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Re: Clean Power Plan and Linkage Discussion at December 14, 2015 Workshop

Pacific Gas and Electric Company (PG&E) thanks the Air Resources Board (ARB) staff for the opportunity to comment on the December 14, 2015 Electric Sector Workshop presentations on the Clean Power Plan (CPP) and regional linkage. As a result of California's progressive and forward-looking policies, the state is already on track to achieve the reductions prescribed by the U.S. Environmental Protection Agency (US EPA). PG&E will continue to work with California's other utilities, the ARB, and other state agencies on an implementation plan that builds off of existing initiatives, while providing the flexibility to meet the rule's emission reduction goals in the most affordable and sustainable manner. With this objective in mind, PG&E has developed the following comments in response to the CPP and linkage discussion from the recent workshop.

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I. Clean Power Plan Compliance Demonstration

PG&E appreciates ARB's initial modeling efforts to demonstrate that affected electric generating units (EGUs) in California will meet the interim and final CO_2 goals assigned to the state by the US EPA under the CPP. We understand the scope and purpose of this compliance demonstration exercise, and provide suggestions below on how it could be improved. In addition to this exercise, we recommend ARB perform modeling to inform upcoming state policy decisions.

Specifically, PG&E suggests that ARB use California's updated targets in assessing compliance, clarify various assumptions used in the compliance demonstration, and improve its modeling by including updated state policies, creating sensitivities to reflect policy uncertainties, and modeling regional dynamics. We also recommend that ARB conduct additional modeling to inform policy choices, including those regarding the treatment of electricity imports, linkage to other mass-based CPP programs, leakage demonstration, and the role of transportation sector policies on the state's emission reduction goals and Cap-and-Trade Program.

A. Scope of Compliance Demonstration

Below are PG&E's suggestions regarding the scope of California's State Plan compliance demonstration.

i. Applicable EGUs and State Targets

The CPP provides the ARB the flexibility to revise the state-level rate- or mass-based goal if variation in baseline data or inventory may impact such goals.1 Since ARB has identified approximately 22 additional covered EGUs that result in an increase to California's covered emissions of approximately 1.5 MMT CO2 in 2012, ARB should recalculate California's state rate- and mass-based targets accordingly, and model compliance against these updated targets.

ii. Modeling Assumptions

Regarding ARB's presentation on its initial compliance demonstration, PG&E requests that ARB clarify the following assumptions:

- Whether new sources are included in the model, and whether ARB's "new source complement" was added to the state's target when calculating California's compliance position;
- Whether the Diablo Canyon nuclear power plant is operating or not in the non-stress scenarios;
- What the levels of energy efficiency are in each case; and
- How imported electricity is treated in the model and in the different cases.

iii. Modeling Recommendations

PG&E recommends that ARB enhance its compliance demonstration by:

- Modeling the updated RPS provisions and an assumed extension of the Cap-and-Trade Program;
- Making assumptions about other states' CPP state plan approach and modeling the broader WECC market to better assess regional impacts;
- Modeling compliance when imported electricity is subject to the California carbon price (if not already done so), when imported electricity is subject to double regulation and when it is subject to regulation solely by the exporting state;
- Modeling biomass resources at different CO_2 emission levels; and
- Modeling economic retirement of EGUs in addition to the assumptions about planned retirements.

B. Modeling to Inform Policy Choices

In addition to the compliance demonstration, we recommend ARB perform modeling to inform policy choices, particularly regarding the treatment of electricity imports and allowance trading with mass-based CPP programs.

i. Emissions from Imported Electricity

As noted above and in more detail in Section II below, different assumptions about the regulation of CO_2 emissions from imported electricity upon CPP implementation may lead to different carbon prices across various states, which could result in less efficient units being dispatched because of a lower carbon price in a given state, and less natural gas generation in California. Additional modeling conducted independently, or as part of the state's compliance demonstration, should be conducted where imported electricity is 1) modeled as subject to the California carbon price, 2) subject to double regulation, and/or 3) as subject to regulation solely by the exporting state. This analysis would help assess the impact of the regulation of emissions from imported power on state and regional emissions and power markets.

ii. Linkage and Regional Considerations

California is in a unique position to potentially link its Cap-and-Trade Program with additional jurisdictions such as Ontario and Manitoba, as well as with states who choose mass-based, trade-ready approaches under the CPP. PG&E believes that broad allowance trading is the most promising approach to reducing emissions at low cost. PG&E's initial modeling analysis with ICF Consulting, using its Integrated Planning Model (IPM), has found that broadening the scope of allowance trading under the CPP significantly reduces compliance costs.[1] Such trading would also result in a uniform carbon price across participating states, which would promote efficient investment and dispatch in power markets. We also note that in linking its Cap-and-Trade Program (through a state measures approach), California's emission budgets are determined by California and not by the CPP. As a result, California would not expect to be in a natural long position like it would be under budgets based on the CPP.

