



## Comments of Pacific Gas & Electric Company

Energy Storage and Aggregated Distributed Energy Resources Initiative:

### Proposed Scope and Schedule

Submitted by		Company	Date Submitted
Anja Gilbert	415-973-1255	PG&E	June 1, 2015
Brad Wetstone	415-973-5599		

### Summary

Pacific Gas and Electric Company (PG&E) offers these comments on the Energy Storage and Aggregated Distributed Energy Resources initiative stakeholder call held on May 21, 2015. PG&E appreciates the work done by the CAISO to engage stakeholders in the initiative. In summary, PG&E:

1. Generally supports the CAISO's scope and schedule with regards to proposed enhancements to requirements, rules, market products and models to enable increased participation by energy storage and aggregated distributed energy resources.
2. Largely agrees with the scope and schedule for the non-generator resource (NGR) model enhancements.
3. Requests CAISO expand allowable baseline methodologies as a part of the proxy demand resource (PDR) and reliability demand response resource (RDRR) products and supports CAISO's inclusion of the PDR product in this initiative.
4. Recommends that the issue of "distinguishing charging power versus station power" be addressed starting in 2015, rather than in 2016.
5. Seeks clarification from CAISO regarding: the link between CAISO's Energy Storage Interconnection paper and the Energy Storage and Aggregated Distributed Energy Resources initiative, how and where CAISO will address any potential Resource Adequacy (RA), Deliverability, and Must Offer Obligation issues; and the rationale for including the treatment of pseudo-ties and dynamic scheduling arrangements in 2015.
6. Recommends resolution of CAISO's Expanding Metering and Telemetry Options Phase 2 initiative prior to CAISO addressing multiple use application resources.
7. Recommends CAISO coordinate all aspects of this initiative with its participation in the Supply Resource Demand Response Integration Working Group (SIWG) and the Load Modifying Resource Demand Response Operations Working Group.
8. Would like to clarify that the scope of the CPUC's Integrated Demand Side Resources (IDSR) proceeding is still being determined and therefore the CPUC's action to address aggregating distributed energy resources remains uncertain.

**1. PG&E generally supports the CAISO's scope and schedule with regards to proposed enhancements to requirements, rules, market products and models to enable increased participation by energy storage and aggregated distributed energy resources.**

PG&E believes that there are a number of barriers preventing additional storage resources and aggregated distributed energy resources from fully participating as a part of the California wholesale market, and believes that a CAISO initiative focused on enhancements to existing models and products would be a valuable mechanism to enhance market participation by these resources. PG&E believes the CAISO's approach is reasonable and will allow participants to assess what types of further changes are necessary.

**2. PG&E largely agrees with the scope and schedule for the non-generator resource (NGR) model enhancements.**

PG&E has the following recommendations on the scope of the NGR model for 2015:

- PG&E recognizes that in the future with a diversity of storage resources online, there may be preferences for what costs an entity is willing to take on in managing their state of charge based on the sophistication of their business model. As a result, PG&E supports broad flexibility in allowing the state of charge to be managed either by CAISO or the resource.
- In order to build on the experience stakeholders gain from using the NGR model, PG&E recommends that enhancements beyond what CAISO has scoped for 2015 be addressed in 2016.

PG&E has the following recommendations on the scope of the NGR model for 2016:

- CAISO should align its processes with the CPUC's endorsement of storage counting as Resource Adequacy by updating the NGR multiple configurations model to include non-zero transition times.
- PG&E requests that the CAISO leverage its Expanded Metering and Telemetry Initiative for the NGR model, and seek clarification on metering configurations for DERs. PG&E would also like to ensure that any metering configurations for DERs that fall under CPUC jurisdiction should align with ongoing CPUC initiatives.<sup>1</sup>
- While this may not fit under the scope of the NGR model, PG&E is interested in a 50% state of charge parameter for resources with longer cycle times such as four hours or longer. PG&E believes this could allow resources to more effectively bid in their capacity into regulation markets. CAISO should examine a 50% state of charge parameter for resources with longer cycle times.

---

<sup>1</sup> For example, in D.14-05-033 (R.12-01-005), the CPUC ruled that energy storage devices smaller than 10 kW paired with Net Energy Metering (NEM) eligible generators do not have to be metered separately from the NEM generator. This decision may present challenges to CAISO's statement that aggregated resources must be bid in as a homogenous group. (D.14-05-033, pp.20)

<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M091/K251/91251428.PDF>

Beyond 2016, PG&E has the following recommendations for the NGR model:

- PG&E understands that the CAISO has expressed interest in exploring difference bidding in the Integrated Forward Market for energy storage resources. PG&E supports exploring such a bidding enhancement for the Integrated Forward Market. Difference bidding would allow storage resources to bid energy based on price differentials, so that a storage resource could offer bid(s) to charge based on the hourly price(s) being a certain percentage or dollar amount less than the price(s) in available discharge hour(s), subject to other limitations.

