Pacific Gas and Electric Company

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Mr. Richard Corey
Executive Officer
California Air Resources Board
1001 I Street
Sacramento, California 95812

Re: Pacific Gas and Electric Company's Comments on the Air Resources Board's Proposed Amendments to the Cap-and-Trade Regulation 15-Day Amendment Text

Dear Mr. Corey:

Pacific Gas and Electric Company (PG&E) appreciates this opportunity to comment on the Air Resources Board's (ARB's) 15-Day Amendment package for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms (Cap-and-Trade) Regulation.

PG&E supports ARB's continued efforts to develop and improve the Cap-and-Trade Regulation in pursuit of the Senate Bill 32 carbon reduction target of 40 percent below 1990 levels by 2030. By making prudent adjustments to Cap-and-Trade, ARB can help ensure that California meets its aggressive greenhouse gas (GHG) emissions reductions goals beyond 2020 while maintaining a vibrant economy.

As PG&E has commented previously, the Cap-and-Trade Program should be designed in a way that protects against unreasonable costs, recognizes the investments California utility customers are making in a low carbon energy system, encourages meaningful linkage with other jurisdictions to lower the overall cost of compliance, and provides regulatory certainty to guide investment.

There is much to celebrate about the Cap-and-Trade Program. ARB has documented that the total GHG emissions from covered sources for the Program's first two-year compliance period were significantly lower than the ARB-determined GHG emissions cap,[1] and California is on

[1] Total emissions for 2013-2014 were 291.2 Million Metric Tons (MMT) of carbon dioxide equivalent (CO2e). The Emissions limit for the same period was 322.5 MMT CO2e. See the full 2013-2014 compliance report at https://www.arb.ca.gov/cc/capandtrade/2013-2014compliancereport.xlsx

track to meet the 2020 target of reducing GHG emissions to 1990 levels.[2] Careful adjustments to the Program as California seeks more ambitious GHG reductions in 2030 and beyond will ensure that Cap-and-Trade continues to be an effective and flexible policy tool and an excellent example to other jurisdictions looking to tackle the issue of climate change.

PG&E previously commented extensively on the proposed amendments to the Cap-and-Trade Regulation, and incorporates those comments by reference.[3] [4] Many of our previous comments remain germane and should be addressed by ARB. The comments in sections I-IV below focus on some of the most critical issues and changes in the Cap-and-Trade Regulation amendments. These issues include:

- **Electric Allowance Allocation** – PG&E continues to support the principle of allocating allowances to electric distribution utilities (EDUs) on the basis of customer costs, and appreciates ARB's recognition of the proposed retirement of Diablo Canyon Power Plant (DCPP) and other technical improvements to the EDU allocation methodology.

  PG&E provides additional recommendations regarding the EDU allocation methodology in further pursuit of ensuring sustainable and equitable costs for California utility customers.

- **Gas Allowance Allocation** – PG&E supports continued allocation of allowances to natural gas suppliers with the current cap decline factor, and maintains that the consignment rate should not accelerate for a number of reasons elaborated in this section.

- **California Independent System Operator (CAISO) Energy Imbalance Market (EIM) Secondary Emissions Effect** – PG&E generally supports ARB's proposed interim approach to address secondary emissions from the EIM. However, the secondary emissions problem must be clearly defined, the GHG emissions costs and benefits of the proposed solution quantified, and the treatment of EIM emissions aligned with similar transactions for this solution to be implemented appropriately.

- **Market Design Considerations** – PG&E maintains that the Cap-and-Trade Program is a robust tool for achieving environmental goals while maintaining a vibrant economy. However, the design of the Program must be finely tuned to achieve this end, and PG&E reiterates a number of market design recommendations that should be considered to

[2] ARB's Scoping Plan homepage: https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm (See Section "What is the Status of AB 32 implementation")
[3] Pacific Gas and Electric Company. "Re: Pacific Gas and Electric Company's Comments on the Air Resources Board's Proposed Amendments to the Cap-and-Trade Regulation." Sept. 19, 2016. https://www.arb.ca.gov/lists/com-attach/51-capandtrade16-VSVQMVQKU2VVDFQ3.pdf
[4] Pacific Gas and Electric Company. "Re: Pacific Gas and Electric Company's Comments on the Air Resources Board's Proposed Modifications to the 2016 Cap-and-Trade Amendments." Nov. 4, 2016. https://www.arb.ca.gov/lists/com-attach/57-ct-amendments-ws-VyddPFMNUmRWDwRn.pdf

maintain a Program that is both an environmental and economic success. Adequate cost containment measures, including a price collar – consisting of a hard price cap and continuation of the price floor - are particularly important considering the significant uncertainty in modeling and achieving emissions reductions to 2030 and beyond.

