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VIA E-MAIL DOCKET@ENERGY.CA.GOV

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 13-IEP-1A
1516 Ninth Street
Sacramento, CA 95814-5512

Re: 2013 Integrated Energy Policy Report: Comments of Pacific Gas and Electric Company on the Final Lead Commissioner's 2013 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 or Commission) Final Lead Commissioner's 2013 Integrated Energy Policy Report (Final 2013 IEPR),[1] which will be considered at the CEC Business Meeting scheduled for January 15, 2014. The Final 2013 IEPR makes considerable updates to the Draft Lead Commissioner 2013 IEPR (Draft 2013 IEPR) and PG&E appreciates the Commission's responsiveness to its and other stakeholder concerns.

To avoid repetition, PG&E incorporates its comments on the Draft 2013 IEPR by reference[2] and focuses these comments on remaining areas of concern, as described in Sections II through VI.

II. ENERGY EFFICIENCY

In its comments on the Draft 2013 IEPR, PG&E identified the need to make two significant adjustments to the "Zero-Net-Energy (ZNE) Buildings" section of Chapter 1, in light of the uncertainties underlying the distributed generation (DG) component of ZNE implementation. More specifically, the suggested modifications were to: (1) add flexibility to

[1] California Energy Commission. (2013). Final 2013 Integrated Energy Policy Report (No. CEC-100-2013-001-LCF). Sacramento, CA. Retrieved from http://www.energy.ca.gov/2013publications/CEC-100-2013-001/CEC-100-2013-001-LCF.pdf

[2] Plummer, M. (2013). 2013 Integrated Energy Policy Report: Comments of Pacific Gas and Electric Company on Draft 2013 Integrated Energy Policy Report. Pacific Gas and Electric Company. Pp. 5. Retrieved from http://www.energy.ca.gov/2013_energypolicy/documents/2013-10-

the ZNE definition to allow for both on-site and off-site renewables dedicated to the building, until further research can illuminate the impacts and merits of each; and (2) to clarify that Time Dependent Valuation (TDV) requires enhancements to appropriately value DG system production.[3] PG&E applauds the significant improvements to the Final 2013 IEPR's text on these two issues, particularly on TDV; however, PG&E remains concerned about the ZNE definition's limited flexibility.

As the Final 2013 IEPR now notes, TDV examines values specific to the intent of the metric,[4] and a ZNE Code Building will not have zero utility costs.[5] Furthermore, the Final 2013 IEPR appropriately calls for further discussion on critical ZNE issues including "the availability and refinement of electricity and natural gas system information and costs used to update TDV" and "effect of ZNE Code Buildings on the operation of the electric grid."[6] PG&E looks forward to participating in these discussions and recognizes that due to the broad implications of the ZNE goals, which could represent over 300 megawatt (MW) of new DG annually by 2020 and over 1 gigawatt (GW) of new DG annually by 2030,[7] participation from stakeholders working on key planning efforts, such as the California Independent System Operator (CAISO), will be critical to include in these discussions. These discussions will likely inform the CAISO's Transmission Planning Process as well as the California Public Utility Commission's (CPUC) Long Term Procurement Plan, and various components of the CEC's 2015 IEPR. Therefore, PG&E recommends that the CEC reference these discussions and the CAISO's vital role in them in the "Recommendations" section for "Zero-Net-Energy Buildings" at the end of Chapter 1.[8]

Though the Final 2013 Report reflects many important improvements over the Draft 2013 Report, due to the aforementioned uncertainties about DG, PG&E remains concerned that the ZNE definition lacks sufficient flexibility to allow market actors to pursue least-cost DG strategies beyond the confines of a development entitlement. As stated in the Joint Investor Owned Utility (IOU) comments on the 2013 IEPR ZNE Workshop,[9] PG&E's comments on the Draft Report, and the Final Report,[10] certain energy intensive building types[11] face significant challenges to accommodate sufficient renewable energy generation systems to offset on-site energy consumption. For example, as presented by PG&E at the October 22, 2013 ZNE Residential Stakeholder Group Workshop, new multi-family high-rise buildings confront

