Comments of Pacific Gas and Electric Company
Commitment Cost Enhancements Phase 3 Revised Straw Proposal

Submitted by	Company	Date Submitted
Maureen Quinlan 415-973-4958	PG&E	11/23/2015

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 November 3rd Revised Straw Proposal. In summary, PG&E:

Major Concerns

1. 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.
2. Opposes the removal of default Use-Limited status. If CAISO moves forward with their proposal, they should clarify the consequences of removing default use-limited status for Hydro, PDR, RDRR, and participating load.
3. Recommends that documentation requirements for registering hydro resources should be tailored appropriately.
4. Urges CAISO to describe the criteria it will use in the negotiation process to evaluate the reasonableness of a submitted opportunity cost value and methodology, and allow frequent renegotiation.

Additional Recommendations

5. Is concerned with CAISO's proposed timeline for registering resources as Use Limited by March 2016, and implementing opportunity costs by Fall 2016.
6. Recommends improvements to the Opportunity Cost Model concerning reruns, limitation inputs, and transparency. The RAAIM changes proposed in RSI2 highlight the importance of accurate modeling.
7. Requests CAISO provide an example of how the DEB calculation will work with the new opportunity cost adder.
8. Supports CAISO maintaining the short term use limited card while CAISO and market participants validate the opportunity cost model is functioning as intended.

Major Concerns

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[1] and to FERC in response to the CCE2 Tariff filing[2].

- 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 could unnecessarily reduce CAISO's flexibility in ensuring reliability[3]." CAISO's

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[1] 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

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

[3] 152 FERC ¶ 61,185. Par 35.

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. If CAISO moves forward with their proposal, they should clarify the consequences of removing default use-limited status for Hydro, PDR, RDRR, and participating load.

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 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[4]. 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.

If CAISO moves forward with its current plan to remove default Use-Limited status, CAISO should fully consider the downstream effects of resources losing Use-Limited status and make any appropriate tariff changes. For example,

- What are implications of losing Use-Limited status (for RA resources and non-RA resources)?
- Will currently default Use-Limited Resources be exempt from bid insertion in the future only if they successfully re-register as Use Limited? How will CAISO ensure that resources with limitations are not unduly hit with unavailability penalties?
  PG&E is concerned that resources such as run of river hydro, which are currently default Use-Limited, could be subject to bid insertion and RAAIM penalties without that status. Those resources would no longer be used for RA if that were the case, unnecessarily increasing costs.
- Will the use limit reached outage card still be available for resources not registered as Use Limited under the new definition?

III. Supporting documentation requirements for registering hydro resources should be tailored appropriately.

While we still oppose hydro resources losing the default Use-Limited status, we recognize that CAISO will continue to develop Use-Limited registration requirements for these resources. According to the proposal, resources applying for Use-Limited status must provide original documentation to the CAISO to reflect its environmental or design limitations as well as, "a document showing the methodology used to translate the limitations as stated in the original documentation to what was submitted in the registration process."

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

PG&E would appreciate CAISO clarifying the expectations for this methodology description for hydro resources. Limitations for hydro resources are significantly more complex than fossil resources. They're modeled based on precipitation, snowpack levels, watershed conditions, wildlife flow requirements, and recreational flow requirements among other things. PG&E recommends that SCs for hydro resources be able to satisfy the methodology requirement by submitting a single document which explains the modeling approach used, rather than the actual calculations performed by the model.

IV. 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.

Additional Recommendations

V. PG&E is concerned with CAISO's proposed timeline for registering resources as Use Limited by March 2016, and implementing opportunity costs by Fall 2016.

CAISO expects resources to apply for Use-Limited Resource status with the CAISO in March 2016 in order to qualify for opportunity costs beginning in Fall 2016. PG&E sees this is problematic because critical tariff provisions pertaining to the definition of a Use-Limited Resource, default Use-Limited status, and registration documentation will not yet be approved by the Board of Governors or FERC in March 2016. In this scenario, currently Default Use-Limited Resources would be expected to apply for Use-Limited based on registration requirements not yet outlined in the tariff. PG&E understands the time lag required for CAISO to process Use-Limited applications before the Go-Live date. However, implementing a policy before it has been approved is not a tenable solution.

PG&E also urges the CAISO's policy and implementation staff to coordinate on this issue. It has been brought to our attention that new "supporting documentation" requirements have been added to the 2016 Annual Use Plan template that SCs are required to submit by March 2016. This has created significant confusion for both parties as to what the documentation requirements actually are for currently default Use-Limited Resources (e.g. hydro facilities). These documentation requirements are clearly in the scope of the CCE3 initiative, and should be decided upon the stakeholder process before being implemented.

