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VIA E-MAIL
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California Energy Commission
Dockets Office, MS-4
Re: Docket No. 11-IEP-1A
1516 Ninth Street
Sacramento, CA 95814-5512

Re: 2011 Integrated Energy Policy Report: Comments of Pacific Gas and Electric Company on the Lead Commissioner Draft Report *2011 Integrated Energy Policy Report*

I. INTRODUCTION

Pacific Gas and Electric Company ("PG&E") appreciates the opportunity to provide comments on the California Energy Commission's ("CEC") Lead Commissioner Draft Report *2011 Integrated Energy Policy Report* ("IEPR"). The draft IEPR provides a comprehensive overview of the energy landscape in California, highlighting the many successes of numerous energy policies, along with the challenges we face in achieving the State's aggressive energy policies. PG&E shares the objective of advancing the state's transition to a low-carbon energy future in a manner that balances reliability, environmental impact, and cost to customers.

PG&E's comments on the draft IEPR focus largely on suggestions for clarification and possible misstatements. However, one of PG&E's overarching concerns is that the draft IEPR contains very little information on the actual cost impact on customers of the numerous -- and sometimes overlapping -- public policies regarding power supply and whether customers actually need the volume of power that utilities would be required to procure under these numerous mandates. (For example, the California Clean Energy Future team currently tracks 16 different energy initiatives, including greenhouse gas emissions reductions, renewables supplies, energy efficiency, distributed generation, electric vehicles, transmission expansion, and demand response, to name a few.) PG&E suggests that in future IEPRs the cost and rate impacts of the myriad energy initiatives be assessed. This information can help California choose the most cost-effective means to achieve its goals, and may help guide the implementation timelines for various initiatives, particularly when considering the cost to refurbish other aging infrastructure in the state. We should ensure that our efforts to transition to an ever-cleaner energy supply do not saddle customers with ever-higher costs for decades to come.

PG&E's comments address recommendations contained in individual chapters of the IEPR, in the order they appear. PG&E's key recommendations include:

1. Nuclear Issues: PG&E supports numerous recommendations in the draft IEPR, but notes a number of the recommendations on nuclear issues go well beyond the scope of Assembly Bill ("AB") 1632 and address nuclear power plant safety and operational issues that are subject to direct oversight by the Nuclear Regulatory Commission ("NRC"). See Section XIII.

2. Combined Heat and Power ("CHP"): Adoption of a CHP metric is premature, given additional analysis on this issue will be performed in the 2012 IEPR.

3. Deferral of Issues for 2012 IEPR: PG&E supports additional study of the Governor's 12,000 MW of localized energy resources proposal and water policy issues in the 2012 IEPR.

PG&E is happy to discuss these comments with the CEC staff should additional information be needed.

II. PG&E SUPPORTS FURTHER EXAMINATION OF RENEWABLES ISSUES IN THE 2012 IEPR

PG&E looks forward to continuing the development of a renewables strategic plan in the 2012 IEPR. Adding more specifics to the five high-level recommendations on pages 49 and 50 will be key to building a better understanding of the most beneficial ways to incent renewable development in California. Furthermore, PG&E fully supports the draft IEPR conclusion that the state needs to strengthen the north-south 500 kV "backbone" system to support renewables development in the state (p. 37).

PG&E does recommend some modifications to the text in Chapter 1. These suggestions are in order of appearance in the text rather than order of importance.

1. On page 28, it may be helpful to update the Renewable Portfolio Standard ("RPS") targets to reflect the interim targets recently adopted by the California Public Utilities Commission ("CPUC"). For example, interim targets of 21.3% for 2014, 23.3% for 2015, 27% for 2017, 29% for 2018, 31% for 2019 were adopted in December 2011.

2. On page 29, a range of "prudent" renewable contracting is presented, assuming a 30% to 40% contract failure rate. PG&E agrees that it has used a 40% failure rate in the past; however, it should be made clear that past failure rates are not necessarily indicative of future failure rates or failure rates of projects currently under contract and in development. Additionally, Figure 1 indicates only investor-owned utilities ("IOUs") and publicly-owned utilities ("POUs") contracts to meet the 33% target; energy service providers ("ESPs") and community choice aggregators ("CCAs") are also required to meet the 33% target and should be

reflected in the chart. Additionally Footnote 17 should be modified to correct the spelling of "Wynn" to "Winn".

