Pacific Gas and Electric Company®

Comments of Pacific Gas and Electric Company
Flexible Resource Adequacy Criteria and Must-Offer Obligation
Fifth Revised Straw Proposal

Submitted by	Company	Date Submitted
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Pacific Gas and Electric Company (PG&E) offers the following comments in the stakeholder process for the California Independent System Operator's (CAISO) Flexible Resource Adequacy Criteria and Must-Offer Obligation (FRAC-MOO) initiative January 17, 2014 Fifth Revised Straw Proposal (Proposal).

In summary, PG&E's chief comments are:

- The CAISO has not justified the need for the complex four-category flexible RA framework;
- PG&E recommends a simplified two-type framework;
- Because of the four-category framework, PG&E does not support using Capacity Procurement Mechanism to backstop flexible capacity; and
- PG&E continues to advocate for two changes to the flexibility requirement allocation methodology.

1. The Need for the Complex four Category Framework Has Not Been Justified

The Proposal recommends four flexible capacity procurement categories with corresponding minimum and maximum procurement targets, as well as, different must offer obligations (MOO) for each category. PG&E does not support the four-category approach. In general, the framework is overly complex and not adequately supported by analysis. Moreover, this major change to the design has been introduced late in the stakeholder process (month 13 in 14 month stakeholder process) and the CAISO has not allowed stakeholders adequate time to vet its limited analysis.

Specifically, the CAISO's proposal:

- Introduces new flexible capacity "products" by creating multiple definitions of "flexibility;"
- Infringes upon the jurisdiction of the CPUC and other LRAs by developing prescriptive requirements for the counting of resources. Any minimum or maximum constraints on the counting of resources, as well as the actual counting rules, should be addressed by the CPUC and other LRAs;
- Is not sufficiently supported by data and analysis. The CAISO analysis does not appear to recognize flexibility from non-flex RA resources;
- Is not supported by actual operational examples of insufficient flexible capacity;
- Creates unnecessary complexity; and
- Does not allow for sufficient time for vetting and validation by stakeholders.

Several of these concerns warrant further discussion.

First, the 17-hour energy requirement for Category 1 is inconsistent with the CPUC's June 2013 RA decision. In fact, the requirement to be available to provide 17-hours of energy makes Category 1 capacity look much more like generic RA rather than the flexible RA needed to meet ramping events. In 2013 the CAISO and CPUC jointly defined the flexibility requirement as the maximum monthly 3-hour ramp. Based on this agreed-upon definition, a resource that provided six hours of energy should be able to count against the requirement without any restrictions. If the CAISO wants to redefine the definition of the requirement, then it should do so in concert with the CPUC and stakeholders and not through restrictions in the counting rules. Other aspects of the CAISO's proposal also appear inconsistent with the CPUC's most recent RA proposal.[1]

[1] The CAISO's proposed counting conventions for storage and demand response resources are inconsistent with the CPUC's most recent proposal. The Energy Division proposal recommends qualifying capacity (QC) and effective flexible capacity (EFC) be determined using different methodologies for each resource type. For storage, the same QC methodology applied to dispatchable generic resources will be applied, based on a four-hour Pmax (maximum sustained output), including testing and verification in CAISO operations. For supply-side DR, the same requirements currently applied to customer-focused, existing demand response programs and rates will be applied (using load impact protocols). See Qualifying Capacity and Effective Flexible Capacity Calculation Methodologies for Energy Storage and Supply-Side Demand Response Resources, Staff Proposal Outline, Resource Adequacy Proceeding R. 11-10-023, January 16, 2013. http://www.cpuc.ca.gov/NR/rdonlyres/59531E27-5A74-4E47-8551-0FBAB2DB6B0D/0/QCandEFCMethodologies_ESandSupplySideDR.PDF

Second, the analysis provided by the CAISO is insufficient to justify the adoption of such a complex framework. The CAISO has not analyzed the energy needed during daily ramping events or factored into its analysis the flexibility that can be expected from resources not included in the flexible RA showing. PG&E recommends the CAISO calculate the daily flexibility energy needed for 2013. This requirement can then be compared against the energy expected from different category frameworks, including the CAISO's proposed framework and an alternative recommended by PG&E. PG&E also recommends the CAISO adjust the requirement to recognize some of the flexibility that could be provided by non-RA resources. These resources will be providing flexibility in part due to the price signals in the CAISO's spot markets.

