentives for solar water heating technologies may not be required because those technologies are already demonstrated to be cost-effective.

We agree that all solar technologies should qualify for incentives. Although solar water heating does not normally reduce electric demand (since most hot water heaters are gas), the need for reductions in gas usage is increasingly critical as natural gas commodity prices fluctuate nationwide. On the other hand, solar water heating may already be cost-effective and providing incentives under the circumstances may have the unintended effect of increasing

the cost of solar water heaters. In the past, this Commission provided incentives for installations of solar water heaters and later determined that the impact of the incentives was mainly to increase the cost of the technology, which suggested that sellers received a windfall profit and that public funds were not required to motivate product sales.

Because solar water heating can reduce demand for expensive natural gas, we intend to include that technology in the CSI to promote its use. In order to avoid a recurrence of the type of problem we observed in the past, the CSI program should include incentives for solar water heaters as a pilot program, which we may monitor and modify as necessary.

Currently, SDREO administers the SGIP program in San Diego and has already designed a program element that would provide performance-based rebates for solar water heating units. We will direct SDG&E to offer a contract to SDREO to administer a pilot program for solar water heater incentives. The program should, as the staff report recommends, provide upfront rebates following installation at levels that reflect a system performance index. The details of the program should be included in a program implementation plan, which should be submitted to and reviewed by Commission and CEC staff, and which may be funded following an ALJ ruling approving the program implementation plan. The plan should include an element for evaluating the market impacts of the program, including a comparison of solar water heater prices in regions with and without incentives and over the course of the program term. This pilot program would operate for 18 months and evaluation of its impacts on equipment prices, demand, and overall cost-effectiveness should begin at the end of the 12th month. At the request of any party or the staff of the Commission or the CEC, we will consider extending the program before the 18

month program period is over with preliminary evaluation results that suggest positive results.

In addition, as the attached staff report indicates, it is our intention to include solar heating, ventilation, and air conditioning equipment in the program, as well as concentrating solar technologies deployed in distributed applications. The details of incentive levels will be the subject of further workshops and comments during 2006 before inclusion in the program. We need further information about the technologies involved in solar heating and air conditioning before committing to include them in the SDREO pilot program on solar water heating.

In sum, the CSI program will provide incentives to solar PV, solar thermal, solar water heating, and solar heating and air conditioning technologies. We seek the assistance of SDREO is designing and implementing a pilot program for solar water heating offered to SDG&E residential, commercial and industrial customers and which would set rebate levels according to thermal output.

Project Size and Ownership Requirements. Currently, the SGIP program allows participation by projects not exceeding 5 MW in size, although the actual incentive is capped at 1 MW.

PG&E supports continuing the incentive cap to avoid exhausting limited funding on single large projects. CLECA and CMTA comment that the existing cap is somewhat arbitrary and may dampen investments in cost-effective larger projects. The utilities also propose that they qualify for incentives.

We retain the program size restriction now set at 5 MW, and increase the rebate limit from 1 MW to 5 MW. The CSI is intended to be a program which promotes cost-effective retail projects to serve onsite load. Historically installations over 1 MW were viewed as wholesale projects for which investors

already had opportunities for long term subsidies in contracts that would fulfill the utilities' Renewable Portfolio Standards. In practice, the capacity size of the majority of solar projects which have entered into RPS contracts is much higher. If a customer's onsite load is sufficiently large to accommodate an installation over 1 MW in size, we do not want to stifle these large customer-site projects. And, as the CLECA/CMTA comments point out, an investment in a large solar installation provides just as much benefit to the environment as a larger number of smaller projects.

A related issue is whether to place a limit on capacity size relative to onsite load. Currently, the SGIP allows systems to be sized up to 200% of peak load. At present, net metering laws do not require the utilities to purchase solar production that exceeds the customer's annual electric consumption, so any excess energy goes into the utility grid uncompensated. Solar customers could enter into wholesale power purchase contracts with the utility, which would require the solar generator to register as a qualifying facility with FERC, which is a different concept altogether than a customer-side retail project.

As stated in the order which opened this rulemaking, we intend to explore the jurisdictional issues surrounding net metered and wholesale solar transactions. The need to resolve these issues becomes more urgent as the number and capacity of solar projects interconnecting to the grid increases. In the meantime, we do not find it prudent to pay incentives for capacity above the on-site load that may potentially be unutilized. We therefore reduce eligible system size to 100% of historic peak load, beginning with SGIP applications received on or after the effective date of this decision.

Also initially, the utilities will not qualify for CSI funds. They have capital budgets, an obligation to serve and adequate incentives to invest in solar

projects. If the utilities wish to construct cost-effective large solar projects themselves, such investments are recoverable in utility rate base following general rate case review. We will reconsider utility eligibility when we undertake our first program review in 2009.

Treatment of federal tax incentives. The federal Energy Policy Act of 2005 provides for tax incentives for solar projects, which mainly benefit larger projects. The staff report addresses federal tax credits but does not recommend CSI levels incorporate their impacts at this time.

The record is unclear as to how federal tax credits may affect investment decisions. In some cases, federal tax credits may not overcome the hurdle posed by the initial equipment cost. In others, they may obviate the need for some or all state-sponsored incentives. Because we wish to develop the most cost-effective program possible, we do not wish to provide funding for projects that do not need them. As the staff report suggests, we intend to gather more information on this subject and later adopt ways to reflect federal tax credits in the computation of CSI payments.

V. Funding Levels and Sources

D.05-12-044 authorized \$300 million for solar incentives in 2006 in addition to the approximately \$42 million already authorized for solar projects in the SGIP. During the course of the SGIP program, the program administrators have found it necessary to move funds from non-solar technology program elements to keep pace with demand for solar project incentives. There have been periods where SGIP funding for solar incentives has been exhausted, requiring a large number of projects to await additional funding. SDREO comments that its own program has stalled because it has funding for only half of pending incentive requests. Our augmentation of 2006 solar funding by \$300 million should

mitigate this problem over the next year. Indeed, TURN suggests there may be more funds available than qualifying projects.