I. ELECTRICAL ALLOWANCE ALLOCATION – RECOMMENDATIONS TO FURTHER REFINE AN IMPROVED METHODOLOGY

PG&E filed extensive comments on the EDU allocation topic on November 4, 2017, which are here incorporated by reference.[5] In particular, we reiterate that maintaining a reasonable allocation to EDUs is a critical component of a broader strategy to ensure equitable impacts for California households.

PG&E thanks ARB staff for incorporating several recommended changes in this 15-day package to better reflect EDU cost exposure and protect California households. Specifically, staff is to be lauded for recognizing PG&E's proposed retirement of Diablo Canyon Power Plant (DCPP) and for utilizing a consistent replacement assumption that maintains incentives for voluntary over-compliance with California's Renewables Portfolio Standard (RPS). While some technical suggestions for improvement to that provision are described later, ARB's proposed framework for addressing retirement of coal and nuclear plants is sound.

PG&E also supports several of the technical adjustments that are incorporated in this proposal. This includes calculating RPS energy based on retail sales (per statute) and not energy for load. It also includes utilizing the California Energy Commission (CEC) load forecast that does not include additional achievable energy efficiency (AAEE). These adjustments strengthen this proposal and should be maintained.

In addition to these improvements, PG&E suggests the following changes to the proposed EDU allocation methodology in further pursuit of ensuring sustainable costs for California utility customers.

A. ARB Should Solely Utilize the Cap Adjustment Factor to Avoid Double Counting GHG Emissions Reductions

First, ARB's proposal to adjust year-to-year EDU allocation for 2021-2030 by both the general cap adjustment factor (CAF) and the key electricity sector GHG reduction measure (obligation to achieve 50 percent RPS by 2030) results in an allocation decline that is too steep to adequately address EDU cost exposure and shield California households from higher annual electricity bills.

[5] *Ibid.* p 7-10.

ARB staff maintain that the CAF is included to "equitably spread the effects of the declining cap across entities, and to spread them across years to encourage continually decreasing emissions."[6] In addition, the 50 percent RPS is widely understood as a key measure to reduce electric sector GHG emissions to help achieve the statewide 2030 GHG target.[7] As staff recognize, this will clearly reduce the EDU cap-and-trade cost burden as defined by ARB. However, by including the general reduction (the CAF) in addition to the reductions from the ambitious electric sector reduction measure (50 percent RPS), ARB is effectively not acknowledging RPS compliance as a strategy for accommodating the CAF.

As a result, the proposed EDU allocation is below the expected EDU cost burden as calculated by ARB. The EDU sector is the only sector in which this double-reduction is incorporated into the proposed allocation provisions. This is inequitable, and is a major driver of the steep decline, approximately 50 percent from 2021 to 2030, in the EDU allocations.

To address this affordability and equity issue, PG&E encourages ARB to utilize only one source of decline in the allocation methodology –the general decline as reflected in the CAF, assuming a flat 33 percent RPS in the allocation spreadsheet. Finally, we note that incorporating this change to the allocation provisions will not undermine EDU incentives to continue to reduce GHG emissions.

B. The Rapid 2020-2021 Allocation Decline Will Impact California Utility Customers if Not Addressed

Second, the transition between the 2020 allocation and ARB's proposed 2021 allocation is still too steep (approximately a 20 percent decline in one year for the overall EDU sector), despite some improvements due to the technical fixes already described. While ARB's Attachment C recognizes a major driver of the decline is a change in the load forecast, we note that EDU customer investments – in rooftop solar and energy efficiency – are key drivers of the downward shift in the load forecast. ARB is using a narrow definition of cost-exposure in describing potential over-allocation to EDU customers. We encourage ARB to consider the broader set of costs EDU customers are paying to help California achieve its GHG goals – including customer programs and the RPS program – in assessing fair allowance allocation levels.