3. On page 29, Table 1 shows the CEC's estimate of in-state renewable capacity and generation. However, the discussion of the resource potential does not distinguish between "technical" potential and "economic" potential. Nor is there any mention about the level of resources that utilities may need to meet customer demand. Lastly, the chart does not include signed contracts for facilities under development, thereby overstating the potential. PG&E suggests that additional language be added to the text to address these concerns.

4. On page 33 of the draft IEPR, it is noted that "Back-of-the-envelope estimates by Energy Commission staff…". PG&E suggests that "back-of-the-envelope" estimates should not be used for planning purposes and are of questionable value in a planning document, particularly given the time period in question is 40 years in the future. Furthermore, the statement, which focuses on the level of renewables in 2050, gives short shrift to PG&E's current portfolio, which today is already more than 50% carbon-free. This figure includes PG&E's RPS-eligible deliveries (15.9% in 2010), large hydroelectric deliveries, and generation from PG&E's Diablo Canyon Power Plant. The statement is highly speculative about the future state of California's electric energy system and should be deleted.

5. On page 33, the statement "The 2009 RPS solicitation by the California Public Utilities Commission…" should be corrected to read "The 2009 RPS solicitation by PG&E, SCE and SDG&E…" because the CPUC does not conduct the solicitations, rather the utilities do.

6. On page 38, the description of renewable integration issues should be reworded because it implies that more regulation is all that is needed to integrate intermittent renewables. However, regulation is only part of the solution and there may be more need for net load following and ramping, which can be slower than regulation because it covers a longer forecast uncertainty (from hour-ahead or day-ahead to real-time dispatch), rather than in between 5-minute real-time dispatch. If integration requirements are defined too narrowly, the result may be the development of the wrong resources or procurement of the wrong products. PG&E suggest the draft IEPR leverage the work of the CAISO in defining the flexibility requirements. Additionally, more work on integration issues is expected to occur in the CPUC's Long-Term Procurement Plan ("LTPP") proceeding.

7. On page 39, PG&E suggests that Footnote 28 be modified to indicate that load following requirements are simply the need for flexible capacity to balance load and wind/solar variability and forecast uncertainty between the hourly average and the 5 minute average interval used for real-time dispatch.

8. On page 42, it is noted that "the majority of solar thermal power tower technology contracts …are below the 2009 Market Price Referent." PG&E questions the veracity of the

statement and suggest that it may be more correct of "solar photovoltaic" technology, rather than "solar thermal".

9. On page 43, there is a discussion about environmental justice concerns that does not fully capture the range of environmental and public health benefits. For example, there appears to be a conclusion that there are no significant environmental or public health benefits from replacing older fossil fuel power plants with new, lower emitting and discharging natural gas units – the write-up implies that these benefits can only be realized through renewable generation. However, no one would argue that replacing a car built in 1966 with a car built in 2012 would not provide huge environmental and public health benefits. Furthermore, replacement of older facilities with newer generation technologies may be more cost-effective for customers and provide greater system reliability than an all-renewable build-out. Such trade-offs must be considered to fully inform the policy debate. Lastly, the discussion does not consider that some communities are not well-suited for solar generation and it may not be cost-effective to install solar in those areas, given the presumed health and environmental benefits may not materialize if other generating sources remain.

III. ENERGY EFFICIENCY IS A KEY ELEMENT OF CALIFORNIA'S CLEAN ENERGY FUTURE

As the first element of the State's "loading order," energy efficiency is critical to first reducing California's energy usage. While PG&E has few specific comments on Chapters 2 and 3 of the draft IEPR, PG&E notes that it and other IOUs are actively engaged in the provision of energy efficiency measures for customers and also work collaboratively with CEC in developing numerous energy efficiency standards for buildings and appliances; however, there is surprisingly little mention of this public-private partnership in the draft IEPR. The draft IEPR could be bolstered by a more expansive discussion on this public-private partnership and how it has helped make California a global leader on energy efficiency innovations. Furthermore, while the draft IEPR notes a number of issues the CEC should address, there is no roadmap forward provided so that parties can better understand and support strategies for moving forward in this important area. It may be helpful to hold a public workshop to discuss prioritization of initiatives between building standards and appliance standards, absent any additional resources to advance the many initiatives underway. Additionally, discussions on zero net energy buildings should include a discussion about who will pay the costs of the grid required to service these buildings if rate design is not fundamentally restructured to ensure that fixed costs are recovered through fixed charges.[1] Finally, strong enforcement of existing standards and development of mandatory quality requirements are essential to achieving increased energy efficiency savings.

