

Decision PROPOSED DECISION OF ALJ EBKE (Mailed 1/26/2010)

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Application of Pacific Gas and Electric  
Company to Implement and Recover in  
Rates the Costs of its Photovoltaic (PV)  
Program (U39E).

Application 09-02-019  
(Filed February 24, 2009)

**DECISION ADOPTING A SOLAR PHOTOVOLTAIC PROGRAM FOR  
PACIFIC GAS AND ELECTRIC COMPANY**

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**DECISION ADOPTING A SOLAR PHOTOVOLTAIC PROGRAM FOR  
PACIFIC GAS AND ELECTRIC COMPANY****1. Summary**

This decision adopts a five-year solar photovoltaic program (PV Program) to develop up to 500 MW of solar photovoltaic (PV) facilities in the range of 1 to 20 megawatts (MW) in Pacific Gas and Electric Company (PG&E's) service territory. In addition, this decision approves a 2 MW PV pilot project.

The PV program provides for development of both utility-owned generation (UOG) and power purchase agreements (PPA). Under the UOG portion of the PV Program, PG&E will be allowed to install up to 250 MW of UOG PV facilities from 1 to 20 MW in size in its service territory. Under the PPA portion of the PV Program, PG&E will be authorized to solicit 250 MW of capacity from PV facilities 1 to 20 MW in size located in PG&E's service territory at a rate of 50 MW a year. Pricing under the PPAs will be based on competitive solicitation with the successful bidders entering into a 20-year PPA with PG&E. Solicitation of projects 1 to 3 MW in size shall continue until the Commission has established a price for projects to contract pursuant to Senate Bill 32. To ensure that ratepayers are held essentially indifferent between projects developed by PG&E and those developed by independent power producers, the revenue requirement for the UOG portion of the PV Program shall be based on the weighted average price per kilowatt hour received in the PPA solicitations combined with the actual annual production for each UOG facility. Consistent with our previous decisions, to ensure transparency and fairness of the solicitation process, we also require PG&E to use an independent evaluator to separately evaluate and report on each PPA solicitation, evaluation, and selection process.

## **2. Background**

On February 2, 2009, Pacific Gas and Electric Company (PG&E) filed this application seeking approval of a Photovoltaic Program (PV Program) and authorization to recover associated revenue requirements for the PV Program in rates. PG&E's proposed PV Program consists of the installation and operation of up to 500 megawatts (MW) of 1 to 20 MW photovoltaic (PV) generation facilities in PG&E's service territory over a five-year period. Up to 250 MW of the program capacity will be utility-owned generation (UOG) and PG&E will procure up to 250 MW through power purchase agreements (PPAs) with independent power producers. PG&E seeks authorization to incur an estimated \$1.45 billion in capital costs for the UOG portion of the PV Program. In addition, PG&E requests approval of a 2 MW Pilot Project to be started in 2009 at the estimated capital cost of \$11.9 million.

Several parties filed protests and responses to the application. The Commission held a prehearing conference (PHC) on May 14, 2009. Following the PHC, the Assigned Commissioner and Administrative Law Judge (ALJ) issued a Scoping Memo and Ruling (Scoping Memo) which established the scope of issues and the schedule for the proceeding.

Parties served testimony and rebuttal testimony pursuant to the Scoping Memo schedule. Evidentiary hearings were held on September 10 through 14, 2009. The Division of Ratepayer Advocates (DRA), Californians for Renewable Energy (CARE), California Large Energy Consumers Association (CLECA), Western Power Trading Forum (WPTF) and Direct Access Customer Coalition (DACC), Consumer Federation of California (CFC), Coalition of California Utility Employees (CUE), The Solar Alliance, Independent Energy Producers Association (IEP), The Utility Reform Network (TURN), California Farm Bureau Federation (Farm Bureau), and The Greenlining Institute (Greenlining) filed

timely opening briefs. DRA, WPTF and DACC, CLECA, CUE, The Solar Alliance and California Solar Energy Industries Association (CALSEIA), CARE, and Greenlining filed timely reply briefs. CARE and DRA requested final oral argument pursuant to Rule 13.13 (b) of the Commission Rules of Practice and Procedure.<sup>1</sup> Accordingly, the Commission held a final oral argument on --- , 2010.

On October 11, 2009, the Governor signed Senate Bill (SB) 32 (Stats. 2009, ch. 328) and Assembly Bill (AB) 920 (Stats. 2009, ch. 376) into law to take effect January 2010. SB 32 increases the size of generation facilities eligible for California's feed-in tariff program from 1.5 MW to 3 MW, and raises the program's statewide cap from 500 MW to 750 MW. SB 32 also establishes that the price under this program shall be based on the market price referent adjusted to include all current and anticipated environmental compliance costs subject to a ratepayer indifference test. AB 920 allows net energy metering customers with projects of up to 1 MW to sell any excess electricity they produce over the course of a year to their electric utility at a rate to be determined by the Commission.

Because both pieces of legislation require the utilities to provide compensation for electricity provided to the grid by projects similar in size and technology to those under consideration in this application, the assigned ALJ issued a ruling on October 30, 2009, requesting additional briefs on whether any aspects of SB 32 and AB 920 would impact PG&E's proposed PV Program. DRA, TURN, PG&E, Greenlining, Solar Alliance, CFC, CARE, CALSEIA, and CUE filed timely supplemental briefs.

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<sup>1</sup> All references to Rules are to the Commission's Rules of Practice and procedures.

The proceeding was submitted on //2010 upon conclusion of the final oral argument.

### **3. PG&E's Proposed PV Program**

PG&E proposes a five-year PV Program to develop up to 500 MW of PV facilities between 1 and 20 MW in its service territory in northern and central California. PG&E's proposed PV Program would consist of two separate parts:

- The UOG portion of the PV Program would allow PG&E to develop up to 250 MW of UOG at an estimated cost of \$1.45 billion.
- The PPA portion of the PV Program would allow for PG&E to enter in up to 250 MW of contracts with third party developers for long-term PPAs at a pre- time- of- delivery (TOD) price of \$246/megawatthour (MWh).

In addition, PG&E proposes to build a PV Pilot project of up to 2 MW in 2009, at an estimated capital cost of \$11.9 million.

PG&E states that the proposed PV Program supports a number of California and federal environmental goals such as increasing the renewables portfolio standard (RPS) target goal to 33% by 2020 for California, and reducing California's greenhouse gas emissions back to 1990 levels by 2020 as articulated in AB 32. PG&E also states that the PV Program supports the federal energy and environmental policy objectives outlined in President Obama's energy plan.<sup>2</sup> PG&E emphasizes that the PV Program is designed "to expedite and simplify the regulatory approval process and to facilitate the annual, systematic development of PV resources"<sup>3</sup>, thereby helping to meet the 2010 RPS target, under flexible

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<sup>2</sup> Exhibit 1 at 1-6.

<sup>3</sup> PG&E Application at 3.

compliance. In addition, PG&E asserts that utility ownership of PV facilities, coupled with a PPA program is beneficial to customers.<sup>4</sup>

The following sections provide more detailed description of the two components of the proposed PV Program.

### **3.1. UOG Portion of the Proposed PV Program (PV UOG)**

The UOG portion of the proposed PV Program would allow PG&E to develop UOG PV projects at a rate of 25 MW in 2010, 50 MW each in 2011, 2012 and 2013, and 75 MW in 2014. PG&E anticipates UOG PV projects to be between 1-20 MW, with a possibility that some projects below 1 MW may also be developed. PG&E offers no details on how many projects below 1 MW it plans to pursue, but states that it does not anticipate these projects to constitute a significant portion of the UOG portion of the PV Program.

The UOG projects primarily would be ground mounted on land PG&E already owns or near PG&E's existing substations, although PG&E anticipates that additional land may need to be purchased and some roof-top mounted projects may also be developed. PG&E plans to make deposits to secure control of some land in advance of Commission approval of the PV Program and proposes to include these deposits in a Plant Held for Future Use (PHFU) account for recovery prior to the operation of the PV facilities.

PG&E proposes to use a competitive procurement process to solicit both bundled turnkey projects and unbundled engineering, procurement and

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<sup>4</sup> Exhibit 1 at 1-6.

construction (EPC) bids for the development of the UOG portion of the PV Program.<sup>5</sup>

PG&E's proposed cost recovery of the UOG portion of the PV Program would be based on Commission approved annual capacity price targets for the PV Program. If at the end of the PV Program, the actual total capital costs are at or below the average target plus a contingency, PG&E proposes that it will be allowed to recover the actual capital costs of the PV Program without any further reasonableness review, and customers will be refunded the difference with interest at the memorandum account/commercial paper rate. If, however, at the end of the PV Program, PG&E's average installed cost for the UOG portion of the PV Program exceeds the average target, PG&E would be authorized to recover the actual capital costs up to the average target and file an application for recovery of amounts in excess of the average target. PG&E proposes to establish a memorandum account to record the difference between the revenue requirement for the UOG portion of the PV Program booked to PG&E's Utility Generation Balancing Account (UGBA) and the revenue requirement based on the actual capital costs of the UOG portion of the PV Program.

PG&E seeks Commission approval to suspend or scale back the UOG portion of the PV Program if it determines that it cannot meet the established capacity price targets or if it finds other factors impacting the use of capital.

PG&E proposes to recover the stranded cost for the UOG portion of the PV Program through a non-bypassable charge for each facility installed for a ten-year period following the commercial operation of the facility.

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<sup>5</sup> PG&E describes unbundled EPC bids as projects where PG&E could supply owner-furnished major equipment to a construction/installation contractor. *Id.*

### **3.2. PPA Portion of the Proposed PV Program**

The PPA portion of the proposed PV Program includes an annual solicitation for projects from 1 to 20 MW, located in PG&E's service territory. PG&E anticipates selecting projects based on viability and energy delivery criteria. Selected projects will be required to achieve commercial operation within 18 months after the PPA is executed.

PG&E requests that the Commission adopt a standard contract form, including a non-negotiable standard price for all of the PPA projects. The price for the PPAs would be based on PG&E's estimated levelized cost of energy (LCOE) for the UOG portion of the PV Program. PG&E requests that it be allowed to update both the PPA forms and the price through an advice letter filing.

PG&E seeks approval to recover the costs of the PPAs through PG&E's Energy Resource Recovery Account (ERRA), which was established to record, among other things, costs of PG&E's procured power. Stranded costs associated with the PPAs would be recovered over the entire term of the agreement through a non-bypassable charge.

### **3.3. Pilot Project**

In addition to the 250 MW of UOG projects, PG&E proposes a 2 MW Pilot Project to "expedite the deployment of the PV program, demonstrate PG&E's commitment to the Program, and to allow PG&E to develop and refine internal and external processes needed to develop, permit, and operate a PV facility prior to deployment of the larger PV Program."<sup>6</sup> PG&E proposes to book the

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<sup>6</sup> PG&E Application at 7.

\$11.9 million revenue requirement for this project to the UGBA after the Pilot Project achieves commercial operation.

### **3.4. Parties' Positions**

CUE supports PG&E's application and urges the Commission to approve the PV Program. CUE believes the PV Program is a unique project with the potential for distribution system benefits but no transmission connection concerns and could add value in developing an additional potential path toward meeting the RPS goals.

CUE suggests that the PV Program will help achieve the RPS goal because many of the current RPS contracts signed by investor-owned utilities (IOU)s have been cancelled, suspended or delayed. As a result, CUE advocates that "more projects than ultimately needed must be pursued in order to have sufficient number of projects succeed."<sup>7</sup> CUE also advocates that in meeting the 33% RPS goal,<sup>8</sup> multiple approaches and strategies must be considered to ensure sufficient amount of renewable resources are available.

CUE believes that by facilitating the development of up to 500 MW of mid-size PV projects, the PV Program will also help fill the gap that CUE believes exists for these types of PV projects as a result of current RPS solicitation practices. In CUE's view, this gap suggests that viable mid-size projects that could make an incremental contribution to meeting the state's RPS goals will be foregone.<sup>9</sup> CUE believes the Commission should fill this gap by approving the

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<sup>7</sup> Exhibit 401 at 5.

<sup>8</sup> The 33% goal was established in Executive Order S-21-09, which directed the California Air Resources Board (CARB) to adopt regulations increasing California's RPS goal to 33% by 2020.

<sup>9</sup> CUE Opening Brief at 5.

PV Program and facilitating the delivery of renewable energy from these types of projects.

DRA supports UOG as an alternative to the competitive market, but recommends denying the PV Program, because it believes the PV Program introduces heightened risk for ratepayers.<sup>10</sup> To begin, DRA argues that PG&E has already signed enough RPS-eligible contracts to meet its 2010 RPS obligations. Thus, it does not need the PV Program to achieve the RPS goals.<sup>11</sup> DRA disagrees with PG&E's claim that the RPS process is unreliable when it comes to executing contracts. Further, DRA argues that even if some of PG&E's RPS contracts fail to come on line, the PV Program would be "an ad hoc, over-priced solution."<sup>12</sup> DRA notes that the PV Program would be over twice the market price referent (MPR).<sup>13</sup> DRA believes PG&E can meet its renewable energy goals with much cheaper alternatives, consistent with the Commission's least-cost-best-fit (LCBF) procurement directives.<sup>14</sup> DRA suggests several modifications to the proposed PV Program as ratepayer protection measures in the event the Commission considers adopting it.