In addition, the drop in allocation from 2020-21 will clearly reduce the size of California climate credits, and so increase the net annual electric bills of EDU customers. This effect, rather than the "rate shock" dismissed by ARB in Appendix C, is the one we seek to avoid in smoothing the transition from the 2020 to post-2020 allocation provisions. PG&E encourages ARB to include a transition mechanism that would increase the EDU allocations above the proposed levels. For

[6] Attachment C: https://www.arb.ca.gov/regact/2016/capandtrade16/attachc.pdf
[7] 2030 Target Scoping Plan Update Discussion Draft (p. 34): https://www.arb.ca.gov/cc/scopingplan/2030target_sp_dd120216.pdf

example, ARB could reduce the allocation decline included in this proposal in 2021 relative to the 2020 quantities by 50 percent for each EDU, and then implement the CAF calculation to extend the 2021 values through 2030 (while still including adjustments for major changes to resources such as coal and nuclear), or for at least the fourth compliance period.

C. Technical Adjustments to the Recognition of DCPP Retirement

Third, PG&E encourages ARB to incorporate the following technical adjustment to its implementation of DCPP retirement in the spreadsheet. We note that DCPP's current operating licenses expire on Nov. 2, 2024 (Unit 1) and on Aug. 26, 2025 (Unit 2).[8] We encourage ARB to prorate the assumed nuclear generation for PG&E in 2025 to reflect these license expiration dates. For example, a simple proration based on days of operation would result in assumed generation in 2025 of 33% (238/730) of normal generation, or approximately 6 TWh (i.e., Unit 1 not operating at all, and Unit 2 not operating for 127 days in 2025). This proration for 2025 is entirely consistent with ARB's overall methodology and we encourage ARB to include this adjustment in the next regulatory package.

Making the changes suggested in the sections above would yield an allocation to PG&E as represented in the table below.

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2021-2030
ARB Dec Draft	*22.6*	*15.6*	*14.4*	*13.6*	*12.9*	*11.5*	*16.4*	*15*	*13.7*	*12.5*	*11.3*	*137*
Add: Adjust annual decline		0.4	1	1.3	1.9	2.4	2.6	3	3.4	3.7	3.9	23.6
Add: Transition assistance		2.9	2.6	2.3	2.1	2	1.9	1.8	1.7	1.5	1.3	20.3
Add: DCPP adjustment		-	-	-	0.1	4	-	-	-	-	-	4.1
PG&E Total		**18.8**	**18**	**17.3**	**17**	**19.9**	**21**	**19.9**	**18.8**	**17.7**	**16.6**	**185**

[8]Pacific Gas and Electric Company. "In step with California's evolving energy policy, PG&E, labor, and environmental groups announce proposal to increase efficiency and renewables ,and storage while phasing out nuclear power over the next decade. " Press Release. June, 2016. https://www.pge.com/en/about/newsroom/newsdetails/index.page?title=20160621_in_step_with_californias_evolving_energy_policy_pge_labor_and_environmental_groups_announce_proposal_to_increase_energy_efficiency_renewables_and_storage_while_phasing_out_nuclear_power_over_the_next_decade

D. Appropriate Recognition of Transportation Electrification Remains Critical to Achieving the 2030 Target

The electric sector has a key role to play in helping achieve GHG emission reductions by electrifying the transportation sector. This will result in electric sector load growth between seven thousand to twenty thousand megawatts by 2030 according to E3, and an associated increase in Cap-and-Trade compliance costs. [9] PG&E appreciates that ARB staff remains committed to assessing the potential for adjusting allocation to reflect GHG emissions that result from transportation electrification, as this will help ensure that regulatory incentives are aligned with California's desired environmental outcomes. We note that in addition to being accurate and verifiable, the methodology for determining GHG emissions from increased electrification must not be overly burdensome, or create regulatory obstacles that could slow the transition to electric vehicles.

