Comments of Pacific Gas and Electric Company
Commitment Cost Enhancements Phase 3 Draft Final Proposal

Submitted by	Company	Date Submitted
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Pacific Gas and Electric Company (PG&E) offers the following comments on the California Independent System Operator's (CAISO) Commitment Cost Enhancements (CCE) Phase 3 Feb. 17th Draft Final Proposal.

PG&E shares CAISO's ultimate goal in this initiative of efficient management and dispatch of resources in the CAISO market, particularly those with use limitations. PG&E also fully supports CAISO's objective in this initiative to limit exercise of market power. Despite those shared goals, we do have serious reservations about the CAISO's approach and specific design elements within this proposal. CAISO's proposal hinges on a well-functioning opportunity cost model being in place. CAISO has not demonstrated that the opportunity cost model described in this proposal will produce a more efficient outcome than current market rules, as the model has not yet been developed and we have not had the opportunity to test it. A poorly functioning opportunity cost model could result in resources using up their limitations and no longer being available to the CAISO market. This is a reliability risk, and a financial risk to PG&E customers if those resources can no longer be counted for Resource Adequacy. PG&E's comments are motivated by a desire to mitigate these risks, while improving the ability of CAISO's market to optimize use limited resources.

PG&E's main points are:

- PG&E is opposed to CAISO's requirement that all resources participating in the market must provide 2 starts per day minimum if physically capable of doing so.
- CAISO should delay the Board decision on CCE Phase 3 to allow market participants more time to discuss recent proposal elements, and in light of the recent delay in implementation until 2017.
- PG&E maintains that contracts signed by LSEs and approved through regulatory review, should be accepted as legitimate use limitations for the remainder of the contract term, not the temporary period proposed by CAISO.
- Variable ("run of river") hydro resources should be exempt from the Resource Adequacy Availability Incentive Mechanism, in line with the treatment of wind and solar resources.
- PG&E reiterates our comments from previous CCE3 proposals in an Appendix.

I. At this time, PG&E is opposed to CAISO imposing a requirement that all resources participating in the market must provide 2 starts per day minimum if physically capable of doing so.

CAISO moved an element from the Bidding Rules Enhancements initiative into the CCE3 Draft Final Proposal – Changes to Master File Resource Characteristics. CAISO proposes that several Master File characteristics (maximum daily starts, maximum MSG transitions, and ramp rates) will have two values moving forward rather than one– a "design" characteristic and a "market" characteristic. PG&E reiterates the concerns with this overall policy that we expressed in the Bidding Rules Enhancements initiative – that CAISO is creating an artificial distinction between "market" characteristics and "physical" characteristics which does not exist in reality[1].

CAISO also introduced a new element to this design in the Draft Final Proposal, which requires resources to provide at least 2 starts per day through the "market" characteristic field. CAISO goes on to provide an exception to the 2 start requirement for resources near the end of their life cycle, subject to CAISO's discretion. The proposal states:

> "Therefore the ISO is now proposing the market based maximum daily start values be, at a minimum, two starts per day except in the event the design capability value for maximum daily starts is one start per day or under the limited exception as noted below. If the design capability of the resource is one start per day, the market based value can then be one start per day."[2]

PG&E opposes this proposal on several grounds. First, PG&E does not believe CAISO and stakeholders have had a full opportunity consider the impacts of the policy on the market and their resource portfolio, as it has only been introduced in the Draft Final Proposal. A policy change of this significance deserves more consideration than has been afforded thus far.

Secondly, PG&E is very concerned about the additional burden this requirement could place on resources above and beyond their Resource Adequacy Requirements. The CAISO and Local Regulatory Authorities establish RA requirements such that CAISO will have the capacity and capabilities it needs to maintain reliability. RA is the foundation for reliability in the CAISO, and resources must perform up to the requirements set out in their particular RA category. As CAISO states in the proposal,

[1] http://www.caiso.com/Documents/PGEComments_BiddingRulesEnhancementsStrawProposal.pdf; http://www.caiso.com/Documents/PG_EComments_BiddingRulesEnhancements_RevisedStrawProposal.pdf
[2] CAISO Commitment Cost Enhancements Phase 3 Draft Final Proposal, February 17, 2016, p.46.

Flexible Category 1 resources have a Must Offer Obligation of two starts per day, and all other RA resources (system, flex categories 2 and 3) are obligated to provide one start per day[3]. In essence, CAISO's CCE3 proposal would extend a Flexible Category 1 operational requirement to non-Flex Category 1 RA resources and non-RA resources. PG&E opposes this approach. If CAISO is in need of more Flexible Category 1 resources than LSEs are currently required to offer into the market, then the Resource Adequacy framework is the appropriate avenue to evaluate and address those challenges, not a Master File requirement.