CLECA also recommends that the Commission reject this application, asserting that the proposal is too expensive and cannot be justified. In particular, CLECA is concerned that if approved, ratepayers will be burdened with the cost of the PV Program at three times more than the existing portfolio when other less expensive renewable alternatives exist. CLECA disagrees with PG&E's claim

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<sup>10</sup> Exhibit 100 at 1.

<sup>11</sup> DRA Opening Brief at 5.

<sup>12</sup> DRA Opening Brief at 5.

<sup>13</sup> MPR is the benchmark price for competitive renewable solicitations.

<sup>14</sup> Exhibit 100 at 2.

that the PV Program will help PG&E meet its RPS goal for 2010. In CLECA's view, the contribution of the PV Program is insubstantial, because it would only add "0.5 percent to renewable energy sales by 2013, and 0.7 percent by 2014 when the UOG portion of the program is fully deployed."<sup>15</sup> Further, CLECA argues that to focus on small PV projects in the 1 to 20 MW range is not a very efficient way to obtain additional renewable power in a short time frame as these types of projects may face siting and permitting problems due to the need for multiple locations.<sup>16</sup> CLECA also contends that on an annual basis, because of their capacity factor, smaller PV projects produce less per kilowatt (KW) installed than other solar and other types of renewable projects. Therefore, CLECA argues more individual PV projects will be needed to meet the RPS goals.<sup>17</sup>

The Farm Bureau recommends rejecting the application, echoing the concern about the cost of the proposed PV Program and the lack of benefit to ratepayers. In the Farm Bureau's view, the PV Program is too expensive and fails to consider other alternatives with better value and benefits.<sup>18</sup> The Farm Bureau is concerned about land acquisition and the threat of eminent domain for land owners. In addition, the Farm Bureau is concerned about the environmental impacts related to the project sites, and the impacts PV projects might have on neighboring agricultural lands. This concern is also echoed by CARE.

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<sup>15</sup> CLECA Opening Brief at 7.

<sup>16</sup> *Id.*

<sup>17</sup> Exhibit 500 at 5.

<sup>18</sup> Farm Bureau Opening Brief at 4.

TURN only supports the PV Program with modifications. While TURN states that it is supportive of utility procurement mechanisms for small and mid-size PV facilities, it believes ratepayers will not realize the full benefits of such an approach under the PV Program unless the program is based on a competitive process to lead to the selection of the least-cost and highest value projects. TURN recommends several modifications to the proposed PV Program to allow competition, and to provide performance measures.

Although initially opposed to the application, IEP now supports PG&E's application, stating the modest progress in the RPS and the opportunity for an additional 250 MW of independent power as the reasons for its support.

The Solar Alliance supports the application, stating that the PV Program "will make a positive contribution to the expanded development of renewable energy sources,"<sup>19</sup> but recommends the use of a competitive auction for the PPAs greater than 3 MW, instead of the fixed price proposed by PG&E. The Solar Alliance agrees with PG&E that projects between 1 and 3 MW should be afforded a fixed price.<sup>20</sup> The Solar Alliance also proposes a slightly different schedule for the development of the PPA portion of the PV Program.

Greenlining urges the Commission to reject the application for a number of reasons. First, Greenlining states that PV is one of the least cost effective forms of renewable energy and believes there are less expensive technologies that could deliver renewable energy to meet the RPS goals. Second, the fixed price PPA does not allow competitive pricing. Thus, Greenlining argues it prevents savings that can arise from a fully competitive market.

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<sup>19</sup> The Solar Alliance Opening Brief at 3.

<sup>20</sup> *Id.* at 12.

CARE states that the proposed PV Program would allow additional electric generation during peak demand eliminating the need to operate fossil-fueled plants that are often sited in lower-income residential neighborhoods. For that reason, CARE supports the application.

CFC urges the Commission to reject the application. CFC lists a number of issues where it believes PG&E's application lacks the detail or the specificity needed to determine the reasonableness of the UOG portion of the PV Program's capital cost estimate.<sup>21</sup> For example, CFC points out that PG&E has not chosen the sites for the UOG PV facilities and does not know how much land the UOG portion of the PV Program will ultimately require. Therefore, CFC asserts PG&E's estimate for the cost of land is unknown. Further, CFC states a number of unknown assumptions such as the technology used, the efficiency of the panels, and whether a tracking system will be installed, could affect the cost estimate. In short, it is CFC's position that there are too many unknowns to find the UOG cost estimates reasonable.

CFC also opposes the fixed price PPA, arguing that it may result in higher costs than a competitive procurement process.

#### **4. Need for the Program**

##### **4.1. Discussion**

California has long recognized the importance and environmental benefits of renewable energy and has taken a leadership role in crafting programs to promote the development of renewables in the state. In 2002, the RPS was established under SB 1078 and accelerated in 2006 under SB 107 to advance the procurement of renewable generation in California. The RPS requires electric

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<sup>21</sup> CFC Opening Brief at 5 through 12.

corporations to increase procurement from eligible renewable energy resources by at least 1% of their retail sales annually, until they reach 20% by 2020. The state has also made substantial efforts to promote the deployment of solar facilities more specifically, recognizing some of the relative advantages solar offers as a renewable resource, in particular that solar output largely coincides with peak demand. The California Solar Initiative (CSI) was introduced in 2006 to spur the development of renewable distributed generation in California. In 2009, in Decision (D.) 09-06-049, the Commission also approved a solar PV Program (SPVP) for Southern California Edison Company (SCE), which authorized SCE to deploy up to 500 MW of distributed systems through both PPAs and UOG installations on rooftops in its service territory. It is also state policy that the highest priority be given to those renewable resources that can be developed most quickly.<sup>22</sup>

This decision, which adopts PG&E's proposed PV Program with modifications, represents another significant step in advancing the development of renewable generation in California. By adopting the PV Program as modified, the Commission reinforces the importance of renewable distributed wholesale generation as an attractive resource option in the utilities' renewable generation portfolios. Also, this decision emphasizes that procurement mechanisms and strategies other than the RPS solicitations can help facilitate the expeditious installation and operation of additional renewable facilities in California and deliver benefits to ratepayers.

We next discuss why it is prudent to adopt the proposed PV Program with modifications. We address parties' concerns and find that the PV Program does

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<sup>22</sup> Executive Order S-21-09.

not interfere or conflict with the RPS program or other renewable energy programs. In addition, we find that the PV Program is in the interest of ratepayers and the adopted prices are just and reasonable.

First, with respect to the RPS compliance, there is significant disagreement among parties about whether the PV Program is needed for PG&E to meet its 2010 RPS compliance obligation. We agree that PG&E has signed enough renewable contracts to meet its 2010 RPS compliance, but do not believe that this fact alone suggests that adopting other programs targeting development of additional renewable projects are unnecessary or, as DRA puts it, “discretionary.”<sup>23</sup>

Development of renewable generation to meet the RPS goals for 2010 and beyond is a priority for both this state and this Commission. While the record shows that PG&E has contracted for enough renewable power to meet its RPS target for 2010, even with the flexible compliance alternative, there is a possibility that PG&E may not meet its RPS target because of various factors that may impede timely development of some renewable facilities. Many renewable resources require new project construction or transmission infrastructure to access the renewable resource. Because such additions generally have environmental impacts, the permitting process has the potential to result in some delays. Financing challenges, permitting delays, and transmission access represent risks that have been widely recognized as factors that can compromise the timeliness of renewable deployment, particularly given the scale of the facilities that PG&E has relied on thus far. Small and mid-size PV projects, like those proposed by PG&E in its application, however, can largely avoid these

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<sup>23</sup> Exhibit 101 at 16.

potential risks insofar as these facilities can be located close to load without the need for transmission additions. In addition, mid-size PV may be able to resolve potential environmental barriers and public opposition relatively more quickly than larger scale projects. While CLECA is correct that small projects may face similar permitting requirements as do larger projects, in general, it is unlikely that small projects would elicit the same kind of public opposition as larger projects simply because they do not occupy vast stretches of land. It is more likely that these projects will have less difficulty resolving environmental and permitting concerns because they involve smaller parcels of land.

These factors combined with the modular nature of PV technology suggest that PV facilities can be deployed relatively quickly and with greater certainty than large scale renewable projects. Thus, developing these resources can be an efficient and relatively certain way of bringing additional renewable resources on line. Over the long run, adopting a program that could facilitate development of mid-size PV projects and help deliver renewable power to California could benefit the ratepayers and help reduce the risk of not meeting the RPS goal.

In its testimony, DRA offers an analysis using the SWOT (strengths, weaknesses, opportunities and threats) technique to determine the reasonableness of the PV Program. We disagree with DRA's analysis, because it does not take into account some of the benefits of the projects proposed in PG&E's PV Program. DRA argues that because currently there is no mechanism to quantify the value of solar displacing fossil fuel or shaving off peak demand in electric rates, ratepayers will not receive any of those benefits. Although the above benefits are not quantified in this proceeding, they are among the known and unique benefits of PV technology and should not be overlooked.

Another factor that weighs in favor of adopting the PV Program is our interest in renewable UOG. We have previously addressed the benefits of

renewable sources and have emphasized our support for renewable UOG. In D.08-02-008 at 31, the Commission stated, “First, there may be a unique and important role for utility-owned RPS generation. Utility-owned generation from renewable energy resources, for example, can put downward pressure on what are otherwise increasing renewable energy prices.”

Despite the various benefits small and mid-size PV projects offer, the parties raise several concerns. One concern is that the PV Program could conflict with the RPS, to the detriment of ratepayers. DRA is concerned that if prices offered in PG&E's PV Program are higher than the prices for projects developed from the RPS solicitation, developers will bypass the RPS solicitation or bilateral negotiations in favor of PG&E's PV Program. We do not believe the PV Program, as modified herein, would conflict with the existing RPS program, because the PV Program has a limited focus and targets only a subset of projects that in our view may not compete in the RPS solicitation.

Potential overlaps with the RPS program are also limited by the narrow focus and eligibility criteria of the PV Program adopted here. Only solar PV projects that are located in PG&E's service territory and can achieve commercial operation within 18 months of signing a contract would be eligible to participate in the PV Program. In contrast, the RPS does not limit projects to a specific location. Nor does it require an 18 months online date. RPS projects may be located outside of PG&E's service territory and may have a different online date depending on the negotiated contract. Accordingly, the majority of the projects that are eligible to participate in the RPS would not be eligible to participate in the PV Program. Thus, such projects would continue to be properly considered in the RPS process and would not be able to “forum shop” as DRA supposes. Again, in our view, adopting the PV Program would facilitate the expeditious

installation and operation of PV facilities that could help PG&E meet its RPS goals.

DRA's other concern, that developers with large projects will have an incentive to divide their projects into 20 MW parcels to take advantage of the PV Program prices, while a reasonable argument in the context of the pricing structure PG&E proposed in its application, is rendered largely irrelevant under the pricing methodology adopted in this decision. Presumably, a developer could fragment large projects into 20 MW parcels and forgo the RPS solicitation process if the fixed price offered under PG&E's PV Program were higher than those under the RPS solicitation. However, as described in more detail below, rather than adopting PG&E's fixed price approach, PG&E will be required to hold competitive solicitations for the PPA component of its program. Thus, to the extent a developer may be influenced by the price and contemplates fragmenting its project, it cannot do so because the result of the PPA solicitation cannot be known in advance.

A number of parties raised the issue of price. Parties' concern with price boils down to the concern that the PV Program could allow more expensive projects to move forward in lieu of lower cost facilities that would have been selected under the RPS program. As explained above, the PV Program, while potentially more expensive than some of the larger scale projects under the RPS solicitations, offer a number of specific benefits that we believe are unique to PV, and in particular to smaller PV projects. The Farm Bureau references the Renewable Energy Transmission Initiative (RETI) Phase 1A Final Report to argue that solar PV is a high-cost alternative to other RPS-eligible resources. The RETI Phase 1A report was published in April 2008 and reflects historic market conditions. The Farm Bureau argues that the market conditions in the RETI report demonstrates that it is not the right time for PG&E to pursue solar PV.

The record in this proceeding suggests that the market for solar PV is a dynamic one, with prices changing rapidly. For example, since the release of the RETI report cited in the Farm Bureau's testimony, the market conditions have changed. A more recent RETI report indicates that solar PV costs may be lower than exhibited in the Farm Bureau's testimony. In fact, the Final RETI Phase 1B report distinguishes PV among all other technologies as one technology with a significant potential to have a decrease in its capital cost in the future:

“Unlike most other renewable technologies, capital costs in the photovoltaic industry have significant potential to decrease, and there is considerable commercial interest in utility-scale “thin film” systems.”<sup>24</sup>

Further, the statement made by PG&E's witness Wan during hearings, which noted that prices for PV have been declining<sup>25</sup> is also consistent with recent trade publications showing a trend in declining PV prices overtime.<sup>26</sup>

Our sense is that the PV Program we adopt today could provide a unique opportunity to facilitate expeditious development of renewable generation by independent producers and could result in installation of new renewable facilities in California. As such, it will help meet PG&E's RPS goals and will provide some benefits to the ratepayers. For these reasons, we feel that it would be prudent to adopt such a program.