II. GAS ALLOWANCE ALLOCATION – CONTINUING ALLOCATION AND MAINTAINING PLANNED CONSIGNMENT

PG&E remains concerned with the sharp increase in cost impacts to customers (including low-income customers) from ARB staff's proposals for an accelerated CAF and accelerated consignment.[10] In addition, staff's stated goal to create equity between EDUs and natural gas suppliers is premature given the few options for alternatives to natural gas, or technologies to reduce its use compared to those available in the electricity sector. PG&E recommends maintaining the existing annual decline of the cap adjustment factor (~2%), maintaining the existing annual consignment increase (5%), and increasing the ability to use offset credits for natural gas supplier compliance. These recommendations have been explained thoroughly in PG&E's previous comments and are summarized below. [11]

A. Achieving the Right Balance of Carbon Costs Is Critical

The impact of the proposals to double the annual rate of decline for the CAF and sharply accelerate the consignment requirement will negatively impact customers. Staff estimates that full consignment of natural gas allowances in 2021 would result in a decrease of the average household's annual emissions by 40 to 50 kg CO2e. [12] This equates to approximately a 2% reduction in a household's emissions compared to a 54% increase in average annual residential

[9] Energy and Environmental Economics. "California PATHWAYS: GHG Scenario Results." April, 2015. p 69. https://ethree.com/documents/E3_PATHWAYS_GHG_Scenarios_Updated_April2015.pdf
[10] Attachment D: https://www.arb.ca.gov/regact/2016/capandtrade16/attachd.pdf
[11] Pacific Gas and Electric Company. "Re: Pacific Gas and Electric Company's Comments on the Air Resources Board's Proposed Modifications to the 2016 Cap-and-Trade Amendments." Nov. 4, 2016. https://www.arb.ca.gov/lists/com-attach/57-ct-amendments-ws-VyddPFMNUmRWDwRn.pdf
[12] Attachment D, p. 3: https://www.arb.ca.gov/regact/2016/capandtrade16/attachd.pdf

natural gas compliance costs in 2021 under staff's proposal. [13] This approach requires customers to pay a high price for minimal reductions. PG&E's recommendations for maintaining the current regulations are based on our support of carbon reduction approaches that customers will embrace, while maintaining affordable customer rates.

B. The Natural Gas Sector Is Fundamentally Different From the Electric Sector, and Therefore Should Be Treated Differently

Of particular concern in staff's proposal is the application of the steeper CAF for the natural gas sector. A well-designed CAF would allow the natural gas sector to reduce gas use commensurate to the CAF to maintain affordable rates for customers. However it will be very challenging to achieve the rate of reduction needed to match the steeper CAF because the natural gas sector is fundamentally different from the electric sector.

These differences include:

- Different elasticities of demand
    - Historically, natural gas demand from residential, small commercial and small industrial customers has not been highly responsive to retail price signals. For example, natural gas price elasticities in the near-term used by the California Energy Commission Demand Analysis Office are much lower.[14]
- Different opportunities for efficiencies
    - The natural gas system is already highly efficient.
    - Unlike the many end-uses for electricity, natural gas is primarily used for producing heat, for which there is a more limited range of potential efficiency gains (e.g. compared to electricity used to produce light).
- Different renewables markets
    - The renewable natural gas (RNG) market is still in the early stages of development and is not yet capable of providing affordable and reliable RNG at-scale.
    - Unlike solar and wind, RNG feedstock is a limited resource and is in competition with the electricity and transportation sector.
    - The higher price of RNG means introducing more costs to natural gas customers, who will also face rate pressure from other sources (including GHG costs).

[13] Pacific Gas and Electric Company. "Re: Pacific Gas and Electric Company's Comments on the Air Resources Board's Proposed Modifications to the 2016 Cap-and-Trade Amendments." Nov. 4, 2016. https://www.arb.ca.gov/lists/com-attach/57-ct-amendments-ws-VyddPFMNUmRWDwRn.pdf

[14] See page A-9 of California Energy Commission. *California Energy Demand 2014-2024 Final Forecast. Volume 1: Statewide Electricity Demand, End-User Natural Gas Demand, and Energy Efficiency.* (CEC-20002013-004-V1-CMG). 2014.

As PG&E has commented previously, the current differences between the natural gas and the electric sectors mean that a more gradual approach is warranted, and that other policy options to incent RNG development will be more effective to promote GHG reductions. The existing CAF, existing consignment rate and access to more offsets for natural gas would still introduce a growing price signal while allowing the natural gas sector to develop more options for alternatives and protect customers from unnecessary costs.