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1 See, for example, the recent study published by the Massachusetts Institute of Technology entitled "The Future of the Electric Grid, which discusses challenges with how grid charges for power distribution are allocated today and changes that are needed. The study is available at http://web.mit.edu/mitei/research/studies/documents/electric-grid-2011/Electric_Grid_Full_Report.pdf

With respect to the recommendations presented on pages 67 to 69, PG&E has the following questions or requests for clarification.

1. On page 67, the second recommendation for newly constructed buildings suggests adoption of building standards that would improve efficiency levels 20-30 percent every three years. It is not clear to PG&E if this 20-30 percent refers to whole building energy use, or only regulated loads. PG&E notes that a large portion of home energy use is not regulated by Title 24 or Title 20, which could make achievement of this recommendation challenging, if not impossible. Furthermore, the draft IEPR does not include any discussion on the use of the grid by Zero Net Energy ("ZNE") customers; PG&E recommends any discussion about ZNE include a discussion on rate design and cost shifting, given ZNE customers do use the grid to balance their power needs.

2. Also on page 67, third recommendation, PG&E notes that the IOUs are already leading efforts to adopt Reach standards for newly constructed buildings. Through the Reach Code subprogram, an element of the statewide Codes and Standards Program, the IOUs have provided technical support to numerous local governments in California. Moreover, the IOUs have provided most, if not all, of the research and analysis for updating CALGreen, the State's Reach code.

3. On page 68, the need for collaboration on workforce development programs is noted. PG&E respectfully suggests that current efforts among the IOUs be leveraged in this area, given much work has already been done to respond to these needs through education and training aimed at compliance improvement, and through workforce education and training.

IV. METRICS

Chapter 4 provides a status report on the development of various metrics to track California's achievement of its clean energy future. PG&E supports the measurement of progress on these goals, including the creation of a metric that measures cost to customers. However, developing metrics, without addressing necessary actions or course corrections when key metrics like cost and reliability are not met, will not be an effective use of the energy agencies' scarce resources. PG&E suggests that the agencies discuss collaboratively what actions will be taken to modify the state's energy policies if key metrics like cost and reliability cannot be achieved under the state's aggressive goals.

PG&E comments on two of the metrics found in this chapter: the first on reserve margin and the second on the Installed Capacity metric. With respect to the reserve capacity, at page 75, <u>in the Reserve Margin</u> discussion, the reference to the "energy reserve margin" should be changed to "capacity reserve margin." Comments on the Installed Capacity Metric, as well as other combined heat and power issues in Chapter 8, are noted in Section V of these comments.

V. COMBINED HEAT AND POWER AND INSTALLED CAPACITY METRIC

The draft IEPR contains information on CHP issues in two separate chapters – Chapters 4 and Chapter 8. PG&E has consolidated CHP comments below for ease of reading.

With respect to the Installed Capacity metric, at pages 73-74, the draft IEPR notes that "Staff plans to revise the metric to show estimates of CHP potential and a goal of adding about 6,200 MW of [Combined Heat and Power] CHP by 2032." PG&E suggests that it is premature to revise the metric by adding 6,200 MW of CHP by 2032 without a critical examination of the costs and benefits of adding a large amount of CHP, including the ability of CHP to reduce greenhouse gas emissions ("GHG"). In addition, the metric must consider the need for this significant quantity of resources, in addition to the other goals set forth in the Governor's Energy Plan and the challenges of integrating renewables, as discussed further below.

Goals for 2032 should consider California's long-range GHG goal of reducing GHG emissions in 2050 by 80% from the 1990 level. The California Air Resources Board ("ARB") has determined that the 1990 level was 427 million metric tons (MMT), so the cap in 2050 is 85 MMT (20% of 427 MMT) from all sectors, including electricity generation. Assuming a normal operating lifetime of 30 years or more, CHP units installed by 2032 would still be operating in the year 2050 and would conflict with California's long-range GHG goal. Two studies in recent years analyze paths for California to emit 85 MMT per year or less in 2050. Neither has any role for CHP.

In November 2009, Energy and Environmental Economics, Inc. ("E3") issued "Meeting California's Long-Term Greenhouse Gas Reduction Goals." The report is available at: http://ethree.com/documents/GHG6.10/CA_2050_GHG_Goals.pdf. The report presents four pathways to cut California's GHG emissions to 85 MMT in 2050. The electric generation mix in 2050 is shown for each pathway in Figure 26 on p. 75 of that report. CHP is notable by its absence—no new generation from CHP occurs in any of the four pathways.