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[3] Ibid., pp. 5-9
[4] Op. Cit., 2013 Final IEPR, pp. 26
[5] Ibid, pp. 23.
[6] Ibid, pp. 25.
[7] "Technical Feasibility of ZNE Buildings in California (ZNE Technical Feasibility)", Arup, December 2012, Table 17, pp. 43.
[8] Op. Cit., 2013 Final IEPR, pp. 34.
[9] Winn, V. J. et al. (2013). Joint Utility Comments to the CEC on Workshop on Definition of Zero Net Energy Building. Pacific Gas and Electric Company, Southern California Gas Company, San Diego Gas & Electric Company, and Southern California Edison. Pp 3. Retrieved from http://www.energy.ca.gov/2013_energypolicy/documents/2013-07-18_workshop/comments/PGandE-SCE-SCGC_and_SDGandE%20Joint_Comments_08-01-13_TN-71784.pdf.
[10] Op. Cit., 2013 Final IEPR, pp. 25.
[11] Op. Cit., Technical Feasibility of ZNE, Figure 11, pp. 42.

significant energy intensity[12] and DG[13] challenges to achieving ZNE due to their dense occupancy levels, limited passive cooling opportunities, and reliance on mechanical systems.[14] For this reason, PG&E supports the CEC's preclusion of this building type from the 2020 goal in the Final 2013 Report[15] but recognizes that challenges remain for these and other large, energy intensive buildings to eventually meet the ZNE goals for new and existing buildings.[16] Without clear policy guidance today on alternative ZNE compliance options for these builders, the State could face the prospect of annually exempting up to 24%[17] of new floor space and nearly half of new energy use[18] from code compliance after 2030. Therefore, in the spirit of continuing to seek "meaningful flexibility"[19] for buildings that will struggle to achieve ZNE, but provide meaningful opportunities for energy efficiency, PG&E strongly urges the CEC to continue to improve the flexibility of the ZNE definition and ZNE goals in future proceedings to ensure that these policy tools do not miss energy savings opportunities or generate undesirable consequences for market stakeholders and utility customers.

Related to the section on Comprehensive Energy Efficiency Program for Existing Buildings, PG&E agrees with the CEC's inclusion on page 19 of language highlighting the barrier to full investment in energy efficiency upgrades created by providing incentives only for energy savings achieved by exceeding building code. As noted by the CEC, this leads to decisions by customers and building owners to postpone energy efficiency investments, thereby leaving significant energy savings, that could be achieved by improving buildings up to current code levels, unrealized, and prolonging an inefficient building stock in California.

III. NUCLEAR POWER PLANTS

In its comments on the Draft 2013 IEPR, PG&E provided extensive comments on Chapter 6, "Nuclear Power Plants." Chapter 6 discusses progress toward implementing recommendations made in the Assembly Bill 1632 Report and the 2011 IEPR, and by the Nuclear Regulatory Commission (NRC) Near-Term Task Force. PG&E thanks the CEC for its extensive revisions to Chapter 6. These changes greatly improve the Final 2013 IEPR as an analytic foundation for regulatory and policy decision-making. PG&E provides the following additional comments for consideration on the recommendations for the Final 2013 IEPR.

Recommendation 7, "Evaluate long-term impacts and costs of spent fuel storage options,"[20] should be updated to reflect the following. PG&E's decommissioning plan currently

[12] Ibid, Table 17, pp. 86.
[13] Ibid, Table 2, pp. 6.
[14] Ibid, pp. 86.
[15] Op. Cit., 2013 Final IEPR, pp. 23.
[16] California Public Utilities Commission. (2011). California Long Term Energy Efficiency Strategic Plan. pp. 29. Retrieved from http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf.
[17] Op. Cit., Technical Feasibility of ZNE, Figure 11, pp. 42 and Table 12, pp. 37.
[18] Ibid, Figure 10, pp. 41
[19] Op. Cit., 2013 Final IEPR, pp. 25.
[20] Ibid., Pg. 170.

assumes that spent fuel remains in the spent fuel storage pools for 12 years post shut down. PG&E testified in hearings before the CPUC that this timing is governed by the Diablo Canyon Power Plant (DCPP) operating license requirements. The CPUC will address the appropriateness of PG&E's decommissioning plan, including the timing assumed for spent fuel movement, in its decision in the pending 2012 Nuclear Decommissioning Cost Triennial Proceeding. As revised, Recommendation 7 imposes a conditional relationship between decommissioning funding and license renewal funding. This is inappropriate and, in fact, makes no sense. These funding processes are wholly unrelated.

Likewise, Recommendation 8, "Evaluate the structural integrity of spent fuel pools," links spent fuel pool integrity with license renewal by recommending that PG&E provide the CEC and CPUC with an analysis of the structural integrity of the concrete and reinforcing steel in the spent fuel pools, including any increased vulnerability to damage resulting from a seismic event, prior to reactivating the license renewal application at the NRC. The analysis requested is irrelevant to the NRC license renewal process and requirements, which already address the spent fuel pools to the extent relevant to license renewal.

