FILED
12-30-09
04:59 PM

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

Application of Pacific Gas and Electric Company for Approval and Recovery of Costs Associated with its Fuel Cell Project.	Application 09-02-013
Application of Southern California Edison Company for Authority to Implement and Recover in Rates the Cost of its Proposed Fuel Cell Installation Program.	Application 09-04-018

OPENING BRIEF OF THE UTILITY REFORM NETWORK

(PUBLIC VERSION)

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December 30, 2009

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OPENING BRIEF OF THE UTILITY REFORM NETWORK

Pursuant to Rule 13.11 and the schedule adopted by ALJ Duda the Utility Reform Network (TURN) respectfully submits this opening brief in the consolidated applications of Southern California Edison Company (SCE) and Pacific Gas and Electric Company (PG&E) for authority to recover the costs of six proposed fuel cell installation projects.

1. SUMMARY

These applications by the SCE and PG&E (the "utilities") to install six fuel cells at State college campuses present a novel and somewhat strange proposition. The utilities are clear that these projects are not needed to meet demand forecasts or as preferred resources but are proposed to accelerate fuel cell deployment in California through the "demonstrative" and "educational" impacts associated with the projects. The utilities get free land to rate base generation. The participating state campuses get free waste heat. The fuel cell industry gets a big boost in sales. And ratepayers get electricity at an average price of about 25 to 30 cents per kilowatthour.

These fuel cell installations are a ratepayer subsidy to the fuel cell industry, and in particular to UTC, Fuel Cell Energy and Bloom Energy. The electricity costs more than solar generation and produces carbon dioxide. TURN suggests that the public policy goals that support providing subsidies for private installations of fuel cells do not support having ratepayers pay the full cost for fuel cell generation.

Nevertheless, if the Commission determines that is it "in the public interest" to provide this RD&D funding for fuel cells, TURN's primary recommendation is for the

Commission to reject the two "electric-only" fuel cell installations. There is absolutely no "public interest" served in funding fuel cells that cost twice as much as other fuel cells, generate as much carbon dioxide as fossil generation and provide no cogeneration benefits. It is a no-brainer that the money would be more wisely spent on real renewable generation. While TURN appreciates that the beneficiary – Bloom Energy, Inc. – is a California company and a darling of Silicon Valley venture capitalists, it is the private sector that should fund and develop this technology for applications where it is more suitable due to the lack of a host for the waste heat.

Additionally, in order to minimize the ratepayer impact associated with these expensive non-renewable installations, TURN also recommends that if the Commission approves any of the projects it should:

- Apply the lower of the proposed contingency rates to owner's capital costs;
- Apply no contingency, or at most a 5% contingency, to the fixed contract cost of the fuel cell equipment;
- Approve SCE's request to use overcollected Self Generation Incentive Program (SGIP) funds to expense 50% of the costs of the projects, and in fact authorize the use of $30 million in SGIP funds ($15 million per utility) to cover the capital costs);
- Order the utilities to ensure that any contracts with state campuses reserve the benefits of future GHG emissions credits from waste heat generation for utility ratepayers;

- Reduce PG&E's O&M forecast by eliminating the Education and Outreach Specialist position; and

- Approve the utilities' proposals to collect above-market costs from all customers through a non-bypassable surcharge.

2. California Legislative Policies Do Not Support Utility Construction and Ownership of Distributed Fuel Cell Projects

This application presents a somewhat unique project for the Commission's consideration. Even though on the surface this is a request to construct utility-owned non-renewable generation, the utilities actually claim that they are not installing the fuel cells to meet any electric procurement goal. Rather, both SCE and PG&E claim that these projects are "primarily intended to serve as a demonstration project to support the development of fuel cell technology in this state."[1] The utilities then claim that these projects support state "goals and policies," and cite specifically to Executive Order S-20-4 (the Governor's green Building Action Plan), AB 32 and SB 1298.

The utilities explained that these projects were "initiated at the request of the State of California"[2] after they were "approached" by staff from the Governor's office who sought their cooperation to promote the installation of fuel cells. Subsequently, utility staff held numerous conversations with staff from the Governor's office and eventually

[1] Exh. 102, p. 1, Schoonyan, SCE.

[2] Exh. 100, p. 1, Schoonyan, SCE.

with staff from the Department of General Services and the University of California system.[3]

TURN does not dispute the explanation that the Governor's office requested that the utilities promote fuel cell installation. However, state law and factual evidence suggest that the legislature intended ratepayers to provide a partial subsidy for distributed fuel cell applications as the best means to promote this market segment. Utility construction and ownership of fuel cells does not promote that goal and will not achieve the 'market transformation effects' claimed by the utilities. While the Commission should certainly advance State goals and policies, the Commission should not approve projects promoted by the Governor's office if those projects conflict with the goals of laws signed by the Governor himself.