Third, the category proposal is unnecessarily complex. This includes the need for four categories with different counting and bidding requirements, as well as, the procurement limits for each of the categories that change monthly. These changing targets will make the buying and selling of RA and compliance reporting more difficult. It seems the CAISO has lost sight of the scale of the problem to be solved.

The introduction of such complexity is especially curious given the new Reliability Services Initiative (RSI) introduced by the CAISO on January 28th. In this initiative, the CAISO will seek to standardize eligibility criteria and MOO for all RA (system, local and flexible). If the CAISO wants to standardize RA, it is counterproductive to introduce four new RA products via the categories. The most recent FRAC-MOO proposal is headed in the wrong direction. Moreover, since the RSI will be revising all RA in this new initiative, it makes more sense to make incremental, less complex changes in FRAC-MOO now, analyze the results of these changes in 2014 and 2015, and refine the RA rules in the RSI.

An incremental, go-slow approach also makes sense since the CAISO has not yet factored the impact of the new Energy Imbalance Market (EIM). The CAISO expects the EIM to reduce flexibility reserve cost in the CAISO by $3-55 million annually by decreasing the requirement.[2] The introduction of the EIM may also impact the rules that are needed to count and bid flexible RA. The CAISO should wait to implement such a complex framework until we better understand the impact of the EIM on the CAISO. Further, the adoption of 15-minute scheduling under FERC 764 is also likely to have an impact on the spot market's ability to accommodate output from wind and solar resources.

[2] PacifiCorp-ISO Energy Imbalance Market Benefits, page 35. http://www.caiso.com/Documents/PacifiCorp-ISOEnergyImbalanceMarketBenefits.pdf

2. PG&E Proposes a Simplified Category Framework

PG&E recommends the CAISO simplify its four-category framework to two categories or types. Categories 1 and 2 would be combined into Type 1, and Categories 3 and 4 into Type 2. There is no limit to the amount of Type 1 resources that can be shown by a load serving entity (LSE) towards its flexible RA requirement. Type 1 would have a six hour energy requirement which is consistent with the framework adopted by CPUC. Up to ten percent of an LSE's requirement can be shown from Type 2 resources. This ten percent limit is fixed for all months.

The two categories are not defined by technology. Requirements for Type 2 resources are less restrictive, but any resource can participate as either a Type 1 or Type 2 resource. Additional detail of the two types is provided below.

Type 1 (no limit for showing)

- 17-hour bidding requirement (5:00 a.m. to 10:00 p.m., every day).
- 6 hours of energy limit (based on a resource's committed, or shown, effective flexible capacity (EFC)).
- Minimum two starts each day.
- Scheduling coordinators indicate to the CAISO if the 6-hour energy limit (or higher), a maximum daily start limit (minimum two), or no restrictions are applicable for each day.
- Regulation energy management (REM) resources are classified as Type 1. Due to the nature of only providing 15 minutes of energy for a 3-hour flexibility definition, the EFC for a REM resource will be counted as one-twelfth (1/12) of its nameplate capacity. The CAISO has full control of committed REM resources.

Type 2 (up to 10 percent of showing)

- 5-hour bidding requirement (Monday - Friday with applicable hours seasonally determined by the CAISO during the annual Flexible Capacity Requirements (FCR) study process).
- 3 hours of energy limit (based on a resources' committed, or shown, EFC)
- Minimum ten starts per month.

- Scheduling coordinators indicate to the CAISO if the 3-hour energy limit (or higher), a maximum daily start limit, or no restrictions are applicable for each day.