SB 1 would have funded solar project incentives at a level of \$1.1 to \$1.8 billion over 10 years. We have stated our objective of promoting the development of a solar market that eventually thrives independently and without government subsidies. We also hope to satisfy the objectives of the Governor toward installation of 3,000 MW of solar over 10 years.

ASPv and PV Now (which filed comments jointly and are hereafter referred to as ASPv/PV Now) advocate for a 10 year budget of \$2.3 billion for the PV portion only, plus unspecified additional funding for other technologies. ASPv/PV Now comment that the staff's recommended funding levels would not be adequate to support development of 3,000 MW.

PG&E, SDG&E/SoCalGas and Energy Innovations in the past raised concerns that the program could cost much more than \$1.8 billion to reach the stated 3,000 MW goal. PG&E recommends the Commission adopt a firm limit on the amount of rate increases imposed on nonparticipating customers. We do that today, through this order, which specifies the amount of funding we intend to spend on the CSI.

CLECA raises concerns about the impact of CSI on customers and shares utility concerns that the CSI budget would represent only a portion of the subsidies going to solar development, noting the costs of net metering and waivers of standby charges.

CMTA supports using distribution rates to fund the program but expresses concern that the cost not be allocated on an equal cents per therm basis because the cost would be disproportionately borne by large industrial customers, even though residential and commercial customers drive peak use.

SDG&E/SoCalGas raise similar concerns, noting that AB1x limits rate increases for residential customers to 130% of baseline, which means rate increases attributable to CSI may be disproportionately borne by larger customers.

PG&E also proposes that the Commission require funding from the state's municipal utilities by supporting associated legislation. Recognizing that the Commission has no ratemaking authority over municipal utilities, PG&E believes that the Commission should at least restrict program participation to customers of utilities contributing to program costs.

Environment California presented an analysis to show that the Commission may need to spend \$2-3 billion to reach its objectives depending on the impact of such variables as federal tax credits.

PG&E and SDG&E also raise the issue that ratepayer funding of solar incentives should result in credit to the utilities in their RPS requirements for the funding of this program. Although a prior Commission decision, D.05-05-011, determined that renewable energy credits, or RECs, for distributed generation belong to the distributed generation owner, the Commission has not addressed how this will apply to renewable distributed generation which receives incentives through ratepayer-funded programs. This is an issue we cannot fully resolve today, but will address in this proceeding, in coordination with our RPS proceeding R.04-04-026. However, in past procurement decisions, we have stated our intent to provide some RPS credit for support of incentive programs, and we reiterate that intent here.

Discussion. We commit \$2.5 billion over the next 10 years for this program using distribution revenues from all gas and electric options of PG&E, SCE, SDG&E and SoCalGas. We believe the sum we adopt today, while higher than that anticipated by the Legislature, may be needed to assure optimal solar

development and confidence in the industry. We agree with PG&E and others that it would be best to have a statewide solar program, supported by municipal utility customers in addition to investor-owned utility customers.

We also understand the concerns of parties who question the cost-effectiveness of a CSI program and the solar technologies it would support. However, the matter of cost-effectiveness is one we cannot finally resolve at this time. Some parties argue that the original staff report's cost-benefit analysis was too optimistic and others believe it ignored significant benefits of solar development. The analytical framework for measuring solar cost-effectiveness is a topic in this proceeding that is yet unresolved. It has been the subject of two consultant reports, hearings and a proposed ALJ decision and may require additional work before we are able to adopt a cost-benefit methodology that fairly captures costs and benefits of solar technologies. While the cost-effectiveness of the solar program is not now quantified with certainty, we are encouraged that solar technologies can improve and become more cost-effective with a "push" from an incentive program and the "pull" of a program design that encourages technological improvements. We consider this issue in our program design and in the way we plan to monitor and modify the program in the coming years.

We understand concerns raised by CMTA, SDG&E/SoCalGas about the allocation of program costs to customer classes. Currently, SGIP costs are allocated to electric customers according to a method we refer to as "equal percent of marginal costs" and to gas customers on the basis of equal cents per therm. We do not here change these allocations partly because we do not have an adequate record for doing so, but we will consider whether to change them in each utility's general rate case or rate design window. We do, however, exempt

CARE customers from the costs of this program as a matter of equity, especially since CARE customers are the least likely to be beneficiaries of the incentives. Consistent with the allocation of SGIP costs between PG&E, SCE, SoCalGas and SDG&E, the total revenue requirement we authorize today for the CSI will be allocated to the utilities based on their proportionate shares of energy efficiency funding. We are interested in PG&E's proposal to consider an auction mechanism and discuss it below in the section addressing the structure of incentives.

As several parties propose, we intend to monitor the progress of the program with a formal evaluation and report at least every two years. On the basis of those evaluations, we may calibrate funding and incentive levels to assure a program that promotes solar investments but one which works toward a self-sustaining market and cost-effective technologies. While we retain a general goal of 3,000 MW, this goal may be too ambitious with the level of funding we believe we can justify at this time and while cost-effectiveness is not assured. We may modify annual funding levels if we find that solar technologies are more cost-effective, whether independently or relative to other energy resource options. We may reduce funding if we find the market for solar or individual solar technologies is robust without incentives. We discuss our evaluation process in more detail below.

VI. Structure of Incentives - Capacity Based, Performance Based, and Auctions

The two existing solar incentive programs managed by the Commission and the CEC have provided payments on the basis of capacity, with the exception of a small performance-based pilot at the CEC. For capacity-based incentives, a project owner is paid the full incentive on the basis of the project's

size as soon as it is installed. The problem with this incentive structure is that it does not recognize power production or motivate good project management or maintenance once the project is installed. Projects may even be removed without penalty at any time.