C. Natural Gas GHG Reduction Achievements Should be Reflected in Allocation

PG&E recommends ARB staff consider an additional allocation approach to reflect GHG reduction accomplishments in the natural gas sector. This additional allocation would account for the potential expansion of natural gas into new markets that lead to net reductions in GHG emissions, such as in the medium- and heavy-duty vehicle sectors and off-road transportation, as well as the decarbonization of the natural gas system through RNG, hydrogen, and other forms of lower carbon gas.

III. EIM GHG ACCOUNTING – TOWARD A REASONABLE AND IMPLEMENTABLE INTERIM APPROACH

PG&E generally supports ARB's proposed interim approach to address secondary emissions in the California Independent System Operator's (CAISO) Energy Imbalance Market (EIM). However, ARB and the CAISO must continue to coordinate closely to ensure that the secondary emissions issue is handled in a manner that does not create inappropriate barriers to participation in the EIM given the broader benefits EIM provides to renewable integration and lowering GHG emissions. Defining the problem, quantifying both the costs and benefits of the proposed solution from an emissions reduction perspective, and aligning the treatment of EIM emissions with other similar transactions are all critical to a reasonable and implementable approach to addressing this issue.

A. ARB Should Provide a Precise Definition of Emissions from Secondary Dispatch in Order to Ensure an Appropriate Solution

Developing an accurate approach to capturing secondary emissions requires a precise definition of what dispatch actions will be defined as secondary dispatch, and the circumstances under which emissions caused by secondary dispatch would require the surrender of ARB allowances. Criteria and considerations for designing and evaluating potential solutions will depend on the definitions adopted by ARB. In its most recent presentation to stakeholders, ARB stated that, "Secondary dispatch illustrates the potential backfill effect of higher emitting resources to serve EIM load when the optimization attributes lower emitting resources to serve California load." The ARB presentation further notes that secondary dispatch is neither defined in the EIM tariff nor observable by market participants. Further defining secondary dispatch and the

circumstances in which such emissions should be captured is an essential prerequisite to understanding the scope and magnitude of the issue, and implementing a reasonable remedy.

EIM currently assigns requirements for GHG allowances to resources deemed to provide imports into California to the cleaner resources scheduled in EIM. Under the proposed approach, ARB would retire additional GHG allowances using the unspecified emission rate for all imports scheduled into California by EIM. This does not directly calculate the emissions caused by the backfill effect and may overstate the emissions effect of EIM imports. While this would be an interim solution until CAISO can develop a more accurate method, it is still essential for ARB and CAISO to provide a clear definition of secondary dispatch and the circumstances in which such emissions should be captured.

B. The EIM Enables Significant GHG Reductions

PG&E interprets ARB's objective as quantifying and pricing any emissions associated with secondary dispatch. However, it's also important to keep in perspective that the EIM enables significant GHG reductions. For example, if it were not for the energy transfers facilitated by the EIM, some renewable generation in CAISO would have to be curtailed either through economic curtailment or exceptional dispatch. A recent CAISO report highlighted that for the first half of 2016, the EIM resulted in a reduction of 292,000 metric tons of GHG emissions. [15]

PG&E is also concerned with ARB staff conclusions that increased participation in the EIM leads to additional EIM leakage. On page 12 of Attachment F, ARB staff conclude that as a result of increased EIM participation and the deemed-delivered mechanism in the EIM algorithm that attributes delivery to the lowest emitting resources, there is a growing potential for emissions leakage as the EIM expands. PG&E believes further analysis is needed prior to reaching this conclusion. Additionally, as secondary dispatched resources can either be zero-emitting resource or fossil fuel-based resource (and could be correlated with the marginal units in the EIM Balancing Authority), further analyses is warranted as to which EIM entities are correlated to an increase in emissions leakage.

C. Creating Different Standards for the EIM and Specified Imports Could Weaken the EIM and Diminish its Benefits

PG&E shares the CAISO's Department of Market Monitoring's concern that the proposed solution for EIM holds the EIM to a higher GHG compliance standard than imports, and therefore will alter the incentives to participate in the EIM.[16] By allocating additional secondary

[15] http://www.caiso.com/Documents/EIMGreenhouseGasCounter-FactualComparison-PreliminaryResults_Jan-Jun_2016_.pdf
[16] https://www.caiso.com/Documents/DMMComments-RegionalIntegration-EIMGreenhouseGasCompliance-StrawProposal.pdf

GHG compliance obligations to EIM participating resources, the current solution assigns a greater GHG compliance obligation to energy imported through EIM than energy imported from specified resources on a short-term basis. This could discourage EIM participation, which is concerning given that the EIM has lowered emissions and enabled California to export excess renewable generation as described above, resulting in not only GHG reductions but also cost savings.