Furthermore, in the November 24, 2011 issue of Science, analysts from E3 and Lawrence Berkeley National Laboratory published "The Technology Path to Deep Greenhouse Gas Emissions Cuts by 2050: The Pivotal Role of Electricity."[2] Like the earlier report, the November 2011 report has zero new generation from CHP. CHP was rejected explicitly as a measure that would lead to stranded costs: "[Emission-reducing] measures were not selected if they would reduce emissions in the short term but would have to be retired before the end of their economic life in order to meet lower emissions targets in a later year." (p. 28)

2 The report is available for a fee, but the free "Supplemental Material" is available at: http://www.sciencemag.org/content/suppl/2011/11/23/science.1208365.DC1/Williams.SOM.pdf capacity.

In addition, the Self-Generation Incentive Program ("SGIP") program results suggest that small-scale CHP has significant challenges in reducing GHG. According to Itron's 2010 evaluation of the SGIP program,[3] the key findings for GHG and CHP are:

- CO_2 emissions from non-renewable-fueled SGIP systems exceed CO_2 emissions from the displaced grid-based electricity
- Useful waste heat recovery operations act to reduce CO_2 emissions that would have resulted from use of on-site boilers
- The magnitude of the reduced boiler CO_2 emissions is insufficient to enable non-renewable CHP systems to have net negative GHG emission values

The Draft IEPR (p. 10) notes a focus on CHP: "...future *IEPRs* will provide a more comprehensive assessment of the status of combined heat and power in California. As part of this effort, the staff will be developing scenarios for this technology for the revised forecast." PG&E suggests that Staff's assessment include the two reports noted above and the results of the SGIP program.

It is premature to include an update of a specific target, especially one as large as 6,200 MW. There is considerable uncertainty about the ability of large amounts of CHP to meet the required efficiency criteria and beat the emissions of using a boiler and electricity from the grid. PG&E recommends that the CEC examine the "double benchmark" to determine the appropriate comparison for CHP and GHG reductions. Additionally, to inform understanding of CHP potential, the CEC should revisit the reporting guidelines of useful thermal output reported by CHP facilities in the Energy Commission Quarterly Fuels and Energy Report (QFER) so that generators report better quality information more consistently. The definition of useful thermal output in this form is inconsistent with useful thermal output definitions at FERC and at the CEC for AB 1613.

PG&E is happy to participate in a public, transparent process to discuss appropriate assumptions for CHP potential that reduces GHG emissions. Any CHP goals must consider need for new generation and renewables integration. PG&E also recommends that the CEC consider the appropriate double benchmark for GHG reductions from CHP and how CHP should report Useful Thermal Output in the Energy Commission Quarterly Fuels and Energy Reports.

In addition to Chapter 4, Chapter 8 discusses CHP additions but fails to fully consider these additions in the context of need and renewables integration. Chapter 8 discusses integration challenges and the need for new gas-fired generation to provide ancillary services. Chapter 8 also suggests that new, conventional gas-fired generation should be residual to potential CHP development in local capacity areas (p. 134). CHP targets must carefully consider

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[3] http://www.cpuc.ca.gov/NR/rdonlyres/3EF6BE45-8CC2-4607-A902-5421E8C6C560/0/SGIP2010ImpactEvalResultswebinar.pdf

the relationship between system need for baseload, must-take resources, renewables additions, and system reliability. PG&E notes that the 2009 IEPR found that while "60 percent of potential host sites for large CHP are located" in Southern California, adding large amounts of CHP in Southern California would be difficult with existing emission credit problems, could lead to over-generation problems, and would not lead to the "optimal compliance pathway" to 33% renewables.[4] The new draft IEPR does not acknowledge these challenges.

Finally, new opportunities for CHP are being advanced through AB 1613 feed-in tariffs, through SGIP rules, and Qualifying Facility ("QF") settlement procurement activities. These policies should be fully deployed and evaluated for impact before creating even more new incentives and policy.

Given the 2012 IEPR will also review CHP activities, adding a CHP metric of this magnitude may be premature and the CEC should defer adding a CHP metric at this time until further analysis has been performed. Additional investigation through a public process is necessary to discuss the CHP potential that reduces GHG emission and appropriate level of CHP additions in any goal. CHP goals must consider the need for additional new resources and the additions needed for renewables integration.

VI. APPLYING "LESSONS LEARNED" TO POWER PLANT PERMITTING MAY HELP REDUCE SOME RENEWABLE DEVELOPMENT ROADBLOCKS

PG&E has few substantive comments to offer on Chapter 5 of the draft IEPR. PG&E looks forward to the culmination of the "Lessons Learned" process and development of an action plan for implementing any recommendations that arise from this process.