Performance-based incentives (PBI), on the other hand, recognize good project performance by paying the project owner on the basis of energy production levels. Such a performance-based incentive structure would promote not only installation of solar projects but also their efficient operation. As PG&E and Energy Innovations observe, the risk of moving our incentive program toward a production-based system is that fewer projects will be built because of the upfront costs of installation and the need for support to get financing. The cost of monitoring performance may be more than it is worth for small projects.

SCE argues that the size of a PV unit is not necessarily indicative of value to the system. It supports performance based incentives and also suggests the Commission consider eligibility requirements pertaining to the site and which would affect performance, such as orientation of panels, amount of shading, and minimum level of annual sunshine.

Vote Solar, on the other hand, supports PBI as a way of expanding program participation with a limited budget, since PBI would be a cheaper option than capacity-based payments. It would use a pay period that is shorter than the 20 years proposed in the original staff report, observing that businesses have payback periods of 2-7 years. ASPv/PV Now also support a PBI model, initially with commercial installations and later applied to residential. ASPv/PV Solar also discuss the importance of good metering policies for a PBI program and developing incentives that complement state and federal tax policies. They support the development of a PBI program through a workshop process.

CLECA also strongly supports PBI as a way of assuring a cost-effective program and advocates for consideration of tax impacts in designing a PBI program, and also good metering and program monitoring.

The record in this proceeding does not provide enough information and analysis to adopt a performance-based incentive structure today. Still, we are convinced that a good incentive program is one that promotes efficient operation of the solar project to the extent such a program is effective and readily administered. As the staff report recommends, we intend to explore this option prior to the January 2007 consolidated CSI. Parties have proposed several options, such as a pilot program for large projects, or hybrids of upfront incentives combined with performance-based payments over some subsequent period. We intend to conduct workshops on this topic in cooperation with the CEC and look forward to the recommendations of the parties and staff on this topic. We will also take the opportunity to explore PG&E's proposal to conduct an auction in which prospective solar projects who bid the lowest receive incentive funding. Because of the administrative difficulties of managing such an auction, we will conduct workshops on how to create such an auction for large projects only.

The types of issues we hope to address in workshops and a subsequent order include:

1. What types of meters would be required for PBI applications? What other types of administrative activities would be required and how should they be implemented?
2. What kind of incentive structure would be most effective for different types of installations?
3. How long should the payback period be by project size and type?
4. Is low-cost financing necessary in conjunction with PBI as a

- way to offset the up-front costs?
5. Should PBI be combined with a up-front capacity payment to offset initial investment costs?
 6. What types of auctions or bidding systems are possible for solar installations? How should they be conducted and for what types of projects?
 7. How should a PBI program recognize state and federal tax benefits?
 8. How should a PBI program be monitored and evaluated?
 9. If the Commission adopts PBI, which, if any, site -related eligibility requirements should be implemented?

VII. Incentive Levels - Initial Levels and Changes

D.05-12-044 reduced incentives available for qualifying SGIP solar from \$3.00/watt to \$2.80/watt, consistent with the incentives available for the CEC's ERP solar projects. The SB 1 and the staff report suggest incentives automatically decrease by an average of at least 1/10th each year. The incentive reduction would occur either at the end of the calendar year or by a trigger tied to the amount of capacity reserved in the program. For example, in 2007 the incentive payment is scheduled to be reduced to \$2.50 per watt, but may be reduced to that level sooner if and when the reserved capacity for the program reaches 50 MW. The staff also suggests that the incentive levels may vary by sector according to demand and other factors. Accordingly, residential incentives, or those for residential new construction, could be higher or lower than incentives for commercial projects. The details of this element of the program will be established in a subsequent order, following workshops or other procedural steps.

The parties have also raised concerns that both the ERP and SGIP have borrowed funds from future years or transferred funds from other program

categories to meet demand for solar incentives. Each program has experienced periods when funding was not available.

Energy Innovations is concerned that reducing the incentives from the existing levels will substantially dampen participation. SDREO, on the other hand, believes incentives in its region have been too high in some cases. It also believes that residential and commercial incentives do not need to be treated alike because the members of each sector may have different reasons for investing and face different economic circumstances. SDG&E/SoCalGas support incentive levels for CSI start at the current levels for the SGIP and ERP and decline over time.

Some parties have raised concerns that the Commission has not responded quickly enough to changing market conditions in setting incentive levels. ASPv/PV Now support the idea of a trigger mechanism but believe the details still need to be determined. SDG&E/SoCalGas support the staff report's proposal for a trigger mechanism that would reduce incentive levels if a given level of funding had been exhausted in the early stages of the funding cycle. As SDG&E/SoCalGas and PG&E observe, the level of funding commitments made in the SGIP program has been exaggerated by applications for projects that are never built. The utilities observe that this problem will be mitigated substantially with the introduction of an application fee in the SGIP program, which they believe should be applied in the CSI program as well.

Discussion. We are presented with the difficult task of setting an incentive level that is high enough to motivate cost-effective solar investments and yet not so high that ratepayers are subsidizing projects that would be built without lower incentives. Fortunately, we have some experience with incentives offered by the ERP and SGIP that provides guidance in this regard. We find no

justification for setting initial incentive levels differently according to project size or customer class (indeed, today incentives are not tied to customer class but only project size). Over time, we may be able to justify different incentive levels for different sized projects according to market conditions. Right now, however, we do not have a way to justify making such a distinction. Initially, all solar PV projects will be offered the same incentives, whether they are smaller than or larger than 30 MW, as the staff report proposes. We also authorize an application fee for CSI projects, which should substantially reduce the number of unlikely projects for which administrators receive applications. Since we do not have a record that would guide our selection of reasonable application fees, we will direct the utilities and SDREO to propose fee levels that they believe are reasonable on the basis of their experience with the SGIP.