The Legislature has implemented ratepayer subsidy programs to promote *private installations* of fuel cells and distributed generation facilities through the Self-Generation Incentive Program (SGIP) and the California Solar Initiative (CSI). The Legislature has also imposed requirements on utility procurement of renewable energy (RPS) and has authorized a feed-in tariff for projects under 3 MW. These state policies in no way promote utility ownership of small fuel cells.

A public policy that promotes "public-private" partnership by providing a *partial subsidy* for private installations is not equivalent to a policy that supports full public *ownership* of the installation. This is tantamount to claiming that a government tax credit

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[3] See, for example, 1 RT 15-18, 56-57, Berman, PG&E.

is a basis for justifying full government ownership. Regardless of the merits of public ownership, it is axiomatic that a *public subsidy* is not equivalent to *public ownership.* The various laws regarding renewable energy explicitly differentiate between utility procurement and private project subsidies.

The utilities justify these installations as providing "demonstrative" value, which they claim will help accelerate the future installations of fuel cells. Their claim is premised on the notion that high cost is not the primary barrier to fuel cell installation, but rather that lack of knowledge and awareness of the benefits of fuel cells are really keeping the industry from growing in the same way that the solar industry has blossomed in California.

The record in this proceeding does not support the utilities' claims that fuel cells will bloom if only the utilities promote six additional projects that will demonstrate to the world the true value and benefits of fuel cells. The record in this proceeding documents that fuel cell technology has been around for a long time. Fuel cells were developed by the military for niche applications back in the 1950's and developed by NASA for space applications in the 1960's.[4]

Since the inception of the Self Generation Incentive Program (SGIP) in 2001, California ratepayers have supported the installation of less than 15 megawatts of fuel cell capacity. The utilities emphasize that this number of installations is pitifully small and represents less than 5% of the total megawatts supported by SGIP funds. TURN fully

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[4] See, generally, Exh. 201, slides 10-12.

agrees that fuel cells have lagged significantly behind solar photovoltaics and internal combustion engines.

But the utility witnesses profess a general ignorance of the fuel cell market outside of SGIP installations.[5] The Commission should give very little weight to their assertions that that companies are installing solar rather than fuel cells because they are more comfortable with the technology. Solar installations have blossomed because solar PV is a renewable generation resource that has been supported by federal and state tax credits that significantly lower the final cost to the owner. More importantly, significant global support for solar energy has spurred demand and the construction of new silica and panel production facilities and has resulted in significant cost declines.

Commercial fuel cell technology has been around for at least as long, if not longer, than solar photovoltaic technology. However, fuel cell technology costs have not experienced the declining cost trajectory associated with solar panels. While it may well be true that cost declines will occur in the future, it is not true that the installation of an additional 6 MW of fuel cells will somehow dramatically alter the market penetration of this generation technology.

TURN understands that from a global perspective there are locations and applications where solar power is not a good alternative and where fuel cells make some sense. However, no one has even tried to make the case that this is true for California. California has good solar potential. It has significant solar, wind and geothermal

[5] See, for example, 1 RT 11-13, Berman and Loveless, PG&E.

renewable resource potential. Spending two to three times as much for non-renewable fuel cell projects simply makes no sense for California ratepayers.

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3. IF THE COMMISSION AUTHORIZES ANY OF THESE PROJECTS, IT SHOULD AT A MINIMUM ORDER THE UTILITIES TO ELIMINATE THE "ELECTRIC-ONLY" PROJECTS, WHICH COST TWICE AS MUCH AND GENERATE GHG EMISSIONS JUST LIKE A GAS-FIRED POWER PLANT

TURN does not agree that an RD&D function for fuel cells justifies a capital outlay of over $40 million with additional annual O&M and fuel expenditures. However, if the CPUC decides to promote the installations desired by the Governor's office (assuming that is, that the Governor's office was aware of the costs of these projects), then at the very least the CPUC should reduce the size of the project by eliminating the "electric-only fuel cells," which cost about twice as much (on a per unit basis) as the other fuel cells. The educational value of installing this "novel" technology is not justified given the high price and the high GHG emissions.

3.1. The Cost of the Electric-Only Installations is Unreasonable *Per Se*

The total capital cost of the entire six megawatts of proposed installations is $42 million, or an average installed capital cost of about $7000/kW. The individual project cost data is confidential. The attached confidential Appendix A to this brief provides the installed capacity costs and levelized cost of electricity for each individual fuel cell project as calculated by the utilities. What is public information is that the **per unit capital cost of the electric-only fuel cells is about twice the cost of the cogeneration**

units![6] The utilities did not dispute this general relationship and agree that the per unit capital costs and output price of the electric-only facilities are much higher than the cogeneration facilities.[7]

The average capital cost is only a little higher than the average capital cost of large commercial rooftop solar projects supported by CSI,[8] though it is almost twice the forecast installation cost of SCE's authorized solar photovoltaic program.[9] It is not appropriate, however, to compare these generation sources based solely on capital costs. Solar PV has no fuel costs and capacity factors in the 20-30% range. Fuel cells require natural gas as well as stack replacement, but have capacity factors in the 70-80% range. A more relevant comparison is based on the levelized cost of electricity over the life of the project.