Lastly, it is not clear that requiring additional daily starts is the best way to address the market power concerns raised in the proposal. CAISO states that a resource could exercise market power by artificially restricting its starts to one per day, and taking advantage of the different optimization horizons of the Day Ahead and Real Time markets. PG&E understands CAISO's intention to prevent manipulation of the market by not allowing artificially restrictive Master File values and supports this objective. DMM and CAISO should explore alternatives such as evaluating resources for market power if a resource provides 1 maximum daily start, and mitigating the resource to a higher start value only in the case that market power is identified.

II. CAISO should delay the Board decision on CCE Phase 3 to allow market participants more time to discuss recent proposal elements, and in light of the recent delay in implementation until 2017.

CAISO's implementation team announced on the February 16, 2016 Release User Group call that CCE Phase 3 would no longer be part of the Fall 2016 release[4]. Instead, CCE3 would be implemented in 2017. PG&E supports this delay, given the already packed Fall 2016 release schedule, and the discretionary nature of the CCE3 proposal.

Given the additional time now available, PG&E recommends that CAISO extend the stakeholder process and reschedule Board consideration beyond March 2016. This will allow stakeholders and CAISO the benefit of further discussing and evaluating the new elements introduced in the Draft Final Proposal – specifically requiring at least 2 starts per day for all resources (as discussed above). The longer implementation horizon would also allow CAISO to provide more robust opportunity cost model testing and simulation which has been requested by PG&E and other stakeholders. Additionally, stakeholders had many questions on the Feb. 25th call about how energy storage resources would be treated under this proposal, which has not received much attention up to this point.

[3] CAISO Commitment Cost Enhancements Phase 3 Draft Final Proposal, February 17, 2016, p.45.
[4] CAISO Release User Group Call. Feb. 16, 2016. http://www.caiso.com/Documents/Agenda-ReleaseUserGroupWebConferenceFeb16_2016.pdf

PG&E believes these are pieces of the CCE3 proposal that have not received full stakeholder input yet, and would appreciate the opportunity to do so before the Board makes a decision, particularly if doing so will not delay the ultimate implementation of this initiative.

III. PG&E maintains that contracts signed by LSEs and approved through regulatory review, should be accepted as legitimate use limitations for the remainder of the contract term, not the temporary period proposed by CAISO.

PG&E appreciates CAISO's recognition that long term contractual limitations approved through a robust regulatory process do not constitute an attempt to exercise market power. As such, PG&E does not believe it's reasonable for the CAISO to require renegotiation of these contracts within three years in order to qualify for Use Limited status. PG&E reiterates our previous comments supporting a grandfathering of existing contract limits through the lifetime of the contract as a legitimate basis for receiving Use-Limited Status.

CAISO's proposal relies upon assumptions that 1) such contracts can actually be renegotiated and 2) the outcome of a renegotiation would be a relaxation of the contract limitations. PG&E does not believe either of those outcomes is guaranteed. PG&E is very concerned about the impact to our ratepayers of reopening already approved CPUC contracts, and uncertainty around the cost recovery process for these reopened contracts.

IV. Variable ("run of river") hydro resources should be exempt from the Resource Adequacy Availability Incentive Mechanism, in line with the treatment of wind and solar resources.

As the CAISO has identified in its Commitment Cost Enhancements Phase 3 Draft Final Proposal, certain hydro resources operate similarly to wind and solar in that there is no ability to store the water and create the ability to optimally choose when to generate.[5] This will result in these hydro resources facing similar challenges responding to incentives under the RA Availability Incentive Mechanism (RAAIM) as the CAISO described for wind and solar resources in its Reliability Services Initiative (RSI) Phase 1 Draft Final Proposal.[6] Consistent with the treatment of wind and solar resources, PG&E proposes that the CAISO exempt hydro resources from the RAAIM if the resource design or regulatory requirements result in variability beyond the control of the scheduling coordinator and/or operator of the resource.

[5] CAISO Commitment Cost Enhancements Phase 3 Draft Final Proposal, February 17, 2016, p.23.

[6] Reliability Services Addendum to the Draft Final Proposal, February 27, 2015, p. 53.

CAISO's current proposal regarding RAAIM treatment does not go far enough to exempt variable hydro resources. In Table 2 of the CCE3 Draft Final Proposal, CAISO indicates that hydro resources in general would be exempt from RAAIM for the remainder of the month when a use-limited reached outage card is submitted. However, if a variable hydro resource does not qualify as Use Limited under CAISO's new definition, it will not have access to the use-limited reached outage card. Specifically, if a hydro resource meets any of the following criteria PG&E recommends that the resource be exempt from the generic RAAIM:

- *Design Limitations*. Hydro resources with no storage capacity or switching center limitations that prevent the resource from increasing or decreasing output;
- *Flow Restrictions*. Hydro resources where the scheduling coordinator lacks control over stream flow due to water rights, regulatory requirements (e.g., flow requirements for fish, reservoir level requirements for recreation, etc.); or
- *Spill Considerations*. Hydro resources that have inadequate storage capacity.

