Comments of Pacific Gas and Electric Company

Flexible Ramping Product –Revised Straw Proposal

Submitted by		Company	Date Submitted
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Pacific Gas & Electric (PG&E) appreciates the opportunity to participate in the stakeholder process for the CAISO's Flexible Ramping Product Initiative and to submit comments regarding the CAISO's proposal as outlined in its November 29, 2011 Revised Straw Proposal.

PG&E supports the high-level objective of creating a Flexible Ramping Product and commends the CAISO for including design elements that address Bid Cost Recovery (BCR)[1] and rescission of payment for non-performance. However, PG&E strongly opposes the CAISO's proposal to allocate all of the Flexible Ramping costs to load. Variable Energy Resources are partly responsible for the need to develop a Flexible Ramping product, and, therefore, it is just and reasonable to allocate a portion of the costs to these resources.

PG&E is also seeking more detail on how the CAISO will determine the procurement requirements for Flexible Ramping. The level at which the CAISO sets the requirements will be a key driver of the Flexible Ramping cost. Finally, based on PG&E's understanding that Flexible Ramping will often be dispatched, PG&E does not support the inclusion of energy opportunity cost in the payments to Flexible Ramping providers.

1. Summary of Straw Proposal

Below are the design elements of the CAISO's Flexible Ramping Product discussed in the Straw Proposal:

Cost Allocation

- Both Flexible Ramp Up cost and Flexible Ramp Down cost will be allocated to Load.[2]
- The CAISO will track resource level deviations and publish aggregated data for each of the following cost buckets on a monthly basis:

[1] The CAISO proposes to include a resource's revenue from selling the Flexible Ramping in its BCR calculation.

[2] The CAISO has abandoned the original position advocated in its November 1st Straw Proposal, in which it proposed to allocate costs to both load and supply deviations. Instead, the November 29th Revised Straw Proposal proposes to allocate all upward and downward flex ramp costs to metered demand.

- Costs attributable to (1) load, (2) intertie ramps, (3) deviations from hourly schedules, and (4) costs attributable to deviations from ISO dispatch.

- The report will provide the information necessary for load to transfer Flexible Ramping to Load with the use of Inter-SC trades.

Product Characteristics

- Flexible ramping products will be procured in both the DA market and Real-Time Pre Dispatch ("RTPD").
- The product will be based on a 5-minute ramp.
- There will be two separate flexible ramping products: ramping up and ramping down.
- The market will accept bids on both products, which express the resources' willingness to provide flexible ramping and the cost associated with this service.
- DA non-contingent reserve awards may be fully or partially converted to upward flexible ramping if the resources have economic energy bids in RTPD.

Need Determination

- Flexible ramping products requirements in both DA market and RTPD will be based on anticipated variability and uncertainties between RTPD and Real-Time Dispatch ("RTD").[3]
- The CAISO will perform statistical study using historical data to determine the quantity requirements.
- In the DA market, the CAISO intends to procure the portion of flexible ramp that has a high confidence of being used and will procure the remainder of the flexible ramp product in RTPD.

Compensation

- Procurement of flexible ramping, energy schedules, and other ancillary services will be co-optimized.
- Flexible ramping prices will equal the shadow price of the Flexible Ramping constraint.
- Flexible ramping revenue will be included in the BCR calculation, and there will be rescission of payment for non-performance.

2. Comments on Cost Allocation

<u>Flexible Ramping Costs Should be Allocated to All Market Participants based on Cost Causation</u>

[3] Variability is due to the differences of modeling granularity (15 minute in RTPD vs. 5 minute in RTD) and uncertainty is due to unforeseen events occurring between RTPD and RTD (such as less than expected output from renewable resources).

