



Comments of Pacific Gas & Electric Company
Flexible Resource Adequacy Criteria and Must Offer Obligation –
Phase 2 Straw 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) Flexible Resource Adequacy Criteria & Must Offer Obligation (FRACMOO) Phase 2 Straw Proposal.

PG&E agrees with the CAISO that removing the inflexible RA limitations and self-scheduling penalties from the scope of this initiative is appropriate and appreciates the focus being placed on a durable definition for Flexible RA capacity.

PG&E has split its comments into two sections. The two sections indicate which items PG&E has identified as key issues with the FRACMOO2 Straw Proposal and items where PG&E is seeking more information to understand the CAISO's proposal.

Key Issues

- PG&E believes that a more appropriate calculation of a pumped-storage resource's Flexible Resource Adequacy capability is to count the full pumping capabilities associated with its operational characteristics.
- PG&E generally supports addressing energy storage charging capability via transmission studies to help mitigate chargeability risks.

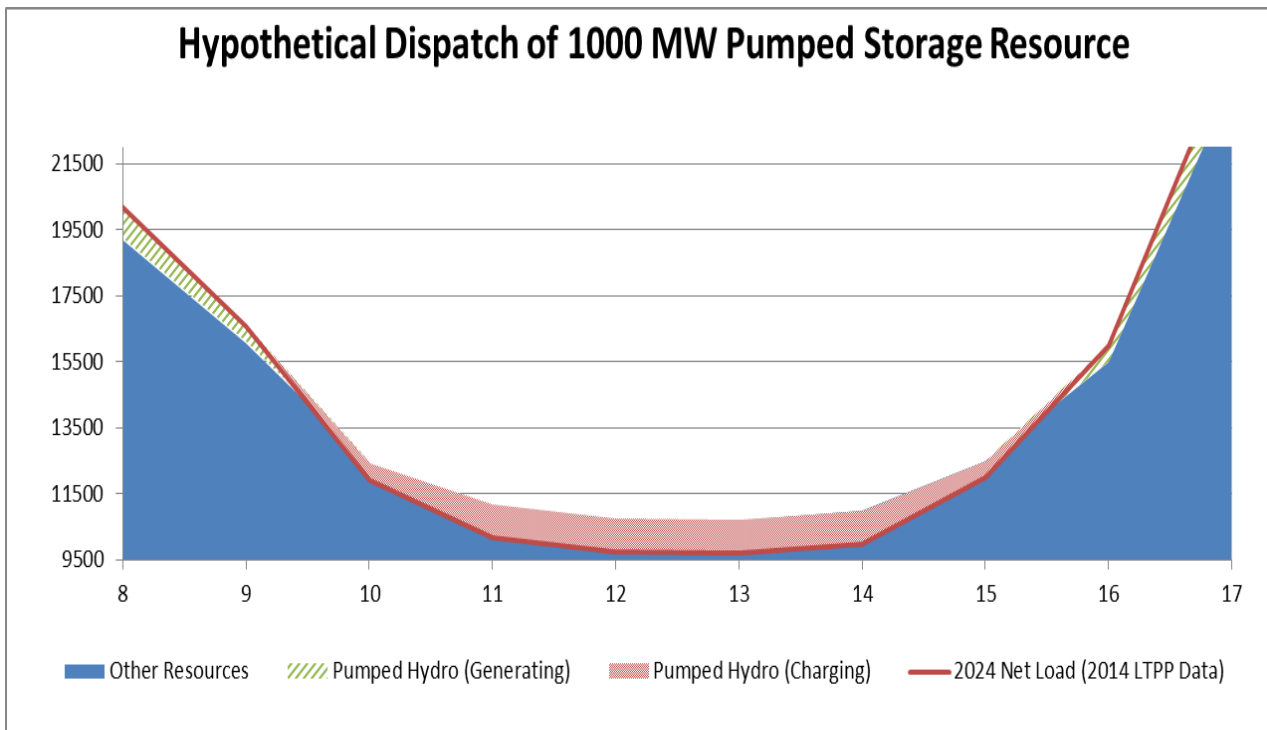
More Information Is Needed

- The CAISO should spend more time working on rules to allow non-resource specific imports to count towards Flexible RA.
- More detail is needed to understand the CAISO's proposal for how exports can provide Flexible RA.
- PG&E requires more detail on an LRA's negative contribution to flexible need in order to assess this aspect of the proposal.
- PG&E does not support different resource adequacy showing requirements for small LSEs.