The average levelized cost of electricity from these fuel cell projects is between 25 and 30 cents/kWh.[10] This price for electricity is similar to the forecast levelized cost of

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[6] See, Exh. 300, p. 2, Hawiger, TURN. See, also, Exh. 202, p. 21, Momoh, DRA. DRA presented evidence based on a consultant report that estimates the capital cost of the selected cogeneration fuel cell technology (molten carbonate) at about $5000 per kW and the capital cost of the electric-only fuel cell technology (solid oxide) at about $12,000 per kW.

[7] See, for example, 2 RT 209, 215-216, Rumble, SCE;

[8] See, D.09-06-049, *mimeo.* p. 26 (citing to the figure of $6780/kW used by SCE based on historic data from large CSI installations).

[9] See, D.09-06-049, Ordering Paragraph 1, *mimeo.* p. 58 (costs lower than $3,850 per kW, including a 10% contingency, deemed reasonable).

[10] Exh. 202, p. 2, Momoh, DRA; Exh. 304-C (PG&E has agreed that the average program price of $0.304/kWh is public information); Exh. 108 (SCE's weighted average price is $0.25/kWh).

electricity of 26 cents/kWh for Edison's rooftop solar photovoltaic project.[11] The 26 cent/kWh price was adopted by the Commission as the cap on the prices of PPAs which will be signed by SCE for independent rooftop solar projects.[12]

As detailed in confidential Appendix A, the output electricity price from the two electric-only fuel cells is **CONF XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXX,** or significantly more than the prices from the cogeneration projects.

Whether compared to the cogeneration units, to SCE's authorized solar UOG projects, or to any other clean energy alternatives, the prices of the electric-only fuel cell facilities are entirely unreasonable.

3.2. The Electric-only Facilities Emit Greenhouse Gases In Amounts Equal or Greater than Natural Gas Power Plants

Fuel cells use hydrogen as an input and release carbon dioxide and water as outputs of the chemical process. While all fuel cells have low criteria pollutant emissions due to the lack of combustion, their emissions of carbon dioxide - the primary contributor to the greenhouse gas (GHG) effect – are not at all trivial. Typical fuel cell carbon dioxide emissions are approximately 900-1000 pounds per MWh of electricity, but when the waste heat is utilized the net GHG emissions are reduced to about 500 pounds per MWh.[13]

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[11] D.09-06-049, *mimeo.* p. 30.

[12] D.09-06-049, Ordering Paragraph 1, *mimeo.* p. 56.

[13] 2 RT 212:11-27, Nelson, SCE. See, also, 1 RT 122:4-10, Loveless, PG&E.

The emissions performance standard adopted by this Commission is 1100 pounds of carbon dioxide equivalent per MWh. At least one proposed electric-only fuel cell unit was rejected by PG&E due to a violation of this standard.[14] The typical GHG emissions from a new combined cycle natural gas plant are in the 800-900 pounds per MWh range.[15] The actual GHG emissions of the electric-only project proposed by Bloom Energy at San Francisco State is **CONF** XXXXX pounds per MWh.[16]

3.3. There Is No Valid Justification for the Electric-only Installations

The utilities' rationale for selecting these two electric-only projects does not justify such a high cost. In its direct testimony SCE explained that "has also chosen to demonstrate and examine the operation and benefits of a novel design, an electric-only fuel cell system, where the heat exhaust from the fuel cell is recycled within the fuel cell itself to generate electricity at a much higher efficiency," and further explains that "this effort will be worthwhile because this technology has not yet been studied as well as the larger fuel cell cogeneration options." SCE continues:

> If successful, there are many locations where this type and size of equipment could be used to potentially provide improved service at a lower cost to electric customers. The commercially available electric-only fuel cell units tend to be produced as smaller-sized modules than typical fuel cell cogeneration units. Since they do not need to be mechanically integrated with a host facility's physical plant to achieve relatively high efficiencies, they provide greater flexibility to host sites.[17]

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[14] 1 RT 121, Loveless, PG&E.

[15] 2 RT 213, Nelson, SCE.

[16] Exh. 303C, Location 2, p. 3.

[17] Exh. 100, p. 13-14, Rumble, SCE.

