

Comments of Pacific Gas and Electric Company

RSI Phase 2 and FRACMOO Phase 2 – Issue Paper

Submitted by	Company	Date Submitted
Jordan Parrillo	PG&E	July 15, 2015

Pacific Gas and Electric Company (PG&E) offers the following comments on the California Independent System Operator's (CAISO) Reliability Services Initiative (RSI) Phase 2 and Flexible Resource Adequacy Criteria and Must Offer Obligation (FRACMOO) Phase 2 June 25, 2015 Issue Paper.

FRACMOO Phase 2

PG&E's primary comments on FRACMOO Phase 2 are:

1. The working group in FRACMOO Phase 2 should consider the costs and reliability benefits of securing existing operating flexibility via forward requirements vs. short-term market incentives. The FRACMOO Phase 2 initiative should assess whether incentives and price signals from the energy markets can be sufficient to provide needed operating flexibility while reducing dependence on additional forward procurement requirements.
2. CAISO should alter its flexible capacity counting rules for storage resources that do not fit into the CAISO's non-generator resources (NGR) model to be consistent with the California Public Utilities Commission (CPUC) rules.
3. CAISO should structure flexible capacity rules so that intertie resources can provide flexible capacity only if they can provide comparable reliability benefits as an internal resource.
4. The assessment of the potential impact of merchant variable energy resources (VERs) and their allocation of flexible capacity requirements should be an ongoing process to capture changes in the market and increasing levels of renewable energy resources.

1. The working group in FRACMOO Phase 2 should consider the costs and reliability benefits of securing existing operating flexibility via forward requirements vs. short-term market incentives.

PG&E recognizes the need for operating flexibility to integrate increasing amounts of variable energy resources. We also recognize the need to consider the reliability and cost impacts of different approaches to secure that flexibility.

It appears that the existing system has operating flexibility to integrate the majority of anticipated renewables without significant curtailment: CAISO's LTPP studies show that under the 33% RPS scenario, the amount of RPS curtailment is limited to less than 1% in 2024.¹ Additional flexibility may be needed in the future if more than 33% renewables are integrated into the system or if currently anticipated flexibility does not materialize. However, since the system appears to have sufficient operating flexibility in the next 5-10 years, now is the appropriate time for the CAISO to consider the benefits and costs of securing that flexibility via different means. In concept, higher forward requirements may be justified if sufficient flexibility is not likely to materialize via short-term market incentives. The working group in FRACMOO Phase 2 should consider the costs and the reliability benefits of securing existing operating flexibility via forward requirements vs. short-term market incentives.

- i. The working group studies should use clear reliability metrics so that stakeholders can understand and assess the need for forward flexible capacity requirements in terms of reliability vs. cost impacts.

The Issue Paper indicates that the need for a flexible capacity product to account for over-generation is not just an economic issue, it is a reliability issue. The working group studies should use clear reliability metrics so that stakeholders can understand and assess the need for forward flexible capacity requirements in terms of reliability vs. cost impacts. Further, evidence that increased penetration of variable energy resources and faster net-load ramping needs are leading to reliability issues is needed. Through the working group studies, the causes of violations of the identified reliability metrics must be clear so that stakeholders can assess the need for modifications to the existing flexible capacity products or additional flexible capacity products in terms of reliability needs.

- ii. **The working group studies should consider the impact of short-term market incentives and assess the need for forward requirements with clear assumptions about other market developments.**

The working group studies on flexibility needs should look at whether incentives and price signals from the energy markets are sufficient to provide the required operating flexibility and maintain reliability. The studies should consider whether the CAISO's energy markets and additional market based solutions are able to incent generators to provide the needed dispatchability. If the CAISO believes that the current energy market solutions to ramping needs are not sufficient, the stakeholder process should explore what additional enhancements to the short-term market structure can incent the needed flexibility, in addition to evaluating the stricter forward RA requirements suggested in the issue paper.