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<sup>24</sup> We take official notice of the Final RETI Phase 1B report (<http://www.energy.ca.gov/2008publications/RETI-1000-2008-003/RETI-1000-2008-003-F.PDF>), page 5-27.

<sup>25</sup> TR Volume 1 at 9.

<sup>26</sup> <http://www.solarbuzz.com/FastFactsIndustry.htm>.

However, given the record evidence regarding the rapidly changing market for solar PV, and the reasonable concerns expressed about cost, we do not believe it is reasonable for the Commission to adopt an administratively set capital cost and price for purposes of either the UOG or the PPA portions of the PV Program. We discuss the PV Program costs next.

## **5. The PV Program Costs**

We are persuaded by concerns raised about the proposed PV Program costs, specifically the concerns that the program cost estimates are not fully justified and that the proposed UOG price does not effectively allow for the benefits of competition. In particular, we agree with the thrust of DRA's view that as proposed "neither the UOG nor the PPA component of the program will create the competitive environment that is supposed to protect the ratepayers from overpaying for renewable energy."<sup>27</sup> Below, we discuss why our adopted PV Program changes the pricing structure from that which PG&E proposed. We adopt a competitive solicitation for the PPA portion of the PV Program and require that the price of the UOG portion be tied to the prices from the competitive solicitation for PPAs.

### **5.1. UOG Costs**

PG&E estimates the capital costs for the 250 MW of the UOG portion to be \$1.45 billion. This corresponds to the average capital cost target of \$4,275/kW direct current (DC) for the entire UOG portion of the Program.

PG&E's operation and maintenance (O&M) cost estimate consists of labor, materials, and contracts for operation and maintenance of the PV facilities and includes a 20% contingency factor due to uncertainties in the ongoing operation

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<sup>27</sup> DRA Opening Brief at 5.

of the PV facilities.<sup>28</sup> PG&E estimates the LCOE for the UOG portion to be \$295/MWh (TOD-adjusted).

### **5.1.1. Parties' Positions**

In previous sections, we have discussed parties' concern regarding the cost of the proposed PV Program. The main concerns about the cost of the UOG portion of the PV program are:

1. The estimates are unreasonable and unjustified.
2. The UOG price does not allow benefits from market competition.
3. The PV Program is more costly when compared to the CSI, the RPS, SPVP or other UOG projects.

### **5.1.2. Discussion**

We do not adopt PG&E's cost estimates and the proposed contingency factors for UOG projects. Instead, we use the weighted average price of selected bids from the competitive solicitation for PPAs to determine the revenue requirement for UOG projects.

PG&E has provided cost estimate based on a 5 MW project. However, these estimates are not sufficiently supported. CFC has demonstrated that PG&E's estimates of the UOG portion of PV Program costs lack important details. For example, it is not clear where PG&E's plants will be built, how much land will be needed, or how much the land will cost. Greenlining also points to some deficiencies in PG&E's cost estimates. Specifically, Greenlining indicates that PG&E's cost forecast ignores the cost associated with panel disposal at the

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<sup>28</sup> Exhibit 1 at 5-6.

end of the panels' useful life. According to Greenlining, the panel disposal costs for the UOG portion alone could amount to approximately \$27.5 million.<sup>29</sup>

We are not convinced by PG&E's response regarding the lack of cost estimates, particularly the response that the panel disposal cost was left out because of the uncertainty about how the panels would be disposed of, or the possibility that some panel manufacturers' voluntary take-back programs could reduce the costs of panel disposal. Moreover, PG&E's response that the unknown factors are implementation details is not reasonable.

These are important factors that could have significant impacts on the estimated cost of not only the UOG portion, but also the PPA portion, and the entire PV Program. Unless these cost details are known, it is difficult to verify the reasonableness and accuracy of PG&E's claims for the total cost of the program. Moreover, the lack of a robust cost estimate calls into question the reasonableness of the proposed contingency factors that are added to the cost of the PV Program. We are not persuaded that we have sufficient information to determine a reasonable price for UOG projects. Further, PG&E's estimates are based on a blend of information gained from various sources, thus it is difficult to determine their credibility.<sup>30</sup> Even if we did have sufficient information at this time, given a constantly changing market for solar PV, we believe such an estimate would be outdated in a short period of time.

With respect to comparing the cost of the PV Program to other programs, we agree with DRA that it would be most reasonable to compare the cost of the

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<sup>29</sup> Greenlining Opening Brief at 13.

<sup>30</sup> Exhibit 603 at 5.

PV Program to projects of similar size.<sup>31</sup> In our view, the most relevant comparison is to RPS projects, which contain projects similar in size to the PV Program. The CSI and the SPVP do not provide a reasonable comparison because they exclusively represent smaller projects, whereas PG&E's PV Program will span a much larger range of project sizes; the SPVP will include primarily 1 to 2 MW projects with a focus on rooftop deployment. The CSI is targeted at projects under 1 MW designed to be deployed on residential and commercial rooftops. Further, as DRA notes, PG&E has amortized the cost of the PV Program over 25 years while the SPVP's costs are amortized over 20 years. The difference in the amortization also makes it difficult to make a reasonable comparison.

Likewise, PG&E's comparison to other UOG projects in other states does not provide useful information. While PG&E has provided cost data for two projects, one in South Carolina and one in New Jersey, both are for much smaller capacity than the PV Program. The South Carolina project is only 10 MW and the New Jersey program is 80 MW.<sup>32</sup>

Comparing the cost of PG&E's proposed PV Program to solar PV projects in the RPS indicate that the PV Program is not cost competitive relative to some of these RPS projects. As DRA notes and based on PG&E's confidential testimony, there "are many less costly market alternatives to PG&E's PV Program."<sup>33</sup> Thus it would not be in the ratepayers' interest to adopt PG&E's

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<sup>31</sup> Exhibit 101 at 7.

<sup>32</sup> We understand that the original proposal for the program in South Carolina was for 120 MW.

<sup>33</sup> DRA Confidential Opening Brief at 7.

cost estimates given information suggesting these estimates appear high relative to the market price for a similar product.

As further indicated by the pricing information from the RPS program, and our general orientation in favor of relying on competition, we also agree that competition could bring significant savings to ratepayers. As DRA states “unless PG&E can build and procure projects in their program for the same or less than the market already provides, then it does not make sense to approve PG&E’s PV program.”<sup>34</sup> This is particularly true to the extent there is a robust market capable of providing the type of projects considered here.

At the same time, as stated in previous decisions,<sup>35</sup> we encourage the utilities to consider the development of renewable UOG as a resource option. Provided they can do so at a cost that compares favorably to market prices, there is no compelling reason to exclude the utilities from building, owning and operating renewable facilities. With this in mind, we believe a reasonable approach to ensuring ratepayers get the most value out of this program is to adopt a price for UOG projects that is based on the market price of similar PV projects, as determined through PG&E’s solicitation process. This price will be used in calculating the annual revenue requirement for each UOG facility PG&E chooses to install. In pursuing this approach we seek to ensure that ratepayers are essentially held indifferent between projects developed by the utility and those developed by independent power producers. Furthermore, we believe this approach, by largely holding PG&E to the same pay-for performance standards

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<sup>34</sup> Exhibit 101 at 3.

<sup>35</sup> D.08-02-008, D.09-06-018 approving 2008 and 2009 RPS procurement plans for PG&E.

that IPPs are held to, ensures that PG&E is well motivated to maximize the performance of these facilities over time.

In Comments on the proposed decision (PD), PG&E disagrees with the PD's cost recovery approach and argues that it is flawed and unworkable.<sup>36</sup> PG&E suggests that the proposed approach does not provide the same benefits to customers as cost of service approach would. SCE also disagrees with the PD's proposed cost recovery. SCE refers to D.09-06-049 where the Commission adopted a cost of service approach for SCE's SPVP, and argues that the Commission should adopt the same approach for PG&E's PV Program.<sup>37</sup>

These arguments are not compelling. D.09-06-049 at 40 stated that the SPVP does not establish a precedent for other possible UOG or IPP renewable programs. Furthermore, we agree with DRA that ratepayers will receive all of the benefits of UOG regardless of the UOG cost recovery approach.<sup>38</sup>

As explained below, PG&E is directed in this decision to conduct a solicitation for 50 MW of capacity per year from independent power producers. Each bid received in these solicitations will include a price per kWh as well as the capacity and expected performance of each proposed project. From this information, PG&E will be able to calculate a weighted average price per kWh across the winning bids in the solicitation. When combined with the actual annual production for each of PG&E's UOG projects, this weighted average price can serve as a reasonable basis for setting the annual revenue requirement PG&E

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<sup>36</sup> PG&E Comments on the PD at 2-5.

<sup>37</sup> SCE Comments on the PD at 4.

<sup>38</sup> DRA Comments on the PD at 3.

can recover in total from ratepayers, including any O&M costs, for the capacity it installs.

Each solicitation will serve as the basis for the price and the resulting revenue requirement that PG&E can recover from ratepayers for any UOG project it chooses to undertake before the initiation of the next solicitation. Because the price will change from solicitation to solicitation, PG&E may choose to develop less than the total amount it is authorized to develop in a given period. The decision to build is purely a discretionary decision of PG&E's, presumably based on its internal assessment of whether the price derived from the PPA solicitation would provide sufficient returns. If PG&E elects to build less than the capacity it has been authorized to develop in a given year, the balance will be carried forward and be added to the capacity PG&E is authorized to develop in the subsequent year. Again, in each subsequent year, the annual revenue requirement PG&E is authorized to recover from ratepayers for the capacity it chooses to install will be based on the weighted average price of winning bids in that year's solicitation and each facility's output, as described in Appendix B.

This authorization is granted for the first 20 years of the UOG plant operation, consistent with the PPA contract terms for this program. PG&E should seek additional cost recovery guidance from the Commission via application no earlier than 2029 to address cost recovery for production from UOG facilities beyond 20 years. A more detailed description of the methodology used to derive the UOG price benchmark using the results of each solicitation is provided in Appendix A. Within 30 days after solicitation for the allotted annual MW is completed, PG&E should submit an advice letter to the Energy Division indicating whether it plans to pursue building UOG PV facilities at the weighted average price of the solicitation for that year.

As another measure to ensure reasonable costs, and to mitigate other concerns raised by parties (e.g., environmental and eminent domain), we encourage PG&E to first develop land that it owns and is also close to its substations for the UOG projects before it acquires other land. We agree with DRA that while locating projects near substations could save overall costs to the ratepayers, it could result in limiting the project size because of space availability at some substations. Therefore, we do not limit the construction of UOG facilities to PG&E-owned land and substations. However, PG&E must justify its land selection in the advice letter filing it submits for UOG facilities if it chooses land other than its own for UOG facilities in the advice letter. In comments on the PD, PG&E presents several scenarios where it believes building UOG projects on land other than its own might make sense and recommends we eliminate the requirement to seek approval to use non-PG&E land through an advice letter. We emphasize that the purpose of requiring PG&E to submit an advice letter to seek authority to build on non-PG&E land encompasses what PG&E has presented, which is to examine all possible scenarios and take all reasonable factors under consideration for site selection. An advice letter process would allow such a review.

## **5.2. PPA Costs**

### **5.2.1. Parties' Positions**

In its application, PG&E proposes a fixed price for the PPAs, based on PG&E's expected LCOE for the UOG portion of the PV Program, which equates to a pre-TOD-adjusted contract price of \$246/MWh. The Solar Alliance opposes the fixed price PPA for projects larger than 3 MW. The Solar Alliance argues that PG&E's proposal for the fixed price PPA is inconsistent with the Commission's stated policy in D.07-12-052, which requires that all long-term procurement occur

via competitive procurement mechanisms. The Solar Alliance also points out that the Commission in D.09-06-049 required a competitive process in the SPVP for the MW to be developed by the IPPs, and that a similar requirement should apply here. The Solar Alliance shares TURN's view that third party projects could sell energy at prices below the price of the PG&E's proposed price and also points out that PG&E itself has recognized that a competitive solicitation could secure prices lower than the fixed price offered by PG&E. Thus, the Solar Alliance advocates a competitive auction for projects above 3 MW.

While the Solar Alliance recommends against using a fixed price PPA for projects above 3 MW, it does believe a fixed price would work well for projects under 3 MW. It suggests we conduct a workshop to determine the price for such projects.

Greenlining is opposed to the fixed price for PPAs. It argues that the fixed price works as a disincentive to bidders to lower their price.