In its rebuttal testimony, SCE agreed that "the most desirable demonstration projects would be those that attempted to maximize the total efficiency of the fuel cell system by using as much of the exhaust heat as possible."[18] TURN certainly agrees with this statement. SCE does not attempt to further justify the installation of an electric-only facility but simply notes that it "determined to put the electric-only fuel cell unit at UC Santa Barbara to leverage this university's strong environmental platform."[19]

SCE's assertion that there are many locations where the electric-only fuel cell will provide "improved service at a lower cost" is preposterous. SCE's own testimony shows that the cost is twice as much. While it may well be true that *on a global scale* electric-only fuel cells may have many useful applications, there is no dearth of potential cogeneration sites in California that provide much better value. It is not the role of California ratepayers to subsidize RD&D into electric-only fuel cells that might prove useful to some private parties outside California.

PG&E entirely ignored the cost differential of the electric-only facilities in its direct testimony. In rebuttal testimony PG&E agreed that the cost of the proposed electric-only fuel cell is higher, but then provided the following three justifications:

> PG&E believes that the demonstrative attributes of the project are greatly enhanced by the installation and operation of two distinct technologies side-by-side at SF State. In addition, the SOFC vendor is the sole California fuel cell

[18] Exh. 102, p. 5, Rumble, SCE.

[19] Exh. 102, p. 6, Rumble, SCE.

> manufacturer with commercially available large-scale stationary fuel cell technology. The SOFC vendor employs many CSU student interns and graduates and is helping to train the next generation of clean energy engineers and entrepreneurs in California.[20]

The solid oxide fuel cell vendor in this case is Bloom Energy, Inc., located in Sunnyvale, California. Bloom Energy was one of the first green tech investments of Kleiner Perkins Caufield & Byers.[21] The company was extensively profiled in the New York Times Sunday Magazine on October 3, 2008.[22] Bloom Energy is a regular intervenor in Commission proceedings concerning the Self Generation Incentive Program and distributed generation issues.

TURN appreciates the desire to foster economic development in California. We have supported providing preferences to in-state manufacturers. We have long urged the IOUs to promote in-state renewable projects instead of signing contracts for wind power generated in Oregon or Wyoming. We did not oppose the 20% incentive adder for "California suppliers" included in SB 412.[23]

But despite any potential benefit to a California company we could never support buying a product when the in-state manufacturer is charging ***twice the price*** than other domestic companies. At that point one cannot help but wonder why the utilities are even considering such outlandish bids. The utilities' position on this issue is

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[20] Exh. 4, p. 2-2, Loveless, PG&E.

[21] Exh. 202, pp. 11 and 18, Mazy, DRA.

[22] Available at http://www.nytimes.com/2008/10/05/magazine/05Green-t.html?_r=1&scp=1&sq=bloom+energy+kleiner+perkins&st=nyt

[23] See, §379.6(g) as amended by SB 412.

The utilities' various justifications for the electric-only projects simply have no merit. TURN thus recommends that the Commission order PG&E and SCE to each eliminate the 200 kW electric-only installations. This reduction of 400 kW in capacity will reduce capital installation costs by over $6 million.[24]

4. CAPITAL COSTS: THE PROPOSED CONTINGENCY RATES ARE TOO HIGH AND INAPPROPRIATELY APPLIED TO THE ACTUAL EQUIPMENT COSTS

The two utilities have proposed two different contingency rates to increase capital costs, and both are higher than overall project rates previously approved by the Commission. Moreover, the utilities inappropriately apply the contingency rate to total costs, rather than just owner's costs. The contingency rate for the ***fuel cell equipment should be at most 5%***, and any higher rate should apply only to installation costs.

4.1. The Commission Should Authorize the Lower of the Two Proposed Contingency Rates for Installation Costs

PG&E applied a contingency rate of CONF XXXX to total capital costs, while SCE applied a contingency of CONF XXXX to total capital costs.[25] These contingency rates are higher than rates previously approved by the Commission. The Commission has in the past authorized overall contingency rates in the 5-8% range for both generation

[24] Exh. 300, p. 2-3, Hawiger, TURN.

[25] The designation of contingency rates as confidential is a departure from precedent and is not justified. For example, in A.09-02-022 (filed in the same month as this application) PG&E detailed contingency rates for each work element of its $160 million proposed project. See, A.09-02-022, PG&E-3, p. 1-18.

