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Pacific Gas and Electric Comments on 2030 Greenhouse Gas Emission Reduction Targets for Integrated Resource Planning

Additional submitted attachment is included below.

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California Energy Commission
Dockets Office, MS-4
Docket No. 17-IEPR-07
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Docket 17-IEPR-07: Pacific Gas and Electric Company Comments on the February 23, 2017 Integrated Energy Policy Report Joint-Agency Workshop on 2030 Greenhouse Gas Emission Reduction Targets for Integrated Resource Planning

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the February 23, 2017 Integrated Energy Policy Report (IEPR) Joint-Agency Workshop on 2030 Greenhouse Gas Emission Reduction Targets for Integrated Resource Planning hosted by the California Energy Commission (CEC) and California Public Utilities Commission (CPUC). Given PG&E's ongoing engagement with the CPUC on this matter in Rulemaking 16-02-007, Informal Comments were provided to CPUC staff in writing on February 21, in advance of the Joint-Agency Workshop and Informal Reply Comments were provided on March 9.

Recognizing the significance of the 2017 IEPR and appreciating that greenhouse gas target setting is a crucial issue with broad implications spanning the CEC, CPUC, and the California Air Resources Board (CARB); PG&E is providing the CEC the same comments submitted to the CPUC on this topic. Key points in response to the *Options for Setting GHG Planning Targets for Integrated Resource Planning and Apportioning Targets among Publicly Owned Utilities and Load Serving Entities* (Discussion Paper), as well as to questions posed by CEC Chairman Weisenmiller, CPUC President Picker, and CPUC Commissioner Randolph at the Joint-Agency Workshop include:

- The electric sector's emissions should be below 62 MMTCO2e by 2030 for planning purposes. This is a soft target to be used for planning purposes, not for compliance; and
- A "bottom-up approach" should be used to divide the electric sector's target between CPUC and CEC jurisdictions.

PG&E looks forward to continuing to work with the CEC and its sister agencies on this important effort throughout the 2017 IEPR process.

Sincerely,

/s/

Wm. Spencer Olinek

Attachments

Pacific Gas and Electric Company®

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February 21, 2017

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Supervisor, Energy Division
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Re: Informal Comments on the CPUC-CEC Staff Discussion Paper About GHG Planning Targets (Rulemaking 16-02-007)

Dear Mr. Douglas:

Pacific Gas and Electric Company ("PG&E") submits these informal comments in accordance with the direction provided by Energy Division staff of the California Public Utilities Commission ("Commission" or "CPUC") on February 10, 2017, requesting party feedback on a CPUC and California Energy Commission ("CEC") Staff discussion paper entitled "Options for Setting GHG Planning Targets for Integrated Resource Planning and Apportioning Targets among Publicly Owned Utilities and Load Serving Entities" ("Discussion Paper").

The following summarizes PG&E's comments:

1. PG&E recommends increased coordination among the state agencies to more fully integrate their respective planning processes and to help identify measures or alternatives that are best or least-cost in different sectors of the economy to achieve the desired 40 percent reduction of greenhouse gas ("GHG") emissions by 2030;

2. PG&E recommends the full range of Option A for the electric sector's GHG planning target rather than a single point target to allow the multi-sector market to find the least cost approach to achieve the desired GHG emission reduction consistent with the cap and trade program;

3. PG&E recommends Option C to divide the electric sector emissions target range between the CPUC and the CEC jurisdictions; and,

4. All load serving entities ("LSEs"), including Public Owned Utilities ("POUs") and their customers, regardless of size, should contribute to reducing GHG emissions.

A. Response to Part 1 Questions

1. Under Part 1, which of the options do you recommend, and why? What issues should be considered when implementing that option, and how should those issues be addressed?

   <u>Response</u>: PG&E recommends Option A pending review of the recent California Air Resource Board ("ARB") 2030 Scoping Plan Proposal analysis. We recommend

Option A because: (1) it provides a GHG planning target range, rather than a single GHG target for the electric sector, which supports the state's efforts to achieve the statewide GHG target cost-effectively, and (2) it is based on a statewide, multi-sector analysis, which evaluates GHG reduction opportunities and costs across all sectors.

Even though ARB's analysis is not an optimization, the estimates are based on current forecasts of the economy and of the known alternatives available to reduce emissions, which is a stronger analytical basis for a target than Option B. ARB's analysis also incorporates uncertainty – a significant issue in planning to 2030 – through the use of ranges.

PG&E recommends increased coordination among the state agencies in the future to more fully integrate their respective planning processes and to help identify the measures that in different sectors of the economy are best or least-cost to achieve the desired 40 percent reduction of GHG emissions by 2030. In the meantime, Option A provides (at least in concept) some indication of the cost of achieving this goal considering the interactions of different measures across the state's economy.