Additionally, PG&E reiterates its comments on the Recommendations 9 and 10, which pertain to the transfer of spent fuel from wet to dry storage. These Recommendations would have PG&E perform an evaluation of the annual capability to determine the maximum number of bundles that can be transferred per year and transfer spent fuel from wet to dry storage as expeditiously as possible. As stated in PG&E's comments on the Draft 2013 IEPR, these recommendations are related to safety and operational issues that are subject to direct and exclusive NRC jurisdiction. The NRC staff concluded that the expedited transfer of spent fuel to dry cask storage would neither provide a substantial increase in the overall protection of public health and safety nor sufficient safety benefit to warrant the expected implementation costs.

The NRC requested and received comments on the staff conclusion and held multiple public meetings across the United States to solicit additional comments on this important issue. Next, the Commissioners will vote on staff conclusions and then issue a Staff Requirements Memorandum (SRM) to the NRC staff. That SRM could include a range of directions, from a simple approval of the staff's recommendation to take no further action, to an instruction that the staff conduct additional analyses and return to the Commission with further information. As indicated, the NRC is actively engaged and taking action on the issue of the timing of spent fuel transfer. Additional action outside of the NRC process is not only inappropriate, it is unnecessary.

IV. BIOENERGY STATUS AND ISSUES

PG&E appreciates the CEC's effort to incorporate stakeholder comments through modifications made to the Final 2013 IEPR. Of particular note, PG&E appreciates the Final 2013 IEPR's recognition that IOU ratepayers cannot be the sole funders of activities that benefit society as a whole, and that alternative approaches are needed. That being said, there remain a few outstanding issues in Chapter 3 that PG&E would like to provide additional comments upon.

In its discussion of the status of biomass facilities in California, the Final 2013 IEPR attributes the idling and retirement of a number of solid-fuel biomass facilities since 2009 to unfavorable economic conditions and unsuccessful attempts to amend power purchase agreements. This assertion fails to fully capture all of the drivers behind the idling of facilities, including factors such as environmental compliance, operational and project development challenges. As such, PG&E recommends that these additional drivers be noted in the Final 2013 IEPR.

In addition, and as stated in prior comments, PG&E noted that two of the projects counted towards the 139 megawatt (MW) of idled capacity were not in fact idled (Wheelabrator Hudson Energy was restarted as a new contract under the name Shasta Renewable Resources and Eel River is currently operating). It remains unclear whether this information is reflected in the table on page 60 of the Final 2013 IEPR.

The Final 2013 IEPR also notes that "the lack of bioenergy projects participating in the RAM [Renewable Auction Mechanism] represents the difficulty of competing against other renewable energy technologies that have lower cost and/or higher subsidies." PG&E does not claim to have access to sensitive financial information or decision-making processes of project developers, but is concerned that this explanation may not fully capture the complex drivers that have prevented bioenergy projects from participating in the RAM program. Further investigation may raise additional drivers including, for example, the fact that many of the existing Qualifying Facilities are larger than 20 MW and that new projects under development are small-scale and not far along enough in development to participate in solicitations, or are waiting for the implementation of the Senate Bill (SB) 1122 Feed-in Tariff program.

The Final 2013 IEPR indicates that very few biopower projects in the current interconnection queue would pass the requirement that feed-in tariff (FIT) projects be "strategically located." However, the Final 2013 IEPR bases this assessment on a draft report by Black & Veatch commissioned by the CPUC using the "strategically located" definition in the Renewable Market Adjusting Tariff (ReMAT) program. In the ReMAT program, the definition of "strategically located" applies only to network upgrades on the transmission system. It should be noted that the draft Black & Veatch report includes both interconnection *and* network upgrade costs in its cost estimates for the determination of a project being "strategically located".

Additionally, PG&E strongly supports the Final 2013 IEPR recommendation for equitably sharing the costs of bioenergy with all who benefit from this industry through a holistic policy approach. PG&E applauds the Commission for recognizing that electric utility customers alone cannot carry the burden of supporting the bioenergy industry. To this end, PG&E believes the Final 2013 IEPR's recommendation to modify CPUC procurement practices should be broadened to ensure that the responsibility of supporting the industry across the state is spread across all Californians, including non-CPUC jurisdictional entities and for the Commission to provide equal emphasis to non-electric solutions to promoting bioenergy.

Finally, in its comments on the Draft 2013 IEPR, PG&E requested a few clarifying changes. Though most were made, consolidated or both, the comments noted below were not

addressed. PG&E believes these comments should be addressed in order to give an accurate and complete view of the current Biomethane environment. Note additions in bold and deletions in strikethrough.