We encourage ARB to conduct modeling that would explore the potential impacts of broader linkage so that California can better design and comply with all state and federal GHG-related regulations while maintaining the provision of safe, reliable, and affordable electricity to our state's residents. For this modeling, PG&E encourages ARB to explore the use of optimization models, which can show how the state can achieve its goals in the most cost-effective manner.

Import/Export Accounting Framework

The ARB notes that under the CPP's import/export accounting framework, which accounts for links between a broader market and a CPP EGU-only market (i.e., emission standard states), at the end of a CPP compliance period:

- Net allowance imports from EGUs in an EGU-only market are subtracted from reported CO_2 emissions in the importing state (the state with a broader market)
- Net allowance exports from EGUs in the broader market state are added to reported CO_2 emissions in the exporting state (the state with the broader market)

Regarding modeling this framework, PG&E does not expect the accounting framework itself to affect the California carbon market; rather, what impacts the market is the linkage to other jurisdictions where their allowances could be used towards compliance with Cap-and-Trade. While linkage between states employing a state measures approach does not appear to be possible, these states may still be effectively linked by both linking to the same (presumably larger) EGU-only market. Since PG&E expects the California program to be a net importer of allowances, broader linkage could help reduce compliance costs. Because of the import/export

accounting framework, California's net import of allowances would also make it less likely that the backstop would be triggered.

iii. Leakage

PG&E agrees with ARB that there would be no economic incentive for leakage to new sources under California's current Cap-and-Trade Program. California's Program appears sufficient to meet EPA leakage requirements. However, ARB could also choose to include the new source complement under a state measures approach. To inform this decision, we encourage ARB to compare the compliance cushion (the gap between expected covered emissions and the CPP target) with and without inclusion of new sources in its CPP compliance analysis. This will provide helpful information to ARB and stakeholders in evaluating whether or not to use EPA's new source complement as part of the leakage demonstration.

iv. Impact of Transportation-Related Policies

The status of transportation-related policies and programs to achieve the state's emission reduction goals will impact the Cap-and-Trade Program, especially as California's emission reduction goals become more stringent. Therefore, modeling to assess the impact of these and other complementary policies will be critical to understanding their role in cost-effective emission reduction. PG&E recommends that ARB further examine the role of policies related to fuels, vehicles, and Vehicle Miles Traveled (VMT) on the state's linked Cap-and-Trade Program to assess their impact on abatement quantities and costs.

II. Clean Power Plan and Cap-and-Trade

A. Emissions Reporting Deadlines and Compliance Periods

PG&E recommends that ARB leverage the preliminary electricity generation facilities reports filed annually on April 10, per the Mandatory Reporting Regulation (MRR), to meet the US EPA state emissions reporting deadline of July 1. Alternatively, ARB could instead use the Subpart D data reported annually on March 31 to US EPA as part of the federal Greenhouse Gas Reporting Program (GHGRP). Either of these options would preclude the need to make disruptive changes to existing reporting schedules and avoid introducing additional reporting requirements.

PG&E also recommends that ARB align its post-2020 compliance periods with US EPA's. The CPP notes that states can choose to set shorter compliance periods than the compliance periods set in the regulation, but cannot set longer periods.[2] Therefore, it would be in the state's best

[2] CPP, p. 64849

interest to align with the US EPA's 2-3 year compliance periods for greater compliance flexibility.

Regarding amendments to align California's Cap-and-Trade Program with CPP compliance periods and deadlines, we recommend that any changes to the deadline for submitting emissions reports that may be needed to satisfy CPP compliance should not be applied to all emissions reports filed pursuant to the MRR. PG&E, for example, currently submits 14 third-party-verified MRR reports on September 1. While submitting the non-verified electricity generation report early might not prove overly burdensome, it is infeasible to submit all 14 verified reports before July 1. Fortunately, PG&E's proposal above would prevent the need to modify any existing reporting deadlines. Modifying the MRR verification deadline for all reporting entities also does not appear necessary for market purposes.

