

**PUBLIC UTILITIES COMMISSION**505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298**FILED**02-07-12  
11:54 AM

February 7, 2012

Agenda ID #11047  
and  
Alternate Agenda ID #11048  
Ratesetting

TO PARTIES OF RECORD IN APPLICATION 10-11-002

Enclosed are the proposed decision of Administrative Law Judge (ALJ) Karl J. Bemederfer previously designated as the presiding officer in this proceeding and the alternate decision of Commissioner Michael R. Peevey. The proposed decision and the alternate decision will not appear on the Commission's agenda sooner than 30 days from the date they are mailed.

Pub. Util. Code § 311(e) requires that the alternate item be accompanied by a digest that clearly explains the substantive revisions to the proposed decision. The digest of the alternate decision is attached.

When the Commission acts on these agenda items, it may adopt all or part of the decision as written, amend or modify them, or set them aside and prepare its own decision. Only when the Commission acts does the decision become binding on the parties.

Parties to the proceeding may file comments on the proposed decision and alternate decision as provided in Pub. Util. Code §§ 311(d) and 311(e) and in Article 14 of the Commission's Rules of Practice and Procedure (Rules), accessible on the Commission's website at [www.cpuc.ca.gov](http://www.cpuc.ca.gov). Pursuant to Rule 14.3, opening comments shall not exceed 15 pages.

Comments must be filed pursuant to Rule 1.13 either electronically or in hard copy. Comments should be served on parties to this proceeding in accordance with Rules 1.9 and 1.10. Electronic and hard copies of comments should be sent to ALJ Bemederfer at [kjb@cpuc.ca.gov](mailto:kjb@cpuc.ca.gov) and Commissioner Peevey's advisor Scott Murtishaw at

A.10-11-002 COM/MP1/ALJ/KJB/lil

[sgm@cpuc.ca.gov](mailto:sgm@cpuc.ca.gov). The current service list for this proceeding is available on the Commission's website at [www.cpuc.ca.gov](http://www.cpuc.ca.gov).

/s/ KAREN V. CLOPTON  
Karen V. Clopton, Chief  
Administrative Law Judge

KVC:lil

Attachment

**ATTACHMENT**

**DIGEST OF DIFFERENCES BETWEEN  
ADMINISTRATIVE LAW JUDGE BEMESDERFER'S PROPOSED  
DECISION AND THE ALTERNATE PROPOSED DECISION  
OF COMMISSIONER PEEVEY**

Pursuant to Public Utilities Code Section 311(e), this is the digest of the substantive differences between the proposed decision of Administrative Law Judge Karl J. Bemederfer (mailed on 2/7/2012) and the proposed alternate decision of Commissioner Michael R. Peevey (also mailed on 2/7/2012).

The Proposed Decision (PD) denies the application of Pacific Gas and Electric Company (PG&E) for authorization to invest ratepayer funds in Silicon Valley Technologies Corporation (SVTC), a start-up corporation that plans to build and operate a manufacturing development facility (MDF) for solar panels in Silicon Valley. The PD finds that the proposed investment provides no ratepayer benefits separate from the benefits that may accrue to the public at large from the construction and operation of the MDF. Accordingly, the PD concludes that any necessary investment should come from private sources rather than PG&E ratepayers.

The assigned Commissioner's Alternate Decision (AD) approves the application. It finds that the MDF is similar to research and development programs that the Commission has financed through ratepayer surcharges in the past. The AD notes that construction of the MDF is consistent with the Commission's program of encouraging utilities to increase their use of renewable resources; is supported by substantial grant funding from the United States Department of Energy; and that, as a research and development project, it is not expected to earn a return. The AD finds that the likelihood of reducing the cost of solar photovoltaic technology is a sufficient justification for the investment of ratepayer funds.

**(END OF ATTACHMENT)**

Decision **ALTERNATE PROPOSED DECISION OF PRESIDENT PEEVEY**

(Mailed 2/7/2012)

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

Application of Pacific Gas and Electric Company for Authority to Increase Electric Rates and Charges to Recover Costs Relating to California Solar Photovoltaic Manufacturing Development Facility. (U39E)

Application 10-11-002  
(Filed November 1, 2010)

**DECISION APPROVING APPLICATION**

**1. Summary**

This decision approves the application of Pacific Gas and Electric Company to invest \$9.9 million of ratepayer funds in SVTC Solar’s Photovoltaic Manufacturing Development Facility (PV MDF). The PV MDF is a fee-for-service facility that will allow firms to test new product designs and manufacturing processes at a pilot scale. The availability of this service will potentially allow companies to reduce the time, cost, and risk associated with bringing new PV technologies to market, which has a reasonable probability of contributing to decreased prices of solar PV. Because the PV MDF will support development of innovative PV technologies, the five guidelines stipulated in Pub. Util. Code § 740.1 that govern our evaluation of utility expenditures on research and development apply to the proposed investment in the PV MDF. We find that the proposed investment meets all five guidelines.