> On page 69: "For example, while there is little debate that AB 1900 will benefit development of biomethane in California, some have raised concerns regarding the **new** ~~**increased**~~ costs to meet new biomethane pipeline quality standards."
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> On page 70: "Pipeline safety is another issue for biomethane. Utilities have said that it is imperative to monitor and test biomethane going into their pipelines. While **some** utilities have **limited** experience injecting biomethane into their pipelines, they still lack data, especially for interconnections into low—demand pipelines."

V. NATURAL GAS SAFETY

In the "Natural Gas Pipeline Safety" Section of Chapter 6, the CEC discusses pipeline safety developments following the 2010 explosion of PG&E pipeline in San Bruno. While, overall, the section includes accurate information, key portions of this section contain inaccurate or misleading information. Therefore PG&E recommends additional changes, with additions shown in bold and deletions in strikethrough.

Firstly, the Section confuses the role of "traceable, verifiable and complete" (TVC) records in ensuring a safe and reliable natural gas delivery system in general, and in the reduction in operating pressure on Line 147 in particular. PG&E has never claimed to have TVC records for every inch of pipeline, nor was the 2011 pressure restoration application based on that premise. On the contrary, the industry's recognition of imperfect records for older pipelines was one of the reasons the CPUC ordered all California gas operators to pressure test or replace pipelines that do not have a TVC record of a prior strength test. While TVC records are important to maintain a safe and reliable system, hydrostatic testing is far more reliable in establishing a pipeline's fitness for service. Accordingly, PG&E recommends the following changes:

> On page 186: "However, PG&E informed **SED's staff in March 2013, and then filed an** ~~the CPUC~~ **errata** in July 2013, ~~however,~~ **explaining** that its 2011 application ~~presenting "traceable, verifiable and complete" records and therefore~~ requesting approval to increase the operating pressure on Line 147 in San Carlos to 365 pounds per square inch gauge (psig) had in fact been based on inaccurate information about the pipeline. PG&E reduced the pressure on Line 147 to 300 psig, and the CPUC asked in a Show Cause Order why it should not rescind all of the orders it had approved to restore operating pressures. At the Show Cause Order hearing, PG&E indicated that **the pipelines were safe as they all underwent pressure tests and explained** the impact of reducing operating pressures on all of the lines whose pressures had since been restored would be to curtail natural gas service to power plants, noncore customers on the San Francisco Peninsula, and core customers in San Francisco's Financial District this winter

should we experience cold temperatures that are expected to occur once in every ten years.

PG&E's errata explained that the information it filed in October 2011 in support of its request to lift operating pressure restrictions on ~~**these pipelines**~~ **Lines 101 and 147** was erroneous **in part**. **With respect to Line 147, information** ~~**Information**~~ contained **in** PG&E records—developed as part of the pipeline records validation process ordered by the CPUC after the San Bruno explosions—showed that t~~**hese pipelines**~~ **certain segments of the pipeline** contained double submerged arc welds or were seamless and had joint efficiency factors of 1.0. PG&E argued that this justified an MAOP of 365 psig. **With respect to Line 101, the error did not involve pipe specifications, but rather the ability of a segment to operate "one class out" per 49 CFR Section 192.611(a) following a class change and valid pressure test.** Based on ~~**this**~~ the October 2011 representation by PG&E, the CPUC granted permission to raise the MAOPs of the lines to no more than 365 psig in December 2011.

The "Natural Gas Pipeline Safety" Section also gives the incorrect impression that Line 147 was unsafe to operate. While this was the position of certain interveners, the language in the CPUC's own Order to Show Cause (OSC) document itself stated: "Prior to issuing this ruling, we immediately conferred with the Commission's Safety and Enforcement Division to confirm the representations by PG&E that the lines have been pressure tested and are being operated at reduced MAOP. The Safety and Enforcement Division has confirmed PG&E's representations and agrees that so long as properly conducted pressure tests were performed as represented, Lines 147 and 101 can be operated consistent with General Order 112-E at the reduced pressures. **The Safety and Enforcement Division emphasized the importance of pressure testing to guard against any record-keeping shortcomings, and agreed that all public safety issues have been addressed by PG&E's operational actions**"[21] (Emphasis added). The Final 2013 IEPR should be updated to reflect this conclusion.