Finally, we recommend the CPUC and CEC keep in mind as they implement this option that the electric sector measures operate underneath the cap-and-trade program that is designed to achieve the statewide goal cost-effectively. ARB illustrates this feature clearly in Figure II-2 of the 2030 Scoping Plan Proposal, where the quantity of reductions achieved by the cap-and-trade program depends on the underlying emissions trends and the performance of the other measures. Specifically, the abatement achieved through complementary measures displaces abatement from the cap-and-trade program. As a result, cost-effectiveness should be the primary evaluation metric for judging the reasonableness of the electric sector planning target compared to the cap-and-trade backstop.

2. If recommending Part 1 Option A, should the IRP process use an emission reduction target equal to the lower end of this range (42 $MMTCO_2e$), the higher end of this range (62 $MMTCO_2e$), or a target somewhere within this range?

   Response: PG&E recommends using the full range from Option A for the electric sector GHG planning target, rather than a single GHG target. This will allow the cap-and-trade market to find the least- cost approach to achieve the desired GHG emission reduction.

   If the state agencies intend to narrow the target range to a single point target to be accomplished by complementary measures, we encourage them to compare the costs of achieving these reductions through complementary measures versus the cap-and-trade cost of achieving those reductions, as estimated by ARB. For example, the Scoping Plan analysis in Table III-3 provides indications of the relative cost-effectiveness of alternatives for further reduction emissions in the electric sector. In particular, the ARB analysis highlights the potential high cost of electrical sector measures that are incremental to the Scoping Plan Proposal (e.g., 60 percent Renewable Portfolio Standard ("RPS") and additional PV at $300-450/metric ton, 2.5x AAEE at $100-200/metric ton) relative to achieving GHG reductions through the cap-and-trade program ($25-85/metric ton).

To provide feedback to ARB regarding the cost-effectiveness of the electric sector target, the CPUC could run multiple optimizations at points in the proposed range of electric sector emissions. The marginal abatement cost from each of these model runs could then be compared to the estimated cap-and-trade program reduction cost referenced above, which will indicate to the CPUC, CEC, and CARB whether it is more cost-effective to utilize the IRP process to obtain additional reductions (by using the low end of the range) versus relying more heavily on the multi-sector cap-and-trade program (by using the high end of the range).

3. Are there any other methods that should be considered for assigning an overall electricity sector target in 2030 for IRP purposes? If so, please describe the method in as much detail as possible and explain why it is preferable to the options listed above.

   Response: Ideally, the state agencies should have a fully integrated planning process that informs the planning process in different sectors of the economy to achieve least cost solutions to the state's GHG emission reduction goals. For example, by integrating their planning process, the state agencies could develop a methodology to estimate marginal GHG abatement costs for different measures and economy sectors that more efficiently define planning targets for different sectors of the economy.

4. Do the proposed methods adequately account for interactive effects between the electric and other economic sectors, in particular with the transportation sector? If not, please explain how those interactive effects should be accounted for in the IRP process.

   Response: Yes, Option A appears to be the best alternative available to capture the interactive nature of different measures in the electric and other economic sectors. ARB's 2030 Scoping Plan Proposal analysis incorporates the interactive effect with the transportation sector by including the electric sector emissions associated with the electrifications levels assumed in ARB's proposal. Obviously, increases in electrification of transportation beyond those levels will increase the electric sector's emissions and the IRP should create a mechanism (e.g., adjusting the planning targets or another crediting mechanism) to address this.

B. Response to Part 2 Questions

5. Under Part 2, which of the options do you recommend, and why? What issues should be considered when implementing that option, and how should those issues be addressed?

   Response: PG&E prefers Option C because it is the only option of those presented in the Discussion Paper that incorporates updated load and resources assumptions in each jurisdiction, including the Senate Bill ("SB") 350 50 percent RPS requirement.

   Issues that should be considered to improve this option are:

   a) In addition to a 50 percent RPS, the resource additions in each jurisdiction should also include a consistent level of incremental energy efficiency which is assumed to be cost-effective and feasible for all LSEs for purposes of developing a planning target range.

b) The effectiveness of incremental carbon free resource additions in reducing GHG emissions.
c) Care should be given to ensuring that LSEs that are subject to the jurisdiction of one agency (*e.g.*, the CPUC) not be responsible for the higher emissions of LSEs that are subject to another agencies jurisdiction (*e.g.*, the CEC).