## 2. Background

Applicant Pacific Gas and Electric Company (PG&E) seeks Commission approval of a plan to invest \$9.9 million of ratepayer funds in SVTC Solar (SVTC), a subsidiary of SVTC Technologies, which proposes to build a new the photovoltaic manufacturing development facility (PV MDF) in Santa Clara County. SVTC has already secured a commitment from the United States Department of Energy (DOE) for a \$30 million investment. However, the DOE commitment is contingent upon SVTC raising an additional \$9.9 million in matching funds.<sup>1</sup> On September 28, 2011, Californians for Renewable Energy, Inc. (CARE) filed a motion to dismiss this application. On October 5, 2011, The Utility Reform Network (TURN), the Division of Ratepayer Advocates (DRA), Greenlining Institute (Greenlining), the Marin Energy Authority (MEA), and the Western Power Trading Forum (WPTF), all of whom together with CARE had protested the application, filed a joint motion to dismiss this Application. CARE, TURN, DRA, Greenlining, MEA and WPTF are collectively referred to herein as "Protestors." On October 31, 2011, the assigned Administrative Law Judge (ALJ) denied the motions to dismiss. Pursuant to a schedule adopted at a prehearing conference on September 22, 2011, the parties filed joint opening briefs on

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<sup>1</sup> PG&E's original application sought authority to invest \$19.8 million in ratepayer funds which was a requirement for receiving an expected grant of \$98 million from DOE. When DOE reduced the amount of the grant from \$98 million to \$30 million, the required matching investment was reduced to \$9.9 million. While the dollar amount of ratepayer money at risk has been halved by this change, the percentage of total project cost to be covered by the ratepayers has increased from 20% to just under 25%. It should also be noted that ratepayers must be charged \$17.8 million in order to provide PG&E with \$9.9 million to invest in SVTC.

November 21, 2011 and joint reply briefs on December 6, 2011. The parties waived evidentiary hearings.

PG&E argues that the PV MDF will engage in research and development (R&D) activities; that R&D investments of ratepayer funds are specifically authorized by Pub. Util. Code §§ 740 and 740.1;<sup>2</sup> and that we have approved

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<sup>2</sup> **Section 740:**

For purposes of setting the rates to be charged by every electrical corporation, gas corporation, heat corporation or telephone corporation for the services or commodities furnished by it, the commission may allow the inclusion of expenses for research and development.

**Section 740.1:**

The commission shall consider the following guidelines in evaluating the research, development, and demonstration projects proposed by electrical and gas corporations:

- (a) Projects should offer a reasonable probability of providing benefits to ratepayers.
- (b) Expenditures on projects which have a low probability for success should be minimized.
- (c) Projects should be consistent with the corporation's resource plan.
- (d) Projects should not unnecessarily duplicate research currently, previously, or imminently undertaken by other electrical or gas corporations or research organizations.
- (e) Each project should also support one or more of the following objectives:
  1. Environmental improvement.
  2. Public and employee safety.
  3. Conservation by efficient resource use or by reducing or shifting system load.

*Footnote continued on next page*

such investments in the past. PG&E also argues that this investment is consistent with renewable energy programs sponsored by the Commission and points out that it is supported by Governor Brown. Finally, PG&E asserts that ratepayers will receive additional compensation for the investment through their ownership stake in SVTC.

Protestors deny that the PV MDF will engage in R&D activities and argue that the investment is not authorized either by Pub. Util. Code §§ 740 and 740.1 or by § 2775.5,<sup>3</sup> which sets out specific requirements that must be met by

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4. Development of new resources and processes, particularly renewable resources and processes which further supply technologies.
  5. Improve operating efficiency and reliability or otherwise reduce operating costs.

<sup>3</sup> **Section 2775.5(a):**

If an electrical or gas corporation desires to manufacture, lease, sell, or otherwise own or control any solar energy system, it shall submit to the commission, in such form as the commission may specify, a description of the proposed program of solar energy development which it desires to pursue. The corporation may pursue the program of solar energy development unless the commission, within 45 days after the commission has accepted the filing of the corporation's description pursuant to this subdivision, orders the corporation to obtain from the commission the authorization to do so as provided in this section. In cases where the corporation seeks to pursue a program of solar energy development with costs and expenses to be passed through to the ratepayers, the corporation may not implement the program until it receives an authorization from the commission which includes findings and a determination, pursuant to subdivision (f), that the program is in the ratepayers' interest. No such authorization shall be required for any solar energy system which is owned or controlled for experimental or demonstration purposes. As used in this subdivision, "experimental or demonstration purposes" means a limited program of installation, use, or development the sole purpose

*Footnote continued on next page*

electrical or gas corporations seeking to invest ratepayer funds in solar energy systems. They assert that investing ratepayer funds in a for-profit start-up company is risky, unprecedented, and sets a disturbing precedent, regardless of its legality. They argue that this type of investment is better suited to a non-regulated entity and point out that shareholders of PG&E have made such investments in the past. Finally, they argue that if the Commission approves the investment, it should be subject to additional conditions designed to increase the probability that ratepayers will ultimately recover the investment.