Key Issues

1. PG&E believes that a more appropriate calculation of a pumped-storage resource’s Flexible Resource Adequacy capability is to count the full pumping capabilities associated with its operational characteristics.

PG&E appreciates the difficulties associated with modeling the pumping load related to pumped storage when reviewing particular ramping needs. The figure CAISO provides in its straw proposal to describe a resource’s impact on net load ramp with discrete start and discrete stop charging capabilities¹ (Figure 4) is only one possible dispatch of a pumped storage resource. If the CAISO dispatch model is appropriately looking hours ahead, the pumping load has and most likely will continue to operate in a way that provides significant value to the CAISO system. The CAISO should look at the operating characteristics of pumped storage similar to other resources to base its Effective Flexible Capacity (EFC) calculation. These characteristics should include its ramp rate and its range of dispatch from full charge to full discharge in a three hour period. PG&E has previously presented dispatch profiles that clearly show what a pumped storage resource can provide in a three hour net load ramp.² In the figure below, PG&E shows that a hypothetical pumped hydro resource has the capability to operate much more similar to Figure 3 in CAISO’s proposal. PG&E believes that a resource should have an EFC equal to the full charging and full generation that it can provide during the relevant three hour ramp.



¹ FRACMOO2 Straw Proposal, Pg. 19.

<http://www.caiso.com/Documents/StrawProposal-FlexibleResourceAdequacyCriteria-MustOfferObligationPhase2.pdf>

² Slide 4 in PG&E CPUC RA Workshop Presentation, 02/09/15;

<http://www.cpuc.ca.gov/NR/rdonlyres/2FA58611-B45F-41A7-B838-D5E351BA6DB5/0/PGE.pptx>

With respect to the use of the term “discrete dispatch”, it appears this term is arbitrarily applied to pumped storage resources. PG&E is not aware of operational issues that discrete dispatch of load creates which would lead to a conclusion that it does contribute to system reliability. In order to bridge this gap of understanding, PG&E would appreciate a number of examples for how discrete dispatch negatively impacts the CAISO’s dispatch model. PG&E looks forward to working with the CAISO to better understand any operational issues it may have and understand why the CAISO views pumped storage as unique on this issue.

2. PG&E generally supports addressing energy storage charging capability via transmission studies to help mitigate chargeability risks.

The FRACMOO2 Straw Proposal proposes an annual off-peak study of transfer capability into load pockets to ensure there is sufficient transfer capability for storage resources to charge using system energy and effectively lift net load without requiring additional local resources to offset load pocket requirements. While PG&E is supportive of the CAISO studying potential chargeability constraints, PG&E suggests that the study occur initially on a one-time basis rather than committing to an annual process before the details of the study have been specified. This initial study can serve as a test to understand the value of reviewing chargeability. The CAISO should conduct this study for all LCR areas so the studies can be used to understand the CAISO’s chargeability limitations in all of the transmission constrained regions within the CAISO’s footprint. Similar to the LCR study, PG&E recommends the chargeability study also examine future years.

In addition to off-peak studies to address existing resources, the CAISO should launch an initiative to examine how the interconnection process could be modified to mitigate chargeability risks. As PG&E has stated in its comments on the draft 2016 Stakeholder Initiatives Catalog³, PG&E is concerned that the current interconnection study process does not provide sufficient clarity as to the potential restrictions on chargeability. The lack of clarity on the chargeability of the energy storage project presents a significant commercial challenge to PG&E’s storage procurement activities.