WPTF/DDAC also argues that the fixed price conflicts with several Commission decisions, including the Commission's competitive market first approach. It notes that Commission decisions that have encouraged competitive procurement have never mentioned fixed price PPAs. It further adds that such a price would also be inconsistent with the criteria for UOG and Commission policy that encourages merchant generation development.<sup>39</sup> In addition, WPTF/DDAC adds that the fixed price will provide no price competition that could benefit the ratepayers.

CFC also notes that the fixed price may result in higher costs than competitive procurement.

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<sup>39</sup> WPTF/DDAC Opening Brief at 4.

TURN also opposes the fixed price, stating that the fixed price could create potential windfalls for the developers. TURN argues that third party developers may be able to achieve lower prices than UOG due to many factors, including the benefits of federal tax incentives, lower cost of capital, and changing market conditions. Under a fixed price structure, the financial benefits of these lower costs would be realized only by the developers. TURN advocates that to the extent that lower prices can be achieved, ratepayers should be able to benefit from these savings in the form of lower rates. Because a competitive procurement process would allow ratepayers to reap the benefits of the lower prices, TURN recommends we reject the fixed PPA price and adopt a competitive procurement process instead.

DRA also proposes that PG&E's program be modified to include cost-competitive PPA solicitations. Specifically, DRA recommends that instead of creating another renewable energy PPA solicitation process, the Commission adopt a PPA solicitation process similar to the market-based pricing mechanism, or Renewable Auction Mechanism (RAM), proposed by Energy Division Staff in Rulemaking 08-08-009.

In response to the above objections to the fixed price PPA, PG&E argues that if the PPA price is not fixed, several aspects of the PV Program, including project selection and contract negotiations, execution, and approval could become more difficult and contentious and result in delays for the PV Program. Furthermore, PG&E asserts that there is a probability that without a fixed price, projects would focus on seeking opportunities to cut costs for the purpose of the bid rather than maximizing the viability of the projects, even though those

measures could threaten the long-term viability of the projects.<sup>40</sup> Thus, PG&E argues that the proposed fixed price PPA is what it will reasonably cost in a competitive market to build viable, mid-size PV facilities.

### **5.2.2. Discussion**

We will not adopt a fixed price PPA as proposed by PG&E, because it has several shortcomings and there is a risk that a fixed price could result in higher prices for PPA contracts and lead to overpayment by the ratepayers. Instead, we adopt a competitive process for the PPA selection. As we have previously stated our preference for a competitive procurement process, this approach will ensure that the PV Program achieves its objectives at the lowest cost to ratepayers.

Many parties raise concerns with using a fixed price PPA and suggest replacing it with a competitive process. The major criticism of the fixed price approach is that it does not result in the best prices for the ratepayers, as would a competitively-based price. This view is shared not only by those who support the PG&E's PV Program proposal, but also by others who oppose it.

DRA, while urging the Commission to deny the application, stresses that if the Commission were to approve the program, it should require competitive price bidding for the PPA portion to protect ratepayers.<sup>41</sup> Greenlining expresses a similar concern regarding the application and states that "the Commission should not approve a pricing scheme that forgoes savings achievable in a fully competitive market."<sup>42</sup> The Solar Alliance, while supporting the application, recommends a competitive procurement process. WPTF and DACC also suggest

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<sup>40</sup> PG&E Reply Brief at 26.

<sup>41</sup> Exhibit 101 at 24.

<sup>42</sup> Greenlining Opening Brief at 9.

the Commission reject PG&E's fixed price approach in favor of truly competitive solicitation in order to attain the best possible price.

At the heart of the concern raised by various parties regarding the fixed price approach for the PPAs is the notion that the benefits that might be achieved through meaningful price competition will not accrue to ratepayers. Furthermore, our ability to administratively determine the "right price" that will both encourage projects to come online while also ensure that ratepayers pay no more than they would have otherwise paid for the same product, is fundamentally limited. As already explained, the solar PV market is changing rapidly. Additionally, given the information we have from the RPS program, there is reason to believe that a competitive process may result in lower prices for the PV Program. The fixed UOG price PG&E proposes is based on an estimate of PG&E's cost for building PV projects and the result of several assumptions specific to utility ownership. These assumptions also introduce significant uncertainty and we have little confidence they represent accurate information at this point, much less going forward. In addition, as witness Jeung suggests "A number of factors impact projects economics, including location, equipment prices, labor costs, and transmission costs."<sup>43</sup> Thus, there is no basis for adopting a fixed price for projects that not only could vary in size, but also would have different characteristics, including ownership. These project-specific attributes and associated costs are best sorted out via a competitive process where each project specific circumstance is considered in developing its bid.

Second, even if the UOG price was a reasonable estimate for UOG, PG&E has not provided any justification why the same price would also be reasonable

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<sup>43</sup> Exhibit 4 at 3-2.

for PPAs. As TURN points out, several factors, including lower costs of capital, could enable third party developers to offer PPAs at prices below PG&E's preliminary forecast of UOG. Under PG&E's fixed price PPA, however, the financial benefits of the lower third party costs cannot be realized by ratepayers. Finally, there is no reason why PG&E cannot use a competitive price and still select the most viable projects.<sup>44</sup> The PPA evaluation process will be similar to the existing RPS solicitation process and will include a number of criteria, including project viability. The same evaluation process and steps as described in PG&E's testimony for the fixed price PPA could also be used for competitively priced PPAs. PG&E's concern that if PPA price is not fixed it could impede the focus on selecting projects with the highest viability is not valid. A viability assessment would remain as a factor in the selection of the projects even with competitive price added as an additional criterion. In other words, although it is true that adding a new criterion could change the selection process, it does not follow that it will necessarily result in selection of less viable projects. Additionally, we disagree with PG&E's contention that a competitive process engenders additional complexity and will result in delay. These matters can be addressed by adopting a non-modifiable standard contract as well as specific deadlines for when winning projects have to be online.

We also decline to adopt DRA's proposal for a PPA solicitation process using staff's proposed RAM at this time. We may reconsider whether to incorporate the PV Program solicitation with RAM at a future date, depending on the outcome of the RAM proposal.

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<sup>44</sup> In fact, the Commission recently initiated implementation of the competitive procurement portion of SCE's Solar PV Program, which includes rigorous eligibility and project viability screens. See Resolution E-4299.

In comments on the PD, DRA recommends that an independent evaluator be required to oversee each PPA solicitation. This requirement would serve as a safeguard against any improper conduct in the selection of the winning bids, and would provide transparency to the PPA solicitation process. It is also consistent with D.06-05-039 approving the IOUs' 2006 RPS procurement plans and solicitation protocols. Accordingly, we require PG&E to use an independent evaluator in each PPA solicitation.

Finally, we agree with TURN that PG&E should provide information to potential bidders in the solicitation indicating preferred locations to interconnect. This information could assist project developers to secure suitable locations to minimize the risk of facing unforeseen interconnection costs and delays.

## **6. Applicable Commission Decisions and Statutes**

### **6.1. Parties' Positions**

Most parties agree that AB 920 does not impact the PV Program. However, DRA urges the Commission to consider PG&E's need for additional RPS resources through the PV Program given that both SB 32 and AB 920 will increase the amount of RPS energy that PG&E will be obligated to purchase.<sup>45</sup> In DRA's view, purchases under AB 920 and the "must take" obligation under SB 32 would significantly increase the amount of RPS energy for PG&E, thereby reducing PG&E's RPS obligation to procure additional renewable resources.

DRA also recommends that the PV Program be limited to facilities greater than 3 MW to avoid overlap with SB 32, which also targets facilities up to 3 MW.

PG&E believes neither AB 920 nor SB 32 materially conflict with the PV Program. In PG&E's view, the PV Program is different from AB 920 in that

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<sup>45</sup> DRA Supplemental Briefs at 3.

under the PV Program none of the power may be used to offset onsite load, whereas under AB 920 a PV facility's output must be used to offset the customer's onsite load.<sup>46</sup>

PG&E also believes SB 32 does not conflict with the PV Program, because facilities targeted by the PV program would likely not want to participate in the feed-in tariff (FIT) program provided pursuant to SB 32. PG&E suggests the price offered under SB 32 may not be adequate to attract new investments. In addition, PG&E believes implementation of SB 32 will likely be on a different schedule from the PV Program.<sup>47</sup>

TURN echoes the view that AB 920 does not conflict with the PV Program, but believes gaming could occur between SB 32 and the PV program to the extent prices offered under the two programs are different. TURN contends price differentials could create a situation where a minimum price guarantee and an opportunity to speculate on higher prices through a competitive process exists.<sup>48</sup> TURN's primary recommendation is to limit PG&E's PPA program to projects greater than 3 MW to eliminate any potential conflicts between the two programs.<sup>49</sup> CUE also supports excluding 1 to 3 MW projects from the PV Program.

CALSEIA disagrees with TURN and cautions the Commission against relying on TURN's argument. CALSEIA maintains that TURN's argument is based on the assumption that the pricing under SB 32 and the PV Program will

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<sup>46</sup> PG&E Supplemental Briefs at 4.

<sup>47</sup> PG&E's Supplemental Briefs at 2.

<sup>48</sup> TURN Supplemental Briefs at 1.

<sup>49</sup> TURN Supplemental Briefs at 4.

be significantly different. Such an assumption, in CALSEIA's view, is speculative because the Commission has not yet determined a price for projects that contract under SB 32.<sup>50</sup>

The Solar Alliance and CFC also believe SB 32 and AB 920 do not impact PV Program. CFC, however, appears to suggest that the Commission compare the PV program to SB 32 and AB 920 by listing some of the elements of SB 32 and AB 920 as guidance.

CFC also argues that PG&E's application is contrary to law because it asks for an order concerning the method of recovery of costs of new construction before the plant is built.<sup>51</sup> CFC refers to Pub. Util. Code § 454.8<sup>52</sup> ("Recovery of costs of new construction") and states that the Commission cannot decide the method for recovery of the costs of new construction until after it finds the plant is used and useful to the public. CFC also asserts that the PV Program will not be in compliance with § 454.4 (c)(3), because PG&E will not be buying renewable energy through the renewable energy procurement process. According to CFC, only PPA contracts that are submitted as part of the procurement process would be in compliance with § 454.5 (c).

## **6.2. Discussion**

AB 920 allows net energy metering customers with projects of up to 1 MW to sell any excess electricity they produce over the course of a year to their electric utility at a rate to be determined by the Commission.

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<sup>50</sup> CALSEIA Supplemental Briefs at 2.

<sup>51</sup> CFC Opening Brief at 26.

<sup>52</sup> Unless otherwise stated, statutory references are to the California Public Utilities Code.

Most parties believe that AB 920 does not have an impact on the PV Program because of the important differences between the statute and the PV Program. We share this view. PV facilities covered by AB 920 are required to use the power to offset on site load while under the PV Program no such requirement exists. Thus, we can reasonably conclude that the facilities that participate in AB 920 are not likely to participate in the PV Program. As such, there is no conflict between the PV program and a program which may implement AB 920.

The impact of SB 32 on the PV Program, however, is more complicated. SB 32 increases the size of generation facilities eligible for California's FiT program from 1.5 MW to 3 MW, and raises the Fit program's statewide cap from 500 MW to 750 MW. SB 32 also establishes the payment to eligible projects at a price based on the MPR adjusted to include all current and anticipated environmental compliance costs subject to a ratepayer indifference test. A major concern expressed by the parties with respect to the impact of SB 32 on the PV Program is the potential for forum shopping. Parties are concerned that if prices under SB 32 and the PV Program are significantly different, projects will gravitate toward whichever program offers the greatest value. This can create a situation where projects that would have moved forward at a lower price may receive a higher price by electing to participate in one forum versus the other. PG&E contends that the SB 32 price is unlikely to be significantly higher than the price under the PV Program. Further, PG&E asserts that the SB 32 implementation timeline is uncertain. CALSEIA echoes the concern about the implementation timeline and further contends that parties' concern about price differential is speculative at this point since the Commission has not established a price for SB 32.

CALSEIA is correct that the Commission has not presently implemented SB 32, thus the prices pursuant to SB 32 are unknown. Furthermore, prices for the PV Program are also unknown. The PD argued that even though we presently lack the pricing information to properly determine whether price speculation would indeed occur, we do know that if SB 32 prices are significantly different from those in the PV Program, price speculation and gaming could occur. The PD determined that the potential for price speculation compels us to establish a mechanism that would eliminate that possibility altogether. The PD rejected CALSEIA's recommendation to review contracts after SB 32 prices are established to determine whether gaming concerns have merit and then take remedial actions such as contract cancellation to prevent unfair gaming. The PD noted that relying on such a mechanism alone may not be sufficient, because the mere threat of contract cancellation may discourage some undesirable behavior, but would not altogether stop or make it less possible for third party developers to engage in price speculation. Furthermore, contract cancellation creates an uncertainty in contracting that could add costs to contracts, and increase overall costs to ratepayers. Thus, the PD noted that we prefer to establish clear and concise rules at the outset to avoid potential unfair gaming and price speculation. Accordingly, the PD excluded projects between 1 to 3 MW from participating in the PV Program. In comments on the PD, parties presented convincing arguments that it would be premature to exclude projects between 1 to 3 MW from the PV Program when SB 32 has not been implemented yet. Additionally, excluding projects up to 3 MW from PG&E's PV Program could leave such projects in PG&E's service territory without a viable market.<sup>53</sup> We believe this is

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<sup>53</sup> The Solar Alliance and the Vote Solar Initiative Comments on the PD at 2.

a reasonable concern. Accordingly, we allow projects between 1 to 3 MW to participate in the PPA portion of the PV Program. However, as a means of overcoming the potential for engaging in price speculation, projects between 1 to 3 MW should be excluded from the PPA portion of the PV Program after the Commission has established a price for projects pursuant to SB 32. PG&E shall file an advice letter for a standard contract for these types of projects.

