

Stakeholder Comments Template

Submitted by	Company	Date Submitted
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Please use this template to provide your comments on the presentation and discussion

Draft Final Proposal issued on November 18, 2014.

Submit comments to EnergyStorage@caiso.com

[Comments are due December 12, 2014 by 5:00pm](#)

The Draft Final Proposal and presentation discussed during the November 25, 2014 stakeholder meeting may be found at:

<http://www.caiso.com/informed/Pages/StakeholderProcesses/EnergyStorageInterconnection.aspx>

Comments

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to participate in the Energy Storage Interconnection initiative. PG&E submits these comments on the Draft Final Proposal posted on November 18, 2014 and the Stakeholder web conference held on November 25, 2014. PG&E commends the CAISO for its work thus far in the Energy Storage Interconnection initiative and looks forward to continuing the collaborative process on all storage related issues.

General Approach

PGE&E reiterates its strong support for the framework the CAISO has developed to accommodate energy storage Interconnection Requests under the existing GIDAP tariff. PG&E

would like to emphasize the importance of some of the key features of the Draft Final Proposal and advocate their retention in the final Energy Storage Interconnection Proposal. Firstly, this approach will be limited to storage devices interconnected to the CAISO controlled transmission system that are stand-alone storage or storage combined with a generator, but not storage combined with load. PG&E would like to further clarify that load customer sited storage is not covered under this policy. And secondly, in order for a storage device to be considered a generator, it must respond to CAISO dispatch instructions, including curtailment to manage congestion, during both charging and discharging modes.

Rate Treatment

PG&E appreciates the CAISO's clarification on rate treatment issues provided in the Draft Final Proposal and supports the CAISO's rate treatment of energy storage devices that operate using the non-generator resources (NGR) model. PG&E would like to reiterate that this rate treatment only applies to storage resources that meet the NGR model requirements. The appropriate venue to evaluate rate policy for other storage applications, such as customer sited behind the meter applications, will be outlined in the upcoming Energy Storage Roadmap. PG&E looks forward to working with stakeholders to evaluate and potentially develop rate policy for those other applications in a manner that allocates costs and compensates grid benefits fairly.

PG&E agrees with the CAISO that charging energy for NGR resources should be settled at the locational marginal price, not be assessed TAC or measured demand uplifts, and that station power should be treated the same way for a storage device as for a conventional generator. Station power will be settled at a retail rate, which is consistent with the ruling *Calpine vs. FERC* (No. 11-1122)¹ that station power falls outside the jurisdiction of FERC. PG&E also notes that in FERC's recent Order on Proposed Tariff Revisions in Docket No. ER15-3-000, FERC accepted PJM's proposed wholesale distribution charges for a distribution connected storage facility.²

For traditional generation, it is relatively easy to distinguish retail station power consumption. However, for storage devices with many new and different technologies, the differentiation between charging energy and retail station power can be hard to distinguish. Clear and consistent rules need to be developed to differentiate retail station power from charging energy and sufficient metering and/or protocols need to be put in place to ensure accurate settlement. This is in keeping with the CAISO's statement in its Energy Storage Interconnection Draft Final Proposal that "an energy storage facility should consult with its load serving entity to determine how retail charges may apply to its station power consumption" (pp.28). Southern

¹ <http://www.ferc.gov/legal/court-cases/opinions/2012/11-1122-opinion.pdf>

² *PJM Interconnection, L.L.C.* 145 FERC ¶ 61,185 (11-28-2014)..

California Edison (SCE) has initiated the station power definition process already in its October 2014 Energy Storage Roadmap comments by recommending that fans, pumps, computers, and lighting should be included in station power and charged a retail rate.³ Further clarification for an exact definition of the charges included in station power for storage is needed.

Reliability Studies

PG&E agrees with the CAISO's approach to perform reliability studies for storage on both the charge and discharge modes. Reliability studies for the discharge operation of storage devices should be studied the same way as conventional generators. For charging mode, network upgrades will only be identified for overloads that cannot be mitigated through congestion management.

Charging Ability of Storage Devices

For charge mode, PG&E supports the study of the maximum charging level through the interconnection study process to provide information regarding potential overloads under assumed conditions. The CAISO should work with the PTO's and other stakeholders to develop and refine base cases to be used to evaluate charging that provide the most useful information. In addition to evaluating peak and off-peak cases, other useful scenarios should be studied. In particular, the best estimate of a "worst case" scenario, which may be a partial-peak or another assumed case, can provide particularly valuable information about potential charging congestion. The CAISO should attempt to ensure consistency in this aspect of the study methodology across all of the PTOs where appropriate. As PG&E noted in its earlier comments, scenarios to be evaluated in the interconnection study process must be carefully selected to avoid any unnecessary increase in study timelines or costs.

Charging Deliverability

If the CPUC RA counting rules for storage were to change in the future, PG&E would support the CAISO in reviewing the need to make corresponding changes in its deliverability study methodology, in particular to address the ability of a storage resource to charge.

Flexibility to Charge at Any Time

The Draft Final Proposal states that if a storage facility elects not to respond to CAISO dispatch for its charging, and thus is not eligible to interconnect under the GIDAP framework, it could request firm load service from the PTO through existing load interconnection processes. A firm load request to PG&E will reside under CPUC jurisdiction. A storage device that receives firm load service and/or does not meet other criteria established for the GIDAP would not be eligible

³ http://www.caiso.com/Documents/SCEComments-EnergyStorageRoadmapWorshopOct13_2014.pdf

to participate in the CAISO market through the NGR model and would not receive the same rate treatment.

Modifying Projects to Include Storage

PG&E supports the CAISO's process to allow existing projects to add storage that meet certain criteria without the need for a new Interconnection Request. As described in the Draft Final Proposal, energy storage can be added to existing projects through the following alternatives to a new Interconnection Request:

Material Modification Request (MMA): storage can be added if it does not have a material impact on the cost or timing of any other interconnection request.

modification review: storage can be added if it does not increase the total capability of the project or substantially change the electrical characteristics.

Repowering: storage can be added if it does not increase the total capability of the project or substantially change the electrical characteristics.

PG&E recognizes that it is important to have the flexibility to evaluate each unique MMA, modification review, and repowering using sound engineering judgment. However, it may be helpful to re-examine and clarify the criteria that determine whether a modification of an existing generation facility qualifies as a material impact, increase in capability, or a substantial change in electrical characteristics. For example, adding energy storage can change the generation profile and potentially increase the Net Qualifying Capacity of a Generating Facility. Assumptions that were used in the original interconnection deliverability study for a Generating Facility may no longer be valid. Any increase in the short circuit duty impacts is defined as an adverse impact,⁴ and energy storage charging from the grid would result in a change in the machine capability by decreasing the Pmin. Based on the loosely defined modification criteria and the changes to project characteristics associated with adding storage, there is ambiguity about which kinds of modifications would be acceptable without a new Interconnection Request. Some additional guidance through a BPM or Technical Bulletin would provide more consistency and certainty for stakeholders about acceptable modifications.

⁴ http://www.caiso.com/Documents/TechnicalBulletin-GeneratorUnitRepoweringSep12_2013.pdf