Consistent with the staff report, we state our intent to automatically reduce incentive payment levels each year by 10 percent or more if demand exceeds the targets proposed in the staff report. These payment reductions are consistent with our expressed intent to reduce incentives over time as technologies become more efficient and less costly.

We also recognize that the automatic annual reductions might not adequately recognize market conditions and believe incentive payments should change as market conditions change in ways that suggest the incentives are higher than they need to be. We believe staff experts at the CEC and the Commission are able to assess the need for incentive reductions without an elaborate formal procedure. We therefore delegate authority to the assigned ALJ in this or a successor proceeding to issue a ruling reducing incentives where the ALJ has received a written justification from CEC and Commission staff and where that written justification has been served on all parties to this or its

successor proceeding. The ALJ and staff may use this procedure to change an incentive level by up to 10 percent a year, and may use the procedure to bifurcate incentive payments according to project size. The change in the incentive level shall apply to all new projects making application to the CSI as of the date of the ALJ ruling.

We also delegate to the staff and ALJ decisions regarding whether to use a future period's budget to support the current period's demand when bona fide applications seek incentives that exhaust the current period's funds. In consultation with Commission and CEC staff, the ALJ assigned to this or its successor proceeding may increase the current period's budget by up to 15% by directing the utilities to use the subsequent period's allocated funds.

VIII. Financing for CSI Projects

ASPv/PV Now urge the Commission to consider a financing program for qualifying solar technologies as part of the CSI program. They comment that existing financial institutions are reluctant to finance solar projects. They also believe a financing option combined with a utility "in-bill" payment may be even more effective at attracting investors than higher incentives, and that financing options may be essential if the Commission adopts a PBI program because of the extended payment stream.

We are interested in exploring the issue of a financing program further. If, as ASPv/PV Now suggest, financing programs would be more effective than higher incentives in motivating solar investments, we may be able to promote more installations at a lower cost.

We will direct our staff to work with the CEC staff on this matter in a workshop to take place in 2006. Some of the related issues we hope to explore include:

1. Should the Commission provide a solar financing program? If so, how should it be administered?
2. Should financing be available to all types of installations and customers or only those that can demonstrate need?
3. How should the financing program be designed? What interest rates are reasonable? What types of standards should apply for borrower creditworthiness?
4. Should repayment of loans be included as part of utility bills as an option?

IX. Low Income Customer and Affordable Housing Installations

As a matter of equity, we hope to encourage installation of solar systems by low income customers and in low income or affordable housing projects. Currently, the staff report suggests that we set aside 10% of the funds for this purpose and provide 125% of the usual incentive to qualifying affordable housing projects. The staff report also suggests we consider whether to provide low interest or zero interest financing for qualifying low income projects.

PG&E and ASPv/PV Now support staff's recommendation for higher incentives to low income housing projects.

We adopt staff's recommendations with regard to the level of incentives for affordable housing projects and low income customers (that is, those who qualify for CARE rates). Therefore, qualifying customers and developers would receive 125% of the prevailing incentive for solar installations. We require a minimum of 10% of program funds be applied to projects installed by low income residential customers and affordable housing projects. We will also consider the possible benefits of providing financing to low income customers and affordable housing projects, as discussed previously.

X. Nonprofit and Low Income Business Set Asides

The Interfaith Environmental Council and The Coalition on the Environment and Jewish Life of Southern California (IEC/CEJLSC) submitted comments on the proposed decision of the Assigned Commissioner and ALJ. The IEC/CEJLSC proposes that the Commission set aside 5% of total program funds for low income businesses, specifically nonprofit organizations. We are interested in this idea. However, because it was proposed after the record of the proceeding was closed – and because we have little information at this point about the need for this type of funding and how it might be allocated – we are unable to adopt the proposal at this time. We will direct our staff to explore this issue for our future consideration in workshops this year.

XI. Energy Efficiency Program Interface

The Energy Action Plan presents a "loading order" that is essentially a statement of how the state and its utilities should prioritize the state's energy resources. The loading order requires optimization of energy efficiency measures first, followed by demand response and renewable energy projects. Consistent with the EAP loading order, the CEC's 2005 Integrated Energy Policy Report recommends the state require new residential and commercial buildings to meet certain energy efficiency standards before qualifying for solar project incentives. Currently, neither the SGIP nor the CEC's ERP require energy improvements as a condition of receiving an incentive for a solar power installation. The staff report recommends projects installed on new structures that exceed energy efficiency standards by 10% or more receive a higher rebate. The staff report does not recommend requiring energy efficiency retrofits on existing buildings as a condition of receiving solar incentives. It does

recommend solar incentives for existing buildings be conditioned on the completion of an energy audit.

PG&E supports the staff's proposal for an energy efficiency audit in existing buildings and suggests the Commission consider a requirement for retrofit of existing buildings. It raises concerns that providing higher incentives to new buildings with energy efficiency standards that exceed existing guidelines because it may not be cost-effective. ASPv/PV Now support higher incentives for energy efficient buildings, as staff recommends, but suggests the awards be monitored to ensure effectiveness.

SDREO believes a 25% bonus for new buildings with energy efficiency metrics that exceed 110% of requirements is too generous, observing that a \$2.80 kw incentive would increase to \$3.50. It suggests a 10% bonus. It also suggests the Commission consider providing a higher rebate to builders that include PV as a standard feature on new homes. SDREO supports the concept of requiring an audit as a condition of incentive payments to owners of existing buildings but raises a concern that this requirement could be subject to abuse and could present an administrative burden.

Environment California suggests the Commission dovetail energy efficiency programs with solar incentive programs. It agrees with the staff's report that requirements for specified energy efficiency standards as a condition of receiving solar incentives should apply only to new construction.