With respect to water consumption at power plants, PG&E looks forward to participating in the discussions on any modifications to this important issue. At pages 83 and 84, numerous "options" are set forth for consideration. PG&E suggests that public workshops be held first to discuss these options and determine whether the full list of alternatives has been presented and to better understand the available technologies. PG&E is concerned that the presentation of options that begin "universally proscribe" or "universally require" may not present the full range of options for consideration. Furthermore, the CEC may wish to have some flexibility to develop water policies for specific sites, given there may be unique issues by location or community that may best be resolved using various cost-effective tools. Such solutions may be preferable to a "one size fits all" water policy.

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4 California Energy Commission, *2009 Integrated Energy Policy Report*, Final Commission Report, December 2009, CEC -100-2009-003-CMF, pages 191-193.

VII. NATURAL GAS IS AN INTEGRAL PART OF CALIFORNIA'S ENERGY FUTURE

Chapter 6 correctly notes the role of natural gas in California's energy supply. PG&E supports this acknowledgement, given the role of natural gas resources in integrating renewables, providing system and local reliability requirements, and helping to meet system operational needs, among other benefits. PG&E offers the following comments to augment the CEC's earlier research and to properly characterize the status of various initiatives underway in PG&E's Pipeline Safety Enhancement Plan.

1. At page 87, the draft IEPR notes two factors contributing to today's lower natural gas prices – the late-2008 recession and the introduction to the market of larger amounts of shale gas. PG&E posits that it is really the introduction of larger quantities of shale gas that is driving prices lower, given that gas consumption overall was higher in 2010 than in 2008, when the recession began. While the recession may have contributed to lower gas demand (and lower prices) in 2009, current gas demand has surpassed demand in 2008 and prior years.

2. Pages 90 to 94 contain a description of four cases used to assess long-term natural gas prices. PG&E's first observation is that all of these scenarios show a price increase to $6.00-$6.50 per MMBTU in the 2012/13 time period. PG&E notes that current forward curves and the general industry consensus on natural gas prices is that they will remain in the $4.00 per MMBTU range in the short term. Second, at the bottom of page 92, the heading "Error! Reference source not found" should be modified to include a reference to Figure 6. Lastly, at page 94, the same "Error! Reference source not found" placeholder is repeated; PG&E believes the reference should be modified to be "AEO 2011 Reference Case".

Pages 95 to 98 of Chapter 6 focus on the potential effects of the San Bruno gas pipeline explosion. PG&E proposes the following modifications to these pages:

3. On page 95, there is a section describing the CPUC's Rulemaking and the requirement to test or replace all pipelines where the Maximum Allowable Operating Pressure ("MAOP") cannot be confirmed. PG&E recommends that the sentence "Until this is complete, pressure levels may be reduced to 20 percent below MAOP" be modified to read "Until this is complete, the utilities will adopt appropriate interim safety measures that include enhanced patrolling and leak survey. As utilities pursue the extensive examination of pipeline system records, conduct hydrostatic testing, and pipeline replacements, customers may experience reduced system pressures and capacity as well as occasional outages." This modification better captures the range of safety measures that may be deployed.

4. At page 96, there is a sentence "To date, PG&E has reported no curtailments to customers as a result of reducing the MAOP by 20 percent on some of its pipelines." As with item 3 above, PG&E recommends that the words "by 20 percent" be deleted, given the sentence

incorrectly implies that pressures were routinely reduced by 20 percent, which was not the case. Pressures were reduced to achieve pressures consistent with the location class.

5. At page 96, there is a discussion about the minimum and maximum amount of natural gas that PG&E needs in the pipeline system to meet demand. The CEC may wish to add a note to this paragraph indicating that as of December 1, 2011, PG&E has returned the inventory swing to 450 MMcf.

6. Lastly, at page 97, the CEC may wish to modify language about the expected CPUC decision on December 15, 2011, given the CPUC has now issued that decision.

VIII. ELECTRICITY AND NATURAL GAS DEMAND FORECASTS

Chapter 7 presents the state-wide forecasts of electricity and natural gas consumption for California over the next 10 years. Preliminary estimates were first issued by the CEC in August 2011. Since that time, PG&E submitted formal comments on the demand forecast (September 15, 2011) and also met with CEC staff on numerous occasions to compare, discuss, understand and address differences in PG&E and CEC forecasts for PG&E Service Area. Both the CEC and PG&E are updating the forecasts based on recent recorded data, economic outlook, and other new studies and information on various assumptions that impact the forecasts (e.g., energy efficiency, distributed generation, electric vehicles, among others). As a result of this collaborative, ongoing process, PG&E comments on this chapter are focused on just a few items.