(Mountainview, Contra Costa 8, Humboldt) and distribution (PG&E AMI, SDG&E AMI) infrastructure.[26]

In its rebuttal testimony PG&E blithely asserts that its requested contingency rate is similar to the contingency is received on "its capital forecast" for the Diablo Canyon Steam generator Replacement Project, as well as the contingency SCE received on the SONGS steam generator replacement project.[27] PG&E's assertion ignores the difference between fixed contract costs and owner's costs. This issue was perhaps best explained in D.06-11-048 when the Commission addressed the costs of the Colusa and Humboldt plants in Section 5 of the decision. In authorizing a 5% contingency on owners' costs the Commission noted the following concerning the contingencies approved for the steam generator replacement projects:

> D.05-02-052 (Diablo Canyon steam generator replacement) does not make reference to either a 15% contingency, which PG&E cites in its testimony, or a 5.1% contingency, which PG&E cites in its comments on the proposed decision. It does make reference to a 2% contingency on one portion of the project (installation contract) and a 20% contingency on another portion of the project (owner's costs). It does not make reference to any contingency amount on any other portion of the project (e.g., procurement contract). In contrast, PG&E here seeks a contingency percentage on total project costs. It is not apparent that D.05-02-052 and its approval of different contingency factors for discrete portions of the nuclear power plant steam generator replacement project is applicable to PG&E's owner's costs for the Humboldt project.[28]

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[26] Exh. 300, p. 3, Hawiger, TURN.

[27] Exh. 4, p. 3-2, Q/A 5, Bergmann, PG&E.

[28] D.06-11-048, *mimeo.* p. 21, fn. 12.

PG&E has requested a 25% contingency rate in its rate design window (A.09-02-022), which it justified primarily due to the cost risk of information technology systems work necessary to implement new tariffs on an expedited basis. PG&E rebutted recommendations for lower contingencies by noting that "PG&E's IT work for [peak day pricing] is not a civil construction project."[29]

In this case, the project scope (aside from the manufacture of the fuel cell itself) is much more akin to a construction project. Even the lower contingency rate is out of line with prior contingency rates, though one might argue that a higher rate is warranted due to the fact that the utilities have not previously managed a fuel cell installation project. The Commission could apply a 10-15% contingency to the installation component of the capital costs. In any case, there is absolutely no justification for the higher of the two contingency rates and at most the Commission should authorize the lower of the two proposed contingency rates for each utility.

TURN also notes that the utilities bear little risk for cost overruns due to unanticipated changes in scope. The utilities have requested preapproval of the forecast capital costs and would seek recovery of any cost overruns through a traditional reasonableness review.[30] The proposed decision of the ALJ in A.09-02-022, where the utilities requested similar ratemaking treatment, completely rejects PG&E's proposed 25% contingency, explaining that "we see no compelling reason for authorizing any

[29] PG&E-8, p. 2-5, Lechner Rebuttal Testimony, August 5, 2009, cited in Exh. 300C, p. 3, Hawiger, TURN.

[30] See, for example, Exh. 2, p. 5-1, O'Flanagan, PG&E.

contingencies in this proceeding, especially in light of our concern regarding the magnitude of the contingencies and our regulatory responsibilities. The exclusion of the contingency allowance does not preclude PG&E from recovering reasonable actual costs that are in excess of the forecasted amount."[31]

4.2. No Contingency Should Apply to the Fuel Cell Equipment Costs

Even more importantly the Commission should not authorize such high contingency rates for the fuel cell equipment itself. The fuel cell equipment cost is the major component of capital costs.[32] But the utilities apply their contingency rates to both the fuel cell equipment costs as well as to other capital costs, including all installation, interconnection and construction costs.[33] The fuel cell units are prefabricated modular units delivered by the vendor. The vendor contract specifies a fixed price, so that the risk of cost overruns in fuel cell unit production is borne by the seller.[34] A contingency for the fuel cell equipment itself should either be zero, or at most no higher than 5%, in line with contingencies approved previously for major capital generation projects.

The utilities' testimonies on this issue fully support TURN's recommendation. SCE argues in direct testimony that a contingency is necessary because "each site has

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[31] Proposed Decision of ALJ Fukutome in A.09-02-022, issued on 12/22/09, *mimeo.* p. 122-125.

[32] See, Exh. 1, p. 3-7 to 3-7, Table 3-1 and 3-3; and Exh. 100-C, p. 20, Table II-4. Interestingly, without the contingency, PG&E's fuel cell equipment costs are about CONF XXX of total installed capital costs while SCE's fuel cell equipment costs are about CONF XXX of the total.

[33] PG&E Supplemental Testimony, Table 3-1; SCE Testimony, Table II-4.

[34] 1 RT 136-137, Bergmann, PG&E.

unique characteristics that may present unforeseen conditions which result in increased costs." In its rebuttal SCE reiterates that "there is the potential for reasonable increases in costs to accommodate **site specific construction and design requirements**."[35]

In its rebuttal testimony PG&E states that the contingency covers "scope modifications that may occur during the development, engineering, construction and startup of the Fuel Cell Project," and further explains that "uncertainty and difficulties associated with constructing electric generation at CSU campuses, such as allowable work hours, acceptable noise levels, additional safety measures, and traffic restrictions, all can require multiple mobilizations of construction crews and increase costs, which justify the contingency factors."[36]

TURN fully agrees with these analyses. Both SCE's and PG&E's testimonies underscore the fact that the risk and uncertainty of project costs is associated with the **site design and site-specific installation component of the project**. It is thus entirely inappropriate to apply the contingency rates to the fuel cell equipment cost component.

