



Comments of Pacific Gas & Electric Company
Flexible Resource Adequacy Criteria and Must Offer Obligation –
September 26th Working Group

Submitted by	Company	Date Submitted
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Pacific Gas and Electric Company (PG&E) offers the following comments on the California Independent System Operator’s (CAISO) Flexible Resource Adequacy Criteria & Must Offer Obligation Phase 2 (FRACMOO2) September 26th Working Group.

1. The CAISO should develop an appropriate methodology for counting the operational flexibility of intermittent renewables in the Flexible Resource Adequacy (RA) program before the 2019 Flexible capacity needs technical study process.

In a recently released discussion paper developed by the Board of Governors and Management of the California ISO, “Electricity 2030: Trends and Tasks for the Coming Years”, the reliability benefit associated with market bidding by renewable generators is mentioned multiple times.¹ PG&E does not believe the RA process accurately values the capacity associated with renewable resources that provide operational flexibility and dispatchable renewable resources will certainly need to be a major part of the operational solutions in managing the grid.

There are multiple paths the CAISO could take to recognize the contributions renewable resources can provide toward operational flexibility. For example, the CAISO could change the methodology to calculate the Flexible RA requirement by removing the wind and solar resources that are unlikely to self-schedule based on a LSE demonstration that the resource has substantial curtailment rights. Alternatively, the CAISO could change the EFC counting rules for wind and solar resources to remove the link between generic Net Qualifying Capacity and EFC. If wind and solar resources commit in an RA filing to provide economic bids during the Flexible RA category 1 Must Offer Obligation, they should be counted as if they did not contribute to the forecasted monthly maximum three hour net load ramp, which is the basis of the monthly Flexible RA requirement. While PG&E supports examining such approaches, PG&E believes the second approach is preferable for the CAISO to address first due to the ability for the CAISO to implement the EFC change without significant implementation changes. The first approach is likely to have large impacts on how the Flexible Capacity Needs Technical study is currently administered and translated into Flexible RA requirements.

¹ Electricity 2030: Trends and Tasks for the Coming Years
<http://www.caiso.com/Documents/Electricity2030-TrendsandTasksfortheComingYears.pdf>

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Due to the relatively simple change associated with this modification, PG&E asks the CAISO to create a separate track of the initiative simply to develop this methodology with implementation of this change in place by the 2019 RA year. Since the modification will only be on the RA counting rules, and not the requirement itself, it can be implemented during an early fall 2018 release in time for the 2019 Annual RA filing on October 31, 2018.

2. PG&E does not support using a Flexible RA structure that completely ignores the ability of self-schedules to adjust to load changes throughout the month.

The CAISO working group presentation indicates that the CAISO believes the Day Ahead (DA) flexible RA product should be based on the difference between the monthly minimum net load and the monthly maximum net load. Considering the significant variability and adjustability of self-schedules, particularly self-scheduled imports, between different days within a week and different weeks within a single month, PG&E does not believe the monthly minimum and monthly maximum is the correct basis for this requirement.

3. PG&E asks the CAISO to provide updates on the analysis discussed during the August 2nd Working Group meeting.

In its comments to the CAISO August 2nd Working Group, PG&E supported the CAISO conducting further analysis on several topics that was discussed during the August 2nd Working Group call. These included: redefining net load as load minus inflexible capacity, increased granularity in Day Ahead schedules, Integrated Forward Market (IFM) - Residual Unit Commitment (RUC) integration, and expanding the Short Term Unit Commitment (STUC) outlook horizon. In addition, PG&E asked the CAISO to investigate using maximum ramp rate restrictions on variable energy resources and how this form of a restriction could reduce the operational challenges the CAISO currently faces. While there was limited discussion about the theoretical concepts associated with redefining net load as load minus inflexible capacity, as well as increasing the granularity in DA schedules during the September 26th Working Group, the CAISO has yet to provide further details on how it plans to analyze these potential changes, and whether this analysis will be conducted in this stakeholder process or another stakeholder process.

PG&E asks the CAISO to address all of these topics in the FRACMOO2 stakeholder process, regardless of whether the CAISO believes these solutions are an effective means to address the challenges it faces. By moving towards conducting these analyses, the CAISO can identify and communicate with its stakeholders why these solutions will work or not work. Establishing this fundamental understanding of the market options available to the CAISO is likely to help stakeholders better appreciate the challenges that lead the CAISO to seek changes to the flexible Resource Adequacy (RA) product.

4. While the CAISO is making progress on product definitions, the concept of multiple flexible capacity products still has the potential to greatly complicate the RA Process.

PG&E continues to have concerns that the CAISO may have already determined that multiple flexible capacity products are needed before completing an analysis of its operational needs. That said, the

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concept of separating flexible RA requirements into markets meets one of PG&E’s criteria towards establishing capacity products, which is that the products are clearly defined to address individual specific concerns. These distinctions are easily understood and appear to properly distinguish different levels of service that generating resources provide. Therefore, while we continue to believe that the CAISO should complete its analysis of operational needs, we believe structuring products based on distinct CAISO markets is a fundamentally sound concept.

While using CAISO markets to distinguish between flexible products appears reasonable, the current products continue to suffer from having multiple objectives, which continue to lead to challenges designing appropriate counting rules and penalties for non-performance. One suggestion that could reduce the likelihood of challenges associated with measuring capacity performance would be to focus the flexible RA product solely on forecast error, and allow other CAISO tools to manage the need for load following.² This would better fit the flexible ramping product paradigm, which only compensates resources that are not dispatched for energy due to a need for ramping in a future interval.

In addition, PG&E remains concerned about the complexity of the RA paradigm and implementation challenges associated with multiple flexible RA products. While these distinct Flexible RA products are relatively understandable, translating these distinct products into capacity products is not an easy task. Adding these different “categories” of Flexible resources³, in addition to the existing “categories” of Flexible RA will likely create confusion. PG&E would appreciate if the CAISO could better explain the relationship between the proposed flexible RA products that are distinguished between CAISO markets and the current flexible RA Must Offer Obligation categories, which are differentiated by the times of the day when the resources are required to bid into CAISO markets.

5. PG&E requests more information to understand better the CAISO’s operational needs.

While the CAISO has made progress with respect to defining its operational needs, PG&E remains concerned that the CAISO has not responded to requests to better explain how its existing challenges to maintaining control performance relate directly to a capacity insufficiency. PG&E continues to ask the CAISO to produce several years of hourly control performance data to aid in identifying the true causes of the performance error to implement solutions that will effectively address the challenges the CAISO believes are likely to persist into the future.⁴

² Existing CAISO tools to that help the CAISO manage load following include: current Flexible Ramping Product, Regulation, and the Energy Imbalance Market. Other future tools that are likely to help manage load following more effectively than capacity products are a DA Flexible Ramping Product (FRP) and a change to 15 minute DA scheduling.

³ The new categories of Flexible resources, as PG&E understands them, are: DA, 15 min, 5 min, and Regulation.

⁴ An example of this type of data can be found on slide 25 of “ERCOT’s Experience in Integrating Renewable Resources” presented at 2016 Fall Reliability Conference. Presentation can be found here:

<https://www.midwestreliability.org/MRODocuments/RC2%20ERS%20in%20ERCOT%20Sandip%20Sharma.pdf>