

## Energy Storage and Distributed Energy Resources Phase 3 Issue Paper

Submitted by	Company	Date Submitted
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PG&E appreciates the opportunity to comment on the scope of topics that will be taken up as part of the Energy Storage and Distributed Energy Resources (ESDER) Phase 3 initiative, as set out in the Issue Paper published on September 29, 2017.

PG&E applauds the CAISO for the identification of numerous important issues impacting the realm of distributed energy resources (DERs) and energy storage resources particularly. While certain topics are a carry-over from prior ESDER phases—such as the Load Shift product (formerly Load Consumption product), Multiple Use Applications (MUA), and certain operational elements under the non-generating resource (NGR) model—we see that there are a number of new topics focused on Demand Response (DR) enhancements. The list of topics for potential inclusion is very broad. As such, PG&E is concerned that addressing all of them in a timely manner may prove overly ambitious.

While the CAISO has “designated” the consideration of a Load Shift product “as a priority” for this initiative, not all DR-related topics in the Issue Paper seemingly support this goal. Some of the identified DR issues are either operationally focused (e.g., DR modeling and weather-sensitive DR) or pertain to barriers to DR integration (e.g., resource design constraints and DR aggregation). Both topic categories are important and urgently await resolution. Nevertheless, these topics may draw attention away from the consideration of a Load Shift product if retained in the scope of the present initiative.

PG&E recommends that some or all of the DR-related issues that do not directly support the consideration of a Load Shift product be considered either in another track within ESDER or in a separate stakeholder initiative. This will ensure that the CAISO and stakeholders have sufficient opportunity to consider the Load Shift product, and the other topics receive full consideration in turn.

PG&E notes that several of these topics have been scoped into the CPUC’s Resource Adequacy proceeding (i.e., weather sensitive DR) and the proposed CPUC’s DR Supply Side Working Group<sup>1</sup> (i.e., resource design constraints). While it is not clear that there will be sub-issues assigned to the CPUC or the CAISO for consideration, the CAISO and CPUC will need to coordinate closely. If the scope and division of work isn’t properly clarified, there is the risk of duplication and inconsistency if addressed simultaneously at the CPUC and the CAISO. This risk

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<sup>1</sup> CPUC issued a Proposed Decision (PD) and Alternate PD on September 15, 2017, which would establish a Supply Side Working Group along with a Load Consumption Working Group.

applies equally to the CPUC's Supply Side Working Group and Load Consumption Working Group. PG&E would appreciate the CAISO clarifying its plans to coordinate with the CPUC, as it pertains to these topics.

**1. Please provide comments on whether your organization supports or opposes the Demand Response proposal item, as well as the reasons why.**

- **DR Modeling**: While PG&E supports addressing commitment costs and the impact of a 0 MW Pmin, as it would help differentiate the unique elements of DR as compared to traditional generation, it is not clear that the ESDER 3 initiative is the appropriate forum for undertaking such a review. Similarly, for the modeling of minimum and maximum run-time constraints, it's not clear if ESDER 3 is the right venue. Previously, issues of this nature were being addressed in the Commitment Cost Enhancement and the Commitment Cost Energy and Default Energy Bid Enhancements initiatives.
- **Weather Sensitive DR**: PG&E supports addressing this issue generally. However, it is in scope for the CPUC's Resource Adequacy (RA) Rulemaking (R. 17-09-020) and is also being considered in the CPUC's proposed Supply Side Working Group. Whether this topic is included in the ESDER 3 initiative or not, the CAISO must coordinate the scope of work in this area with the CPUC.
- **Resource Design Constraints**: PG&E supports addressing this issue. We note that while ultimate changes to the Proxy DR (PDR)/Reliability DR Resource (RDRR) rules are the purview of the CAISO, these issues may also be addressed in the CPUC's proposed Supply Side Working Group with CAISO's direct involvement.
- **DR Aggregation Rules**: PG&E supports addressing DR aggregation rules with a specific emphasis on reviewing the applicability or methodology for the default load adjustment.
- **RDRR Economic Buy Back of DA Awards**: PG&E supports the CAISO's proposal not to include this topic in ESDER 3.
- **EVSE Load Curtailment**: Notwithstanding PG&E's comment on "technology neutrality" below, the application of the metered generator output (MGO) performance measurement rules should be considered for DERs generally. PG&E notes that implementation of MGO probably resides outside of ESDER 3 and would likely require CPUC input for applications to behind-the-meter configurations.
- **Load Consumption and Regulation**: PG&E supports addressing Load Shift in ESDER 3. This topic was previously scoped into ESDER 2, which resulted in a conceptual proposal from the Load Increasing Working Group. It is not clear to PG&E whether that conceptual proposal will be the starting point for the current initiative or the CAISO plans to start anew. PG&E would appreciate the CAISO clarifying whether or not efforts in the current initiative are intended to build on prior work in this area. Regardless of the starting point, it was the general sense from parties in the previous phase that development and implementation of a Load Shift product would be a multi-year effort.