4.3. Conclusion

The higher contingency rate should apply only to the installation costs detailed in SCE's Table II-3. At most, a contingency of 5% should be applied to the equipment costs. The result of these two recommendations (5% contingency for fuel cell equipment, lower of the two proposed rates for installation costs) is to reduce aggregate capital costs

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[35] Exh. 102, p. 9, Rumble, SCE.

[36] Exh. 4, p. 3-2, Bergmann, PG&E.

(assuming the original utility proposals of six units) by about $4 million.[37] The major component of this reduction is the use of a 5% rate for the fuel cell equipment itself. A lower rate (or no contingency at all) for the equipment itself would also be quite appropriate.

5. Operations and Maintenance Costs and Contract Terms

In our written testimonies TURN recommended that the Commission order both utilities to negotiate for compensation for the waste heat and for ratepayer credit for GHG emissions credits. TURN also recommended the elimination of one O&M position for PG&E. Based on a review of the entire record TURN reiterates two of these recommendations but agrees that negotiation for waste heat compensation may be unproductive due to the other contributions from the campuses, especially if the campuses manage all education activities associated with the fuel cell projects and if ratepayers retain any potential value of future GHG credits associated with waste heat production.

5.1. O&M – Education and Outreach Specialist Position

PG&E includes over $80,000 per year in fixed O&M labor costs for an "education and outreach specialist" to perform the following functions:[38]

> PG&E intends to coordinate with the two universities in implementing a **community outreach program** in order to maximize the educational benefits of the fuel cell facilities both on the campus and in the community as a whole. PG&E plans to install an educational kiosk at each facility that will include information about fuel

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[37] See, Exh. 300-C, Attachment 3, Hawiger, TURN.

[38] Exh. 2, p. 4-10, Table 4-12.

> cell generation …. In addition, PG&E will coordinate with the two universities to update signage and educational material, help develop class curriculum, host tours of the facilities and facilitate other educational and community outreach actions."[39]

PG&E emphasizes in rebuttal testimony that this position is not an ad campaign but rather designed to implement "a community outreach and education program in order to maximize the educational benefits of the fuel cell facilities, both on campus and in the surrounding communities."[40] Regardless of its purpose, ratepayers should not be funding such a community or campus educational campaign. The Commission should not put PG&E in a position where it is funding outreach programs that might create the appearance of utility greenwashing.

Moreover, the state universities are in a better position to support these education and outreach activities. Part of the justification for these projects is the educational value of the fuel cells to the campuses. If this is really true, then the universities should develop the necessary educational materials and activities best suited to their needs.

5.2. Contract Terms – Future GHG Offset Credits

The four cogeneration units produce waste heat which will serve the campus heating systems. The utilities propose to provide this waste heat to the campuses for free.

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[39] Exh. 2, p. 2-7, Loveless, PG&E.

[40] Exh. 4, p. 2-2, Loveless, PG&E.

This represents an annual value of between $350,000 and $700,000 depending on the price of gas.[41]

While TURN no longer recommends that the utilities negotiate for compensation for this waste heat, at a minimum any lease contracts must assign future benefits to ratepayers.

It is entirely possible that within the ten-year life of the project the State or the Federal Government will enact a cap and trade program that includes offsets, and that the avoided GHG emissions due to waste heat production by the fuel cells will qualify as an offset mechanism. In such a situation, it is not clear whether PG&E as the owner of the fuel cell or the campus as the owner of the waste heat could claim rights to the avoided GHG emissions. PG&E does not know the answer.[42]

Given that utility ratepayers would be funding these fuel cells and providing the campuses with the waste heat for free, it is entirely reasonable and fair to assign any potential value due to avoided GHG emissions to ratepayers. The Commission should order the utilities to include terms in the contracts with the campuses that ensure that any such future value will be retained by ratepayers.

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[41] The lower bound assumes a gas price of $4/MMBtu while the upper bound is at a gas price of $8/MMBtu, which is closer to the gas price assumed by the utilities. See, Exh. 300, p. 6, Hawiger, TURN.

[42] 1 RT 132-133, Loveless, PG&E.

6. Cost Recovery and Cost Allocation

6.1. Use of SGIP funds

SCE proposes to cover 50% of the capital costs for its projects from funds available in the Self-Generation Incentive Program memorandum accounts. TURN had recommended that 100% of all project costs be funded by carryover SGIP funds, but TURN now revises this recommendation slightly to propose that $30 million of the overcollections in the SGIP accounts be used to fund the capital costs of four fuel cell projects ($15 million for each utility).