2015 will be a test year. If the CAISO experiences an operational problem related to flexibility in its spot markets, it can issue a capacity procurement mechanism (CPM) designation to address the issue. If it is determined that specific restrictions on use-limited resources counting for flexible capacity RA are necessary to address CAISO operational challenges, the CAISO and CPUC could work with stakeholders to develop a refined approach for future years (2016 and beyond). In the absence of operational evidence that an alternative method is needed, this proposed approach would continue to be used.

Over the next several years through the RSI and other forums, the CAISO, CPUC, and stakeholders would continue to evaluate whether additional categories or other modifications to the flexible capacity framework are necessary. In the initial RSI paper, the CAISO has indicated a preference for standardization of RA products which supports fewer not more categories. Future analysis should consider:

- Commitment of use-limited resources as flexible capacity and their impact on operations;
- The ability for market prices to incent non-RA resources to provide flexibility;
- Historic operational performance of the grid with regards to flexibility; and
- Number of CPM events required to procure additional flexible RA and identification of cause for those incidents.

3. PG&E Does Not Support Using CPM to Backstop Flexible Capacity with the Four Category Framework

PG&E does not support the CAISO's plan to extend the tariff applicability of the CPM to include insufficient flexible capacity. We do not support the CPM expansion because of our opposition to the categories as discussed above. Backstopping the four categories as currently proposed would unnecessarily increase CPM cost for California customers. PG&E would support expanding the usage of CPM as a flexibility capacity backstop should the CAISO redefine its categories in a manner consistent with PG&E's recommended two-type approach discussed above.

4. PG&E Continues to Support Two Changes to the Flexibility Requirement Allocation Methodology

As discussed in our Nov. 27, 2014 comments, PG&E continues to support two changes to the methodology used to allocate the flexibility requirement.

1. The flexibility requirement caused by VERs' output should be allocated to VERs; and
2. The allocation to load should be done based on each LSE's largest monthly ramp, regardless of coincidence to net-load peak ramp.

Flexibility Requirement Caused by VERs' Output Should Be Allocated to VERs

PG&E supports allocating the flexibility requirement caused by VERs to VERs. An allocation to VERs is fair, helps create efficient procurement outcomes and does not put at risk grid reliability.

As discussed in PG&E's previous comments, allocation of the flexibility requirement of merchant VERS or VERs with non-CAISO off-takers to CAISO participants is unjust and unreasonable. Other control areas, such Puget Sound Energy (Puget)[3] and Westar Energy,[4] have recognized the need to fairly allocate the fixed capacity costs associated with regulation services. Puget developed FERC-approved regulation services charges for generators that include the capacity cost of resources needed to balance intermittent generation. These costs are allocated by Puget to generators that export their power or serve the energy needs inside the control area. The CAISO should take a similar approach in allocating flexibility requirements to generators that export their energy or serve CAISO load.

The allocation of the flexibility requirement to VERS will also promote efficient procurement outcomes. If the true cost of VERs is allocated to VERs, then these costs will be reflected in their offers to energy and capacity solicitations. This means that the true costs will be reflected in the offers, and the procurement will be based on a more accurate cost basis resulting in better procurement decisions. Moreover, having these costs correctly accounted is also fairer to competing resource technologies that have lower or little flexibility requirement costs.

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[3] Puget Sound Energy's Compliance Filing Regarding Revisions to Settlement and Submission of Schedules 3 and 13 of Puget Sound Energy, Inc.'s Open Access Transmission Tariff, Feb. 6, 2013. http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13173234

[4] Westar Balancing Area Services Agreement and Schedule 3A to Open Access Transmission Tariff, June 3, 2009. http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=12041334

Allocation of the flexibility requirement to VERs will not put at risk grid reliability. One possible solution suggested at the stakeholder meeting to eliminate the possibility of CAISO load procuring flexibility on behalf of non-CAISO load was for the CAISO to remove the generation and variability produced by VERs from non-CAISO off-takers from the requirement calculation. This approach is fundamentally flawed. Either the CAISO needs the flexibility to meet the intermittent burden placed on the system or it does not. The requirement does not disappear simply because there is a non-CAISO off-taker (assuming the generator is not dynamically metered). If the requirement is needed for reliable grid operations, then the flexibility should be procured and the costs allocated to the responsible VER. Artificially reducing the requirement puts the CAISO's reliability at risk.