B. Allowance Borrowing

PG&E believes that the types of "borrowing" currently permitted under the Cap-and-Trade Program are also permitted by the CPP under the state measures plan approach. These borrowing provisions are similar in nature and effect to other flexibility mechanisms that EPA identifies (e.g., allowance price containment reserves) as permissible under a state measures plan. As with other flexibility mechanisms, EPA created the backstop provisions to ensure achievement of its emission goals under a state measures plan.

We acknowledge that the current Federal Plan proposal prohibits borrowing altogether under its emissions standard approach. However, California is currently pursuing a separate state measures approach and should therefore not encounter any issues related to the borrowing prohibition contained in the Federal Plan proposal. Additionally, the Final Rule prohibits borrowing of emission rate credits under a rate-based emissions standard plan type, and once again, this does not apply to California.

C. Treatment of Imports

ARB should work with the California Independent System Operator (CAISO) to ensure the treatment of imports under the ARB's Cap-and-Trade Program promotes efficient dispatch in Western power markets once the Clean Power Plan is implemented. A pathway that results in different GHG prices across various states within CAISO's electricity market could lead to inefficient dispatch and result in less efficient, higher heat rate units being dispatched because of a lower GHG price in their state. This could risk the environmental and economic efficiency of CAISO's dispatch and result in increased GHG emissions across the CAISO footprint. This could also have a significant impact on the economic benefits to California associated with CAISO's regional expansion. For these reasons, it is important that ARB's approach to the

treatment of imports within the Cap-and-Trade Program considers consistency with an expanded regional CAISO electricity market and that ARB coordinates with CAISO and regional entities to achieve efficient dispatch.

Absent any changes in California's approach post-2020, power plants importing to California could pay twice for GHG costs beginning in 2020 – once according to the CPP for the state in which they are located and once to comply with California's Cap-and-Trade Program. This potential double regulation of imported power could distort siting incentives and least-cost dispatch in electric markets, and raise costs for California ratepayers. Moreover, such double regulation in and after 2020 could expose California's GHG regulations to legal challenges under the Commerce Clause as well as claims that California's program violates the Federal Clean Air Act by attempting to regulate the GHG emissions of sources in other states already subject to federal GHG controls.

Allowing broad allowance trading across the Western Electricity Coordinating Council (WECC) (i.e., through a "trading ready" approach) combined with removing imports from ARB's Cap-and-Trade Program once the CPP takes effect is the clear first-best solution. This holds particularly true as the CAISO market expands in the coming years. A broader electricity market across the West would help to take full advantage of the region's renewable resources by integrating clean, renewable energy on a coordinated western grid. As the electricity markets become increasingly integrated regionally, GHG markets should do no less.

D. Title V Permitting

ARB staff's presentation at the December 14, 2015 workshop included two slides on "Title V Permitting" (slides 14 and 15). These slides state, among other things, that "Power plant permits will need to include CPP conditions for any applicable emissions standards", and that ARB, CEC and CAPCOA are working together to "Develop model CPP conditions to ensure consistency." These statements are consistent with relevant portions of ARB's September 2015 "Clean Power Plan Compliance Discussion Paper" ("Discussion Paper"), where ARB asserts that if ARB adopts a "state measures plan" to comply with the CPP, requirements for EGUs to comply with the MRR and Cap-and-Trade regulations will be federally enforceable. Any federally enforceable elements of an approved CPP Plan that apply to EGUs would be Clean Air Act "applicable requirements" and would be required to be included in Title V permits for the affected facilities.

PG&E's understanding of the CPP requirements for a state measures plan is very different from the view expressed by ARB in the Discussion Paper and at the December 14 workshop. The preamble to the final CPP, and the rule text itself, make it clear that a state measures plan need not include *any* federally enforceable elements other than a federally enforceable backstop

measure to be implemented if the state's GHG emission reductions under the CPP plan fail to achieve the interim and final targets specified for California. In that case, nothing in the California CPP Plan would be federally enforceable against affected EGUs or become an applicable requirement, and the Title V permits for existing EGUs in California need not be modified to include CPP-related conditions.