With respect to CFC's claim that PG&E's application is contrary to law, § 454.8 states that:

In any decision establishing rates for an electrical or gas corporation reflecting the reasonable and prudent costs of the new construction of any addition to or extension of the corporation's plant, when the commission has found and determined that the addition or extension is used and useful, the commission shall consider a method for the recovery of these costs which would be constant in real economic terms over the useful life of the facilities, so that ratepayers in a given year will not pay for the benefits received in other years.

It appears that CFC's argument is that because PG&E has not built the new facility and the Commission has not found the plant to be used and useful, the Commission cannot establish a cost recovery mechanism for the new plant. Nothing in § 454.8 prohibits the Commission from establishing a cost recovery mechanism for an approved utility investment before the plant is built. The only requirement in § 454.8 is that when the Commission considers a cost recovery mechanism for a new plant that is used and useful, it would consider a mechanism that would allow the cost be distributed over the useful life of the facility so that ratepayers only pay for the benefits received in that year. CFC's interpretation of the Public Utilities Code is therefore inaccurate.

With respect to CFC's claim that PG&E has failed to demonstrate that its PV Program complies with LCBF principles, we believe such an analysis is not

required at this time. Section 399.14 requires PG&E to include LCBF analysis in its renewable energy procurement plan (Procurement Plan) filed with the Commission. Accordingly, PG&E shall amend its 2010 Procurement Plan to include its PV Program. The Commission will then review contracts executed under the PV Program for consistency with PG&E's approved Procurement Plan and compliance with all other relevant RPS procurement requirements. This also addresses CFC's argument raised in its comments to the PD.<sup>54</sup>

## **7. PV Program Size and Schedule**

### **7.1. Parties' Positions**

PG&E originally proposed to develop UOG projects at about 50 MW annually, claiming that the 50 MW per year target would be a manageable project load for developing UOG projects from 1 to 20 MW in size. For the PPA portion of the PV Program, PG&E proposed to hold annual solicitations for up to 50 MW from 2010 to 2014 and if less than 50 MW is awarded in a given solicitation, the remaining megawatts would roll over to the following year's solicitation. As described below, PG&E later changed its recommendation in response to parties' comments.

The Solar Alliance and CALSEIA propose a declining schedule with 100 MW of PPAs in the first year, 75 MW in the second year, 50 MW in the third year, and 25 MW in the fourth year of the program.<sup>55</sup> The Solar Alliance contends that front-loading the procurement of MW would be an effective approach to ensuring that the entire 250 MW of the PPA program will be built.

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<sup>54</sup> CFC Comments on the PD at 3-4.

<sup>55</sup> This proposal was jointly offered by the Solar Alliance and CALSEIA.

In response to CALSEIA and Solar Alliance's proposal to front-load the procurement of MW, PG&E endorses the concept but recommends a slightly different schedule. PG&E suggests 75 MW each in the first and second year, and 50 MW each in the third and fourth year of the PV Program, with the fifth year as the "clean-up" for contract failures.<sup>56</sup> PG&E asserts that this schedule would allow an opportunity to take advantage of future price reductions in PV facilities and for new technologies to develop and bid into the last year of the PV Program.

DRA also proposes that the proposed PV Program be scaled back to half its size to provide ratepayer protection. DRA disputes PG&E's claim that the full size of the PV Program is needed to achieve economies of scale.

TURN proposes to consider reallocating the MW between the UOG and PPAs after two years.

Regarding TURN's proposal for a two-year evaluation of the allocation between the PPA and UOG portions of the PV Program, PG&E responds that a two-year check point would create uncertainty for bulk purchases as well as administrative costs that ratepayers will have to bear. PG&E argues that some PPA projects may not be fully developed by the end of the two year term. Thus, a comparison between UOG and PPA projects under such circumstance would not be useful. Finally, PG&E argues that a two-year program check will be unnecessary because a program review is intended at the end of the fifth year of the PV Program when results for both the UOG and PPA portions will be available.

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<sup>56</sup> Exhibit 4 at 3-5.

## **7.2. Discussion**

We adopt a size of 500 MW for the PV Program. PG&E will be authorized to build up to 50 MW of PV UOGs and solicit up to 50 MW of PV PPAs annually.

We reject both PG&E's revised, and CALSEIA and Solar Alliance's proposed schedules to front-load the MWPPA procurement schedule. Neither has presented a convincing argument why front-loading the PPA procurement schedule MW would be beneficial, other than the claim that it would allow MW that dropped out from an earlier solicitation to be rolled into the subsequent solicitations, helping to avoid "any MW left on the table." This however, seems to ignore the fact that the solicitation would occur every 12 months while the timeline required for contracts to achieve commercial operation is 18 months. Therefore, by the time the next solicitation occurs, the number of MW which may have dropped out from the previous solicitation may not be known. Thus, the benefits of this mechanism are unclear. Moreover, unassigned MW from one solicitation will automatically be added to the next year's solicitation. Thus, there is no reason to front load the program.

Further, front-loading the PPA procurement schedule MW would not enable the PV Program to take advantage of future price reductions that could become available due to technological improvements or new developments in the market. As PG&E recognizes "there may be cost effective technologies that can participate in later solicitations that do not exist today."<sup>57</sup> One of the key reasons for an annual solicitation is to enable the program to take advantage of additional choices as technology evolves and new companies enter the market. As the above comments suggest, if the PPA procurement was front-loaded, these

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<sup>57</sup> Exhibit 1 at 3-3.

potential savings would be forgone as fewer MW would be left to participate in future years of the PV Program.

Given these considerations, we adopt the schedule for an annual solicitation of 50 MW of PPA power. For the same reasons, we will adopt a 50 MW per year limit for the UOG portion of the PV Program. We also allow PG&E to accrue unbuilt MW from a given year to the next year for both the PPA and UOG portions of the PV Program. In other words, if PG&E elects to build less than the authorized annual capacity, or if the PPA solicitation results in less MW than allotted, the remaining MW for that year will be added to UOG portion or the next year's solicitation, respectively. This will ensure that ratepayers will receive the benefits of potential price decreases in the future in both the PPA and UOG portions of the PV Program. In Comments on the PD, parties, including TURN argue that unused MW should be added to the PPA category so that the full extent of the PV Program goals can be realized.<sup>58</sup> We agree with this revision and authorize PG&E to add unused UOG MW from one solicitation to the next.

A different, but related issue concerns the treatment of dropouts, defined here as projects and related capacity that were either selected through a solicitation or which PG&E has indicated its intent to develop, but that for various potential reasons do not come online within the required timeframe. In the interest of ensuring that the PV Program fulfills its overall capacity objectives, any projects and associated capacity that drops out over the course of the PV Program should be added to the authorized capacity that can be developed in the next available solicitation or UOG identification process, respectively. This accrual of dropouts should occur through the last solicitation

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<sup>58</sup> TURN Comments on the PD at 3.

of the PV Program. We note, however, that this policy may create a perverse incentive for PG&E to cancel UOG projects it has declared its intent to undertake if the weighted average price from a subsequent solicitation is higher than the price from a prior solicitation. To prevent this we will not allow the output associated with the capacity that PG&E has indicated it plans to deploy in a given solicitation cycle to be pursued at a different price should these projects dropout. In other words, the capacity that PG&E indicates it intends to deploy pursuant to the advice letter process described above effectively locks in the price that PG&E can receive for any output from this capacity. Should PG&E fail to develop this capacity within the authorized timeframe, unlike dropouts from the PPA side of the PV Program, this capacity will not be rolled forward.

Regarding the size of the PV Program, we are not convinced that DRA's proposal to reduce the program size by half is warranted. First, as discussed earlier, a more reasonable approach to ensuring ratepayer protection against potential high costs will be to adopt a price for the UOG portion of the PV Program that is linked to the PPA prices which reflect the market price of PV. Second, as DRA acknowledges, there is a lack of analysis in this record as to "(a) what aspects of PG&E's programs might enjoy economies of scale, and (b) what effects changing the size of the program would have on the economies of scale."<sup>59</sup> Without a proper analysis, it would be difficult to draw a conclusion about how much of a reduction in the PV Program size would be appropriate.

We also reject TURN's proposal to reevaluate the allocation of the MW between UOG and PPAs to determine which cost is less. Because the adopted

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<sup>59</sup> DRA's reply Brief at 4.

price structure is such that the UOG price will be tied to PPA prices, no further comparison will be needed.

Finally, we reject PG&E's proposal to suspend or scale back the PV Program without Commission authorization. While there may be factors that could justify termination of the PV Program, PG&E will be required to formally seek Commission authorization to do so. However, we note that we are not requiring PG&E to build any UOG projects. This remains a discretionary decision of PG&E's based on its own assessment of the economics of pursuing these projects under the pricing methodology set forth in this decision.

## **8. Cost Recovery and other Performance Mechanisms, and Reasonableness Reviews**

### **8.1. Parties' Positions**

Several parties have recommended that the cost recovery for the UOG portion of the PV Program be contingent upon a certain level of performance of the UOG facilities and that shareholders share some of the cost savings or cost overruns with ratepayers.

TURN believes PG&E should be accountable for the cost estimates and the performance of its UOG facilities similar to requirements in the PPAs. TURN recommends that we establish an LCOE based on the proposed costs estimates as an overall cost cap for the UOG projects. TURN also recommends a performance mechanism to link cost recovery of PG&E's UOG facilities to performance of the facilities by assessing a penalty if deliveries fall more than 10% below the initial forecast. TURN believes this would create an incentive for PG&E to select the most cost-effective projects and take all appropriate actions to

properly operate and maintain them. Thus, TURN argues, it protects the ratepayers.<sup>60</sup>

DRA also proposes an 80/20 cost sharing mechanism between ratepayers and shareholders with cost overruns above 20% to undergo a reasonableness review. CARE also supports a cost sharing mechanism. DRA suggests that the Commission conduct a reasonableness review of PG&E's capital expenditures and O&M costs after the fact in PG&E's General Rate Case (GRC).

PG&E does not believe it should be subject to any performance guarantee or cost sharing mechanisms. It argues that a performance guarantee mechanism would be unfair to PG&E because PG&E would not have the benefit of better than expected performance of the facilities while it could bear the risk if facilities underperform.<sup>61</sup> PG&E also opposes the cost sharing mechanism as proposed by DRA and CARE, arguing that such an approach is inconsistent with traditional cost-of-service ratemaking where the Commission initially determines the costs and later will have an opportunity to decide if additional costs are reasonable.

## **8.2. Discussion**

Solar Alliance/Vote Solar dispute the necessity of establishing a price cap for the PPA portion of the PV Program, arguing that because the PD relies on a competitive solicitation, a price cap is unnecessary.<sup>62</sup> IEP also argues that a cost cap is no longer necessary if the price for the PPAs and the UOG projects are set

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<sup>60</sup> TURN Opening Brief at 8.

<sup>61</sup> Exhibit 4 at 11.

<sup>62</sup> Solar Alliance/Vote Solar, Opening Comments on PD, pp. 6-9.

competitively.<sup>63</sup> CLECA argues that the Commission should not rely entirely on the results of the solicitations. CLECA recommends the Commission review the results of PPA solicitations and make a determination that ratepayers will be well served by the addition of the renewable power at the winning price levels.

We adopt a cost cap as recommended by TURN for the maximum price ratepayers should pay for energy procured from the PV Program. A price cap would ensure protection for ratepayers against unjust and unreasonable prices in case the market does not place sufficient pressure on bidders to control the price and sellers bid prices far in excess of their cost. This also addresses CLECA's concern raised in comments on the PD. However, given the lack of detail in PG&E's cost estimates, as discussed above, we do not believe PG&E's estimate can be used to identify a reasonable cap. Instead, we use the information from PG&E's 2009 RPS solicitation, which represents the market price for these types of projects, and adopt a cost cap calculated at the weighted average price of PV projects from PG&E's 2009 solicitation. This is a reasonable cost cap for the PPAs because the 2009 RPS solicitation reflects recent market prices for similar projects and if PV prices are to come down in future years, the price derived from the 2009 solicitation would reasonably represent a maximum price for the PV projects. Also, because the price from the RPS solicitation is confidential, there is no risk that the price cap, which is derived from RPS confidential information, would be used as a price target in the PPA solicitation. In comments on the PD, TURN recommends that we keep the cost cap in place for the first two years of the PV Program, after which time PG&E should be directed to refresh the cap based on the weighted average bid price for facilities less than 20 MW in the

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<sup>63</sup> IEP Comments on the PD at 10.

most recent RPS solicitation.<sup>64</sup> Although we share TURN's view that it would be appropriate to tie the maximum price available under the PV Program to current average bid prices under the RPS process, to reduce administrative burden, we do not adopt TURN's recommendation to refresh the cost cap after two years.