PG&E also has concerns about the implementation timeline for this initiative. Given the expanded scope of the initiative, it was reasonable for CAISO to bring the proposal to the Board of Governors meeting in March 2016 rather than November 2015. However, the intended implementation date of Fall 2016 has not been adjusted, and seems quite aggressive. PG&E encourages CAISO to lay out its tariff development and implementation schedule more clearly to assess whether Fall 2016 is truly achievable. PG&E would support a delay in implementation to Spring 2017 given that this is a discretionary tariff change, and a delay could allow for more robust testing of the opportunity cost model with market participants before implementation. Prior to assigning this initiative to a release, CAISO should also hold workshops or conduct Customer Partnership Group sessions to engage the market participants and solicit input on the model and requirements.

VI. PG&E offers the following comments on the design of the Opportunity Cost Model

- **PG&E reiterates its prior comments urging CAISO to establish reasonable triggers for rerunning the opportunity cost model in between monthly scheduled reruns.**

  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.

- **PG&E is not convinced that artificially reducing a resource's limits in the opportunity cost model will result in better dispatch outcomes.**

  PG&E understands CAISO's intention to create a reserve margin around both the modeled dispatch levels and opportunity costs by modeling 90% of a resource's limitation. However, PG&E is concerned about inserting intentional inaccuracies into a model that is already built on imperfect forecasts. For example, it's not clear what CAISO will do if a resource exceeds 90% of its dispatch limitation in real life. Will the model still be rerun with the actual dispatches as input? A more appropriate solution to the reserve margin issue would be to implement the triggers described above. Then CAISO will be aware when resources are approaching their limitations quicker than anticipated, and update the opportunity costs accordingly.

- **The Opportunity Cost model inputs, processes, and results need to be transparent to SCs of Use-Limited Resources.**

  Market participants should have the ability to shadow the CAISO's Opportunity Cost model and produce similar results. PG&E would like CAISO to share its LMP estimates and other model assumptions with SCs, and lay out a plan to do so in the next proposal. CAISO should also be transparent about the model results and how they compare to reality so both CAISO and market participants can gauge the accuracy of the model. In addition, CAISO should clarify how it will track the starts, run hours, etc. of Use-Limited Resources. For example, when rerunning the model will CAISO rely on data from its own markets or will SCs be expected to submit that data separately? If the latter, through which system will SCs submit this information?

- **The RAAIM eligibility changes proposed in RSI Phase 2 highlight the importance of using opportunity costs that are as accurate as possible.**

  In the ongoing RSI Phase 2, CAISO has proposed that Use-Limited Resources will no longer be exempt from RAAIM penalties once they've reached their annual limitation[5]. Currently, Use-Limited Resources can submit a Use Limit Reached card to indicate they've exhausted their available starts, run hours, or output, and they are no longer subject to RAAIM penalties. While not part of the CCE3 scope, the change to the RAAIM policy increases the financial risk to SCs of managing resources with use-limitations, and underscores the importance of accurately calculating opportunity costs to avoid exhausting the resource limits. CAISO should keep CCE3 market participants informed of this related provision in RSI2.[6]

VII. CAISO should provide an example of how the DEB calculation will work with the new opportunity cost adder.

The revised draft proposal states that "opportunity costs due to a limitation on output will be added to the resource's Default Energy Bid[7]." PG&E would like additional clarity around how the implementation of opportunity costs will impact the existing DEB calculation process (Tariff Section 39.7.1). Specifically, will the Negotiated Rate Option described in Section 39.7.1.3 be impacted by this new policy, and if so, how?

VIII. PG&E supports CAISO maintaining the short term use limited card while CAISO and market participants validate the opportunity cost model is functioning as intended.

CAISO has proposed to maintain the short term use limited card for a transition period after the CCE3 changes have been implemented. PG&E supports maintaining this tool to manage use limited resources while CAISO validates the model and opportunity cost adders are functioning properly, and market participants gain experience with the new process.

[5] Reliability Services Phase 2, Second Revised Straw Proposal. p26.
http://www.caiso.com/Documents/SecondRevisedStrawProposal-ReliabilityServicesPhase2.pdf

[6] CAISO should also coordinate with the California Public Utilities Commission on the proposed change to availability penalties for use-limited resources, in recognition that these resources have met the CPUC established the rules to qualify under the RA program.

[7] CCE Phase 3 Revised Straw Proposal, p. 29.