PG&E strongly opposes the CAISO's proposal to allocate all of the flexible ramping costs to load. A primary justification of this initiative, and other recent initiatives designed to provide more flexibility, is the integration of renewable resources. According to the CAISO's own analysis:

> *Renewable integration will likely result in significant changes over time to the operation of the conventional generation fleet, due to the operational characteristics of variable energy resources. When not controlled through dispatch, variable energy resource plants can have very steep ramp rates as compared to the more gradual ramp rates for conventional fuel source resources. Per the NERC Integration of Variable Generation Task Force report, some variable energy resource generators can change output by 70 percent in a time frame of two to ten minutes, many times per day (...). At certain times of day, the ramps induced by the combination of wind and solar production will become quite extreme and will recur daily.*[4]

While there is variability in the load, the CAISO has presented no evidence that load variability will increase such that the new ramping product is needed. The CAISO's current set of products has been (and will continue to be) sufficient to handle the variability in load. The need for these products is being driven primarily by the projected increase in variability from Variable Energy Resources (VERs), not the increase in variability of load.

Given the need for Flexible Ramping caused by VERs and the CAISO's commitment to allocate costs based on cost causation as expressed in the Road Map, the CAISO position to not allocate costs based on cost causation is untenable. There is no question that VERs are partly responsible for the need to develop a Flexible Ramping Product, and, therefore, it is not just and reasonable to allocate the entire cost to load.

Finally, PG&E notes FERC's apprehension with regard to accepting a proposal that does not follow the principle of cost allocation based on cost causation. In its December 12, 2011 Order regarding the implementation of CAISO's flexible ramping constraint, FERC questions whether the CAISO's allocation of cost to only load was just and reasonable.

> *With respect to cost allocation methodology, CAISO attributes the need for flexible ramping capacity to a number of factors. CAISO has not adequately demonstrated to the Commission that its proposed allocation reflects the Commission's cost causation principles, and accordingly that allocation may not be just and reasonable. Therefore, the Commission finds that the Flexible Ramping Constraint cost allocation raises factual issues that require more data to evaluate fully; we are setting the matter for hearing and settlement judge procedure.*[5]

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[4] Renewable Integration: Market and Product Review (pages 10-11). Also note Figure 3 which shows impacts of integrating solar and wind resources.

[5] FERC Docket ER12-50-000, Dec. 12, 2011, p. 11. http://www.caiso.com/Documents/2011-12-12_ER12-50_FlexiRamporder.pdf

An Interim Allocation Methodology based on Cost Causation should be Implemented with this Initiative

PG&E appreciates the CAISO's desire to develop comprehensive and permanent allocation mechanisms in a stand-alone initiative. PG&E can be supportive of a future initiative only if the CAISO puts in place a reasonable interim cost allocation. The CAISO's current proposal to allocate costs only to load does not meet this objective. If the CAISO wants to defer the cost allocation discussion, it would be more appropriate to allocate costs more broadly on an interim basis. For example, allocating costs to all market participants in the interim would be more appropriate than singling out one sector of the market to carry the burden. Not only will a broader interim allocation be fairer it will motivate more parties to support future initiative to develop more permanent cost allocation mechanisms.

More Information is Needed on How Cost is Divided into "Slices"

The CAISO has proposed to track the costs by resources so parties could use this information as the basis for trading Flexible Ramping obligations via Inter-SC trades. The CAISO's proposed methodology is a two-step process. In the first step the CAISO divides the total Flexible Ramping costs into "slices". These slices are further allocated to individual participants based on deviation metrics. The CAISO has not provided any detail on how the costs will be divided into slices. This is a critical feature of the methodology, and the CAISO needs to provide greater detail on this step. Without more information, it is unclear if the methodology is just and reasonable.

PG&E also asks the CAISO to provide greater detail how the deviation metrics (as described in the in the table on page 33 of the Revised Straw Proposal) will be measured and aggregated. A detail settlements example would be helpful.