**3. PG&E requests CAISO expand allowable baseline methodologies as a part of the proxy demand resource (PDR) and reliability demand response resource (RDRR) products and supports CAISO's inclusion of the PDR product in this initiative.**

- PG&E supports the expansion of baseline methodologies for the PDR and RDRR products and would like to see baseline methodologies that account for demand reduction that occurs on a daily basis. The CAISO should clarify the consideration of both behind the meter baseline and separately metered applications for measurement and validation. PG&E would also like to understand if CAISO has explored alternative baseline methodologies beyond the North American Energy Standards Board (NAESB) standards.
- PG&E supports a revision to the tariff that would allow the definition of alternative baselines to reside in business practice manuals. This would allow updating baseline methodologies as the market evolves, without having to go through tariff revisions.
- While some participants on CAISO's stakeholder call recommended separating demand response issues from the Energy Storage and Aggregated Distributed Energy Resources initiative, PG&E would like to ensure that PDR issues and potential enhancements to the PDR product remain in the this initiative. PG&E is particularly interested in ensuring PDR issues are included in the initiative as behind-the-meter storage can act similarly to PDR.

**4. PG&E recommends that the issue of "distinguishing charging power versus station power" be addressed starting in 2015, rather than in 2016.**

- PG&E believes the CAISO should consider the issue of distinguishing between charging power versus station power in 2015. CAISO has already defined "station power" for generation. However, storage technology is not completely analogous to generation and therefore presents the new issue of whether electricity which is lost during storage is charging energy or station power. There appears to be some uncertainty on this topic, and PG&E believes the CAISO is well positioned to coordinate some of the practical and technical questions involved. PG&E is also interested in how CAISO plans to align itself with the CPUC's approach on the issue, especially given that providing guidelines on distinguish charging power versus station power is proposed in the new Energy Storage Procurement Framework and Design Program, Order Instituting Rulemaking, R. 15-03-011. Specifically, PG&E would like to ensure that station power for energy storage resources is classified consistently across jurisdictions.

**5. PG&E seeks clarification from CAISO regarding: the link between CAISO’s Energy Storage Interconnection paper and this initiative; how and where CAISO will address any potential Resource Adequacy (RA), Deliverability, and Must Offer Obligation issues; and the rationale for including the treatment of pseudo-ties and dynamic scheduling arrangements in 2015.**

- PG&E would like clarification on which aspects of CAISO’s Energy Storage Interconnection paper will apply to this initiative. For example, the Energy Storage Interconnection paper outlines that storage will not be paired with load, which PG&E interprets as behind the retail meter. However, on the stakeholder call, CAISO indicated that while challenging, storage could be paired with retail load. PG&E notes that the rate treatment of retail storage is within the CPUC’s jurisdiction; accordingly, PG&E would like to ensure the CAISO works with the CPUC to determine rate treatment that accurately recovers the cost of the distribution grid.
- The CAISO should clarify what topics and requirements related to Resource Adequacy, Deliverability, and Must Offer Obligations would apply to Distributed Energy Resources. For those topics outside of the scope of this initiative, CAISO should clarify how and when these topics would be addressed.
- Could CAISO clarify why the treatment of pseudo-ties and dynamic scheduling arrangements for storage resources has been identified as a need for 2015? Is this an issue that could be addressed as a part of a business practice manual update or does it require a tariff change?

**6. PG&E recommends resolution of CAISO’s Expanding Metering and Telemetry Options Phase 2 initiative prior to CAISO addressing multiple-use application resources.**

While PG&E is supportive of multiple use applications (e.g., aggregating demand response and energy storage), PG&E would like to see full resolution of the Expanding Metering and Telemetry Initiative prior to CAISO addressing multiple use applications in the Energy Storage and Aggregated Distributed Energy Resources initiative. The verification of metering and telemetry requirements for various sources is needed to support a rational and efficient discussion of the potential for the aggregation of storage to provide demand response and grid services.

**7. PG&E recommends CAISO coordinate all aspects of this initiative with its participation in the Supply Resource Demand Response Integration Working Group (SIWG) and the Load Modifying Resource Demand Response Operations Working Group.**

PG&E recommends that the CAISO coordinate this initiative with the work being done in the Supply Resource Demand Response Integration Working Group (SIWG) which is in the process of developing recommendations for reducing barriers to demand response participating in the CAISO market. The SIWG was directed by the CPUC to submit its recommendations by June 30, 2015.<sup>2</sup> Items of potential overlap in the SIWG recommendations include revisions to existing baseline methodologies and telemetry requirements for market integrated demand response resources.

PG&E also recommends that the CAISO use this opportunity to improve the integration of Load Modifying Resource Demand Response with the CAISO market and consider implementing recommendations made by the Load Modifying Resource Demand Response Operations Working Group that are approved by the CPUC. Like the SIWG, this working group is required to submit

---

<sup>2</sup> CPUC Decision 14-12-024, Ordering Paragraph 4.f.

recommendations by June 30, 2015.<sup>3</sup> The Load Modifying Resource Demand Response Operations Working Group recommendations are generally operationally focused so there could be greater efficiency in addressing them in coordination with the other issues within the scope of the Energy Storage and Aggregated Distributed Energy Resources initiative.

**8. PG&E would like to clarify that the scope of the CPUC’s Integrated Demand Side Resources (IDSR) proceeding is still being determined and therefore the CPUC’s action to address aggregating distributed energy resources remains uncertain.**

On slide 9 of CAISO’s presentation, CAISO mentions the CPUC’s DSM proceeding, “Will address aggregation of distributed energy resources to meet system needs.” However, PG&E understands that the CPUC is still determining the scope of the proceeding, therefore, addressing aggregation of distributed energy resources, more aptly “may” be addressed in the CPUC’s DSM proceeding. PG&E would like to ensure that the CAISO align any of its aggregation rules with rules the CPUC is developing.

---

<sup>3</sup> Ibid.