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of which is to investigate the technical viability or economic cost effectiveness of a solar application.

(b) The commission shall deny the authorization sought if it finds that the proposed program will restrict competition or restrict growth in the solar energy industry or unfairly employ in a manner which would restrict competition in the market for solar energy systems any financial, marketing, distributing, or generating advantage which the corporation may exercise as a result of its authority to operate as a public utility. Before granting any such authorization, the commission shall find that the program of solar energy development proposed by the corporation will accelerate the development and use of solar energy systems in this state for the duration of the program.

(d) As used in this section, "solar energy system" means equipment which uses solar energy to heat or cool or produce electricity and which has a useful life of at least three years. "Solar energy system" does not include an electric plant as defined in Section 217.

(f) The costs and expenses of implementing a program of solar energy development shall not be passed through to the ratepayers of an electrical or gas corporation unless the commission finds and determines that it is in the ratepayers' interest to do so.

### 3. Discussion

#### 3.1. Is the proposed investment authorized by Pub. Util. Code §§ 740 and 740.1?

Pub. Util. Code § 740 authorizes utilities to charge ratepayers for “expenses for research and development.” However, the statute does not define what constitutes an R&D expense. To assist our analysis of this issue, we adopt the definition of “research and development” from the federal Office of Management and Budget (OMB) guidelines:

Basic research is defined as systematic study directed toward fuller knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific application toward processes or products in mind.

Applied research is defined as systematic study to gain knowledge or understanding necessary to determine the means by which a recognized and specific need may be met.

Development is defined as systematic application of knowledge or understanding, directed toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes that meet specific requirements.<sup>4</sup>

To determine whether work done at the PV MDF falls within this definition, we look to the application and the supporting documentation including this description of the PV MDF in the SVTC grant proposal to DOE:

Our objectives and goals, which we established based on input from more than 100 PV companies, will meet the needs of the

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<sup>4</sup> <http://www.nsf.gov/statistics/randdef/fedgov.cfm>

industry by enabling companies to **develop** [emphasis added] innovative products with less cost, time, and risk.<sup>5</sup>

Elsewhere in their application, SVTC describes the PV MDF as...

A fabrication facility that 20-30 PV companies could use simultaneously to do pilot manufacturing on a fee for service basis. It would have baseline manufacturing equipment, plus specialized equipment bays and private locked bays for each company's unique technological process.<sup>6</sup>

In simple terms, the PV MDF is a facility housing a collection of basic manufacturing equipment for making solar panels, either alone or together with specialized tools owned by the users and stored at the facility. It is effectively a test lab in which solar panel fabrication companies can evaluate alternative product designs and manufacturing processes. The companies can rent the PV MDF rather than build their own test facilities, thereby shortening the time and lowering the cost of bringing solar panels to market.

From the short description given above, it should be clear that users of the PV MDF would not be doing either basic or applied research. Users would primarily be testing the scalability of new technologies and manufacturing processes at the PV MDF, although the materials and processes may have been developed through basic and applied research conducted elsewhere. The definition of "development" from the OMB Guidelines, if read broadly, appears

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<sup>5</sup> SVTC Technologies' PV MDF Application for funding from DOE PV Manufacturing Initiative (DE-FOA-000259).

<sup>6</sup> *Ibid.*

to cover this facility since testing of products and processes is part of developing them.