As described in the CPP preamble, state plans may be either of two types: (1) all requirements for meeting EPA's emission guidelines are "in the form of federally enforceable emission standards" (an "emission standards" state plan); or (2) the state's mass CO2 emission goals may be achieved "in part, or entirely, through state measures" (a "state measures" plan).[3] A state measures plan provides states with the flexibility to accommodate existing programs "that result in avoided generation and CO_2 emission reductions at affected EGUs. This includes market-based emission budget trading programs that apply, in part, to affected EGUs, *such as the programs implemented by California* and RGGI participating states…" (emphasis added).[4] As defined in the CPP, state measures are "measures that are adopted, implemented, and enforced as a matter of State law. Such measures are enforceable only per State law, and are not included in and codified as part of the federally enforceable State plan."[5] If a state plan "relies upon State measures . . . *in lieu of the emission standards*," the state plan is required to include various specified elements, none of which are emission standards for affected EGUs (emphasis added).[6] Thus, while California *may* include federally enforceable requirements for EGUs in its CPP plan, there is no requirement that it do so (except for the required backstop measures).

Inclusion of backstop measures in the state CPP plan also does not require any immediate changes to EGU Title V permits. The federally enforceable backstop must include "emission standards for affected EGUs that will be put into place, if there is a triggering event listed in paragraph (a)(3)(i) of this section, within 18 months . . .."[7] While the backstop included in the state plan must be federally enforceable, federally enforceable emission standards for affected EGUs need not be in place until 18 months after the backstop is triggered. Thus, the state CPP plan need not include federally enforceable emission standards for EGUs that would require Title V permit modifications for affected EGUs, making it premature for ARB to be considering Title V templates or model conditions at this time.

If ARB decides to include federally enforceable emission standards for affected EGUs in its CPP compliance plan, and those standards are part of a "mass-based emission trading program," the

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[3] 80 Fed. Reg. 64832
[4] 80 Fed. Reg. 64835, 64836
[5] 40 C.F.R. § 60.5880
[6] 40 C.F.R. § 60.5745(a)(6)
[7] 40 C.F.R. § 60.5740(a)(3)

state plan will then be required to include the elements specified in section 60.5790(b) of the final CPP. These include federally enforceable requirements for CO_2 monitoring, reporting, and recordkeeping by affected EGUs, and requirements for state allowance allocation and tracking. PG&E is concerned that making any aspect of the MRR and the Cap-and-Trade program federally enforceable will make it difficult to make future needed changes to the program, and could result in situations where EPA or citizen suit enforcement actions interpret and apply the MRR or Cap-and-Trade rules differently from ARB. Thus, any such federally enforceable requirements should be as limited and simple as possible. A strong model is EPA's permit requirements for acid rain sources, particularly 40 C.F.R. § 72.40 regarding acid rain compliance plans. The key permit element is a compliance plan that includes a certification that the designated representative will hold allowances in at least the amount of the unit's actual annual emissions, and that the unit will meet any applicable NOx emissions limits. ARB should work to assure that any federally enforceable requirements it adopts for affected EGUs in the CPP plan are similar to EPA's minimal but effective requirements for acid rain sources.

E. Backstop Provision

In the event the backstop is triggered, ARB could modify its Cap-and-Trade Program by separating allowances into two categories: (1) allowances that may only be used by EGUs in California regulated under the CPP, and (2) allowances that may be used by covered entities not regulated under by the CPP. In the event of a federal backstop, category 1 allowances may not be used by CPP-affected EGUs for Cap-and-Trade compliance. Banked allowances from previous compliance periods and offsets would also not be available for use by an EGU during the period of a backstop.

In the compliance period in which the backstop measures apply, the number of EGU allowances in any compliance period would be capped at the level of emissions to be achieved under the CPP compliance period in which the trigger occurs, less allowances reflecting emissions reductions that the EGUs failed to achieve in the period that triggered the backstop. For example, if in 2022-2024, California EGUs' target equal 161 million metric tons (MMT) and California EGUs covered under the CPP emit 191 MMT, then the 30 MMT deficiency that caused the backstop to be triggered should be deducted from the quantity of category 1 allowances available to EGUs for Cap-and-Trade compliance. By limiting the allowances available to EGUs to the quantity of emissions required by the CPP, the Cap-and-Trade Program and infrastructure can be used to facilitate a federal backstop.

We also recommend that ARB explore alternative backstop flexibility features such as a "trade ready" approach that would allow EGUs in California to utilize allowances from other "trade ready" CPP programs if the backstop is triggered.

Sincerely,

/s/

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