6. Are there any other methods that should be considered for dividing the GHG emissions reduction target between the CPUC's and Energy Commission's respective IRP processes? If so, please describe the method in as much detail as possible and explain why it is preferable to the options listed.

   <u>Response:</u> Yes, ideally, the state agencies can work together in future IRP cycles to determine marginal GHG abatement prices that can facilitate the planning across economic sectors and LSE jurisdictions within the electric sector.

7. What are the data requirements associated with the methodology you recommend? If these data entail forecasting or simulation, please describe the input data needed and potential sources of this data.

   <u>Response:</u> Option C requires estimates of the hourly profiles of load and renewable resources, and other inputs typically required for production simulations to estimate the emissions associated with generation and power purchases/sales associated with in each LSE's portfolio, and the reduction in emissions with new zero-carbon additions.

8. How do we account for hydro variability, and what are the target GHG reductions during average hydro years? How do we incorporate uncertainty?

   <u>Response:</u> PG&E recommends using average hydro conditions, instead of modeling different hydro conditions, recognizing that over the long-run hydro generation will approximate its average output.

9. What are reasonable expectations to allocate GHG targets for the other POUs (not just the 16 largest that are required to do IRPs)?

   <u>Response:</u> PG&E does not see a good reason why smaller POUs and their respective customers should not contribute to reducing the state's GHG emission, particularly if methodology and metrics used to allocate responsibility to reduce emissions can be simplified to enable their own procurement of zero and lower-carbon energy.

10. What are stakeholder thoughts on the evolution of filing requirements between compliance periods, particularly between the first and second compliance filings?

    <u>Response:</u> PG&E expects that CPUC, CEC, LSEs, and interested stakeholders will continue to work to improve methodologies, tools and processes in between IRP filing dates. Standardization of the filing requirements for all LSEs will facilitate aggregation to ensure that state-level goals are met by the sum of individual LSE IRPs.

11. Should utilities consider the GHG emissions for their own facilities and their vehicle fleets?

    Response: No. PG&E believes that incentives already exist for LSEs to reduce GHG emissions of own facilities and vehicles. For example, PG&E's fleet of more than 14,000 vehicles is one of the cleanest in the industry. PG&E also has executed a multifaceted strategy to invest in key facility improvements, engage employees and incorporate sustainability principles and continuous improvement into all aspects of our real estate management.[1]

12. How should the Energy Commission and CPUC address publicly-owned utilities becoming community choice aggregators, and whose jurisdiction does that fall under for IRPs?

    Response: This question highlights the importance of the CPUC and the CEC having common requirements for review and certification of POU and CCA IRPs. POUs and CCAs have the same responsibility to contribute to the state's reduction of GHG emissions regardless of whether their IRPs are subject to review and certification by the CPUC or the CEC.

13. Should utilities consider short-lived climate pollutants in their IRPs?

    Response: Short-lived climate pollutants ("SLCP") include black carbon, fluorinated gases (F-gases) and methane. These pollutants are already being addressed by the ARB's SLCP Strategy. SB 605 (Lara, Chapter 523, Statutes of 2014) directed ARB to develop a comprehensive SLCP Strategy, in coordination with other state agencies and local air quality management and air pollution control districts. SB 1383 (Lara, Chapter 395, Statutes of 2016) requires the ARB to approve and begin implementing the plan by January 1, 2018. ARB staff released a proposed SLCP Strategy in April 2016 and a revision to the SLCP Strategy in November 2016. ARB staff will present the final Proposed SLCP Strategy to the Board for approval in early 2017.

    The revised proposed SLCP Strategy includes targets for SLCPs as a whole and for each of the three main SLCPs. It also includes targets for specific sectors. For example, there is a specific methane reduction target for the oil and natural gas sector.

    PG&E believes that the best path to achieving the state's long-range environmental goals—including SLCP-focused reductions—is through an integrated and flexible policy framework that optimizes sustainable and cost-effective GHG reductions across all programs and sectors.

cc: Official Service List R.16-02-007

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[1] Specific examples of PG&E's strategy can be found in our 2016 Corporate Responsibility Report: for Buildings and Facilities throughout PG&E's service territory, see hyperlink http://www.pgecorp.com/corp_responsibility/reports/2016/en06_buildings.jsp; for PG&E's strategy for Greening Our Fleet, see hyperlink http://www.pgecorp.com/corp_responsibility/reports/2016/en05_fleet.jsp.