We now turn from the general language of § 740 to the more detailed guidelines of § 740.1. In § 740.1(a), the legislature requires that we consider whether proposed R&D expenditures “offer a reasonable probability of providing benefits to ratepayers.”<sup>7</sup> PG&E cites several possible benefits to ratepayers from the proposed investment in the PV MDF: 1) the direct return of ratepayers’ investment resulting from the sale of the preferred stock ratepayers will receive in exchange for their investment; 2) the reduced price of solar energy in the future if one or more manufacturers develops a cost-saving technology as a result of lessons learned at the PV MDF; 3) the immediate benefits of leveraging \$30 million in federal grant funding and the multiplier benefits from the infusion of those dollars into the California economy; and 4) the possibility that the PV MDF stimulates increased PV manufacturing capacity and employment in California. Before delving into these examples, we note that the latter two categories of benefits are not benefits to ratepayers per se. Rather they are benefits that accrue to the relatively small subset of PG&E ratepayers who would be employed by the MDF or manufacturing facilities, or indeed, to other utilities’ ratepayers to the extent that increased manufacturing capacity occurs in other service territories. Although increasing employment in California is certainly a desirable outcome, such benefits are only tangentially relevant to the

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<sup>7</sup> Because a subsequent criterion addresses the likelihood of success of the funded activities, we frame the relevant question here as whether there is a reasonable prospect of ratepayer benefits, assuming that the PV MDF remains financially viable over a number of years and a significant number of clients do in fact utilize the PV MDF’s facilities.

determination of whether the proposed investment in the PV MDF offers a reasonable probability of providing benefits to ratepayers as a class. Thus, we focus our attention on the preferred stock and solar energy price benefits, which are potential benefits to ratepayers per se.

In its original application, PG&E argued that the utility's financial stake in the project would "provide the potential for full reimbursement to PG&E's customers over the long term."<sup>8</sup> More specifically, it would "provide an opportunity for reimbursement of PG&E's customers after five years."<sup>9</sup> However, as TURN's analysis indicates, even if the PV MDF remains profitable for at least five years, and SVTC requires PG&E to redeem the shares at that time, which SVTC may require at its discretion according to the terms of deal, the total return to ratepayers would be approximately \$14 million, which is less than the \$17.9 million of grossed-up revenue requirement that PG&E requests.<sup>10</sup> Ratepayers will only receive a full return of their investment from their equity stake, at any reasonable discount rate, if SVTC conducts a public offering and PG&E is able to convert the shares to common stock and sell them at a profit. Perhaps recognizing that this potential ratepayer benefit is speculative and remote, PG&E has minimized economic return on the invested funds in its amended application and its briefs, choosing instead to emphasize the potential for lower cost solar energy as the principal ratepayer benefit:

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<sup>8</sup> *Application of Pacific Gas and Electric Company for Authority to Increase Electric Rates and Charges to Recover Costs Relating to California Solar Photovoltaic Manufacturing Development Facility*, dated November 1, 2010, at 1.

<sup>9</sup> *Ibid.* at 3.

<sup>10</sup> *Opening Brief of The Utility Reform Network (Public Version)*, dated November 21, 2011, at 26.

PG&E has never claimed that its investment in the MDF would be the source of benefits for the RD&D Project. Instead the primary benefit of the project is the RD&D potential for improved solar manufacturing processes and lower PV product costs and prices.<sup>11</sup>

Rather than emphasize the potential for direct financial benefits, PG&E characterizes the expenditure as foremost an R&D investment, which may additionally confer some direct return to ratepayers through their equity stake. As PG&E notes:

TURN again misapprehends the nature of the MDF Project – it is not an “investment” under which PG&E expects a guaranteed return at some point, it is an *RD&D project* [emphasis in original] which normally would carry no “right of return” at all other than the cost reduction and cost efficiencies that may result overall. The fact that PG&E is structuring its RD&D expenditures for the project as an investment at all is unusual....<sup>12</sup>

We agree with PG&E’s characterization of the proposed expenditure. Any direct return to ratepayers from their ownership of preferred stock in the PV MDF is secondary to the goal of promoting cost reductions in solar PV technologies.

We now examine whether there is a reasonable probability of ratepayer benefits from decreased solar energy prices, which PG&E states is the primary benefit of this investment. By its nature, R&D is risky and potential returns are highly uncertain. Whether any of the firms that avail themselves of the PV MDF ever achieves a manufacturing process breakthrough that results in an

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<sup>11</sup> *Reply Brief of Pacific Gas and Electric Company* dated December 6, 2011, at 5.

<sup>12</sup> *Ibid.* at 10.

appreciable price reduction cannot be predicted with much confidence. As a point of reference, we take official notice of the awards that have been granted to projects designed to improve solar technologies in the California Solar Initiative's RD&D program.<sup>13</sup> Four projects, all led by for-profit firms, have been awarded a total of nearly \$6.6 million in the improved technologies portion of the program. Potential returns to ratepayers from technological improvements due to these projects are inherently speculative. However, the Commission had some assurance that these projects were reasonably likely to yield positive results because they were selected from a competitive process. The PV MDF was similarly selected for an award by the U.S. Department of Energy (DOE) as a result of a competitive solicitation. In making the award announcement, Secretary Chu stated:

[The PV MDF] will enable start-ups, materials suppliers, and other PV innovators to eliminate a major portion of their up-front capital and operating costs during product development and pilot production. This will potentially accelerate development and time to market by 12 to 15 months. The MDF will ... aim to reduce the costs and development time for participating PV industry leaders to deliver innovative, emerging technologies from the laboratory to commercial manufacturing lines.<sup>14</sup>

Thus, it appears that in DOE's judgment, the PV MDF is likely to facilitate the development of innovative and emerging PV technologies.