Because the amount PG&E will be able to recover for UOG projects is expressly tied to the price from the PPA solicitations, the cap for the PPA portion of the PV Program will in effect act as a cap for the maximum cost ratepayers would bear for UOG projects under the UOG portion of the PV Program as well.

With respect to DRA's proposal for a reasonableness review, we note that PG&E's recovery for the UOG portion of the PV Program will take place in the ERRR proceeding after a review of the costs per ERRR compliance standards. We also do not adopt a cost sharing mechanism. Nor do we adopt a performance guarantee mechanism. PG&E's cost recovery will be tied to the performance of its facilities. Thus, no performance guarantee will be necessary.

We do, however require that PG&E make an annual compliance filing in this proceeding showing, among other things, the results of the PPA solicitation and UOG costs. This information will allow the Commission to compare the costs of the UOG and PPA and better understand the impacts of the PV Program. PG&E shall file annual compliance reports with the Energy Division.<sup>65</sup> The annual report prepared by PG&E shall include the information outlined in Appendix A.

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<sup>64</sup> TURN Opening Comments at 4.

<sup>65</sup> The first annual compliance report will be due a year from the effective date of this decision.

We adopt PG&E's proposal for recovery of the cost of the PPA portion of the PV program through PG&E's ERRA. PG&E shall seek recovery for the UOG portion of the PV Program in its ERRA proceeding.

## **9. PV PPA Contract Forms**

On August 21, 2009, PG&E along with the Solar Alliance, Vote Solar Initiative, and CALSEIA submitted a form PPA for projects greater than 3 MW to 20 MW. They refer to this proposal as the Large Project PPA form.<sup>66</sup> The Large Project PPA replaces PG&E's original proposal which was submitted on June 19, 2009. The Large Project PPA does not contain pricing or the process for solicitation of projects. There is no agreement on a form contract for projects 3 MW and less.

### **9.1. Parties' Positions**

DRA recommends PG&E's and the Joint Solar parties' proposed standard Large Project PPA be rejected. DRA asserts that neither DRA nor any other consumer advocate parties participated in PG&E's and the Joint Solar Parties' settlement negotiations to develop the proposed Large Project PPA. As a result, DRA contends that only sellers (i.e., the Joint Solar parties) would benefit from the negotiated contract at the expense of ratepayers.<sup>67</sup> DRA suggests, consistent with the Energy Division Staff RAM proposal, that the Commission adopt the AB 1969 feed-in tariff (FiT) contract with a few additional terms. For projects between 10 and 20 MW, DRA recommends that PG&E file a Tier 3 Advice Letter proposing changes to the RPS pro-forma agreement.<sup>68</sup>

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<sup>66</sup> The Large Project PPA form is Exhibit 13.

<sup>67</sup> DRA Opening Brief at 12.

<sup>68</sup> DRA Opening Brief at 12.

CFC also opposes the Large Project PPA. CFC contends that the Large Project PPA as proposed has shifted risks and costs from solar developers to PG&E's customers and "in most cases, the changes increase the cost of purchased power to be paid by customers."<sup>69</sup> Specifically, CFC expresses concern with terms and conditions concerning the Compliance Costs Cap, Guaranteed Production, Modification to Contract Quantity, Project Security, Pollution and Earthquake Insurance.<sup>70</sup>

CUE argues that the Large Project PPA does not represent the interests of workers and specifically advocates that the PPA should require the independent power producers to: (1) hire only state-licensed electricians to perform electrical work; (2) invest in existing training infrastructure by requiring suppliers to hire apprentices enrolled in state-certified apprenticeship programs; and (3) pay construction workers the prevailing wage rate. CUE argues that while these terms are not required by state law, they serve important policy objectives of improved production efficiency, higher quality work product, continuity of a skilled workforce, and a guarantee that workers will receive fair wages and benefits such as health care.<sup>71</sup>

In response, PG&E asserts that the PPA forms "equitably allocates risk between independent developers of PV facilities and PG&E, acting on behalf of

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<sup>69</sup> CFC Opening Brief at 22.

<sup>70</sup> We note that CFC's Opening Brief appears to refer to an old version of the Large Project PPA and contains several errors. The correct version of the Large Project PPA is Exhibit 13.

<sup>71</sup> CUE Reply Brief at 13.

its customers, because it was an agreement reached in an arm's length negotiation between a number of parties representing competing interests."<sup>72</sup>

## **9.2. Discussion**

We adopt a modified standard contract for the PPA portion of the PV Program. We understand DRA's concern that no consumer advocate groups were present during negotiations to develop the proposed Large Project PPA. Nonetheless, we find it reasonable to adopt a modified standard contract for the PPA portion of this program. As TURN has stated, a standard contract would provide some modest level of development security.<sup>73</sup> A standard contract, based on a modified version of the Large Project PPA, will be in ratepayers' interest because it will expedite the negotiation and Commission approval of PPAs and could attract more sellers to participate in the solicitation. It will also reduce the administrative costs associated with contracting for individual PV projects due to fewer review and documentation requirements.

Modeling the standard contracts on the existing RPS standard contracts seems reasonable and we agree with most of the revisions made in the Large Project PPA to tailor the RPS standard contracts to this program. However, we make a number of revisions to the Large Project PPA form to minimize ratepayers' risk exposure.

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<sup>72</sup> PG&E Opening Brief at 19.

<sup>73</sup> Exhibit 800 at 5.

First, we adopt the proposed compliance cost cap with modifications.<sup>74</sup> We agree with the Solar Alliance that complying with changes in law and regulatory requirements may be difficult to quantify and as such may pose additional risk to the project financing. Having certainty in contract terms and obligations not only helps with securing project financing, but also gives the seller an increased ability to offer better prices. We find it is reasonable to identify a limited liability for these costs in order to facilitate financing. Therefore, we adopt the proposed compliance cost, and require that Section 3.1(o) of the Large Project PPA form be modified to clarify that it would only apply to costs due to changes in the law that occur after the execution of the contract.

CFC's concern with the Compliance Cost Cap is that PG&E's ratepayers could be responsible for any compliance costs that exceed the cap. We therefore, make another revision to the Compliance Cost Cap provision in Section 3.1(o) and require PG&E to seek Commission authorization through an advice letter prior to making any payments above the cap to ensure that such costs are reasonable. We believe this is a reasonable measure to ensure that ratepayers are not automatically subject to costs above the cap. We require PG&E to seek Commission authorization through an advice letter prior to making any payments above the cap to ensure that such costs are reasonable.

PG&E witness Jeung testified during hearings that major new compliance costs are less likely to occur because compliance rules are generally well established up front. No party has identified a scenario which suggests that the

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<sup>74</sup> The compliance cost cap applies to a seller's costs associated with complying with several regulatory certifications and requirements as described in Section 3.1(o) of the Large Project PPA form. The compliance cost cap is a cap on total costs over the term of the agreement not to exceed \$20,000/MW. CFC's brief incorrectly refers to an old version of the proposed Large Project PPA.

PV projects are likely to be subject to higher compliance costs or that the compliance cost cap amount is unreasonable. With the above modification, we are comfortable that the risk exposure to ratepayers is low.

With respect to the Guaranteed Energy Production provision, the Large Project PPA form lowered the performance requirements for a seller from an average of 160% of the expected generation over a two year period in the RPS standard contracts to 140%. CFC asserts that lowering the performance requirements will increase the likelihood that PG&E will need to acquire replacement power at a higher cost to PG&E's customers.

Although we disagree with CFC's analysis, because PG&E did not provide a specific justification for this change, we require the Large Project PPA to contain the 160% requirement. In conjunction with the lower general performance requirement, the Large Project PPA form also proposed lower performance requirements to cure a performance default in a prior two year period. We reject this proposal as well and require PG&E to employ a 90% requirement, which is its RPS standard contract. Accordingly, the Guaranteed Energy Production will be 160% and the Guaranteed Energy Production Cure will be at 90%.

Regarding the contract capacity provision, the Large Project PPA form provides the seller a one time option to reduce the contracted capacity of its project to no less than 70% of the original contact capacity in the event it fails to meet delivery requirements set forth in the PPA. In addition, if a seller opts to exercise this one-time option, it can avoid paying penalties for past performance shortages, but it will be required to meet delivery requirements throughout the remainder of the contract term (i.e., 160% of the expected generation over a two year period).

CFC characterizes this new provision as a way for sellers to avoid paying a penalty. PG&E explains in its reply briefs that providing this one-time option for sellers also benefits PG&E's customers because it will allow a project to continue operating and delivering without resulting in an event of default.

We agree that including this flexibility in the PV Program strikes a reasonable balance between buyer and seller without necessarily imposing additional costs on PG&E's customers. Accordingly, the Large Project PPA form may include the one-time option for a seller to reduce the contract capacity to no less than 70% of the original contract capacity.

Finally, because the size of the projects in the PV Program is limited and because these projects would be developed over a fairly short time frame, we are comfortable with the lower project development security amounts and the insurance provision proposed in the Large Project PPA form.

With respect to CUE's request for PPAs to provide prevailing wage rates and other labor related requirements, we do not require such conditions, because the California Labor Code pertaining to prevailing wage does not apply to the projects under the PPA portion of the PV Program.

#### **10. Additional Rate of Return**

PG&E requests the rate of return (ROR) on rate base for the UOG portion of the PV Program be equal to its currently authorized ROR of 8.79 adopted in D.07-12-049 for 2008, plus one percent. PG&E claims the additional one percent is allowed pursuant to § 454.3 and by D.06-05-039 for renewable assets.<sup>75</sup> Alternatively, PG&E requests that if we find that § 454.3 is not applicable, we grant the increase in the rate of return pursuant to § 454(a).

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<sup>75</sup> PG&E Application at 7.

### **10.1. Parties' Positions**

Greenlining opposes the additional rate of return adjustment, arguing that an increase in the rate of return would be justified only if the technology is experimental. Greenlining states that the PV Program relies on solar PV which "has been in relatively widespread use for the last three decades."<sup>76</sup>

CFC opposes the proposed increased rate of return for a different reason. CFC argues that D.06-05-039 allows an increase in the rate of return under § 454.3, only after a hearing and a determination that "the capital costs [of the facility], when added to its costs of operation and maintenance, result in a cost of electricity generated over the useful life of the facility less than that of electricity generated by existing facilities utilizing nuclear power or fossil fuel; and the facility is used and useful." CFC asserts "PG&E has offered no evidence which would support such a finding."<sup>77</sup>

### **10.2. Discussion**

We reject PG&E's request for an additional rate of return. Because of the cost recovery approach adopted herein, PG&E will not enter into rate base the capital investment associated with the projects it develops for the UOG. Thus the issue of what rate of return it should be authorized to receive for those investments is rendered moot. As described above, the rate of return PG&E receives for these projects will be a function of how efficiently PG&E can build and operate these systems relative to the price it will receive per kWh as calculated from the PPA solicitations.

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<sup>76</sup> Greenlining Opening Brief at 12.

<sup>77</sup> CFC Opening Brief at 27.

However, even if PG&E's capital investments for its UOG facilities were in rate base, we would reject PG&E's request for a higher rate of return. PG&E's request for an increase in its ROR is premised on the notion that the PV Program is experimental. PG&E argues that the program is experimental because it "is open to any type of PV technology, including PV technologies that have more recently come into the market and, for later years of the Program, cost-effective technologies that do not exist today."

Section 454.3 in relevant parts provides that:

The Commission may, after a hearing, approve an increase of from one-half of 1 percent to 1 percent in the rate of return otherwise allowed an electrical corporation on its electric plant for investment by the corporation in facilities meeting the following requirements: ...

(c) ...The facility is experimental and is, in the determination of the commission, reasonably designed to improve or perfect technology for the generation of electricity from renewable resources or to more efficiently utilize other resources in a manner which will decrease environmental pollution from and lower the costs of the electricity generated.

For a utility to qualify for the increase in the rate of return pursuant to § 454.3, the PV facilities under the utilities' program would have to be experimental and designed to improve or perfect technology for the generation of electricity from renewable resources. The core technology used in the PV Program, however, is not experimental. As Greenlining states, "PV technology is hardly experimental"<sup>78</sup> and as PG&E itself states "the PV Program will allow for the deployment of a proven renewable technology."<sup>79</sup> Thus, there is no

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<sup>78</sup> Greenlining Opening Brief at 12.

<sup>79</sup> PG&E Application at 3.

experimental feature to the PV Program. Further, PG&E's assertion that the program can be viewed as experimental because there is likelihood that PG&E may take advantage of future development in the PV technology during the life of the program is also insufficient to fulfill the requirements of § 454.3 for an increase in the rate of return. Therefore, we reject PG&E's request for an increase in the rate of return per § 454.3.