Discussion. Making energy efficiency improvements a condition of solar incentives makes sense for two reasons. If the structure is energy efficient, the solar installation can be smaller and more efficient. Moreover, energy efficiency improvements are almost always more cost-effective than solar installations given the current state of technology. For these reasons, we adopt staff's

recommendations to require an energy efficiency audit in existing buildings as a condition of receiving any incentives. We also make solar rebates on all new structures contingent on a demonstration that the structure has met all energy efficiency standards. We do not adopt, at this time, an augmented incentive level for new construction that exceeds building standards by more than 10%. This issue warrants further exploration in workshops this year.

We are also interested in requiring retrofits in existing buildings as a condition of providing incentives to solar installations because of the superior cost-effectiveness of energy efficiency improvements and the easy availability of energy efficiency retrofits due to existing utility programs. Accordingly, we will direct staff to work with CEC staff in developing recommendations for making energy efficiency improvements in existing buildings a condition of solar incentive payments, and to address the following issues:

1. What if any energy efficiency retrofits or energy efficiency metrics should be required as a condition of owners of existing structures receiving solar incentive payments?
2. What other program elements are appropriate, for example, timing of retrofits, or customer type or size?
3. How should the program be integrated or coordinated with the existing energy efficiency programs?

XII. Metering

Customer meters may have various uses in the context of the CSI. Currently, simple meters on residential and most small commercial sites installed for billing purposes measure net energy use by the customer and may "run backwards" if the energy produced by the solar installation exceeds energy use. These simple meters may be used where "net metering" is permitted. Time-based meters, also referred to as advanced metering infrastructure (AMI), are required to measure performance in the event the Commission adopts

performance-based incentives. They may also facilitate rate setting for solar projects that recognizes the value of output during peak and off-peak periods. Vote Solar believes that time-of-use pricing could spur development substantially.

System performance metering permits the customer to determine the amount of energy produced by the solar installation and permits the customer to identify system problems requiring adjustments or repairs. The staff report comments that most solar systems already include an inverter with self-contained internal metering and display equipment. The report recommends the installation of such meters be a condition of incentives in the CSI program. The CEC would maintain a list of acceptable performance meters for this purpose.

We certainly understand the need for good metering in order to manage and monitor CSI installations and the CSI program generally. We are particularly interested in the benefits of meters that measure usage with some specificity. We are also interested in exploring a utility tariff that would have the utility pay for solar power on the basis of peak and off-peak deliveries, and one that recognizes the fixed costs of distribution. We will retain the metering requirements currently in place for SGIP solar projects and explore metering and production payment issues in greater detail in workshops to be conducted by Commission and CEC staff. Among the issues we hope to understand are:

1. What types of meters are appropriate and cost-effective for various types of installations?
2. What are the benefits and costs of interval metering compared to net metering?
3. Who should pay for new meters?
4. What are the ratemaking implications of developing a tariff that provides payments to solar installations on the basis of production periods?

XIII. Education, Marketing and Outreach

The staff report observes that the CSI must include a component for providing good information to prospective project developers. Several parties supported this program element. SDREO describes some of the outreach and education efforts it has already undertaken as part of the SGIP program, including the completion of a project in which it developed a map of all 15,000 large non-residential rooftops in the City of San Diego.

We agree that the success of the CSI program is likely to be affected significantly by the extent to which the Commission and program administrators are able to identify project developments and the types of projects that are most suitable for developer properties. Marketing efforts will have to include the provision of information about program rules, interface with energy efficiency requirements, and vendors. The SGIP has focused mainly on commercial and industrial customer investments so program administrators will need to expand their efforts to include residential and low income customers. The CEC may be willing to assist in this effort because of its experience with residential customer outreach for the ERP program. SGIP program administrators should also be prepared to assist CSI program administrators with marketing data and information about their marketing and education efforts for the SGIP program. The CSI program administrators should also be prepared to coordinate marketing and outreach efforts with and take advantage of opportunities presented by developing relationships with energy efficiency administrators, including Flex Your Power. We are impressed with SDREO's efforts to map San Diego rooftops as part of the SGIP program and expect them to make good use of this information for the CSI program.

We concur with the staff's recommendation to require program administrators to submit an education and outreach plan to the Commission by June 1, 2006. The plan should be filed in the form of a motion for adoption by the assigned Commissioner.

XIV. Program Evaluation and Cost-Benefit Applications

Currently, the Working Group evaluates SGIP program cost-effectiveness by hiring contractors. Itron, Inc. recently issued two reports relevant to solar project incentives. The first proposed cost-benefit models for evaluating the portfolio of projects provided solar incentives (and other SGIP projects). The second used the cost-benefit models to provide estimates of program cost-effectiveness. The staff report suggests that third parties conduct program evaluations under the oversight of Commission staff.

Program evaluations imply some type of cost-benefit analysis. We are currently reviewing appropriate cost-benefit models and their inputs in this proceeding and hope to adopt final models, inputs and applications in the near future.

We agree with the implication of the staff recommendation that program administrators are not appropriate candidates for program evaluation because of the inherent conflict of interest that occurs with self-assessments. We adopt the staff's recommendation for staff to oversee program evaluation. The utilities and SDREO should issue RFPs for these evaluations and contractors would be selected and managed by Commission staff. To the extent possible, evaluation and monitoring protocols should be those specified in R.-01-08-028 for energy efficiency programs or similar to them. On the basis of these reports, we will solicit the proposals of staff and the parties for recommendations on program changes that would promote cost-effectiveness, a robust market, innovation and

reduced program risk to ratepayers. We direct the utilities and SDREO to file no later than March 31, 2006, motions seeking approval of proposed outlines and evaluation schedules.