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<sup>13</sup> <http://www.calsolarresearch.org/Funded-Projects/solartech.html>.

<sup>14</sup> *Amendment to Application of Pacific Gas and Electric Company for Authority to Increase Electric Rates and Charges to Recover Costs Relating to California Solar Photovoltaic Manufacturing Development Facility*, dated July 15, 2011, at 4.

SVTC's grant application indicates that they have engaged in a considerable amount of due diligence to ascertain whether a PV MDF would meet a currently unserved industry need. SVTC claims to have conducted interviews with over 30 venture capital investors and over 100 companies at all levels of the PV supply chain during the two years leading up to their application. Their extensive research confirmed that there is an unmet need for services aimed at reducing the costs that firms incur to develop and demonstrate the manufacturability of breakthrough PV technologies.<sup>15</sup> Based on their market research, SVTC estimates that the PV MDF will allow PV start-ups to save \$10 - \$15 million by avoiding the need to create their own pilot manufacturing lines. SVTC anticipates that the PV MDF will serve approximately 180 companies during its first ten years of operation.<sup>16</sup> If a substantial fraction of this number of firms does eventually use SVTC's services, it seems likely that several of these companies will succeed in developing cost-cutting technologies and processes.

TURN questions whether a cost-reducing improvement developed at the PV MDF would flow through to consumers. "Even if STVC [sic] Solar manages to promote innovation by new entrants to the solar business, any financial gains will be realized by investors in solar companies."<sup>17</sup> However, elsewhere in their

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<sup>15</sup> SVTC Technologies' PV MDF Application for funding from DOE PV Manufacturing Initiative (DE-FOA-000259) at 6.

<sup>16</sup> *Application of Pacific Gas and Electric Company for Authority to Increase Electric Rates and Charges to Recover Costs Relating to California Solar Photovoltaic Manufacturing Development Facility*, dated November 1, 2010, at 6.

<sup>17</sup> *Opening Brief of The Utility Reform Network (Public Version)*, dated November 21, 2011, at 17 - 18.

comments, TURN acknowledges that the solar industry is fiercely competitive and has experienced rapidly declining costs.<sup>18</sup> PG&E's response points out the link between the competitive nature of the PV industry and the downward pressure on prices that competition entails.

The fact that benefits accrue to the companies participating in the Project, with no "guarantee" of customer price reductions, is irrelevant. The solar PV industry is highly competitive, and thus any manufacturing cost savings are likely to be passed through in retail prices, given the opportunity for higher revenues and higher sales volumes due to price cutting.<sup>19</sup>

We note that the point made by PG&E applies to any R&D grant awarded to private firms, including the CSI RD&D grants mentioned above, and we are persuaded by PG&E's argument. The key question is whether the PV MDF, if successful enough to be used by a large number of companies, is likely to promote cost-reducing innovations that will ultimately benefit ratepayers. The evidence provided by PG&E indicates there is a reasonable likelihood that it would.<sup>20</sup>

We now examine the guideline stipulated in § 740.1(b), namely that the Commission should strive to minimize expenditures on projects with a low probability for success. As evidence for the likelihood of success, PG&E highlights several factors related to SVTC and the PV MDF project. They point

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<sup>18</sup> *Ibid.* at 6.

<sup>19</sup> *Reply Brief of Pacific Gas and Electric Company* dated December 6, 2011, at 6.

<sup>20</sup> DRA spends a considerable portion of its opening brief arguing that any cost reductions that may occur will not lower the prices of any contracts already executed by PG&E. However, PG&E never claims in its filings, nor would we necessarily assume,

*Footnote continued on next page*

out that SVTC has a proven track record in providing MDF services to the semiconductor industry for over ten years.<sup>21</sup> As stated above, SVTC's proposal was selected by DOE as a result of a competitive solicitation. SVTC performed extensive market research with over 100 firms across the PV supply chain over the course of two years prior to submitting their application. SVTC reports that over two-thirds of the companies they surveyed stated that they are likely to use the PV MDF, indicating a large latent customer base.<sup>22</sup> Additionally, SVTC has assembled a highly qualified leadership team and technical staff, many of whom have held leadership positions in top solar PV manufacturing firms and research institutions.<sup>23</sup>

Neither DRA nor TURN directly refuted these points. TURN does argue that any new manufacturing capacity that may result from development activities undertaken at the PV MDF is unlikely to be sited in California, but this argument does not directly rebut the evidence that the PV MDF is likely to attract a large enough customer base to remain profitable over a number of years.