1. Table 8 on page 102 shows somewhat counterintuitive results for the electricity demand forecast. For the mid case, energy consumption grows faster than peak for the period 2010-2015 (1.42% versus 1.19%). However, for the period 2010-2020, peak growth exceeds energy growth, 1.68% versus 1.32%, respectively. The implication, therefore, is that in the period 2015-2020, peak growth would have to necessarily exceed 2.00% annual growth. Furthermore, for the entire period 2010-2022, peak growth is projected at 1.45% -- a considerably lower rate when compared to the 1.68% over the 2010-2020 period. Again, the implied growth rate for the 2020-2022 period would have to be extremely low.

In its September 15 comments, PG&E noted this puzzling result which CEC staff has since explained is due to energy efficiency programs (especially Big Bold Energy Efficiency Solutions or BBEES) that targeted peak reductions in usage. Yet, for at least part of the forecast period, peak growth is once again exceeding energy growth. Further exploration of this issue may be warranted.

Finally, peak growth for the 2010-2020 period (as well as for the 2010-2022 period) exceeds growth for the entire 20-year period prior to 2010. Given the enormous investment in energy efficiency, distributed generation, and demand side management programs, it is unusual that peak growth rates would accelerate and not decline. Whether this is due to new load sources (e.g., electric vehicles), a strong economic rebound, or higher rates of population growth is not discussed. Additional language should be added to the text to explain this phenomenon.

2. Figure 10 on page 108, shows the peak impacts of self-generation. While numerous incentives have been offered and may continue to be offered to incent distributed generation, PG&E is puzzled by the acceleration of self-generation impacts beginning in about 2018. The report does note that a mild flattening of self-generation in 2016 is due to the expiration of the CSI program. The sharp upturn in 2018, however, is not addressed. Additional language should be added to the text to explain this phenomenon.

3. At page 110, reference is made to CEC staff efforts to leverage the CPUC's measurement of utility program savings. PG&E suggests adding language to this paragraph from an earlier section of the draft IEPR, at page 52 to bolster the discussion of the challenges we face in the measurement of energy efficiency savings. The language should read: "However, the CPUC's 2006-2008 (plus 2009) EM&V results, which show a significant difference between reported and evaluated savings for this period, have proven to be controversial and remain in dispute."

IX. KEY ELECTRIC INFRASTRUCTURE ISSUES REMAIN UNRESOLVED

Chapter 8 highlights many of the challenges facing California electricity planners. The draft IEPR highlights this, indicating "[A] fundamental issue that must be faced is the potential conflict between state policy goals and electric system reliability." PG&E agrees with this assessment.

Careful coordination is needed among state agencies as the ARB completes its AB 1318 report, as the draft IEPR notes "tighter coordination will be needed to surmount the challenges of [Once Through Cooling] OTC mitigation while satisfying ambient air quality standards." For example, it is not clear how the CEC and the CPUC will incorporate the results of the AB 1318 report in long-term procurement planning decisions. The new proposed interagency mechanism may help advance these discussions and lead to a clearer roadmap for parties.

Lastly, at page 130, it would be helpful to clarify the first bullet point beginning "That load growth net of…" The last portion of this bullet could benefit from clarification as to how the figures were derived. It may be helpful to indicate that the CAISO has identified a need for 4,600 MW of new generation and that it anticipates about 2,000 MW of that amount will be needed for local capacity reliability in Southern California because of OTC retirements, leaving a need for 2,600 MW of new gas-fired generation.

X. TRANSPORTATION ENERGY DEMAND AND POLICY IMPACTS ARE APPROPRIATELY CHARACTERIZED

PG&E has reviewed Chapters 9 and 10 of the draft IEPR and has no comments to provide on these chapters.

XI. CALIFORNIA'S RESEARCH AND DEVELOPMENT EFFORTS WILL CONTINUE UNDER THE ELECTRIC PROGRAM INVESTMENT CHARGE

Chapter 11 highlights the many achievements of the Public Interest Energy Research ("PIER") Program. PG&E suggests that the text relating to the uncertainties of the future of PIER be updated to reflect the CPUC's December 15, 2011 decision approving an Electric Program Investment Charge ("EPIC"). The EPIC, which will be the successor to the Public Goods Charge ("PGC")" will be used to fund renewables, research, development, and demonstration programs on an interim basis, subject to refund, until policy, programmatic, governance and allocation issues are decided in Phase 2 of the CPUC's Rulemaking. However, PG&E questions whether new incentives are needed for any renewable technology, given the plethora of incentive mechanisms available. The SGIP, New Solar Homes Partnership, California Solar Initiative, Net Energy Metering, and various renewable procurement mechanisms provide numerous ways for renewable generators to participate in the marketplace, reducing the need to create more hidden subsidies for renewables, regardless of technology.