XV. Program Administration

The SGIP is currently administered by PG&E, SCE, SoCalGas and SDREO. SDREO is a private nonprofit corporation that has administered a variety of other energy programs in the San Diego area, including energy efficiency programs funded through this Commission's decisions. Among the activities required of program administrators are the following:

- Coordinate with energy efficiency programs to assure each customer maximizes energy efficiency improvements prior to installing a solar system;
- Verify system installations;
- Make payments for installed systems;
- Provide information, application forms, program instructions on websites and in more traditional formats;
- Provide the Commission with monthly status reports on the program's progress;
- Conduct annual program evaluations;
- Conduct education and outreach, coordinating with existing marketing efforts, such as Flex Your Power and energy efficiency marketing;
- Manage a website that provides information about funding levels, number and types of systems funded and the number of applications in progress and on a waiting list;

The staff also recommends the Commission select third parties to administer the residential retrofit portion of the CSI, while initially retaining the existing SGIP program administrators as administrators for the commercial and industrial portion of the CSI.

The utilities favor their administration of the solar program, under the supervision of the Commission, citing utility experience with SGIP and the infrastructure they already have in place. The utilities observe that they are well-suited to act as a single point of contact to coordinate the CSI with other utility-administered programs such as energy efficiency, demand response, net metering, and interconnection. They clarify that while they may have opposed specific elements of SB 1, they are not opposed to continuation of a well-constructed solar incentive program.

Vote Solar strongly opposes utility administration, observing that utility opposition to SB 1 suggests the conflict of interest they have with regard to distributed solar projects. Vote Solar also commends the CEC's administration of the ERP program and, if administration is to stay with the utilities, Vote Solar recommends the CEC oversee the programs because its decision-making has been more responsive than this Commission's.

ASPv, PV Now, and Environment California recommend the Commission assign administrative tasks to an independent non-profit entity such as SDREO rather than to the utilities, citing conflict of interest concerns similar to those voiced by Vote Solar. PV Now emphasizes the need for flexible Commission oversight which allows for program changes in response to market conditions and broader input from stakeholders.

SDREO suggests the Commission differentiate among solar program activities which could be categorized as implementation, and those activities more closely related to administrative functions. SDREO lists administrative functions which broadly include policy research and oversight, portfolio management of programs, monitoring and evaluation, fiscal responsibility, and dispute resolution. Program implementers perform day-to-day program

activities related to direct program delivery based on contracted agreements. SDREO supports a single agency as the high-level administrator, and regional implementers to deliver the program.

Discussion. The residential retrofit portion of the CSI program is one that is well-suited to third party administration. It is an area where, in the past, the administration has been done by the CEC and not the utilities. Thus, a new administrative structure will need to be developed in any case. We expect to explore, over the next year, a pilot approach using third-party administration initially only for the residential retrofit portion of the program.

For the commercial and industrial sector, we find it prudent to continue the status quo with existing program administrators, including SDREO.

To facilitate implementation of one statewide solar program, we will encourage web-based administrative options to facilitate quick and transparent transactions for applications and other activities. A single interactive database would allow applicants, evaluators and administrators to readily access statewide project information and makes non-confidential project data publicly available.

In addition, we will not engage the SGIP Working Group for the purpose of developing rules or policies for the CSI. Instead, we expect our staff to convene regular and public meetings of the utilities, program administrator(s) and any parties interested in articulating and solving administrative or implementation problems and identifying program opportunities. This group shall work together to develop a program manual using the SGIP manual as a foundation and that reflects the provisions of this order and other orders that address relevant issues.

XVI. Prevailing Wage

The State Building Trades and Construction Trades Council of California, AFL-CIO (SBCTC) filed comments on the proposed decision of the assigned Commissioner and ALJ. They propose the Commission require that in order to become eligible for CSI funds, project developers be required to pay prevailing wages in the construction of related solar projects. The State Legislature considered this matter in its deliberations over SB 1.

SBCTC's proposal to incorporate prevailing wages as an element of the CSI has not been explored on the official record of the proceeding. Consequently, other parties have not had an adequate opportunity to comment on it and we are unable to resolve the matter at this time. We encourage SBCTC to raise the issue as part of the record of this proceeding as we move ahead to address certain implementation issues in more depth.

XVII. Research, Development and Demonstration (RD&D)

Many of the parties to this proceeding observe that solar technologies are not yet cost-effective. We share this concern and adopt the CSI with the objective of supporting the development of an industry that can compete with more conventional technologies and that is robust without government subsidies. We have not addressed here a specific strategy to effect that objective but intend to pursue it in the near future. Accordingly, we intend to allocate up to 5% of each year's adopted budget to RD&D that explores solar technologies and other distributed generation technologies that employ or could employ solar for power generation and storage or to offset natural gas usage, as well as market development strategies. We will direct our staff to work collaboratively with the CEC to manage this effort using consultants and existing research institutions while maximizing existing RD&D efforts.

XVIII. Motions by Golden Sierra Power

In D.04-12-045, the Commission ordered the SGIP Working Group to implement fees in order to discourage applications by projects that were unlikely to be constructed. Such “phantom” projects were, according to the SGIP Working Group, holding up funding for projects that were successful. On April 29, 2005, Golden Sierra Power filed a motion asking the Commission to conduct a workshop to consider the appropriate application fees for prospective SGIP projects. SDG&E, SDREO, PG&E, SCE, and SoCalGas jointly filed an objection to the motion. The ALJ informally denied the motion. Golden Sierra Power subsequently filed a nearly identical motion on September 15, 2005.

This issue has been adequately addressed already in D.04-12-045. We therefore deny the motions of Golden Sierra Power dated April 29, 2005, and September 15, 2005.

XIX. Comments on Draft Decision

The draft decision of the Assigned Commissioner and ALJ was issued for comments on December 13, 2005, in accordance with Pub. Util. Code § 311(g)(1) and Rule 77.7 of the Commission’s Rules of Practice and Procedure. Parties filed comments on January 3, 2006, and reply comments on January 9, 2006. This decision incorporates many of the comments of the parties and elaborates on the reasoning behind our adoption of various program elements and funding levels. It does not, however, change the substantive program elements recommended in the proposed decision of the Assigned Commissioner and ALJ.