Finally, the issue of grandfathering for VERs is irrelevant. This is a new requirement for both load and generators to better reflect the changing energy market. The CAISO is not seeking to eliminate an established CAISO settlement calculation. The fair allocation of this new requirement to all participants (load and generation) needs to be considered. This is similar to the approach taken in the FERC settlement for the Flexible Ramping Constraint cost. Like the flexible capacity requirement, this was a new cost. The issue of cost allocation among load and generation was considered in the settlement, and generators are allocated that portion of the cost that was determined attributable to them (25%).[5] Similar to the Flexible Ramping Constraint, a portion of the flexibility requirement should be allocated to the generators causing the requirement.

Allocation to Load Should Be Done Based on Each LSE's Largest Monthly Ramp, Regardless of Coincidence to Net-Load Peak Ramp

PG&E maintains that the non-coincident approach for the allocation due to load is preferable to the CAISO's allocation based on ramps coincident to the system net load ramp. The CAISO's coincident peak approach can result in one LSE benefiting from the flexible capacity procured by another LSE and not sufficiently contributing to the procurement of flexible capacity. As shown in the simple example in our previous comments, a fairness issue exists with the coincident approach. A non-coincident approach addresses this flaw.

PG&E believes that entities benefitting from procured flexibility should be required to pay a portion of the procurement costs, just as entities benefitting from the investment of transmission are required to pay for a portion of the costs of that

[5] CAISO Fifth Replacement Tariff, Section 11.25.3.
http://www.caiso.com/Documents/Section11_CaliforniaISOSettlements-Billing_Nov1_2013.pdf

transmission.[6] This is the key underlying argument of PG&E's proposed allocation methodology – that all entities will utilize and benefit from procured flexible capacity, regardless of their contribution to the coincident system net load ramp.

5. PG&E Supports Addressing the Flexible RA Incentive Mechanism and Replacement Rules in the New Reliability Services Initiative

PG&E supports addressing the Flexible RA incentive mechanism and replacement rules in the new RSI. PG&E cautions the CAISO to be realistic with the RSI Phase 1 time table. Inclusion of these items along with the other items in the Phase 1 scope (standardization of RA and creation of a new CPM) could easily take longer than the CAISO has projected.

6. Additional Coordination between the CAISO and CPUC on Flexible RA Issues Is Required

The current FRAC-MOO proposal includes counting rules for demand response and energy storage resources that diverge from counting rules proposed by the CPUC.[7] PG&E expects the CPUC's counting rules to set precedence and encourages the CAISO to coordinate with the CPUC so that the tariff filed with FERC in the spring conforms with the rules being developed in the current CPUC RA proceeding.

7. More Detail Is Needed on the Allocation of the Requirement

The CAISO's proposal to allocate the requirement due to variability in wind, solar PV and solar thermal on forecasted data requires additional detail. It is unclear if the CAISO intends to use historical weather data (to date, the CAISO has relied on a 2005 weather data set) or if CREZ data will be relied upon. These issues should be explained in detail in the next FRAC-MOO proposal and must be consistent with the approach taken in the FCR Technical Study.

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[6] FERC Transmission Planning and Cost Allocation by Transmission Owning Utilities, Notice of Proposed Rulemaking, Issued June 17, 2010, Docket RM10-23-000, p79-80. http://www.ferc.gov/whats-new/comm-meet/2010/061710/E-9.pdf

[7] Qualifying Capacity and Effective Flexible Capacity Calculation Methodologies for Energy Storage and Supply-Side Demand Response Resources, Staff Proposed Outline, Resource Adequacy Proceeding R.11-10-023; California Public Utilities Commission – Energy Division.