Similar to the existing resource categories that are already exempt from the generic RAAIM (Wind and Solar), this subcategory of hydro resources are incapable of responding to RAAIM incentives and should not be counted as unavailable to the extent environmental conditions prevent them from providing the MW amount of their RA capacity to the market. The proposed exemptions reflect the reality that the MW amount that these types of hydro resources will be able to count towards RA capacity varies and is highly dependent on the hydrological conditions and weather patterns, making it difficult to accurately forecast their capacity.

PG&E proposes that the Scheduling Coordinator for a hydro resource that meets the specified criteria would register the resource for the RAAIM exemption by submitting a one-time affidavit executed by an executive officer or member of senior management of the generator owner or of the Scheduling Coordinator itself. PG&E recommends that there be a clause in the affidavit that would state an obligation to update the status of the resource if any major construction changes or resource design changes lead to the resource no longer qualifying based on the specified criteria. Additionally, there are conditions (e.g. water levels) that could change the dispatchable capability of a hydro resource. If such changes occur, the resource should be required to update its status. PG&E recommends that establishing exemptions or any updates could happen in conjunction with the submittal of use plans and use-limit updates.

The CAISO's tariff (as found in Appendix A) includes definitions for Hydro Spill Generation[7] and Regulatory Must-Run Generation[8] that could be utilized for developing

[7] **Hydro Spill Generation**: Hydroelectric Generation in existence prior to the CAISO Operations Date that: i) has no storage capacity and that, if backed down, would spill; ii) has exceeded its storage capacity and is spilling even

criteria for RAAIM-exempt hydro resources. While these definitions generally capture the limitations, there are several changes to the Hydro Spill Generation definition that would be necessary to expand the focus beyond spilling and capture all of PG&E's concerns.

though the generators are at full output; iii) has inadequate storage capacity to prevent loss of hydroelectric Energy either immediately or during the forecast period, if hydroelectric Generation is reduced; or iv) has increased regulated water output to avoid an impending spill.

[8] **Regulatory Must-Run Generation**: Hydro Spill Generation and Generation which is required to run by applicable federal or California laws, regulations, or other governing jurisdictional authority. Such requirements include but are not limited to hydrological flow requirements, environmental requirements, such as minimum fish releases, fish pulse releases and water quality requirements, irrigation and water supply requirements, or the requirements of solid waste Generation, or other Generation contracts specified or designated by the jurisdictional regulatory authority as it existed on December 20, 1995, or as revised by federal or California law or Local Regulatory Authority.

Appendix

I. PG&E opposes the CAISO's proposed re-definition of a Use-Limited Resource. Instead, PG&E proposes an alternative approach by which resources could qualify for opportunity costs while maintaining the current definition.

CAISO's current definition of a Use-Limited Resource is:

> "A resource that, due to design considerations, environmental restrictions on operations, cyclical requirements, such as the need to recharge or refill, or other non-economic reasons, is unable to operate continuously."

In the Revised Straw Proposal, CAISO has proposed changing the definition to:

> "A resource with one or more limitation on starts, run-hours, and/or output due to environmental restrictions or design considerations, which cannot be optimally dispatched over the limitation horizon without consideration of opportunity costs.
>
> Acceptable environmental restrictions are those that are imposed by regulatory bodies, legislation, or courts. A non-exhaustive list of acceptable environmental restrictions include: limits on emissions, water use restrictions, or run-hour limitations in operating permits. Restrictions with soft caps that allow the resource to increase production above the soft cap through purchasing additional compliance instruments are not acceptable restrictions.
>
> Acceptable design considerations are those that are due to physical equipment limitations. A non-exhaustive list of acceptable design considerations include: restrictions documented in original equipment manufacturer recommendations or bulletins, or limiting equipment such as storage capability for hydroelectric generating resources."

PG&E is opposed to these proposed changes for several reasons which have been raised in previous comments to the CAISO[9] and to FERC in response to the CCE2 Tariff filing[10].

- The proposed definition does not allow SCs to reflect existing resource limitations established in contracts approved by local regulatory authorities. FERC rejected the previously proposed Use-Limited definition in CCE2, and in doing so said that CAISO "has not supported its position that allowing economic limitations

[9] PG&E comments on Commitment Cost Enhancements Phase 2 Draft Final Proposal. March 2, 2015. http://www.caiso.com/Documents/PG-EComments_CommitmentCostEnhancementsPhase2-DraftFinalProposal.pdf

[10] Docket No. ER15-1875-000. Motion to Intervene and Comments of Pacific Gas and Electric Company under ER15-1875. June, 26, 2015.

could unnecessarily reduce CAISO's flexibility in ensuring reliability[11]." CAISO's current proposal does not provide any evidence that accepting contractual limitations will impact reliability in the CAISO footprint.