The CAISO currently has various efforts to develop short-term market tools that address flexibility needs, such as the ongoing development of the flexible ramping

¹ Phase I.A. Direct Testimony of Dr. Shucheng Liu on Behalf of the California Independent System Operator Corporation, Rulemaking 13-12-010, p.39 of 48. Available at: http://www.caiso.com/Documents/Aug13_2014_InitialTestimony_ShuchengLiu_Phase1A_LTPP_R13-12-010.pdf

product and an initiative scoped in the 2015 Stakeholder Initiatives Catalog to combine the integrated forward market (IFM) and the residual unit commitment process (RUC) while optimizing the IFM over multiple days. This new initiative would consider allowing RUC to decommit resources to better handle over-generation. Other relevant initiatives include the expanding footprint of CAISO's Energy Imbalance Market, the potential expansion of CAISO's full market, and the increased bidding capabilities of renewable resources. All of these market trends will have an impact on operating flexibility. The CAISO needs to be clear on its assumptions about how these changing market conditions will impact flexibility needs in order for stakeholders to assist in the development of a successful procurement framework.

2. CAISO should alter its flexible capacity counting rules for storage resources that do not fit into the CAISO's NGR model to be consistent with the CPUC rules.

In FRACMOO Phase 2, the CAISO will determine the flexible capacity counting rules for storage resources that do not fit into the CAISO's NGR model. Under the current CAISO flexible RA counting rules, storage resources with a non-zero transition time between charge and discharge can only count their discharge capacity towards their Effective Flexible Capacity (EFC) value, despite the ability of these resources to provide flexibility by charging. Storage resources with non-zero transition times are capable of addressing the three hour ramp, and the charging portion of these resources should be counted in the EFC, just as other storage resources that both charge and discharge.

In its Final Decision Adopting Local Procurement and Flexible Capacity Obligations for 2016 (Decision 15-06-063), the CPUC agreed that the charging portion of non-zero transmission time resources should be counted in the EFC and modified their EFC counting rules to count as flexible capacity the full range of charge and discharge that such a storage facility can achieve and sustain over a three hour period. The CAISO must ensure that its markets are consistent with this CPUC rule. The CAISO should modify its existing EFC rules to allow energy storage resources that don't fit into the CAISO's NGR model to provide flexible capacity from both their charging capabilities and their discharge capabilities.

3. CAISO rules allowing inertie resources to provide flexible capacity must ensure that the CAISO system receives comparable benefits from external resources as from internal resources.

PG&E believes there is value in trying to get flexibility from inertie resources, indeed this flexibility is assumed in the LTPP study referenced above. However, CAISO must structure flexible capacity rules so that inertie resources can provide flexible capacity only if they can provide comparable reliability benefits as an internal resource. We recognize that, based on current CAISO market conditions, the scheduling practices of inertie resources may be limited compared to internal flexible resources that have the capability to bid into both the fifteen-minute market and five-minute market. This creates a potential inconsistency between internal and inertie resources that would require significant study before concessions are made to one type of resource over another. This

type of study is particularly difficult when accounting for the recent changes in intertie definitions and future potential rule changes related to EIM entities. It is not clear how resources with different requirements and offer obligations would be counted as flexible capacity particularly in EIM areas, and PG&E seeks clarity as to how these complexities will be addressed in FRACMOO Phase 2 to ensure fair treatment of internal and external resources.

4. The assessment of the potential impact of merchant VERs and their allocation of flexible capacity requirements should be an ongoing process to capture changes in the market and increasing levels of renewable energy resources.

PG&E appreciates the CAISO assessing the potential impact of merchant variable energy resources (VERs) on flexible capacity needs. PG&E believes that it is appropriate and fair to allocate flexible requirements caused by VERs that are not under contract or are contracted to an LSE not located within the ISO's balancing area to those VERs. This follows the principles of cost causation. The CAISO should assess the potential impact of merchant VERs and their allocation of flexible capacity requirements annually to capture changes in the market and increasing levels of renewable energy resources.