The Western Power Trading Forum (WPTF) and two intervenors[43] object to the use of SGIP funds to support these UOG fuel cell projects. These parties emphasize that Commission policy enacted in Decisions 01-03-073 and 04-12-045 explicitly excluded the IOUs from eligibility for SGIP funds. The parties also argue that using even $10.1 million from the more than $120 million in overcollections will endanger funding for future private SGIP projects.

TURN does not disagree that the Commission made IOUs ineligible for SGIP funds as a matter of policy in 2001 and 2004. However, major factual and policy changes since 2004 – notably the creation of the California Solar Initiative (CSI) program and the expansion of the definition of distributed generation - support revising this policy so as to allow the use of SGIP funds for these UOG projects if they are approved. The concern about limited fund availability is misplaced.

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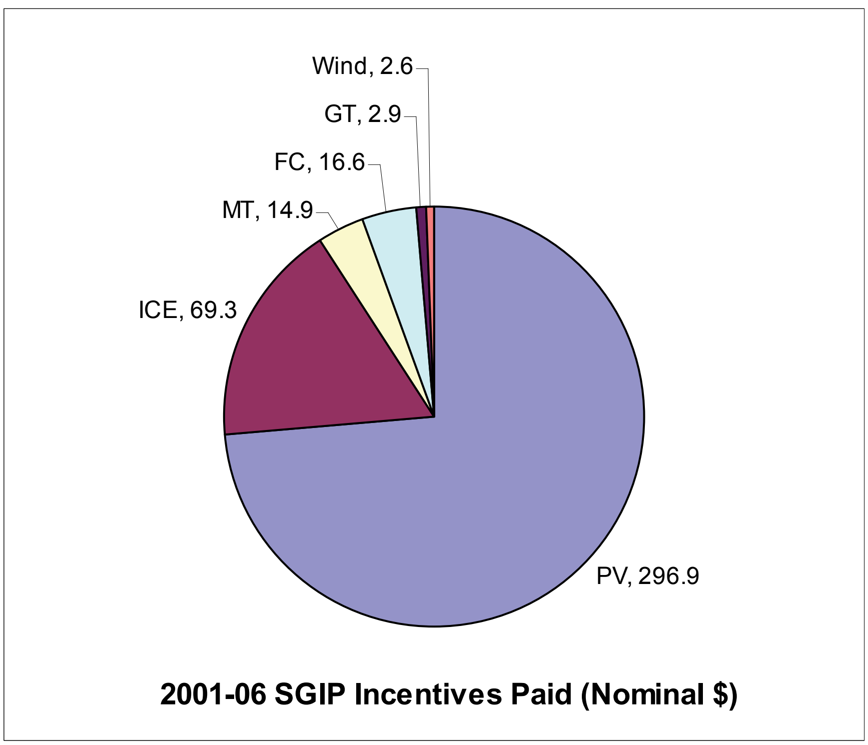
[43] Debenham Energy, a wind developer, and the California Energy Storage Alliance, representing energy storage interests.

The main policy change since 2004 was the transfer of funding for solar photovoltaic projects from the Self Generation Incentive Program to the separate California Solar Initiative (CSI) program starting in January of 2007. SGIP program data show that 71% of the incentives actually paid in 2001-2006 funded distributed solar photovoltaic projects, while less than 4% ($19.2 million) funded fuel cell projects, as illustrated in Figure 1.[44] The creation of CSI dramatically reduced the actual use of SGIP funds and has resulted in significant budget overcollections which could be utilized to promote fuel cell installations without additional rate increases.

Figure 1: SGIP Incentives Paid by Technology (2001-2006)[45]



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[44] Exh. 301, p. 3, Hawiger, TURN.

[45] Source: Itron, SGIP SixthYear Impact Evaluation Report, August 2007, Table 3-7, p. 3-14.

The CPUC reduced the authorized SGIP budget from $125 million in 2001-2006 to $83 million in 2007-2009 in recognition of the transfer of solar projects to CSI. However, this 33% reduction in budget did not nearly account for the much larger percentage of program costs attributable to PV.

Not only was the funding for solar projects moved to the separate CSI program in 2007, but the eligibility of turbine and internal combustion engine (ICE) technologies was eliminated starting in 2008. The net result of these statutory changes has been a dramatic decline in the use of SGIP funds. It appears that the total amount of SGIP incentives actually "paid" by all administrators for all projects in 2007-2009 has been a grand total of $4.1 million.[46] Carryover funding has steadily increased, so that as of mid-2009 SCE had over $40 million in available SGIP funds and PG&E had almost $80 million in available funds.[47]

The Commission recently authorized SGIP budgets of $83 million for 2010 and 2011 and also authorized the utilities to collect over $350 million in previously authorized budgets that had not been committed. Thus, we will essentially have over $500 million available over the next five years to fund projects that have sought less than $5 million in funding for the previous three years.