XX. Assignment of Proceeding

Michael R. Peevey is the Assigned Commissioner and Kim Malcolm is the assigned ALJ in this proceeding.

Findings of Fact

1. Development of solar technologies is consistent with state policy and will provide California with a clean and reliable source of disbursed energy. Because the industry and related markets are still not well-developed, an incentive payment program, such as the one envisioned by SB 1, the Governor and the staff report attached in Appendix A, will benefit California.

2. The existing CEC and Commission solar incentive programs, the ERP and the SGIP, are similar except that they provide incentives to different-sized projects and are funded by different utility rate components.

3. There is no reason to continue the implementation of all or part of the solar incentives in the SGIP if the Commission adopts a CSI program.

4. A 10-year commitment by the state to provide incentives for solar installations may provide a signal to manufacturers and other industry participants that encourages innovation and development.

5. All solar energy technologies have the potential to reduce demand for fossil fuels and investments in more traditional energy resources and provide environmental benefits.

6. SDREO has proposed a way to implement a solar water heating rebate program in our energy efficiency docket and has extensive experience administering the SGIP in the San Diego region.

7. Federal tax credits may affect solar energy investments that may obviate the need for a full CSI rebate for some projects. The record should be augmented to provide adequate information about the likely impact of federal tax credits on decisions to invest in solar projects.

8. Low-income customers are the least likely to be beneficiaries of the CSI program because they are least likely to make investments in solar projects and

because solar technology appears to be less cost-effective than other energy resource options.

9. Performance-based incentives should motivate better investments in and maintenance of solar projects than capacity-based incentives, although the record in this proceeding should be developed to design a sensible performance-based incentive program.

10. The Commission's method for changing incentive levels under the SGIP has not been consistently responsive to changing markets.

11. The SGIP has consistently received more applications for rebates than there has been funding available at its previous incentive levels and at the 2005 level of \$3.50 per watt.

12. Where the demand for rebates exceeds supply, it is reasonable to assume the incentive levels are higher than they need to be to motivate investment.

13. Application fees may reduce the number of project applications that are ultimately not pursued, and thereby reduce administrative costs and the waiting lists for project rebates.

14. Some projects may need smaller rebates or none if they are provided with financing at low cost or no cost. The record of this proceeding, however, does not yet provide adequate information about whether financing is needed and how a financing program should be designed.

15. Motivating solar investments in affordable housing and by low-income customers may require higher incentive payments than those adopted for other types of customers.

16. Energy efficiency improvements tend to be more cost-effective than solar installations. The record in this proceeding is not adequate to adopt a rule that

would require energy efficiency retrofits as a condition of receiving solar incentive payments.

17. Making an energy efficiency audit a condition of receiving incentive payments for solar projects installed on existing buildings may motivate some energy efficiency improvements at those sites.

18. Additional metering requirements for solar installations may permit rate design that improves cost-effectiveness and appropriately recognizes the value of solar electricity production. The record in this proceeding does not permit the adoption of additional metering requirements at this time.

19. Education, marketing and outreach will improve the number and nature of solar investments in California.

20. Program evaluation and monitoring for the CSI program, including the pilot solar water heating program, should be overseen by the Commission staff and/or CEC staff. The utilities shall issue a request for proposal (RFP) for program evaluation consulting and should contract with consultants selected by the CEC and/or Commission staff, who will be responsible for all other contract decision-making and management.

21. The SGIP Working Group would not be an appropriate agent for overseeing the CSI.

22. The SGIP manual provides a reasonable foundation for articulating the rules and requirements of the CSI program.

23. RD&D may assist in tailoring the CSI to promote the development of a robust, self-sustaining solar industry.

Conclusions of Law

1. The Commission has no authority to delegate program decision-making to the CEC.

2. The CSI should provide incentives to all types and sizes of qualifying solar installations. The CSI program should be separate from the SGIP and all solar elements of the existing SGIP should be incorporated into the CSI.

3. The CSI should offer incentives to any solar technology with a capacity rating of less than 5 MW. Solar water heating incentives should be provided only as part of a closely monitored pilot program as set forth herein.

4. SDG&E should be ordered to invite SDREO to administer a pilot program providing rebates for investments in solar water heating in SDG&E's territory, as set forth herein.

5. Allocation of CSI program costs should be decided in ratemaking proceedings that resolve cost allocation issues.

6. Initial CSI incentive levels for solar PV and concentrated solar should be set at \$2.80 per watt in 2006, and should be scheduled to be reduced every 12 months or when certain MW targets are met, consistent with the recommendations in Appendix A.

7. The ALJ, in consultation with the Assigned Commissioner and staff, should have the authority to modify incentive payments by up to 10% a year and to bifurcate rebate levels according to project size and type following a showing by CEC and/or Commission staff to justify such changes, as set forth herein.

8. In cases where funding is or would be exhausted before the end of the funding cycle and following consultation with the CEC and Commission staff, the ALJ, in consultation with the Assigned Commissioner, should have the authority to order the utilities to fund the CSI in the current period with up to 15% of the budget allocated to the subsequent funding period.

9. To motivate solar investments by low-income customers and affordable housing projects, 10% of the annual funding should be set aside for their use. The Commission should also consider augmented incentives for such projects.

10. Incentive payments for solar installations in new structures should be contingent on the builder having participated in utility new construction programs. The Commission should also consider augmented incentives for structures with energy efficiency metrics that exceed levels for the basic program, to be determined later in this proceeding.

11. Incentive payments for solar installations in existing structures should be contingent on the completion of an energy efficiency audit.

12. The Commission staff and the CEC staff should oversee the development of a CSI program manual that is based on the SGIP manual with the program modifications we adopt herein.

13. The assigned ALJ and the staff of the Commission and the CEC should work cooperatively to develop a record on the outstanding program issues identified in Appendix A.