D. ARB Should Maintain the Resource Shuffling Safe Harbor for EIM Participants

The interim measure proposed in the ARB 15-day notice package and the permanent measures being discussed in the CAISO Regional GHG Initiative would address ARB concerns about assigning GHG obligations for "leakage" emissions. Therefore, removing the resource shuffling safe harbor provision is not necessary to achieve the objective of accounting for these emissions.

PG&E is concerned that removing this exemption could create regulatory confusion and discourage EIM participation. Specifically, resource shuffling prohibitions apply to the "First Deliverer of Electricity," which in this case would be the EIM Participating Resource Scheduling Coordinator, including resources that have not elected to export energy to California. However, the obligation for "leakage" emissions would be fulfilled through a process of CAISO reporting EIM transfers to ARB and ARB retiring allowances based on the information provided by CAISO. In this way, there is a mismatch between the entity whose actions could be deemed resource shuffling and the entity that would ensure that EIM Outstanding Emissions are accounted for. PG&E believes this creates unnecessary regulatory confusion, and recommends reinstating the resource shuffling safe harbor.

E. ARB Should Clarify Implementation Details Regarding Allowance Retirement and "Leakage" in Carbon-Regulating Jurisdictions

PG&E has questions and concerns regarding two aspects of implementation of the proposal. Firstly, the proposed regulations do not specify which, if any, allowances ARB would retire in the event that there are not sufficient unsold allowances in the Auction Holding Account for more than 24-months to cover the EIM Outstanding Emissions.

Secondly, as currently proposed, the calculation of EIM Outstanding Emissions is based on all EIM energy transfers into California and does not make any adjustments for emissions that are accounted for under another GHG emissions trading system (ETS). PG&E is concerned that this would be a disincentive to EIM participation for entities in regions that develop a GHG ETS, including GHG ETSs with linkages to ARB's Cap-and-Trade Program. As noted elsewhere in these comments, both the EIM and the ARB Cap-and-Trade linkages provide valuable avenues for emissions reduction. For this reason, PG&E recommends that ARB amend the proposed EIM

Outstanding Emissions calculation to exclude EIM energy transfers from regions with their own GHG ETS.

IV. RECOMMENDATIONS FOR A WELL-DESIGNED CAP-AND-TRADE PROGRAM

PG&E maintains that the Cap-and-Trade Program is a robust tool for achieving environmental goals while maintaining a vibrant economy. However, the design of the Program must be finely tuned to achieve this end, and PG&E reiterates a number of market design recommendations that should be considered to maintain a Program that is both an environmental and economic success.

Considerable uncertainty exists regarding the cost and feasibility of the 2030 GHG reduction targets, which warrants that robust cost containment measures be incorporated into the design of the Program to protect California utility customers. These design recommendations are detailed below:

A. ARB Should Ensure Post-2020 Prices Cannot Exceed Acceptable Levels

ARB should incorporate program design features before 2021 that ensure post-2020 allowance prices cannot exceed a maximum level deemed acceptable by ARB. This could be done by developing a mechanism to refill the Allowance Price Containment Reserve (APCR) if it is depleted. ARB has already proposed limited borrowing from future budgets through 2050 to refill the APCR as a buffer, but a firm price ceiling, as described in PG&E's previous comments, would improve the economic sustainability of the Program.[17] Taken together, this firm price ceiling and existing price floor would provide a price collar for the Program.

A firm price ceiling would enable ARB to provide the allowances needed – via allowance sales at the ceiling price – to defend its maximum allowance price level. We recommend prioritizing the use of revenue from additional allowance sales for the purchase and retirement of an equivalent or greater quantity of GHG instruments (i.e., offsets or allowances) from credible GHG programs in other jurisdictions in order to maintain global GHG integrity.

It is in the interest of all Californians to avoid the potential for skyrocketing, unsustainable program costs that would lead to high prices for customers and could lead to negative environmental outcomes if the Program were to be suspended.