SVTC's track record in other industries, the diligence of their research before deciding to launch the PV MDF, and the strength of their management

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that any cost savings in solar PV technology would apply retroactively to previously executed contracts.

<sup>21</sup> *Application of Pacific Gas and Electric Company for Authority to Increase Electric Rates and Charges to Recover Costs Relating to California Solar Photovoltaic Manufacturing Development Facility*, dated November 1, 2010, at 5.

<sup>22</sup> SVTC Technologies' PV MDF Application for funding from DOE PV Manufacturing Initiative (DE-FOA-000259), at 1 and 10.

<sup>23</sup> *Ibid.* at 28 and 30.

and technical teams provide compelling evidence that the PV MDF has a reasonable chance of attracting a sufficient customer base to remain operable for a number of years. We thus conclude that PG&E's application satisfies the guideline stipulated in § 740.1(b).

The third guideline that we are required to consider per § 740.1(c) is whether the proposed R&D project is consistent with the utility's resource plan. PG&E points out that their procurement plans are focused on meeting the 33 percent renewable energy portfolio requirement.<sup>24</sup> Moreover, under the loading order established in the Energy Action Plan, renewable energy should be procured by PG&E and the other investor-owned utilities to the greatest feasible extent before any additional fossil-fuel based resources. Thus, the need to procure renewable energy will not necessarily end once the 33 percent goal has been met. We find that the proposed investment in the PV MDF is consistent with PG&E's resource plan.

The fourth guideline we must consider is whether the proposed R&D activities would unnecessarily duplicate research performed elsewhere. PG&E argues that the DOE selected the PV MDF for funding as part of the "SunShot" R&D initiative; therefore, the PV MDF is not duplicative of other federally-funded R&D activities. In addition, SVTC performed extensive market research to determine what needs, if any, are currently unmet for the kind of technology development support services the PV MDF would provide. The fact that the PV MDF proposal has received broad support from participants throughout the U.S. PV industry, including major renewable energy research

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<sup>24</sup> *Opening Brief of Pacific Gas and Electric Company* dated November 21, 2011 at 6.

institutions such as the National Renewable Energy Laboratory (NREL) indicates that this type of development support is not readily available elsewhere.

DRA briefly addresses whether the PV MDF is duplicative in their opening brief. DRA criticizes PG&E and SVTC for their failure to participate in a 2010 workshop hosted by the Rocky Mountain Institute (RMI) that, according to DRA, addressed “the very same ‘issues’” that the PV MDF is intended to address.<sup>25</sup> However, footnote 52 in DRA’s testimony provides an abstract of the workshop report that demonstrates the contrary is true.

This report synthesizes the specific design recommendations and technical and process best practices that emerged from RMI’s June 2010 “Solar PV Balance of System” design charrette. BoS costs – all the upfront costs associated with a PV system **except the module** [emphasis added] – account for over half of PV system cost....

The PV MDF is expressly designed to allow firms to test improvements in design and manufacture of PV modules, not balance of system components.

In light of the support of DOE, NREL and several major firms involved in the solar PV industry, we are reasonably assured that the development services that SVTC proposes are not duplicative.

The final guideline we must consider is whether the investment in the PV MDF supports one or more of the five objectives listed under § 740.1(e). It appears that the PV MDF clearly supports at least two of the listed objectives: “environmental improvement” stipulated by § 740.1(e)(1) and the development of “renewable resources” stipulated by § 740.(e)(4).

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<sup>25</sup> *Division of Ratepayer Advocates’ Opening Brief*, dated November 21, 2011 at 10 – 11.

For the reasons discussed above, we conclude that investment of ratepayer funds in this project is authorized by Pub. Util. Code §§ 740 and 740.1.

**3.2. Is the proposed investment prohibited by Pub. Util. Code § 2775.5?**

DRA challenges the proposed investment in the PV MDF on the grounds that the investment violates § 2775.5. This section of the Pub. Util. Code broadly authorizes gas and electric utilities to invest ratepayer funds in “solar energy systems,” provided that the Commission finds that the investment will serve the ratepayers’ interest, will accelerate the use of solar energy systems in California, and will not adversely impact the market for solar energy systems. DRA challenges the proposed investment in the PV MDF on the grounds that the investment in the PV MDF would not benefit ratepayers and would restrict competition in the solar industry in violation of § 2775.5.

A “solar energy system” is defined in § 2775.5(d) as “equipment which uses solar energy to heat or cool or produce electricity.” DRA’s assertion is moot because the PV MDF is not a “solar energy system” as defined in § 2775.5(d). Since the proposed investment in the PV MDF is not an investment in a “solar energy system,” we need not discuss whether this investment meets the requirements of § 2775.5.