XII. ALL BIOENERGY IS NOT CREATED EQUALLY

Biofuels/Biogas: PG&E supports many of the key findings and recommendations of Chapter 12. Biofuels can play an important role in California's energy future, as noted in the draft IEPR. The draft IEPR findings and recommendations, however, could be improved by indicating which particular types of biofuels are encountering interconnection challenges and more information on the cost of biofuels, vis-à-vis other alternatives, would be helpful in identifying the lowest cost resources to meet customers' needs. PG&E supports the recommendation that the CPUC review the interconnection requirements for DG and biomethane projects and biogas standards. However, as PG&E noted in previous comments, not all biogas is created equally – biogas from organic material (i.e., dairy cow manure) is more easily tested than biogas from inorganic material (i.e., landfills) for constituents that could be harmful to the public and to gas pipelines. PG&E suggests that a review of these technical issues be completed before assumptions are made about revising regulations to increase access to natural gas pipelines for bioenergy projects. Accordingly, PG&E recommends the bullet recommending a CPUC review of these requirements delete the suggestion to "identify and implement necessary revisions…"

Biomass: More public discussion is needed on whether additional incentives are needed to promote biomass development. Biomass has been an important part of PG&E's renewables portfolio but PG&E and others in the industry question whether additional incentives are needed to support this industry or whether there are alternate ways to reduce the costs of feedstock. For example, if the cost of wood disposal was increased, this feedstock may be more readily available to biomass developers. Additionally, numerous procurement mechanisms are now available for biomass generators (e.g., Renewable Auction Mechanism, AB 1613 feed-in tariff, SB 32 feed-in tariff, etc.). Furthermore, technology-specific feed-in tariffs only serve to increase customer costs and PG&E would oppose a technology-specific feed-in tariff for biomass. This is an area where new biomass policy development would benefit from a frank discussion, from a utility customer perspective, of the costs and benefits of biomass, as well as any real or perceived barriers to development, before establishing new policies.

XIII. NUCLEAR ENERGY ISSUES

Chapter 13 provides a review and assessment of and recommendations on a number of nuclear power-related issues. As a threshold matter, PG&E questions the expanded scope of nuclear issues that are raised in the 2011 IEPR. While it is certainly appropriate in the 2011 IEPR to provide an update on the AB 1632 Report recommendations as this topic was directed by the legislature, PG&E is concerned that a number of the recommendations in the current draft go well beyond the scope of AB 1632 and address nuclear power plant safety and operational issues that are subject to direct oversight by the Nuclear Regulatory Commission (NRC). While PG&E is fully supportive of sharing information submitted to the NRC and facilitating the State's participation in these federal proceedings, we do not believe it is legally appropriate for the CEC to undertake its own independent review of safety and operating issues which are subject to the exclusive legal jurisdiction of the NRC.

There are numerous recommendations for future activities pertaining to the AB 1632 Report which PG&E supports. For example, provision of technical details and updates on seismic hazard study plans to the CEC, CPUC, and the Independent Peer Review Panel (IPRP) is something that PG&E has, and will continue, to provide. Furthermore, PG&E has no objection to the continued review of progress on AB 1632 seismic studies and other issues in the 2012 IEPR. Additionally, the draft IEPR contains many recommendations for the CPUC, the CAISO, or other state agencies to evaluate nuclear power-related issues that directly pertain to electric system resource planning issues. PG&E has no objection to these recommendations, although we question whether nuclear power should be singled out as part of these reviews. For example, the recommendation regarding an evaluation of the electric reliability impacts and need for replacement power resulting from seismic and tsunami events should be expanded to all susceptible generating sources. Whether Price-Anderson Act liability insurance provides sufficient coverage for a nuclear event is an economic issue unrelated to the CEC's core resource planning function; this recommendation should be deleted from the report.

PG&E provides additional information on several recommendations as follows:

1. On provision of the IPRP finding and recommendations to the Atomic Safety and Licensing Board (ASLB) and Coordination of IPRPs: PG&E will provide the IRRP findings to the NRC as part of its submission of the seismic studies. However, the ASLB considers admitted contentions and the documents/information relevant to admitted contentions presented to the ASLB by the participating intervenors, NRC staff and PG&E. If the IPRP reports are relevant to an admitted contention in the license renewal proceeding, they may be submitted to the ASLB.