3. Comments on Determination of Flexible Ramping Requirement

CAISO Needs to Provide Details on How the Procurement Requirement will be Determined

A key driver of the cost the Flexible Ramping Product, like any ancillary product, is the procurement requirement. This is a key element of the design which has only been addressed in very general fashion. In the Revised Straw Proposal, the CAISO states, "the ISO will perform statistical study using historical data to determine the requirements."[6] It also describes two possible options in determining the level of procurement the DA market.

This general description does not provide stakeholders with enough information to assess the CAISO's proposal or answer some obvious questions. What is the statistical methodology? How much historical data will the CAISO use - one month, six-months, or a year? How often will the CAISO review and revise the requirements? How will the CAISO know whether the requirements are too high?

[6] Revised Straw Proposal, Nov. 29, 2011, p. 9.

PG&E asks the CAISO to give this very important aspect of the design more thought and provide additional detail to stakeholders. If there is a more thorough explanation in another document, it should be referenced (with page numbers included) in the next iteration of the proposal.

4. Comments on Compensation

Payment of Opportunity Cost related to Energy Is Not Justified

PG&E does support the inclusion of opportunity cost related to energy in the payment for Flexible Ramping. PG&E assumes, without evidence to the contrary, that Flexible Ramping will be dispatched often. In fact, if the CAISO is procuring appropriate levels of Flexible Ramping, the expectation is that the most of the ramping will be dispatched. Given a high probability for dispatch, inclusion of energy opportunity cost is inappropriate. PG&E agrees with the DMM's observation on this point:

> *DMM does not agree with the ISO's position that if a resource receives a payment for flexi-ramp that includes opportunity cost components, and is then dispatched in RTD, that there is not "double payment" (November 7 presentation, p. 12). While the opportunity cost of not selling ancillary services may be valid, the nature of the flexible ramping product contradicts the principle of paying an opportunity cost for not selling energy.*[7]

PG&E recommends the CAISO develop a mechanism to prevent this possible double payment to providers of Flexible Ramping.

PG&E is open to revisiting its position if the CAISO can show that the Ramping Product will be dispatched infrequently and is entitled to the energy opportunity cost. In our previous comments, PG&E had requested information to help inform stakeholders on this question, but no additional information was provided regarding this issue.

5. Comments on Product Characteristics

PG&E seeks more detail on two aspects on the mechanics of the product. The first is how the CAISO will manage a resource to ensure flexible ramping capability is maintained. We asked for this information in our previous comments and are making the request again. The second is how the CAISO will address possible incompatibility of non-contingent reserves and flexible ramping as it relates to conversion

CAISO Needs to Provide Detail on the Management of Resources to Ensure Flexible Ramping Capability is Maintained

It is currently unclear to PG&E how the CAISO intends to manage Flexible Ramping reserves procured in the DA market so the full capability is maintained throughout the hour in RT. For example, how will the CAISO ensure that a resource with a DA Flexible Ramping award and an

[7] DMM Comments on Flexi-Ramp Straw Proposal, Nov. 15, 2011, p.2.
http://www.caiso.com/Documents/Department_MarketMonitoring_Comments_FlexibleRampingProductStrawProposal.pdf

economic RT bid is not dispatched to a level that prevents it from fulfilling its Flexible Ramping obligation? PG&E asks the CAISO to clarify this aspect of the design.

CAISO Needs to Address Possible Issue Related to Conversion between Flexible Ramp and Non-Contingent Spinning Reserve

PG&E agrees that it may be beneficial to allow non-contingent reserves and Flexible Ramping to substitute for one another. However, it should be noted that some resources that are capable of offering non-contingent spinning reserve may not be able to provide the Flexible Ramping Product.[8] Thus, the Scheduling Coordinator of these resources should be able to insert a flag prohibiting the CAISO from converting a DA spinning reserve award to flexible ramping in RT.

[8] Resources offering non-contingent reserves are only required to reach their awarded level in ten minutes and do not necessarily have to provide a verifiable ramp rate. This is unlike resources offering flexible ramping, which is a 5-minute ramping product.