**2. Please provide comments on whether your organization supports or opposes the Multiple-Use Applications proposal item, as well as the reasons why.**

PG&E understands that there is developer interest in microgrid participation in CAISO markets. We also note that the CAISO's DER Provider (DERP) tariff already exists to facilitate CAISO participation of DER aggregations (DERAs). Does CAISO contemplate microgrid DERA requirements being established in addition to DERP DERA requirements (i.e., using DERP requirements as a starting place, and adding additional requirements based on the differentiable characteristics of microgrids)? Or, does CAISO contemplate a separate set of rules for microgrid DERAs? PG&E is interested in understanding the basis for these considerations. Does CAISO see the microgrid use case as different from the supply-side DR or DERP use-case for purposes of facilitating participation of DERAs in CAISO transactions? If so, what is different about microgrids as distinct from DR or DERP aggregations?

PG&E is concerned that modifying the NGR participation rules to allow less-than 24/7 participation in the CAISO markets has fundamental implications on what differentiates NGR from the CAISO's PDR model. Consideration for changing NGR requires a holistic assessment of the market in aggregate. Less-than 24/7 participation would fundamentally modify the NGR model in ways that could also reduce its usefulness to physical DERs and energy storage resources in exchange for enabling the netting of wholesale supply and retail demand. Moreover, adequate consideration may be difficult until there is further guidance on the implementation of the DERP tariff.

PG&E suggests that enabling the netting of wholesale supply and retail demand is better suited to an extended PDR model, which would already have the settlements in place for partial-day CAISO market participation such as baselining and metering, but could also enable demand increases as well as demand decreases in participating periods. In any case, PG&E would like to better understand how CAISO would optimize in the markets and settle NGRs for less-than 24/7 participation, given that all CAISO resources are by definition defined in the markets for all hours, and that any metered supply or demand at a wholesale resource location is currently explicitly included in the five-minute dispatch function.

More generally, and as described during the stakeholder call, it seems that the MUA topics as set out in the Issue Paper seem peripheral to more significant MUA issues that remain unresolved. While PG&E applauds the CAISO's continuing commitment to identify and remove barriers to energy storage and DER integration, the initiative's MUA focus may be more valuable if directed towards the following topics:

- Clarifying metering and performance measurement requirements for storage resources and other DERs;
- Determining which reliability services MUA resources can provide to the transmission system versus direct participation in the wholesale market; and
- Establishing rules governing the prioritization of reliability services over non-reliability services.

Addressing these topics will require collaboration between the CAISO, the CPUC, and stakeholders. PG&E considers these topics to be more at the core of MUA challenges impeding the integration of energy storage resources and DERs.

**3. Please provide comments on whether your organization supports or opposes the Non-Generator Resource proposal item, as well as the reasons why.**

As previously stated in our ESDER 2 comments, PG&E continues to support establishing a throughput limit as a parameter. PG&E is not opposed to including this topic in the scope of the ESDER 3 initiative. If included, PG&E would propose that the daily throughput constraint be a parameter specified on a daily basis as part of the day-ahead energy bid. We would further propose that storage resources, which must provide 4 hours of energy at their net qualifying capacity to provide RA, should not be exposed to RA Availability Incentive Mechanism penalties once the daily throughput limit is exhausted, whether through regulation or energy dispatch. Participants should have the flexibility to not bid the resource in real time if the resource has reached its throughput limit in order to ensure the limit is respected. While market participants may structure day-ahead bids to attempt to maximize value within the daily energy limits, this may not reflect a true optimization. The CAISO will likely be in a better position to optimize the times when the storage resource should discharge than market participants managing their resource's state of charge (SOC) through energy bids.

PG&E supports enhancements allowing NGR resource operators to incorporate SOC information in their bids. E.g., a real-time energy bid including SOC would be helpful. However, multi-segment ancillary service bidding affects many resource types and is a much broader issue that should not be addressed through ESDER 3. Rather, it should be addressed through a larger stakeholder process considering bid structure in general. As for regulation bidding for SOC, the current regulation mileage payment should be able to compensate for excessive movement. There is not enough evidence to justify the need for a new product at this point.

**4. Please provide additional comments, if any, from the discussion.**

Efforts to advance DER participation in supporting grid needs should be technology neutral. This sentiment was expressed by the CAISO during the stakeholder call. However, the Issue Paper appears to deviate from this technology-neutral philosophy by proposing development of rules for specific use-case niches, such as for "EVSE Load Curtailment" and wholesale participation by microgrids. PG&E believes a common standard for all DERs should exist without unique adaptations for specific technologies. With common standards that apply equally regardless of technology, PG&E sees the DR model as one gateway among many to greater DER integration.

PG&E again suggests that the CAISO and stakeholders focus on the highest priorities so this initiative can drive towards an effective resolution.