- CAISO has not sufficiently explained why redefining an existing term in the CAISO market is necessary to implement opportunity costs. PG&E is very concerned about the confusion this will cause for market participants and implications for managing resource limitations, which may not be fully anticipated in the stakeholder initiative process.

PG&E's Alternative Proposal

Redefining a Use-Limited Resource to include only those that can be optimized through opportunity costs is not necessary and is potentially disruptive to the management of some resources with use limitations. PG&E proposes that CAISO maintain their current definition of a Use-Limited Resource and the existing default Use-Limited status. CAISO would create a separate tariff provision to describe its opportunity cost modeling and bidding rules. The Registered Cost option could be removed, and all resources would default to the Proxy Cost option. Scheduling Coordinators (SCs) that want opportunity costs added to their proxy cost caps for their Use Limited Resource could apply to CAISO for that "Proxy plus Opportunity Cost" capability.

PG&E believes this approach to be easier for all stakeholders involved. Rather than a two-step process of registering as Use-Limited and then submitting limitation documentation, there would be a one-step process. An SC submits limitation documentation for its Use-Limited Resource to qualify for opportunity costs. CAISO would then follow the same steps as currently proposed to evaluate the application and model or negotiate the opportunity costs.

PG&E believes this alternative is simpler than CAISO's approach yet still achieves the goal of this initiative which is to better optimize commitment of Use-Limited Resources where feasible.

II. PG&E opposes the removal of default Use-Limited status.

CAISO is proposing to remove the default Use-Limited status for hydro resources, PDR, RDRR, and participating load. PG&E does not believe this is appropriate given the obvious limitations that these resources face, particularly hydro resources. Additionally, operators of hydro resources are not incentivized to artificially limit the resource to increase market prices, as most SCs for hydro are also Load Serving Entities. Requiring

[11] 152 FERC ¶ 61,185. Par 35.

these resources to register as Use-Limited is placing an onerous administrative burden on SCs without clear benefits.

While these currently default Use-Limited Resources *could* qualify as Use-Limited under the proposed definition, CAISO anticipates that some of them will not (specifically RDRR and run-of-river hydro). There are resources with use limitations that are excluded in CAISO's proposed definition, such as Demand Response Programs (participating through PDR) which have dispatch limits based on CPUC established program parameters. For example, the Base Interruptible Program is limited to 10 events per month and 180 hours per calendar year[12]. These dispatch limits are an operational reality, but do not fit neatly into an "environmental" or "physical equipment" category. It is unclear if this is CAISO's intention, and if so how CAISO and SCs will manage DR resources in the wholesale market absent the Use-Limited status.

III. PG&E offers the following comments on the Opportunity Cost Negotiation process:

CAISO should outline what criteria it will use to evaluate the reasonableness of a submitted opportunity cost value and methodology.

In the proposal, CAISO states that it will "review the submitted negotiated opportunity costs and methodology. The ISO will either approve the submitted methodology and opportunity costs, or work with the market participants to reach an approved methodology and opportunity cost values." CAISO should also describe the criteria they will use to judge the acceptance of an SC's proposed opportunity cost. How will the ISO determine whether a submitted value in the negotiation process is unreasonable?

SCs should be permitted to update their negotiated opportunity cost values any time they can make a showing that the values have changed.

PG&E understands the CAISO has limited the number of model updates to refresh opportunity costs due to the anticipated run times of the model. However, no run time restrictions exist for negotiated opportunity costs. It is appropriate to allow these resources to update their costs as needed, by submitting recalculations to the CAISO. This option exists currently for hydro resources, which can submit intra-monthly updates to their opportunity cost. CAISO should preserve this ability to reflect opportunity cost changes intra-monthly.

[12] http://www.pge.com/tariffs/tm2/pdf/ELEC_SCHEDS_E-BIP.pdf

IV. CAISO should establish triggers to rerun the opportunity cost model in between scheduled monthly runs.

CAISO has proposed to run the opportunity cost model for each resource on a monthly basis only. PG&E reiterates our previous comments and recommends CAISO establish some triggers for rerunning the model in between monthly scheduled runs (e.g. collective number of actual starts, run-hours, or market prices that differ significantly from model assumptions and predictions). It is in both CAISO's and stakeholders' best interests to have accurate opportunity costs included in resources' bids to manage use limitations, particularly as market participants and CAISO gain familiarity and experience with the new process. Given the uncertainty around predicting LMPs, CAISO should have some pathway to adjust the model if reality differs substantially from the model's predicted dispatch in order to avoid running out of starts or run hours.