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California Energy Commission
1516 Ninth Street
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Re Docket No. 08-IEP-1G 2008 Integrated Energy Policy Report
Cost Benefit Analysis of the Self Generation Incentive Program Consultant Report.

Dear Commissioners:

San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company (SoCalGas) respectfully submit the following comments on the Consultant Report: Cost-Benefit Analysis of the Self-Generation Incentive Program (SGIP) (hereinafter "Report").

While SDG&E and SoCalGas generally agree with the conclusions of the Report regarding the SGIP program moving forward, there are a number of aspects of the cost-benefit analysis that fall short of developing a "sound cost-benefit analysis methodology." SDG&E and SoCalGas appreciate this opportunity to provide these comments for California Energy Commission (Energy Commission) consideration in the

event the Report's cost-benefit analysis methodology is contemplated being applied again in the future.

THE SGIP MOVING FORWARD

Re-instating technologies to SGIP

SDG&E and SoCalGas strongly support TIAX's recommendation to expand the SGIP to all prior technologies that use "super clean" and renewable fuels used in "efficient" CHP applications.

IOU ownership of distributed technologies

The Report endorses an expanded distributed generation market in California yet does not evaluate the overall effects IOU installation and ownership of distributed generation technologies could have on the market in general. SDG&E and SoCalGas believe it also makes sense for IOUs to be able to invest in efforts to further a sustainable energy future and would like to be able to pursue these options in a manner that would not interfere with competitive energy markets, where appropriate, cost effective, and in line with utility or customer operations. Utility ownership of distributed generation at customers' facilities could increase penetration of distributed generation and will allow for more efficient and cost-effective distributed generation to be installed. Where potential owners of CHP applications lack upfront capital and SGIP incentives for engine and micro-turbine CHP projects; do not have interested third party providers; and/or do not have the knowledge or comfort in operating and maintaining CHP equipment, customers are interested in utility ownership of CHP at their facilities. SDG&E or SoCalGas can fill these customer needs by owning, operating and maintaining CHP at customer facilities. It would be helpful if TIAX and the Energy Commission would endorse utility ownership of appropriately placed distributive generation projects.

METHODOLOGY AND DATA ISSUES

The Report states that the typical performance of each technology was modeled as the average weighted capacity factors from 2002 through 2006 (p. 12). This methodology clearly is at odds with the results of the latest Itron Seventh-Year Impact Evaluation, which states that "The annual capacity factors for microturbines and IC engines exhibit a noticeable downward trend over the life of the program. (P. 3-25)" Any use of an average capacity factor will overestimate the typical performance of these technologies. This conclusion seems to be validated by comparing Table 18 of the TIAX Report (capacity factors for ICE (40%), MT (40%), and GT (80%)) with the capacity factors shown in figure 3-14 of the Itron report found on page 3-25. The TIAX Report capacity factors are significantly higher than those in the Itron Report. On the same page, the Itron report speculates that the "Year-to-year variability can be due to a variety of factors including equipment maintenance/reliability issues, staff turnover, and interruption in fuel or service provider contracts, fuel prices, and occupancy/operations schedules of metered CHP systems." It should be noted that the majority of these issues could be eliminated if the utility owned and operated the CHP facilities.

The Report has three different assumptions about the resources avoided when calculating the benefits of the SGIP program. In the air quality analysis, the avoided resource is a natural gas combined cycle combustion turbine that is located in the same air basin and imported power is assumed constant (p. 18). In the macroeconomic benefits section, the Report assumes the distributed generation "replaces imported electric power" (p. 49), power that is imported from out of state. Finally, the cost effectiveness test implies that the avoided power is an average of the power sold in the SP-15 market, a mix of generation within the SP-15 trading area (p. 53). Obviously, if the avoided resource is imported power, there are no criteria pollutant benefits of SGIP technologies. Conversely, if the avoided power is a local power plant, the macroeconomic benefits are vastly overstated. A sound methodology would take a consistent approach in determining the avoided resource for each element of the calculation.

SDG&E and SoCalGas believe the Participant Test information in Table 35 contains several errors which ultimately result in a misstatement of the benefits. First, if

the bill savings are based on the same information as used to develop Table 17, the bill savings values are incorrect. The Table below shows the SDG&E system average rates in comparison to the Table 17 values.