**3.3. Should we impose additional conditions on the application?**

Although TURN supports an outright denial of the application, TURN urges us to impose up to ten conditions if we decide to approve it.<sup>26</sup> Among the suggested conditions are requiring SVTC to charge higher prices to entities that

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<sup>26</sup> *Opening Brief of The Utility Reform Network (Public Version)*, dated November 21, 2011, at 2 – 3.

manufacture their products outside the U.S.; requiring companies that use the PV MDF to offer PG&E up to 500 megawatts of solar panels at a discount to market prices if their products achieve full commercialization; increasing the ratepayers' equity stake to reflect half of the DOE grant's proportionate share of the initial investment; prohibiting PG&E from grossing up the revenue requirement for taxes and instead requiring PG&E to create a Deferred Tax Asset; and establishing a ratepayer committee with binding decision-making authority over investment decisions. We appreciate TURN's creative ideas to promote the interests of ratepayers, but after careful consideration of the suggested conditions, we decline to adopt most of them. As PG&E's reply brief argues, many of these suggestions raise significant legal questions and implementation issues, would possibly deter companies from using the PV MDF's services, or increase the riskiness of the endeavor itself.

TURN offers four suggestions in their opening brief that we will adopt. First, any public statement that PG&E makes related to the investment in the PV MDF should indicate that the investment is funded by ratepayers.<sup>27</sup> Second, TURN states that they believe PG&E has miscalculated the tax gross-up for failing to take into account the deductibility of state taxes on the federal return.<sup>28</sup> Using the federal and California corporate tax rates currently in effect (35 percent and 8.84 percent respectively), TURN's critique appears to be accurate.<sup>29</sup>

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<sup>27</sup> *Ibid.*

<sup>28</sup> *Ibid.* footnote 50 at 21.

<sup>29</sup> Taking the \$9.9 million that PG&E proposes to invest in the PV MDF and dividing by  $1 - (0.35 + 0.0884)$  yields \$17.6 million. The \$7.7 million difference reflects the amount PG&E claims it will pay in taxes. This result demonstrates that PG&E has not made an

*Footnote continued on next page*

Therefore, we will adopt TURN's suggested gross-up for taxes of \$6.81 million rather than the \$7.7 million PG&E requests. Third, TURN notes that the corporate tax rates in effect at the time the revenues are collected could change, which would reduce the amount of gross-up that PG&E actually has to collect.<sup>30</sup> Accordingly, PG&E should refund any over-collection to ratepayers in the event that either state or federal corporate tax rates are lowered for the tax year in which the revenues are collected. Fourth, TURN recommends that we should establish a ratepayer committee to oversee PG&E's investment decisions related to the shares of preferred stock PG&E will hold on behalf of ratepayers.<sup>31</sup> We decline to create a ratepayer committee with decision-making authority, but we will require that PG&E confer with TURN and DRA prior to converting or disposing of any shares in the PV MDF.

#### **3.4. Allocation of the cost of the PV MDF investment**

In a joint protest to PG&E's amended application, WPTF, MEA and the Direct Access Customer Coalition argue that unbundled distribution customers of PG&E should not be required to contribute to the investment in the PV MDF. These parties request that the Commission "make it clear that neither Direct Access nor Community Choice Aggregation customers will bear any of the risks (or benefits) of these investments."<sup>32</sup> We disagree with this position. All retail electric sellers in California are obligated to attain a 33 percent renewable energy

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adjustment for the fact that the effective *net* state tax rate is 5.75 percent (calculated as  $(1 - 0.35) * 0.884$ ).

<sup>30</sup> *Ibid.* at 21.

<sup>31</sup> *Ibid.*, at 23.

share of their supply portfolios by 2020, and the potential benefits of reduced solar energy prices will therefore accrue broadly to all of PG&E's distribution customers. Thus, we find PG&E's proposal to collect the revenues for the investment in the PV MDF from all distribution customers via the Distribution Revenue Adjustment Mechanism to be appropriate.

#### **4. Categorization and Need for Hearings**

This proceeding was initially categorized as ratesetting and it was determined that hearings were required. We affirm the initial categorization and change the hearing determination to "not required."

#### **5. Comments on Proposed Decision**

The proposed alternate decision of President Peevey 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 \_\_\_\_\_, and reply comments were filed on \_\_\_\_\_ by \_\_\_\_\_.

#### **6. Assignment of Proceeding**

Michael R. Peevey is the assigned Commissioner and Karl J. Bemesderfer is the assigned ALJ for this proceeding.