We also reject PG&E's request to grant the rate of return increase per § 454.4(a). PG&E states if the Commission finds that § 454.3 does not apply, it can grant the increase pursuant to § 454.4(a). Section 454.4(a) is intended to ensure that utilities do not change their rates without a showing and finding that the new rates are justified. However, rate of return adjustments are traditionally considered in a utility's cost of capital proceeding. We reject PG&E's request here.

## **11. Non-Bypassable Charge**

PG&E requests recovery of any stranded costs associated with the PV Program through a non-bypassable charge.<sup>80</sup> PG&E believes it is allowed to recover the stranded cost associated with the PPAs over the entire term of the agreement. PG&E also believes it is allowed to recover the stranded costs associated with each UOG facility installed for a 10-year period following commercial operation of the facility.<sup>81</sup>

### **11.1. Parties' Positions**

WPTF/DACC argues that the stranded cost recovery established in D.04-12-048 applies only to utility-owned generation acquired as a result of the

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<sup>80</sup> Exhibit 1 at 6-7.

<sup>81</sup> Exhibit 1 at 6-7.

procurement process specified in that decision. WPTF/DACC argues that PG&E has failed to comply with that process, therefore, if the PV Program creates any stranded costs, those costs should be borne by PG&E's shareholders not its ratepayers.

### **11.2. Discussion**

Based on comments on the PD, we disagree with DACC/WPTF's interpretation that the approach to stranded cost recovery established in D.04-12-048 and further developed in D.08-09-012 is not applicable to PG&E's PV Program. DACC/WPTF assert that Conclusion of Law 16 (COL) of D.04-12-048<sup>82</sup> limits the applicability of stranded cost recovery to circumstances where a competitive RFO was used to select the contracts or assets that may result in stranded costs. We disagree. COL 16 does not confine recovery of stranded costs associated with UOG facilities to those procured under a competitive process as DACC/WPTF suggests. We find that the direction provided in D.04-12-048 is applicable to the stranded costs of the PV Program.

D.08-09-012 further elaborated which customer groups would be subject to recovery of stranded costs through non-bypassable charges (NBC). Specifically,

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<sup>82</sup> COL 16, in full states, "The utilities should be allowed to recover stranded costs for their non-RPS resource commitments from departing load over either the life of the contract or 10 years, whichever is less. The ten-year recovery period should also apply to any utility-owned generation acquired as a result of the procurement process, commencing once the resource begins commercial operation. Stranded costs arising from RPS procurement activities should be collected from all customers, including departing load, over the life of the contract. The utilities should be allowed the opportunity to justify in their applications, on a case-by-case basis, the desirability of adopting a cost recovery period of longer than ten years for their non-RPS resource commitments. Cost recovery for that portion of a resource acquired by the utilities to meet local reliability needs should be recovered from all customers."

D.08-09-012 states that “the NBCs, which include any above market costs related to RPS contracts, will not apply to departed load that is excluded from the load forecasts used to develop the IOUs’ Long Term Procurement Plans. The excluded departing load includes municipal departing load, with the exception of large municipalizations, and CGDL. *DA and CCA load are fully subject to the D.04-12-048 NBCs* [italics added].”<sup>83</sup> Ordering Paragraph 1 of D.08-09-012 is equally clear: “Decision (D.) 04-12-048 and D.06-07-029 non-bypassable charges (NBCs) shall be imposed on direct access (DA) and community choice aggregation customers, as well as new Western Area Power Administration (WAPA) departing load and split wheeling departing load customers.”

In light of the forgoing discussion, we agree with PG&E that it should be allowed to recover any stranded costs associated with the PV Program pursuant to D.08-09-012 and D.04-12-048 through an NBC from direct access customers. Furthermore, DACC/WPTF argument that direct access customers should not be subject to stranded costs associated with the PV Program given that they face their own RPS compliance obligations, DACC/WPTF appears to be litigating issues that are more appropriately considered in R.06-02-013 or may be examined through a petition to modify D.08-09-012.

## **12. Land Deposits**

PG&E proposes to include the deposits it has made on land with the intent of purchasing it for future PV UOG projects in Plant Held for Future Use (PHFU) in order to recover the carrying costs of these deposits prior to the operation of the PV facilities. PG&E plans to transfer the land deposits to plant in service after the PV facilities start operation.

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<sup>83</sup> D.08-09-012 at 56.

### **12.1. Parties' Positions**

DRA opposes PG&E's land deposit proposal. DRA argues that although the Commission may allow a utility to earn a return on the cost of property, land deposits do not qualify for such recovery because they are not "property acquired."<sup>84</sup> In DRA's view, property is only acquired when the land is purchased. DRA is also concerned that "allowing PG&E to earn a rate of return on land deposits would create a perverse incentive for PG&E to put down numerous land deposits in order to pad its rate base, with no risk to its shareholders."<sup>85</sup> DRA urges the Commission to deny PG&E's request, but should the Commission allow PG&E purchases to be treated as PHFU, DRA proposes to limit the time that a property can be held for future use to 18 months, consistent with PG&E's claim of the timeframe for bringing PPA PV projects on line. PG&E is opposed to this treatment, asserting that it would restrict its ability to make reasonable purchases for use in later phases of the UOG build-out.<sup>86</sup>

CFC is also opposed to PG&E's land deposit proposal because PG&E has no firm plans for the use of land on which it will pay a deposit. CFC argues PG&E should not be allowed to hold such deposits in its PHFU account.<sup>87</sup>

In response, PG&E states that plants held in PHFU will be for building PV facilities. Therefore, it should be allowed to recover the carrying cost.

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<sup>84</sup> DRA Opening Brief at 9.

<sup>85</sup> *Id.*

<sup>86</sup> PG&E's Opening Brief at 32.

<sup>87</sup> CFC's Opening Brief at 29.

**12.2. Discussion**

We reject PG&E's proposal to recover the carrying costs of land deposits prior to operation of the PV facilities. As stated previously, we believe that PG&E should use its own land before it procures additional land for the UOG projects. Further, land deposits do not qualify for cost recovery.

The Commission allows utility property held for use at a later date to be included in PHFU based the Electric Uniform System of Accounts, Account 105. Paragraph B describes the PHFU as follows:

This account shall also include the original cost of land and land rights owned and held for future use in electric service under a plan for such use, to include land and land rights:

- (1) Acquired but never used by the utility in electric service, but held for such service in the future under a plan, and
- (2) previously held by the utility in service, but retired from such service and held pending its reuse in the future under a plan, in electric service. (See Electric Plant Instruction 7.)

PG&E also describes PHFU as property acquired in advance for future utility use. Both definitions are consistent in that only utility-owned land and land rights are eligible to be entered into PHFU. Land deposits prior to purchase of the land do not qualify as acquired or owned property per the above definition. Therefore, such deposits cannot be entered into PHFU. Only after land is purchased pursuant to a plan for PV facility construction, will it become acquired property eligible for inclusion in PHFU account.

Even if land deposits were allowed as PHFU, in this instance, they would not be allowed as PHFU, because PG&E has not met the requirement to provide a plan on how these lands will be used if the UOG portion of the PV Program is terminated and PV facilities are not constructed.

### **13. Pilot Project**

PG&E proposes to develop a pilot project of up to 2 MW prior to regulatory approval of this application. PG&E states that the Pilot Project will likely be on its land and is intended to expedite the development of the UOG portion of the PV Program, demonstrate PG&E's commitment to the PV Program, and allow PG&E to refine internal and external processes needed to develop, permit, construct, and operate a PV facility prior to deployment of the larger UOG portion of the PV Program.<sup>88</sup> PG&E estimates the capital cost of the Pilot Project at \$11.9 million.

Several parties recommend rejecting the Pilot Project. Specifically, CARE states that the Pilot Project should be rejected because

During the hearing, PG&E's witness noted that PG&E has selected a bid for its Pilot Project. The ALJ directed PG&E to file a response to several questions regarding the solicitation process. PG&E submitted its filing on September 23, 2009.

A review of PG&E's response to the ALJ questions indicates that PG&E followed a competitive process for the development of its Pilot Project. Specifically, PG&E issued a request for information to several solar PV market participants and then issued a request for proposals to a shortlist of candidates that met specific criteria, including price, system performance and operating costs, developer experience, and ability to comply with standard contract terms and conditions, all of which are common to procurement of capacity and generally used in assessing bids. In light of this, we find that PG&E's selection of the Pilot Project through a competitive process was reasonable.

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<sup>88</sup> Exhibit 1 at 1-5.

We approve the proposed Pilot Project, because it provides some price information, but adopt its actual capital cost instead of what PG&E has proposed. We reject PG&E's proposed cost estimate for the Pilot Project. These estimates are based on the same assumptions as the UOG portion of the PV Program that we rejected for lack of justification and detail. For the same reasons, we reject the capital cost estimate for the Pilot Project.

Although going forward, we will explicitly hold the price customers pay for UOG projects to the prices actually observed through the PPA solicitations, for the purposes of the Pilot Project, we recognize that PG&E did not have access to this information. Thus, we authorize PG&E to recover the actual capital costs instead of the estimated cost for the Pilot Project. PG&E will be authorized to record the capital cost of the Pilot Project into its UGBA as of the effective date of this decision.

#### **14. Comments on Proposed Decision**

The PD of Administrative Law Judge (ALJ) Maryam Ebke in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on February 16, 2010, by PG&E, SCE, TURN, DACC/WPTF, DRA, SCE, IEP, CUE, CLECA, CARE, CFC, CalSEIA, and Greenlining. Reply comments were filed on February 22, 2010, by PG&E, CUE, TURN, DRA, DACC/WPTF, and Solar Alliance. . We have considered parties' comments and have revised the PD where appropriate.

#### **15. Assignment of Proceeding**

President Michael R. Peevey is the assigned Commissioner and ALJ Maryam Ebke is the assigned in this proceeding.

**Findings of Fact**

1. On a contractual basis, PG&E has procured adequate renewable power to meet its RPS target for 2010.
2. New renewable projects and transmission additions face a variety of risk factors, including permitting and financing challenges, and public opposition that may result in contract failure or delay.
3. The output profile of solar PV largely coincides with periods of peak demand.
4. Smaller projects may avoid many of the risk factors that impede the timely development of larger scale renewable projects to the extent these smaller projects do not have the same land impacts, do not require the same level of project financing, and do not depend on large capacity transmission additions.
5. DRA's SWOT analysis does not take into account some of the benefits of PV.
6. The adopted PV Program will not conflict with the RPS program.
7. The final RETI Phase 1 B Report identifies PV technology specifically as having significant potential for capital cost reductions in the future.
8. To date, very few renewable UOG proposals have come forward.
9. The PV Program as modified provides an opportunity to facilitate expeditious development of renewable UOG.
10. The PV Program can help meet the RPS goals.
11. The RPS solicitations indicate that less costly market alternatives exist.
12. The proposed pricing structure for the UOG and the PPA portions of the PG&E's program does not allow for the benefits of competition in achieving lower prices.
13. PG&E's cost forecasts are not justified.

14. The CSI and the SPVP do not provide a reasonable price comparison to the PV Program.

15. Comparison to other UOG in other states does not provide useful information.

16. It is not reasonable to compare the cost of the PV Program to the cost of projects in the CSI or the SPVP.

17. A fixed PPA price may result in overpayment by ratepayers.

18. Front-loading the MW developed per year in the PV Program would not be beneficial.

19. A price cost cap for PPA is reasonable.

20. It is reasonable to require PG&E to use an independent evaluator to oversee each PPA solicitation.

21. It is beneficial to adopt a standard contract for the PV Program.

22. The California Labor Code pertaining to prevailing wage does not apply to the projects under the PPA portion of the PV program.

23. The Large Project PPA form as modified by today's decision is reasonable.

24. Land deposits prior to purchase of the land do not qualify as acquired or owned property for recovery in a PHFU account.

25. The adopted PV Program does not meet the requirement of Pub. Util. Code § 454.3 to justify any ROR, let alone an additional ROR.

26. PG&E conducted a competitive solicitation for the Pilot Project.

### **Conclusions of Law**

1. The adopted PV Program has many benefits and can help meet the RPS goals and should be adopted.

2. PG&E should own, develop, install, operate and maintain up to 250 MW of one to 20 MW PV projects and procure up to 250 MW of three to 20 MW projects from independent solar energy producers.

3. A fixed PPA price should not be adopted.
4. AB 920 does not conflict with the proposed or the adopted PV Program.
5. SB 32 may conflict with the proposed PV Program, but does not conflict with the adopted PV Program.
6. The adopted PV Program is consistent with Pub. Util. Code § 454.8.
7. It is reasonable to allow projects smaller than 3 MW to participate in the PPA portion of the PV Program until the Commission has established a price for projects pursuant to SB 32.
8. A price cost cap for PPA should be adopted.
9. PG&E should use an independent evaluator to review the solicitations for the PPA portion of the PV Program.
10. Direct access customers should not pay for the PV Program stranded costs.
11. Land deposits prior to purchase of the land do not qualify as acquired or owned property for recovery in PHFU account.
12. The PV program does not qualify for an increase in the rate of return as addressed in Pub. Util. Code § 454.3.
13. The revised Large Project PPA form should be adopted with modifications.
14. PG&E should seek Commission authorization through an advice letter prior to making any payments above the compliance cost cap for PPAs to ensure that such costs are reasonable.
15. The issue of whether or not PG&E should be authorized an added rate of return is moot.
16. Direct access customers should pay for the PV Program stranded costs consistent with D.04-12-048 and D.08-09-012.
17. PG&E should not be allowed to include the land deposits for future PV facilities in its PHFU account.