Coordination of the CPUC-established IPRPs for Diablo Canyon Power Plant ("DCPP") and San Onofre Nuclear Generating Station ("SONGS") additional seismic studies is unworkable and this recommendation should be deleted. PG&E's study plans are complete, necessary permit applications submitted, and for some of the studies, data collection is currently underway. The IPRP has issued 2 reports addressing PG&E's additional seismic studies. An IPRP has not even been officially adopted for SCE as the CPUC has not yet issued a final decision on its funding application. Therefore, PG&E recommends this recommendation be deleted.

2. On the recommendation to add safety-related instrumentation: This recommendation addresses safety and operational issues which are subject to exclusive NRC jurisdiction. The NRC staff issued SECY-11-0137 on October 3, 2011 regarding prioritization of recommended actions to be taken in response to Fukushima lessons learned. The NRC staff recommended to the NRC that existing spent fuel pool instrumentation be enhanced to reliably indicate spent fuel pool water levels in the event of a loss of forced cooling. PG&E anticipates that the NRC will order licensees to proceed with those enhancements in the near future. CEC staff may wish to update the draft IEPR to reflect the NRC's recommendations.

3. On reducing the volume of spent fuel in the storage pools: These recommendations address safety and operational issues which are subject to exclusive NRC jurisdiction. PG&E further notes that DCPP utilizes Pressurized Water Reactors (PWR), whereas the Fukushima Daiichi plant utilized Boiling Water Reactors (BWR). Unlike fuel storage in pools at a BWR, used fuel is stored in a separate building at PWR. This allows access to ensure cooling is maintained to the used fuel in the event conditions prohibit access to the containment.

Storage of used fuel in pools and in dry storage have both been identified by the NRC as safe storage methods. PG&E evaluated whether the rate at which used fuel is moved from the spent fuel pools into dry cask storage should be modified. PG&E determined that moving fuel at a faster rate would accelerate ratepayer costs and employee exposure to radiation with no significant increase in safety. Therefore, PG&E will continue to transfer used fuel from the spent fuel pools to ISFSI dry cask storage as needed to maintain the full core offload capability. This schedule has been optimized to fill the present ISFSI space to the point where a planned expansion to full cask capacity can occur. After the upcoming loading campaign in the first quarter of 2012, a total of 736 used fuel assemblies will be in dry cask storage at DCPP. PG&E's used fuel management plan provides safe and secure storage of used fuel until the DOE meets its acknowledged obligations to remove the used fuel from the site. Accordingly, PG&E asks that this recommendation be deleted.

4. On evaluating the long-term impacts of spent fuel storage in pools versus dry cask storage: This recommendation addresses safety and operational issues which are subject to exclusive NRC jurisdiction. Accordingly, PG&E asks that this recommendation be deleted. PG&E further notes that the wording in the recommendation is confusing; the phrase "densely packed pools" mistakenly appears to apply to dry cask storage.

5. On the Station Blackout recommendations: These recommendations address safety and operational issues which are subject to exclusive NRC jurisdiction and are subject to a pending NRC proceeding. The recommendations should be modified to propose monitoring of NRC action on this topic.

6. On the emergency response and planning recommendation: PG&E does not believe it is legally appropriate for the CPUC to provide funding for the Cal EMA for emergency response planning. Funding for that agency should be addressed in the State budget process.

7. On relicensing recommendations: PG&E will provide the results and findings from the additional seismic studies to the NRC, CEC, CPUC and CCC. PG&E expects the NRC will review these results and findings consistent with its regulations and processes. PG&E will also provide cost estimates to the CPUC for complying with NRC requirements responsive to the accident at the Fukushima Daiichi nuclear power plant in Japan. However, because the costs to implement the requirements will be incurred regardless of whether the plant operates an additional 20 years, such costs are not relevant to the cost-benefit analysis for license renewal. Accordingly, PG&E recommends the sentence beginning "The CPUC should consider these additional costs…" be deleted from the relicensing recommendation on providing these estimates to the CPUC.

8. On the plant safety culture recommendation: This recommendation addresses safety and operational issues which are subject to exclusive NRC jurisdiction and is subject to continuing NRC review. The recommendation should be eliminated or modified to propose monitoring of NRC action on this subject.

XIV. CONCLUSION

This wide-ranging report offers a robust assessment of California's numerous clean energy initiatives. PG&E looks forward to continuing discussion of many of these issues in the 2012 IEPR.

Sincerely,

Valerie J. Winn

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