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[46] Exh. 301, p. 4, Hawiger, TURN (based on administrators' website data accessed on 10/5/2009). These data do not apparently include one major project with a CSU campus that has been announced and that may receive about $10 million of SGIP funds.

[47] See, Exh. 300, p. 11, Hawiger, TURN; See, also, Exh. 102, p. 14, Schoonyan, SCE.

Parties will no doubt argue that there will be more demand for SGIP funds due to the passage of SB 412 in October of 2009. This legislation amends again the eligibility for SGIP funds to include all clean distributed generation resources that "achieve reductions of greenhouse gas emissions," potentially including fossil-burning combined heat and power technologies that meet emissions and efficiency criteria.[48] It is difficult to forecast the impact of this change; however, the restrictions on CHP are more stringent than those that applied during 2001-2006. As shown in Figure 1, during that time period internal combustion engine CHP applications consumed about 17% of SGIP incentives, or a total of $69.3 million.[49] The concern that the eligibility of clean DG will consume the over $120 million in existing overcollections thus seems overblown.

An additional policy change since 2004 that warrants reconsideration of the use of SGIP funds for UOG projects is the expansion of the definition of distributed generation in D.09-08-026. The Commission's discussions concerning IOU eligibility in Decisions 01-03-073 and 04-12-045 were very terse, and the decision to exclude IOU fuel cell projects reflected the original notion of distributed generation as generation "installed on the customer's side of the utility meter that provide electricity for a portion or all of that customer's electric load."[50]

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[48] SB 412, amending §379.6 of the PU Code. The ALJ assigned to R.08-03-008 issued a Ruling on November 13, 2009 addressing the implementation of SB 412.

[49] Exh. 301, p. 3, Hawiger, TURN.

[50] D.01-03-073, p. 4, 14. The Decision notes that the California Energy Commission had recommended a more expansive definition to include installations on the utility-side of the meter, but the CPUC rejected this definition and adopted the definition proposed by CPUC staff.

The Commission revisited the definition of distributed generation in its very recent decision on cost effectiveness analysis and concluded that:

> "The term DG is no longer limited to customer-owned facilities, as the facilities may be owned by a third party, and may refer to generation that is either on the 'customer-side' of the meter, with occasional export to the grid, or generation that is on the utility, or 'system-side' of the meter, with occasional customer use, but expressly designed to net export. System-side DG can also be thought of as wholesale DG."[51]

This change in the definition of DG to include wholesale DG on the utility side of the meter broadens the potential future policy treatment of distributed generation facilities. The question of whether SGIP funds should be used for these UOG projects should thus be examined anew based on the underlying legislative and policy goals for SGIP, not based on the mere fact of utility or third party ownership.

6.2. Cost Allocation

Both utilities propose to recover some of the costs of the program through non-bypassable charges that are collected from all customers, not just bundled load customers. SCE proposes to recover the "above-market costs" of the program as a "non-vintaged cost" in the Cost Responsibility Surcharge. PG&E propose to recover "any stranded costs associated with the Fuel Cell Project through a non-bypassable charge" as authorized by D.04-12-048.

TURN has not reviewed in detail the utility cost allocation proposals. In general we fully support recovering the above-market costs of these particular UOG projects from all customers, including existing direct access customers. It is apparent that the

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[51] D.09-08-026, p. 5.

purpose of these projects is not to obtain cost-effective preferred resources, since there are any number of less expensive and cleaner alternatives available through existing procurement processes. Rather, these projects are proposed to promote the development of fuel cell technology in California. The projects represent RD&D funding for fuel cells and will primarily benefit private parties, since fuel cells are not a utility-scale resource. The projects will also subsidize CSU campuses.

The existing SGIP expenses are allocated to all utility customers as a program that provides social and environmental benefits. Irrespective of whether the Commission authorizes the use of SGIP funds for these projects, it should authorize the recovery of any above-market costs from all utility customers.

December 30, 2009

Respectfully submitted,

By: ________/S/________________

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APPENDIX A - CONFIDENTIAL

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Sources: Exh. 107C (SCE LCOE data)

Exh. 304-C (PG&E LCOE and cost data)

Exh. 300-C, Attachment 2 (project capacity and cost data for SCE)

CERTIFICATE OF SERVICE

I, Marcel Hawiger, certify under penalty of perjury under the laws of the State of California that the following is true and correct:

On December 30, 2009 I served the attached:

OPENING BRIEF OF THE UTILITY REFORM NETWORK

(PUBLIC VERSION)

on all eligible parties on the attached lists **A.09-02-013 and A.09-04-018** by sending said document by electronic mail to each of the parties via electronic mail, as reflected on the attached Service List.

Executed this December 30, 2009, at San Francisco, California.

___/S/________
Marcel Hawiger

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