18. The Pilot Project should be approved, because PG&E conducted a solicitation process for the Pilot Project that includes criteria commonly used in bid selection.

19. It is reasonable to authorize PG&E to record the capital cost of the Pilot Project into its UGBA as of the effective date of this decision.

## **O R D E R**

### **IT IS ORDERED** that:

1. The Photovoltaic Program set forth in Appendix A to this decision is approved.

2. Pacific Gas and Electric Company shall implement the Photovoltaic Program as set forth in Appendix A.

3. Within 30 days of the effective date of this decision, Pacific Gas and Electric Company shall file a Tier 3 advice letter with the Energy Division specifying the Photovoltaic Program implementation and administration details needed to implement the Photovoltaic Program set forth in Appendix A, including:

- Standard contract for facilities less than 3 megawatt in size;
- Competitive solicitation process, eligibility, and timeline for the power purchase solicitations;
- Criteria for evaluating conforming bids;
- A process for identifying preferred locations for project development to optimize the locational value of project sites, including impacts on neighboring lands;
- A process generation system interconnection application process and protocols;
- Confidentiality protocols to ensure that information given by developers to Pacific Gas and Electric Company through the interconnection or bidding process is not

shared with Pacific Gas and Electric Company's staff working on the utility-owned generation portion of the Photovoltaic Program; and

- Work papers that will be used for to calculate the annual revenue requirement Pacific Gas and Electric Company will be authorized to recover in rates, for the projects Pacific Gas and Electric Company elects to develop and operate under the utility-owned generation portion of the Photovoltaic Program, based on the methodology set forth in Appendix A.

4. Within 30 days from the effective date of this decision, Pacific Gas and Electric Company shall file a Tier 2 advice letter to modify the description of the Preliminary Statement of its Energy Resource Recovery Account balancing account to reflect:

- Debit entries for the utility-owned generation projects equal to the actual generation of that facility multiplied by the authorized dollar per megawatt-hour amount.
- Debit entries for the cost of the power purchase agreements.

5. Upon operation of a utility-owned photovoltaic program facility, Pacific Gas and Electric Company is authorized to begin debiting to the Energy Resource Recovery Account balancing account the actual generation of that facility multiplied by the dollar per megawatt-hour amount authorized by the Commission's disposition of the advice letter described in Ordering Paragraph 10 that applies to the particular facility.

6. In Pacific Gas and Electric Company's June 2010 Energy Resource Recovery Account forecast application and each subsequent annual filing, Pacific Gas and Electric Company shall include its forecast for the following calendar year: the dollar amount it expects to be eligible to recover during that calendar year for utility-owned photovoltaic program projects, based on a forecast of

generation for each facility multiplied by the applicable dollar per megawatt-hour price for each facility.

7. The accuracy of the accounting for the recovery of the revenue requirement for the utility-owned generation portion of the Photovoltaic Program shall be subject to review in Pacific Gas and Electric Company's annual Energy Resource Recovery Account compliance proceeding filed in February each year.

8. Pacific Gas and Electric Company shall not recover any costs associated with the utility-owned generation portion of the Photovoltaic Program through any rates other than the Energy Resource Recovery Account as authorized by this Photovoltaic Program decision.

9. In order to ensure there is no double counting of Photovoltaic Program costs, Pacific Gas and Electric Company shall identify but not recover in its General Rate Case application all costs associated with the utility-owned generation portion of the Photovoltaic Program, including but not limited to, permitting, planning, engineering, construction, acquisition, deployment, operation, maintenance, and overheads.

10. Pacific Gas and Electric Company shall file a Tier 3 advice letter within 60 days of each competitive solicitation for Photovoltaic Program power purchase agreements, detailing the projects it intends to build as utility-owned generation, including the number of megawatts, the location (including justification for the use of land other than existing Pacific Gas and Electric Company-owned land), the weighted average price of winning bids from the solicitation, including its detailed calculation of that figure, which shall be used in calculating the debit entries to the Energy Resource Recovery Account balancing account authorized in Ordering Paragraph No. 5. In addition, the

advice letter shall specify the projected annual output of each photovoltaic project that Pacific Gas and Electric Company intends to build.

11. Within 60 days of the closing date of each solicitation for power purchase agreements, Pacific Gas and Electric Company shall convene a program forum to identify program solicitation components that may need refinement. Based on the feedback received through these program forums, Pacific Gas and Electric Company may file a Tier 3 advice letter seeking modifications to the solicitation component of the Photovoltaic Program adopted by this decision.

12. Pacific Gas and Electric Company must use an independent evaluator to oversee the entire solicitation, evaluation and selection process for each PPA solicitation, and provide an assessment of each solicitation for the PPA portion of the Photovoltaic Program.

13. Pacific Gas and Electric Company is authorized to record the actual cost of the Pilot Project into its utility generation balancing account as of the effective date of this decision.

14. Pacific Gas and Electric Company may not enter land deposits for future utility-owned photovoltaic facilities into the account for Plant Held for Future Use.

15. Pacific Gas and Electric Company must seek Commission authorization through an advice letter prior to making any payments above the adopted power purchase agreement compliance cost cap.

16. Pacific Gas and Electric Company shall file an annual compliance reports with the Energy Division as described in Appendix A. The first compliance filing is due one year from the date of this decision.

17. The form power purchase agreement for projects greater than 3 to 20 megawatt, referred to as the Large Project Power Purchase Agreement is modified as follows:

- Compliance Cost Cap (Section 3.1(o)) shall state:
  - Costs applicable to the Compliance Cost Cap are only those costs applicable under the term's definition (section 1.26) and are new costs associated with a change in law from the contract's execution date.
  - In the event compliance costs exceed the cap, Pacific Gas and Electric Company will first obtain Commission authorization to incur additional costs.
- Guaranteed Energy Production - (Section 3.1(e)(ii)(A)) shall be 160 percent as the performance metric, as set forth in Pacific Gas and Electric Company's renewables portfolio standard pro forma.
- Guaranteed Energy Production Cure (Section 3.1(e)(ii)(B)) shall be 90 percent as the performance metric, as set forth in Pacific Gas and Electric Company's renewables portfolio standard pro forma.

18. Application 09-02-019 is closed.

This order is effective today.

Dated \_\_\_\_\_, at San Francisco, California.

**APPENDIX A  
The Photovoltaic Program (PV Program) for  
Pacific Gas and Electric Company  
Adopted 2010**

**General Overview:**

The Photovoltaic Program (PV Program) is a five-year program to develop up to 500 megawatts (MW) of solar photovoltaic (PV) facilities in the range of 1 to 20 MW in Pacific Gas and Electric Company’s (PG&E) service territory.

**Total Size of the PV Program:**

500 MW

**Utility-owned Generation (UOG) Portion of the PV Program:**

Size: 250 MW

Schedule:

Year	2010	2011	2012	2013	2014
MW	50	50	50	50	50

Un-designated MW shall be added to next year’s allotment. Un-built MW shall be added to next year’s allotment. UOG drop-outs, defined as projects PG&E indicates it intends to build but does not pursue within the 18 month development timeframe, will not to be added to the next solicitation.

Project Size/Type: Ground-mounted, between 1 to 20 MW photovoltaic facilities.

Project in PG&E’s service territory. Projects must first be developed on land PG&E already owns and close to substations. Other land selections (not owned by PG&E) must be submitted through an advice letter for approval.

Price: The weighted average price of winning bids from PG&E’s most recent solicitation for PPA portion of the PV Program.

PG&E shall file an advice letter within 60 days of the selection of winning bids from a solicitation, indicating the number of MW PG&E elects to develop, the location (if other than existing PG&E-owned land), and the detailed calculation of the revenue requirement for the UOG facilities.

**Power Purchase Agreement (PPA) Portion of the PV Program:**

Size: 250 MW

Project Size/Type: Ground-mounted, between 1 to 20 MW photovoltaic facilities

Project Development Timeline: 18 months

Location: In PG&E’s service territory.

Schedule: Annual solicitation as follows:

Year	2010	2011	2012	2013	2014
MW	50	50	50	50	50

Un-awarded MW shall be added to next year's solicitation.

Solicitation of projects between 1 to 3 MW must seize upon the Commission establishing a price pursuant to Senate Bill 32.

Price: PG&E shall hold a competitive solicitation annually to select winning projects.

PG&E shall use an independent evaluator in each PPA solicitation.

### **Reporting:**

PG&E shall file annual compliance reports with the Energy Division. The first compliance filing is due one year from the effective date of this decision.

PG&E shall consult with Energy Division to develop the format and content of the report. The annual report prepared by PG&E shall include, at a minimum, the following information:

#### Reporting on PPA portion of the PV Program

- Documentation of all solicitations issued for PPA projects;
- A description of all bids received from the PPA solicitations, including the name of bidder, location of project, bid price, and description of proposed facility (generating capacity, type of technology, annual average expected generation, interconnection point), and identification of winning bids;
- The total electrical output for all systems under PPAs that are currently selling electricity to PG&E, for each month of the previous year;
- A description of the project specific distribution and network upgrades and distribution and network upgrades generally needed to facilitate the PPA portion of the PV Program.

- The report from the independent evaluator on each PPA solicitation.

#### Reporting on UOG portion of the PV Program

- A description of all UOG facilities for which work has been initiated or completed in the previous year, including: capital costs, and operations and maintenance expenses, generating capacity, type of technology, annual average expected generation, description of the site (existing PG&E-owned land or newly acquired/leased, land/lease cost, proximity to substation), and progress toward completion;
- A calculation of the levelized cost of energy (LCOE) for each UOG facility that is completed and interconnected to the grid. This calculation shall include work papers showing actual amounts for all cost and electrical output entries used to calculate the LCOE;
- Electrical output by month for the previous year for each PG&E-owned UOG facility that is completed and interconnected to the grid; and
- A description of the project specific and general distribution and network upgrades and distribution and network upgrades generally needed to facilitate the PV PPA Program. The known or projected costs of those upgrades, associated with interconnecting each UOG facility, including all distribution and network upgrades, a listing of the UOG projects identified as triggering the need for network upgrades, and identification of the UOG projects implemented notwithstanding the need for network upgrades, and the cost of those network upgrades.

**(END OF APPENDIX A)**

**APPENDIX B**  
**Alternative Ratemaking Treatment Example Calculations<sup>89</sup>**

Overview of Methodology:

A weighted average across the winning bids in any solicitation will be calculated by 1.) multiplying each respective bid's price per kWh by the share it's production over its contract life represents relative to the total production of all winning bids over their respective contract lives; and 2.) summing these values across all winning bids. This weighted average price per kWh will serve as the price input used to derive the revenue requirement PG&E shall be allowed to recover, inclusive of O&M costs, for any output generated by the capacity it elects to develop prior to the initiation of the subsequent year's PPA solicitation. For each project PG&E chooses to develop it will provide an estimated annual revenue requirement calculated by applying the weighted average price per kWh as described above to an estimate of its systems' estimated output.

<b>Bid #</b>	<b>Capacity (MW)</b>	<b>Price per kWh</b>	<b>Contract Term</b>	<b>Total Production Over Contract (kWh)</b>	<b>Percent of Total Production</b>	<b>Contribution to Weighted Average Price per kWh</b>
1	5	\$0.26	20	175,200,000	10%	\$0.03
2	2	\$0.22	20	70,080,000	4%	\$0.01
3	8	\$0.26	20	252,288,000	15%	\$0.04
4	4	\$0.30	20	112,128,000	7%	\$0.02
5	10	\$0.18	20	367,920,000	22%	\$0.04
6	5	\$0.22	20	122,640,000	7%	\$0.02
7	5	\$0.15	20	131,400,000	8%	\$0.01
8	5	\$0.19	20	227,760,000	13%	\$0.03
9	3	\$0.26	20	131,400,000	8%	\$0.02
10	3	\$0.12	20	105,120,000	6%	\$0.01
<b>Total</b>	<b>50</b>			<b>1,695,936,000</b>	<b>Weighted Average</b>	<b>\$0.21</b>

<sup>89</sup> Note that all numbers provided in this example are for illustrative purposes only.

					<b>Price per Kwh</b>	
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<b>Variable</b>	<b>Example Value</b>	<b>Description</b>
Annual System Output (kWh)	8,760,000	PG&E data: Metered Annual System Output
Assuming Value of Output Equal to Weighted Average Calculated Above	\$ 1,875,889	Calculated: Annual System Output * Weighted Average Price per kWh

**(END OF APPENDIX B)**