B. Post-2020 Cap Setting and Allowances

In the near term, ARB should not reduce the annual GHG allowance budget from 2021-2030 by placing allowances in the APCR even if 2020 statewide emissions are expected to be lower than the 2020 target. PG&E does not view the success to date in reducing GHG emissions as an over-

[17] Pacific Gas and Electric Company. RE: April 5, 2016 Cost Containment Workshop. April 22, 2016. https://www.arb.ca.gov/lists/com-attach/6-sectorbased3-ws-BXVXNlYyVVlQNQVq.pdf

allocation issue that needs to be addressed. In addition, the continued litigation of the current program and the rigor of the 2030 reduction goal program suggest that the program could become much more constrained in post-2020 years. Meeting the greenhouse gas reduction goals in 2030 and potentially beyond will tighten the program in a way that has not yet occurred.

The role of the APCR is not to address "concerns related to over-allocation of allowance budgets".[18] Rather, the APCR exists as a cost-containment mechanism to provide certainty for market participants. As stated by ARB, "the amount of allowances placed into the APCR for each budget year is set at a level that aims to be large enough to provide effective cost-containment and small enough to avoid constraining the availability of allowances in the market." This proposal would have the opposite effect: reducing the annual GHG allowance budget by transferring a portion of the allowances to the APCR would constrain the allowance market and expose ratepayers to higher costs and price volatility. This is particularly concerning in light of the other proposed market tightening measures discussed in subsection C below and the high APCR price tier proposed by ARB and discussed in subsection D below.

As an alternative approach to perceived over-allocation issues, ARB should raise the holding limit for compliance entities to reflect a 2030 program end date. This will increase demand in the market while allowing compliance entities to plan for compliance in the future program, or hedge their commodity exposure.

C. Tightening Modifications to the Auction Price Containment Reserve Are Premature

PG&E does not support ARB's proposal to move allowances that remain unsold for 24 months from the auction account to the APCR. The APCR should provide assurances of cost containment and price stability, but this change would impede both of these goals, particularly given the high APCR price tier proposed by ARB.

There are numerous scenarios that could result in market tightening, including continued drought leading to unexpected increases in natural gas-fired generation, continued economic improvement, and future linkages to other carbon markets relying on California's program to defer investments in carbon reducing activities in the linked jurisdiction. If these scenarios occur individually or in combination, or if other regulatory or economic changes increase demand for allowances, utility customers would be exposed to higher costs and price volatility if allowances are not available in the market because they are removed to the APCR. Cost containment and price stability are important program goals because high costs and price volatility could trigger political backlash against the program, resulting in destabilizing intervention.

[18] Air Resources Board. Proposed Amendments to the California Cap on Greenhouse Gas emissions and Market-Based Compliance Mechanisms ISOR p. 12. August 2, 2016.

Additionally, PG&E does not view the soft market exhibited in the last two Cap-and-Trade Auctions to be primarily a result of low demand, but of continuing uncertainty about the future of the program due to legal challenges and the lack of legislation extending the program at the time of those auctions. Therefore, additional tightening measures such as those proposed might be warranted in the future under certain circumstances, but are currently premature.

D. APCR Reserve Tier Recommendations

As noted above, PG&E opposes transferring unsold allowances to the APCR. However, if ARB decides to change the design to transfer allowances unsold for 24 months to the APCR, the allowances should be transferred to the lowest price tier instead of the highest price tier. Transferring the allowances to the lowest price tier would provide a marginally better measure of cost containment and price stability than ARB's proposal. Cost containment and price stability are important program goals because high costs and price volatility could trigger political backlash against the program, threatening achievement of the State's goals.

Regarding the operation of Reserve tiers post-2020, PG&E supports collapsing the APCR account tiers into a single tier and establishing a fixed price difference between the auction price floor and the APCR account price floor. However, the fixed price difference of $60 proposed by the ARB is too high. In order to provide meaningful cost containment, the price should be set incremental to the lowest APCR price tier. Including significant cost containment measures in the Cap-and-Trade Program is fundamental to avoiding economic harm as well as long-term political risk as deeper reductions are sought and allowance prices rise. These circumstances are more likely to arise as emission cap levels drop in the later years of the program.

Another benefit of a smaller step between the auction floor price and the APCR price is that it reduces incentive to manipulate the market to raise prices. In this way, the floor and APCR prices function similarly to a price "collar" on allowances. Establishing a lower APCR price may also alleviate concerns about increasing holding limits, which we elaborate more on below.