More Information Is Needed

3. The CAISO should spend more time working on rules to allow non-resource specific imports to count towards Flexible RA.

PG&E commends the CAISO for moving forward in developing a framework to allow imports to providing Flexible RA capacity. During the December 21st stakeholder call, stakeholders discussed the value of non-resource specific imports providing Flexible RA capacity. PG&E is interested in seeing additional thought dedicated to how non-resource specific imports can count towards Flexible RA capacity. The CAISO should provide in its revised proposal additional detail on how e-tags could be used to ensure that wheeling schedules are not used to provide Flexible RA capacity.

³ Comments of Pacific Gas & Electric Company CAISO 2016 Stakeholder Initiatives Catalog and Roadmap, Pg. 2
<http://www.caiso.com/Documents/PG-ECommentsDraft2016StakeholderInitiativesCatalog.pdf>

4. More detail is needed to understand the CAISO's proposal for how exports can provide Flexible RA.

As the FRACMOO2 Straw Proposal states, the potential for exports to provide Flexible RA capacity is a new area of exploration. PG&E is interested in continuing the discussion of export Flexible RA. In order to have a fruitful discussion, the CAISO should include in its revised straw proposal a definition of the suggested export Flexible RA product, including a description of how the CAISO would use exports to support resolving the net load ramp.

The FRACMOO2 Straw Proposal seeks stakeholder input on whether exports providing Flexible Resource Adequacy capacity should be exempted from measured demand charges. PG&E does not believe it is appropriate for exports to avoid paying these charges, as load external to the CAISO will be served through these exports if CAISO accepts the export bid.

5. PG&E requires more detail on an LRA's negative contribution to flexible need in order to assess this aspect of the proposal.

As PG&E understands the FRACMOO2 straw proposal, the CAISO proposes to allow an LRA's contribution to be negative. On a basic level, it would be helpful for the CAISO to provide examples of how negative contributions by an LRA could occur in its revised straw proposal. It would also be helpful to understand if or how this negative contribution could affect the overall Flexible RA requirement. The FRACMOO2 Straw Proposal does not address how a LSE could sell the LRA's negative contribution to another LSE that is regulated by a 2nd LRA. What does the CAISO envision for the mechanism to transfer the credit from LSE to LSE? Without further specificity on how CAISO would recognize this transaction and how the transaction could occur, PG&E does not have the information necessary to take a position on this aspect of the straw proposal.

6. PG&E does not support different resource adequacy showing requirements for small LSEs.

The FRACMOO2 Straw Proposal seeks to extend 1 MW RA showing exemptions to off-peak months, for Local showings and for Flexible RA showings. PG&E understands that these exemptions are meant to simplify the RA showing process for small LSEs. While PG&E appreciates the CAISO's focus on simplifying the RA process in principle, we believe that the CAISO should focus on simplifications that affect all LSEs as opposed to focusing its efforts on a particular group of market participants.

On the particular details of the proposed exemptions, PG&E is concerned that these changes could cause more backstop procurement than is necessary. If more backstop procurement occurs due to these changes, PG&E is particularly concerned that such backstop might not be allocated appropriately. In the example provided by the FRACMOO2 Straw Proposal, where an LSE has a local requirement in the PG&E TAC of 0.75 MW, the CAISO argues that the LSE should be allowed to not designate any local RA in the PG&E TAC. However, if the total local requirement is 1000 MW, and the rest of the LSEs provide exactly their allocation of 999.25 MW, then there would be a local collective deficiency of 0.75 MW. Does the CAISO recommend ignoring collective deficiencies of less than 1 MW? If a collective deficiency is found, how is the deficiency allocated across the LSEs in the PG&E TAC? The CAISO should describe how a local collective deficiency would not occur in situations similar to the example provided in its revised straw proposal.