Component	SDG&E ¢ / kWhr	Table 17 ¢ / kWhr
Generation	8.068	12.73
Transmission & RS	1.183	0.87
Distribution	3.936	3.80
PPP	0.626	0.94
CTC	0.185	0.18
ND	0.046	0.03
Trust Transfer	0.081	0.35
DWR Costs	*	0.47
Energy Cost Recovery		0.33
RDSC	0.055	
Sect 376	(0.000)	
Total	14.180	19.70

* - Included in Generation component

The Report contains faulty generation cost information and therefore electric bill savings are likely incorrectly calculated in table 35 and overstated. (SDG&E assumes that the generation cost component is similarly overstated for SCE and PG&E) Second, Table 35 of the Report shows that renewable fuel for internal combustion engines and microturbines is cost free because "...it is assumed that this fuel would have otherwise been flared to CO2 without extracting the energy" (p. 13). Again this error gives the appearance that the benefits are higher than they are in reality. Lastly, the Report does not include federal tax and depreciation benefits, state tax and depreciation benefits, and other incentives such as Energy Commission incentives (p.8). This omission significantly underestimates the benefits of certain technologies to participants. Combined, these errors and omissions limit the usefulness of the Participant Test results in Table 35 of the Report.

It is difficult to assess the cost-benefit methodology since the main societal and non-participant tests were not completed. There is no information included in the analysis on how the non-participant test and the societal test will incorporate the macroeconomic analysis, the commodity benefits in Table 27, or the distribution benefits in Table 38. There is also concern that the benefits in Tables 27 and 38 seem to dramatically change with minor changes in assumptions, especially when the assumptions and modeling underlying the commodity analysis are not adequately described. The Energy Commission has been a leader in transparency and the use of sensitivity analysis. A more full disclosure of the underlying assumptions, methods, and data should be provided. Finally, the results of the societal and non-participant tests should be subjected to reasonable variation of key assumptions.

The benefits described in Table 2 for the societal and non-participant tests omit resource adequacy benefits. There is no discussion of why these significant benefits were left off the list and excluded from the analysis.

The Report does discuss the SDG&E and SoCalGas views on the macroeconomic analysis at length at pages 48-50. However, the responses are not persuasive. As stated above, the assumption that power is imported from outside California is inconsistent with assumptions made elsewhere in the Report . And while the argument about fuel for conventional gas-fired generation being primarily from out-of-state is true, it should apply equally to DG using natural gas. However, the Report misclassifies DG natural gas costs in Table 16 as "natural gas distribution" even though the costs are a mix of both gas distribution and fuel, with the bulk being fuel. Since natural gas distribution is assumed to have a regional purchase coefficient of 0.95 (Table 11), the assumption is that 95 percent of natural gas costs are purchased in California. This assumption that natural gas fuel purchases are in-state purchases overstates the macroeconomic benefits.

Another area needing further study is the 84 percent regional purchase coefficient factor in IMPLAN for photovoltaic (PV) panel manufacturing in California. The value is too high and even the 50 percent factor may be too high to use in the macroeconomic

analysis. While some solar panels in the 2001 to 2006 time frame may have been made in California semiconductor fabrication plants that had excess capacity, it is not clear what percentage of the total capacity this represented, as a significant percentage could have come from purchases made by California integrators from PV manufacturing facilities outside California. Both this factor and the gas turbine factor should be studied separately instead of relying on default IMPLAN factors given their large impact on the macroeconomic analysis.

The energy commodity value used in this analysis is based on production cost modeling. To provide accurate values, there must be an accurate description of the system, however there is no data presented to suggest anything other than a black box. There is no basis to judge the reasonableness of the model because nothing is presented on how resources and transmission, both inside and outside the area, are added over the next 30 years. Because of the lack of information, it is unclear whether the $/kW-year figures in Table 27 are based the assumption of no new conventional generation or transmission. If the cost of new conventional generation or transmission is less than the locational marginal price (LMP) spread over 25 to 30 years, it is the avoided cost, not the LMP differential.

The distribution analysis provided in the Report differs from the methods adopted by the California Public Utilities Commission (CPUC) for DG in D.03-02-068. While it may be an improvement to the E3 modeling for energy efficiency, it ignores previous CPUC efforts to define the value of distributed generation to the distribution system. It is unclear whether the distribution study even investigated whether the distributed generation actually provided physical assurance over the historical period or just assumed it to be the case. This new methodology should be more fully explained as to how the utility data were used to come to the results presented in Table 38. Finally, the methodology should be compared to the four requirements for deferring a distribution project under the current CPUC methodology for determining whether distribution costs are deferred.

CONCLUSION

SDG&E and SoCalGas appreciate the opportunity to comment on Report and look forward to working with TIAX, Energy Commission, and the CPUC in refining a workable cost benefit model for evaluating SGIP and other programs.

Yours sincerely,

Bernie Orozco