E. Increasing the Holding Limit to Strengthen the Market

The current compliance entity holding limit is based on an assumed program end date of 2020 and should be updated to reflect program continuation through 2030. The existing limit prevents entities with compliance obligations from buying sufficient allowances to plan for post-2020 and engage in legitimate hedging activities. Hedging is an important means to control costs. For entities with large obligations, the holding limit, particularly in the outer years, is too small to adequately hedge. Increasing the holding limit would also help to address perceived over-allocation issues.

PG&E understands that an overly large increase to the holding limit raises concerns about market manipulation to increase prices. However, as explained in our comment on the APCR

price tier (Section § 95913), establishing a lower fixed difference between the auction price floor and the APCR price would reduce the incentive to manipulate the market to raise prices. In this way, increasing the holding limit in combination with reducing the step between the auction floor and APCR prices would address a softening allowance market while protecting against market manipulation.

F. Strong Linkage is Critical to the Future of Cap-and-Trade

Carbon market linkage is crucial to ensuring that California can meet its long-term climate goals while maintaining a healthy economy. As with the market, linkages must be well designed to maintain an affordable and stable market.

PG&E supports ARB's proposed linkage with Ontario, which will further expand the number of compliance entities that are able to trade allowances, reducing the overall cost of reducing emissions. California should aggressively pursue additional full linkage with other jurisdictions exploring mass-based carbon regulations. Doing so will further improve the efficiency of the allowance market, and ensure emissions reductions occur not only in California but also more broadly. Full linkage is a very practical way that California's climate leadership can lead to real and measurable benefits to the atmosphere.

While well-designed linkages are encouraged, ARB's proposal to create retirement-only agreements could lead to higher allowance prices due to increased external demand. ARB should not engage in retirement-only agreements without measures to protect against potential higher compliance costs for Californians. The process for approving retirement-only agreements should include an assessment that demonstrates no negative impact on California, and require the same level of scrutiny from the Governor's Office as full linkages.

G. Amendments Should Facilitate the Offset Market, a Crucial Cost Containment Mechanism

Offsets have an important cost containment function in Californian's Cap-and-Trade Program, and represent a real, quantifiable, enforceable, verifiable, additional, and permanent GHG reduction.

Offsets help keep GHG compliance costs affordable to customers as there may be compliance cost savings from purchasing offsets. This important cost-containment function will become even more important as the Cap-and-Trade Program becomes more stringent through 2030. Any consideration of reducing the offset limit must include a thorough analysis of the effects on the cap-and-trade market, compliance costs, and emissions. As part any such review, PG&E encourages ARB to present the results of scenarios with offset usage limits higher than eight percent as well as lower usage limits. A higher offset usage limit may be appropriate post-2020 as a cost-containment tool amidst an increasingly stringent program.

Additionally, changes to the regulations should facilitate the growth of an offset market rather than restricting the market. For example, there should be no geographic limit for offsets, and ARB should expand its protocols to allow it to issue out-of-country offsets, subject to proper oversight. Requiring that international offsets be authorized only through linkage is onerous and impedes the development of low cost, high impact offsets which would create large greenhouse gas reductions. As it stands, PG&E expects a shortfall in offset supply that would diminish the important cost containment function of the Regulation's offset provisions. Therefore, PG&E fully supports ARB's consideration of REDD+/sector-based offsets as an opportunity to address offset shortfall.

Additionally, there is an asymmetry between the start and end date of when a project would be considered out of compliance. Specifically, ARB proposes that this time would start when a project takes an action out of compliance but would end when the regulatory body deems it back in compliance. This asymmetry is problematic and may lead to disputes.

There should also be an opportunity to cure in the event of a gap in reporting after the Reporting Period commences to allow offset projects some flexibility as the market develops. PG&E suggests a cure period of one Reporting Period. This could be reassessed when the market is fully developed and as prices stabilize.

V. CONCLUSION

In conclusion, PG&E continues to support Cap-and-Trade as a program that will help the state meet its aggressive environmental goals while maintaining a healthy economy. PG&E hopes that the ARB will seriously consider the suggestions made herein, and looks forward to continuing to collaborate as Cap-and-Trade extends toward 2030.

Sincerely,

/s/

Nathan Bengtsson
Senior Representative
Pacific Gas and Electric Company