RSI Phase 2

Overall, the RSI Phase 2 stakeholder process and CAISO proposal must take into account that the RSI Phase 1 is currently in front of FERC and adjustments to the scope of RSI Phase 2 may be necessary based on FERC's decisions. PG&E's primary comments on the RSI Phase 2 are:

- The CAISO should add an additional issue to the scope of RSI Phase 2: ensuring that its rules regarding cogeneration resources that bid into the Day Ahead market but are not capable of bidding in the Real Time market are consistent with CPUC rules.
- PG&E does not oppose the CAISO's evaluation of substitution rules for flexible capacity resources on planned outages, based on current flexibility requirements.
- PG&E supports the CAISO developing provisions to apply the proposed RAIM to combined flexible capacity resources.
- PG&E seeks more clarity as to what the CAISO is proposing regarding local resources on outage.
- PG&E supports the CAISO developing a process to update resources' EFC.

1. The CAISO should ensure that its rules regarding cogeneration resources that bid into the Day Ahead market but are not capable of bidding in the Real Time market are consistent with CPUC rules.

In its Final Decision Adopting Local Procurement and Flexible Capacity Obligations for 2016 (Decision 15-06-063), the CPUC adopted changes to the RA counting provisions of cogeneration resources that bid into the Day Ahead market but are not capable of bidding in the real time market. The CAISO must examine its rules regarding these resources to

ensure that its markets accommodate these resources. Currently if resources submit economic bids into the day-ahead market and do not receive an award for their full capacity, the residual capacity is subject to RUC and subsequent bid insertion in the real-time market. This effectively disqualifies a cogeneration resource that is incapable of responding to dispatch instructions in real-time from providing day-ahead economic bids. To resolve this disconnect between the recently adopted CPUC RA decision and CAISO's existing bidding rules, CAISO should exempt cogeneration facilities that are capable of providing economic bids in the day-ahead timeframe but incapable of responding to real-time dispatch instructions from RUC obligations and bid insertion.

In line with these changes, PG&E would like to encourage revisions to the RAAIM in order to remove resource type exemptions, wherever possible.

2. PG&E supports the CAISO developing a process to update resources' EFC.

PG&E believes that it is important for the CAISO to have a process to allow resources to adjust their EFC within a given year. The fact that this does not currently exist has a detrimental impact on the value of resources and potentially increases customer costs. PG&E supports the CAISO developing a process to update resources' EFC and recommends that the processing of requests occurs on at least a monthly basis.

3. PG&E does not oppose the CAISO's evaluation of substitution rules for flexible capacity resources on planned outages, based on current flexibility requirements.

PG&E agrees with the CAISO that substitution rules for flexible capacity resources on planned outages are relevant to the definition of flexible capacity. PG&E does not oppose the CAISO's evaluation of these rules in RSI Phase 2. PG&E recommends that the CAISO develop the substitution rules for flexible capacity resources on planned outages based on the current definition of flexible capacity. PG&E suggests that the CAISO keep in mind the potential for significant revisions to substitution rules if the definition of flexible capacity changes. Therefore, simplified approaches are preferable to complex approaches that require high levels of precision to be successful.

4. PG&E supports the CAISO developing provisions to apply the proposed RAAIM to combined flexible capacity resources.

PG&E supports the CAISO developing provisions to apply the proposed RAAIM to combined flexible capacity resources. Combined flexible capacity resources should be included under the RAAIM construct equivalent to other flexible capacity resources. One way to apply the RAAIM to combined flexible capacity resources is to have a pro-rata share of payments and penalties to the sub-resources making up the combined flexible capacity resource based on the availability of each sub-resource (e.g., the number of starts each resource is allowed). PG&E looks forward to discussing this and other potential approaches to apply the proposed RAAIM to combined flexible capacity resources.

5. PG&E seeks more clarity as to what the CAISO is proposing regarding local resources on outage.

The CAISO has stated that it will assess the implications and feasibility of (1) providing greater specificity into the replacement requirements of local RA resources on planned outages; and (2) allowing an RA resource in a local area to count only as a system RA resource for purposes of outage substitution. PG&E seeks more clarity as to what the CAISO is proposing in this section.

The CAISO also indicates that it will assess the implications of potentially splitting local RA into a separate showing. PG&E notes that adding a new showing adds unnecessary complications and would recommend keeping the process simplified. For example, if changes are necessary, it would be less complicated to add a flag mechanism to the existing filing process rather than adding a new showing.