

## Stakeholder Comments Template

Submitted by	Company	Date Submitted
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Please use this template to provide your comments in the Energy storage Interconnection stakeholder initiative.

Submit comments to [EnergyStorage@caiso.com](mailto:EnergyStorage@caiso.com)

**Comments are due April 14, 2014 by 5:00pm**

The presentation discussed during the April 7 stakeholder meeting may be found at:

[http://www.caCAISO.com/Documents/Agenda-Presentation-EnergyStorageInterconnectionApr7\\_2014.pdf](http://www.caCAISO.com/Documents/Agenda-Presentation-EnergyStorageInterconnectionApr7_2014.pdf)

The CAISO is requesting that stakeholders provide comments in one or both of the following two subject areas:

1. Issues and/or questions of more immediate concern relating to the submission of interconnection requests in the Cluster 7 application window. To the extent possible, the CAISO will seek to address such issues/questions prior to the close of the Cluster 7 application window (i.e., prior to April 30).
2. Policy issues that may require more comprehensive examination through this initiative. As a reminder, policy issues relating to interconnection of energy storage to the CAISO controlled grid are within the scope of this initiative. In contrast, interconnection below the CAISO controlled grid, and market and rate issues, are examples of subject areas not within the scope of this initiative.

To aid the CAISO in differentiating between comments in these two subject areas, please insert your comments under the appropriate heading below. Thank you.

**Issues/questions of more immediate concern relating to the submission of interconnection requests in the Cluster 7 application window:**

For Cluster 7, Pacific Gas and Electric Company (PG&E) believes a supplemental study will be required since the GIDAP does not currently include provisions to study the charging capabilities of energy storage generators. PG&E plans to assess any impacts on the grid due to the charging aspects of energy storage generators through our internal, PTO-managed Load Interconnection process following the identification of Reliability Network Upgrades (RNU), Network Upgrades (NU), Deliverability Network Upgrades (DNU), and Interconnection Facilities (IF) through the GIDAP study process. PG&E will also require CAISO approval of the Network Upgrade and Direct Assignment mitigation upgrades identified in PG&E's Load Interconnection study process.

Concurrent to the Cluster 7 Phase I, the CAISO and its stakeholders should work to streamline energy storage generator interconnections under the GIDAP. Our following comments outline the reasoning for this stance and potential changes to consider.

**Policy issues that may require more comprehensive examination through this initiative:**

**Classification of energy storage as generation**

PG&E recommends the CAISO follow the policy laid out in FERC Order 792<sup>1</sup> and the CPUC Rule 21<sup>2</sup> to classify energy storage as generation, subject to the CAISO's tariff and assessed through the GIDAP. To accomplish this, the CAISO should consider the charging function of energy storage devices as negative generation. This will ensure fair treatment of all market participating generators, whether they include energy storage capabilities or not, when dealing with contracts, cost-allocations, deliverability status, and any other aspects of interconnection.

**Potential CAISO Tariff updates**

To accomplish this, the CAISO and its stakeholders will need to expand the technical studies performed through the Fast Track, Independent Study, and Cluster Study processes from reliability and deliverability assessments to also include impacts on the grid from any negative generation. Additionally, the expected generation profiles for various technologies will need adjustments to account for the operational flexibility resulting when paired with an energy storage device. An

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<sup>1</sup> FERC Docket No. RM13-2-000, Section F.3.: ...the Commission revises the definition of Small Generating Facility in Attachment 1 to the SGIP and Attachment 1 to the SGIA as follows: "The Interconnection Customer's device for the production and/or storage for later injection of electricity identified in the Interconnection Request..."

<sup>2</sup> CPUC Rule 21 Definitions: *Generating Facility*: "All Generators, electrical wires, equipment, and other facilities, excluding Interconnection Facilities, owned or provided by Producer for the purpose of producing electric power, including storage."

example is the generation profile of solar, which assumes no generation potential at night. When paired with energy storage, a solar project could gain the ability to generate at any time of day for a set duration, potentially impacting minimum loading assessments.

#### **Material Modification Process**

PG&E believes the Material Modification Analysis (MMA) to be a compelling avenue to further enhance the functionality of projects that are in the interconnection queue through the addition of energy storage generators. The CAISO should consider reevaluating the study assumptions for renewable and energy storage generators to mitigate potential hurdles to enhancing dispatch flexibility to projects already in the interconnection queue without increasing their Pmax.

Until the GIDAP is updated to allow for the assessment of negative generation, projects requesting an MMA will need to go through PG&E's internal studies and processes to determine any potential impacts and required upgrades due to the charging aspects of the generator. In the future, if the CAISO and its stakeholders move forward with combining charging aspects of energy storage generators under the GIDAP, the full suite of generation and negative generation capabilities of energy storage devices should be analyzed under the MMA process to accurately assess any potential impacts to other generators in the interconnection queue.

#### **Physical assurance of operating characteristics**

Finally, energy storage generators may wish to operate with constraints to avoid triggering electric system upgrades through the interconnection process. Operating constraints may also allow energy storage generation bolted on to a project already in the interconnection queue to pass through the MMA process successfully. If operational constraints are requested PG&E will request some form of physical assurance, leveraged to ensure safety and reliability, that the operational constraint is held.