14. The Commission should allocate up to 5% of total annual program budgets to RD&D.

INTERIM ORDER

IT IS ORDERED that:

1. The staff report attached as Appendix A to this decision is adopted as set forth herein.

2. Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Gas Company (SoCalGas), and

Southern California Edison Company (SCE) shall implement the program described in the staff report and adopted herein.

3. The assigned administrative law judge, in consultation with the Assigned Commissioner, shall proceed to develop a record and propose resolution of all outstanding issues identified in the staff report in Appendix A.

4. PG&E, SCE, SDG&E, and SoCalGas shall allocate the funds adopted herein to the California Solar Initiative and collect those funds in distribution rates in appropriate ratemaking proceedings.

This order is effective today.

Dated January 12, 2006, at San Francisco, California.

MICHAEL R. PEEVEY
President
DIAN M. GRUENEICH
RACHELLE B. CHONG
Commissioners

I reserve the right to file a dissent.

/s/ GEOFFREY F. BROWN
Commissioner

Comr. John A. Bohn recused himself from this agenda item and was not part of the quorum in its consideration.

Dissent of Commissioner Geoffrey F. Brown

SOLAR INITIATIVE

The California Solar Initiative is a bold initiative to jumpstart the solar power industry, to diversify our electricity supply, to vault California into a leadership position in solar energy, and to provide a catalyst to bring down prices for solar power offers the promise of benefits for the state, nation and the world. I appreciate President Peevey's leadership on this issue, as I do the positive and persuasive role of Governor Schwarzenegger in bringing this initiative to the Commission.

I support the broad vision presented in the Initiative. At the same time, I feel the need to express certain concerns about the *specific* order. Regrettably, the totality of my concerns did not allow me to cast an affirmative vote on this item.

First, I believe we are undertaking what is more properly a legislative exercise. The California Solar Initiative is unabashedly a subsidy program, and a multi-billion dollar one at that. Unlike programs such as Baseline, CARE or ULTS (all of which have statutory underpinnings), overall rate levels will be higher due to this program. Unlike energy efficiency expenditures, *no one* is claiming this program is cost-effective. The Legislature has plenary power to act in the public interest, and has had ample opportunity to consider the Governor's Million Solar Roofs program. It failed to enact it. I am uncomfortable with the notion that we are the substitute for the Legislature on energy policy issues, and that we are the proper body to impose what is effectively a tax.

Second, and related, our jurisdiction is broad but not all-encompassing. Like the Legislature, we also have broad authority to act in the public interest, but a program of this magnitude with such far-reaching impacts is better decided by the entity that is directly responsible to all citizens of the state. We cannot impose the costs of this program on customers of municipal utilities. The benefits of the program – environment and economic development – are expected to accrue to all citizens of California. If the program is in the public interest, all citizens should bear the costs. I am especially concerned that it is unfair to require investor-owned electric utility customers to pay for solar electric programs for municipal utility customers. That strikes me as bad policy. A municipal utility electricity customer who takes gas from PG&E will be permitted to obtain the subsidy for solar panels that will be paid for by PG&E electricity customers, even though the municipal

utility customer does not pay into the PG&E electric subsidy pot and the PG&E electricity customers pay rates unrelated to the provision of their service.

Third, I analyze this program in the context of high and increasing electric rates. The California Solar Initiative is advertised as a \$2.8 billion program, but PG&E points out that the actual costs for those ratepayers who do not participate in the program may be as high as \$9.5 billion, including net metering costs. Regardless, this is a huge new burden on ratepayers.

California's rates are again among the highest in the nation. Edison's system average rate is now over 15 c/kwh. Just this month, new PUC-approved electric rate increases of about \$3 billion go into effect. These stem from higher prices for natural gas used to make electricity, higher costs related to long-term DWR contracts, and increases in subsidy programs aside from the Solar Initiative. This doesn't include likely billion-dollar-plus increases expected to result from our new resource adequacy rules and from new metering programs. At what point are rates simply too high to add a new multi-billion dollar subsidy program, no matter how meritorious?

Fourth, there is no indication in the decision – nor is there any analysis that I am aware of – that shows that this technology is likely to be viable in the future without significant subsidies. The decision is predicated upon the notion that massive subsidies will substantially lower production costs. I understand that the declining subsidy structure is intended to push toward this objective. I certainly hope that costs do come down, but it is a leap of faith to assume this will happen. For now, we are talking about subsidizing a technology that costs several times any other reasonable alternative.

Fifth, even assuming that huge new subsidies are appropriate right now, is this the best use of the money? According to the Commission's Energy Action Plan, energy efficiency is the first priority in the loading order. I supported the increases in energy efficiency programs last year because they were cost-effective; I have no doubt that the state will not exhaust itself of useful projects with that money.

What about other renewables? We have the Renewable Portfolio Standard, but I'm sure developers of wind, biomass and other renewable technologies would love to an extra couple of billion in subsidies – no doubt costs would come down as well for these power sources, some of which are already at or near market levels. Why not target the money where we can get the most bang for the buck?

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Even with solar technologies, we could simply buy hundreds or thousands of megawatts of Sterling technology which is already potentially at or near market price levels.

Finally, assuming this program is appropriate despite the above objections, I am concerned that we are committing to spend at least \$3 billion, but many of the rules and safeguards are not yet developed. We need performance standards to ensure that subsidies go to installations that actually work. We need eligibility and installation standards. We need to spell out the relationship between incentives and standards. We need to build-in reviews and potential off-ramps if the program is not working as we hope.

I understand that there are many workshops planned to address all of these issues. I appreciate the hard work and good faith inherent in this process. We have put our enthusiasm before our prudence. Because we believe that solar energy is promising, we have committed ourselves to spend enormous amounts of money with the hope that it will succeed. I believe we should have proceeded carefully, held workshops, and analyzed rigorously the costs and benefits before we moved forward.

Dated January 12, 2006, at San Francisco, California.

/s/ GEOFFREY F. BROWN

Geoffrey F. Brown
Commissioner