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March 9, 2017

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Re: Informal Reply Comments on the CPUC-CEC Staff Discussion Paper on GHG Planning Targets (Rulemaking 16-02-007)

Dear Mr. Douglas:

Pacific Gas and Electric Company ("PG&E") submits these informal reply comments in accordance with the direction provided by Energy Division staff of the California Public Utilities Commission ("Commission" or "CPUC") on February 10, 2017 requesting party feedback on a CPUC and California Energy Commission ("CEC") Staff discussion paper entitled "Options for Setting GHG Planning Targets for Integrated Resource Planning and Apportioning Targets among Publicly Owned Utilities and Load Serving Entities" ("Discussion Paper"). In these comments, PG&E also addresses some of the topics raised by Chair Weisenmiller, CPUC President Picker, and Assigned Commissioner Randolph at the joint CEC-CPUC workshop on February 24, 2017.

PG&E's reply comments consist of the following recommendations.

1. Recommendation for greenhouse gas ("GHG") targets for the CPUC and CEC integrated resource planning ("IRP") processes:

   a. Electric sector's GHG planning target: PG&E recommends using the Option A range; that is, the electric sector's emissions should be below 62 $MMTCO_2e$ by 2030 for planning purposes. This is a soft target to be used for planning purposes, not for compliance.

      Reason: The range rather than a single point target allows all sectors of the California economy to participate in the Cap-and-Trade program and achieve the desired GHG emission reduction at least cost. The range also reflects the uncertainty associated with the performance of the measures assumed in the California Air Resource Board ("ARB") 2030 Scoping Plan Proposal analysis that produced this range. Soft GHG targets used for planning should allow the market to make use of least-cost alternatives to reduce emission, and should not create duplicative compliance requirements to ARB's compliance requirements under Cap-and-Trade.

b. Approach to divide the electric sector's target between CPUC and CEC jurisdictions: PG&E recommends Option C, a bottom-up approach.

   Reason: Option C is the only option of those presented in the Discussion Paper that incorporates updated load and resources assumptions in each jurisdiction, including the Senate Bill ("SB") 350 50 percent RPS requirement. PG&E notes that several of the sources of variation in LSE emission rates (e.g., coal imports, in-state nuclear generation) are not expected to be relevant by 2030. This should make Option C for 2030 less complicated than it would be for earlier years. In particular, we suggest that agencies develop estimates of "adjusted" LSE loads in 2030 that are composed of LSE loads minus assumed generation from non-emitting, non-RPS generation (e.g., large hydro). The adjusted loads would be used to divide the electric sector range between CPUC and CEC jurisdictions (e.g., if CPUC-jurisdictional LSEs have 75 percent of the adjusted load, their range would be 75 percent of the sectoral target range).

   For similar reasons, we oppose the use of Option A. It is based on resource assumptions that are inconsistent with expected 2030 resources. In particular, there are significant differences between coal and nuclear generation embedded in Option A and what is expected in 2030. This makes Option A a poor basis for sharing out the sector target in 2030.

2. Regarding GHG accounting protocols, PG&E recommends:

   a. Development of a consistent GHG accounting system for planning purposes that addresses issues such as unbundled RECs, "firmed and shaped" renewable energy imports, imports of hydro energy, treatment of exports resulting from excess RPS generation, purchases from and sales to the California Independent System Operator's ("CAISO") electricity markets, and transportation electrification. In general, we encourage the agencies to ensure that the load-based GHG accounting system is consistent with ARB's Cap-and-Trade regulation.

   b. State agencies work together to develop and use a consistent methodology to ensure a level playing field for all LSEs in their planning. Improvements in ex post counting of actual GHG emissions should be incorporated in on-going efforts by the CEC pursuant to Assembly Bill ("AB") 1110 and refinements to ARB's GHG compliance process, and should not create a duplicate GHG compliance process at the CPUC. ARB is responsible for GHG compliance through its Cap-and-Trade program and accounting for actual emissions; there is no need to add another layer of GHG compliance requirements as part of the IRP, which would be at best duplicative and at worst contradictory.

   c. State agencies work together to create a mechanism for correctly capturing the interactive effect of increased electricity demand in the electric sector emissions coming from the transportation sector associated with the increased vehicle electrification (e.g., adjusting the planning targets or another crediting mechanism).