#### **Finding of Fact**

1. The PV MDF is an R&D facility.
2. Pub. Util. Code § 740.1 enumerates five guidelines that the Commission must consider when evaluating the merits of R&D expenditures proposed by

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<sup>32</sup> *Late-Filed Protest of the Western Power Trading Forum, Direct Access Customer Coalition and Marin Energy Authority*, dated August 16, 2011, at 8 – 9.

investor-owned gas and electric utilities. The guidelines include the probability that the project will provide benefits to ratepayers, the probability that the project will succeed, consistency with the utility's resource plan, whether the proposed R&D activity is duplicative, and whether the project supports one or more of the following objectives: environmental improvement; public and employee safety; conservation; development of new renewable resources and processes; and improvement in operating efficiency and reliability or other operating cost reductions.

3. SVTC's market research indicates that there is an unmet need for pilot manufacturing support services that will enable PV firms to test innovative product designs and manufacturing processes. The provision of such services will reduce the cost, risk and time to market for emerging PV technologies.

4. The PV MDF has a reasonable probability of enabling one or more of the firms that would use its services to achieve cost reductions in solar PV technology.

5. The solar PV industry is highly competitive, and cost reductions in manufacturing are likely to flow through to consumers.

6. The direct financial return to ratepayers of an investment in the PV MDF through their ownership in preferred stock in SVTC is speculative and unlikely to provide an attractive return on investment.

7. On balance, the proposed investment in the PV MDF has a reasonable probability of providing benefits to ratepayers.

8. The PV MDF received a grant from the DOE via a competitive solicitation.

9. The PV MDF has received wide support among many leading solar PV firms and research institutions. Two-thirds of the more than 100 firms surveyed by SVTC stated that are likely to use the PV MDF services, which indicates a

significant latent customer base. Based on their market research, SVTC anticipates serving approximately 180 companies during the first ten years of operations.

10. SVTC has assembled an experienced and highly qualified team of management and technical staff to oversee the PV MDF.

11. The PV MDF has a reasonable likelihood of succeeding in attracting a sufficient customer base to operate for at least several years.

12. PG&E is required to achieve a 33 percent renewable share of its portfolio by 2020, and the loading order articulated in the Energy Action Plan requires PG&E to use energy efficiency and renewable energy to the extent feasible before procuring any additional fossil-based electricity.

13. By promoting cost reductions of solar PV, PG&E's proposed investment in the PV MDF is consistent with PG&E's resource plan.

14. The support that the PV MDF proposal has received from DOE, NREL, and several leading U.S. companies involved in the PV industry indicates that the services provided by the PV MDF are not duplicative.

15. The PV MDF supports environmental improvement.

16. The PV MDF supports development of renewable resources.

17. Section 2775.5(d) of the Pub. Util. Code defines a "solar energy system" as "equipment which uses solar energy to heat or cool or produce electricity and which has a useful life of at least three years."

18. PG&E's proposed investment in the PV MDF is not an investment in a "solar energy system" as defined; therefore, Section 2775.5 of the Pub. Util. Code does not prohibit the proposed investment.

19. PG&E's calculation of the gross-up for taxes overestimates PG&E's tax burden because it does not account for the deductibility of state taxes from federal returns.

20. The benefits of reduced solar energy prices will accrue broadly to PG&E's customers, both bundled customers and unbundled direct access and CCA customers.

### **Conclusions of Law**

1. Investment of ratepayer funds in SVTC is authorized by Pub. Util. Code §§ 740 and 740.1.
2. Investment of ratepayer funds in SVTC is not prohibited by Pub. Util. Code § 2775.5.
3. The application should be approved with modification.

## **O R D E R**

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

1. Amended Application 10-11-002 is approved with modification. Pacific Gas and Electric Company shall collect a total of \$16.9 million rather than the \$17.8 million proposed.
2. In any public statement regarding the investment in SVTC Solar's Photovoltaic Manufacturing Development Facility, Pacific Gas and Electric Company shall indicate that the investment is funded by ratepayers.
3. If the applicable state or federal corporate tax rate is reduced during any year that funds are collected for investment in the Photovoltaic Manufacturing Development Facility, Pacific Gas and Electric Company shall file a Tier 1 advice letter to correct the tax rate assumptions within 30 days of the enactment of the

change in tax rate and shall refund any overcollection to ratepayers via a subsequent revision to the Distribution Revenue Adjustment Mechanism.

4. Prior to any redemption, sale or conversion of the preferred stock in SVTC Solar, Pacific Gas and Electric Company shall confer with the Division of Ratepayer Advocates and The Utility Reform Network.

5. The hearing determination is changed from Yes to No.

6. Application 10-11-002 is closed.

This order is effective today.

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