Finally, the "Natural Gas Pipeline Safety" Section incorrectly references the duration between the discovery of a leak on Line 147, in late October 2012, and filing an errata with the CPUC on July 3, 2013. The text reads 18 months, when it should be less than 9 months. Accordingly, PG&E recommends the following changes:

On page 186: "The errata revealed that PG&E had learned upon **completing a** repair resulting from a routine leak inspection **and from subsequent investigations** that as many as six segments of Line 147 actually **are early vintage A.O. Smith pipe or** have single submerged arc welds, implying a joint efficiency factor of 0.8, which effectively

[21] Florio, M. P., & Bushey, M. (2013). *Ruling of Assigned commissioner and Assigned Administrative Law Judge Directing Pacific Gas and Electric Company to Appear and Show Cause Why All Commission Decisions Authorizing Increased Operating Pressure Should Not be Stayed Pending Demonstration that Records Are Reliable* (R.11-02-019). California Public Utilities Commission. Retrieved from http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M075/K768/75768199.PDF

reduces the pipeline's MAOP~~s~~ to 330 psig from the approved 365 psig. ~~**The implications from a pipeline safety perspective are clear.**~~ Due to PG&E's admitted error, ~~**the pipelines**~~ **Line 147** received approval to operate at pressures that are higher than the recommended MAOP. PG&E noted in the errata that it has reduced the operating pressures to safe levels, but both the length of time it took PG&E to file the errata—~~**18**~~ **9** months—and the fact that the information contained in the errata was substantive, led the CPUC to order PG&E to appear at a hearing and show cause why it shouldn't be sanctioned for violating Rule 1.1 of the Commission's Rules of Practice and Procedure. Rule 1.1 states that any person who transacts business with the CPUC agrees to "never mislead the Commission or its staff by an artifice or false statement of law or fact."393 The Show Cause Order also asks PG&E to show why all of the CPUC orders approving PG&E requests to restore operating pressures arising out of the post-San Bruno effort to verify pipeline features and maximum allowable operating pressures should not be rescinded until "competent demonstration that PG&E's natural gas system records are reliable." **On December 19, 2013, the CPUC unanimously adopted a decision that the pressure on Line 147 "can safely be restored" to 330 psig, and under a separate decision fined PG&E $14.35M for violations of Rule 1.1.**

VI. ELECTRICITY, TRANSMISSION, AND CLIMATE CHANGE

In Chapters 4, 5, and 9, the CEC considers topics related to the state's electricity system, discusses transmission challenges and opportunities, and climate change, among other topics. PG&E appreciates the Commission's efforts to address climate change and the reliability of the state's electric systems. PG&E provides the following additional comments for consideration on the recommendations for the Final 2013 IEPR.

In Chapter 4, the CEC discusses the updated estimates of new generation costs.[22] PG&E cautions against comparing apples to oranges when looking at trends in the levelized cost of generation across different resources types. Given the increasing penetration of renewable energy, PG&E expects that the fossil fleet will run at much lower capacity factors than it has historically. Because costs of conventional generation will be levelized over a smaller number of megawatt-hours (MWhs), we would expect the levelized cost of energy (LCOE) to increase for the fossil fleet even if there is no change to the fundamental cost structure of building these resources.

Therefore, the charts on page 112 may overstate the relative cost trends and give the misimpression that the fundamental cost of fossil generation is increasing more than is the case. Rather, the crucial takeaway is that the costs of fossil generation are levelized over a smaller number of MWhs. Additionally, the following statement similarly overstates the trend in relative costs of renewable and fossil technologies on a levelized basis: "One of the most significant cost

[22] Op. cit., Final 2013 IEPR, pp. 110-112.

trends is the steady movement of renewable technologies toward being cost-competitive with traditional fossil resources on a cost-per-unit energy basis."[23]

In Chapter 9, the CEC discusses the impacts of climate change on energy supply, including a Lawrence Berkeley National Lab (LBNL) study estimating the impacts of warming temperatures on California's electricity system.[24] From this, the CEC concludes that "by the end of the century, energy supplies would need to increase by nearly 40 percent to meet increased demand from climate change and offset lower capacity of thermal generating plants and substations, assuming no technology advancements or population changes."[25] This statement should be qualified to reflect that a large part of this "40 percent increase" is due to load growth, resource retirements, and other factors. The Final 2013 IEPR gives the reader the impression that the 40 percent increase is due exclusively to the lower peak capacity of thermal generation on increasingly hot days.

VII. CONCLUSION

PG&E is happy to meet with CEC staff to discuss these important topics.

Sincerely,

/s/

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cc: Heather Raitt (Heather.Raitt@energy.ca.gov)
Lynette Green (Lynette.Green@energy.ca.gov)

[23] Ibid., pp. 112.
[24] J.A. Sathaye, et al., "Estimating impacts of warming temperatures on California's electricity system," *Global Enviromental Change*, 2013, http://dx.doi.org/10.1016/j.gloenvcha.2012.12.005.
[25] Op. cit., Final 2013 IEPR, pp. 238