3. Regarding Chair Weisenmiller's question about how does Cap-and-Trade influences LSE decision-making and how Cap-and-Trade (or a carbon tax) should be accounted for in the IRP process, PG&E responds as follows:

    a. The Cap-and-Trade influences LSE decision making in several ways. First, it internalizes a cost for emitting GHGs and thereby raises the variable costs of operating fossil-fired power plants. Further, when natural gas plants are the marginal resource in CAISO electricity markets, Cap-and-Trade raises wholesale electricity prices. These effects improve the relative cost-effectiveness of non-emitting generation. In addition, an assumed trajectory of Cap-and-Trade allowance prices is reflected in the CPUC's avoided cost calculators for demand side resources, helping improve the cost-effectiveness of energy efficiency and other non-emitting demand side resources.

    b. Admittedly, GHG market prices are relatively low today; but with SB 32 targeted GHG reductions for 2030 and if legal uncertainty regarding the allowance auctions and the post-2020 program is resolved, allowance prices should rise over time, making additional GHG reduction measures or GHG free resources cost-effective.

    c. Cap-and-trade should be accounted for in the IRP process. In the near term, this can be done by including an assumed trajectory (or alternative trajectories, such as the auction reserve price and the allowance price containment reserve price) of Cap-and-Trade allowance prices in the energy agencies modeling. In the longer term, state agencies can develop economy-wide tools to model the Cap-and-Trade program endogenously.

4. Regarding LSEs responsibility to contribute to the state's GHG emission reduction goal, PG&E recommends:

    a. All LSEs, including small Public Owned Utilities ("POUs"), direct access ("DA") and customer choice aggregator ("CCA") LSEs should contribute to reducing GHG emissions regardless of size.

    b. In response to Chair Weisenmiller's question about how state agencies should account for the emission reduction of small LSEs who are not required to prepare IRPs, PG&E recommends that the CPUC and CEC should have a process to track plans and actions of small LSEs actions to reduce GHG emissions. Also, the CEC and CPUC should not impose obligations on larger LSEs to reduce emissions for small LSEs.

5. Regarding inter-agency coordination, PG&E recommends:

    a. The state agencies should more fully integrate their respective planning processes to help LSEs identify measures or alternatives that are best or least-cost in different sectors of the economy to achieve the desired 40 percent reduction of GHG emissions by 2030.

    b. Examples of alignment goals at the state agencies and the CAISO are:

        - The CPUC and CEC should combine efforts to produce a common integrated resource plan for the state's electric sector which can inform all LSEs in the state, not just CPUC or CEC jurisdictions.

- ARB should also participate and use information produced by the CPUC-CEC electric sector IRP to update future estimates of electric sector GHG emissions.

- Future CEC load forecasts should reflect the demand-side resources that are found to be least-cost best-fit in prior IRP processes.

- The CPUC and CEC should leverage and update if needed the form currently used in the Integrated Energy Policy Report ("IEPR") for LSEs to present their IRPs, and avoid unnecessary duplicative forms being created for the IRP process.

- The CAISO should review the reliability need (system, local, and operating flexibility) of the state agencies' integrated electric sector plan.

- LSEs preparing their IRPs should use information produced by the CPUC-CEC integrated system plan to prepare their respective IRPs. For example, the system plan could provide useful information as about the reliability contribution of incremental renewable additions, future electricity prices, GHG emission reduction contribution of incremental resource additions, and system's flexible capacity needs.

6. Regarding alignment within CPUC proceedings, PG&E recommends:

    - The system integrated plan should provide useful information about the cost-effectiveness of distributed energy resources, and their effectiveness to reduce GHG emissions, for use in the Commission's individual resource proceedings;

    - RPS planning can be integrated within the IRP Proceeding;

    - The IRP process should also inform the cost-effectiveness of Energy Storage;

    - The system integrated resource plan should also inform future modifications to demand-side programs and tariffs, such as future changes to energy efficiency program targets and the net-energy metering ("NEM") tariff, based on the cost-effectiveness of behind the meter resources, and their contribution to emission reductions.

7. In response to a question from Commissioner Randolph about how to show progress if we are not asking for interim goals, PG&E anticipates that the IRP process will evolve over time and allow initial soft targets to be adjusted over time as conditions change. As Ms. Sahota from ARB explained, the feasibility and cost-effectiveness of the measures included in the Scoping Plan Update proposed scenario are uncertain. Lessons learned in prior IRP cycles should be incorporated in subsequent IRP cycles. In the meantime, through existing compliance mechanisms and public reporting, the state agencies have the ability to track the electric sector's progress to meet their assigned target via:

    a. Existing Cap and Trade emissions reporting

    b. Existing RPS compliance reporting

    c. Utility's power content label, as modified by AB1110 implementation; and

d. LSE's IRP action plans to reduce emissions filed as part of the IRP.

8. In response to Chair Weisenmiller's request to address in comments how to incorporate environmental justice in the IRP process, PG&E recommends that the CPUC and CEC prioritize the system-based alignment of the planning function (as outlined above), and address the localized community based requirements of SB 350 in a qualitative fashion when implementing the LSE action plans in individual resource proceedings, rather than in the planning phase of this first IRP cycle.

cc: Official Service List R.16-02-007