Comments of Pacific Gas & Electric Company pertaining to ISO's Straw Proposal on Bid Cost Recovery Enhancements

Submitted by		Company	Date Submitted
Josh Arnold J2A2@pge.com 415-973-1273	CB Hall cbh7@pge.com 415-973-7064	Pacific Gas & Electric	June 28, 2016

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to submit comments pertaining to the California ISO's June 3rd straw proposal on Bid Cost Recovery (BCR) Enhancements.

At a high level, the ISO's proposal explores three potential modifications to the way BCR uplift is calculated and allocated: (1) the creation of a two-tier methodology for allocating real-time BCR uplift; (2) a change in the calculation of BCR for units operating across multiple days; (3) a change in the methodology for allocating integrated forward market (IFM) BCR.

Outline of PG&E Comments

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1A. PG&E Strongly Supports a Two-Tier Methodology for Allocating Real-Time BCR Uplift

The ISO is proposing to create a two-tier methodology for allocating real-time BCR uplift, allowing such costs (which consist primarily of commitment costs) to be allocated more directly to those market participants who drove the costs (i.e., to those who caused the ISO to commit additional resources in real-time). The ISO currently allocates real-time BCR in one tier (directly to load and exports), which does not allow for costs to be allocated first to those market participants who drove the costs. Furthermore, this one-tier methodology is inconsistent with the two-tier methodologies that the ISO uses to allocate IFM and Residual Unit Commitment (RUC) BCR uplift.

The analysis provided by ISO in its Straw Proposal strongly suggests the following: that the primary cost drivers of Real Time BCR come from the need to commit supply resources in order to account for differences between two market runs that conduct unit commitment, and that were not reflected in the day-ahead market optimizations (i.e. IFM and RUC). PG&E would like to thank the ISO staff for this in depth analysis and, based on this data, strongly agrees with the ISO's proposal to use these identified differences as the basis for a Tier 1 allocation process.

The ISO's proposed two-tier methodology for allocating real-time BCR consists of the following key elements: (A) a tier 1 allocation to those market participants who drove the ISO to commit additional resources; (B) a tier 2 allocation to load and exports to cover any remaining BCR uplift not allocated through tier 1. More specifically, the ISO's proposed tier 1 allocation will be based on the following:

- Increases in ISO Load forecast values between Real-Time Unit Commitment (RTUC) intervals and the corresponding RUC optimization,
- Reductions in Variable Energy Resource (VER) forecast values between RTUC intervals and the corresponding RUC optimization,
- Reductions to a Generation Resource's expected schedule from the Day Ahead Market process due to any updated upper operating limits (i.e., real-time forced outages or de-rates), and
- Reductions in net Import positions between hours that were not reflected in the day-ahead

The ISO's proposed two-tier methodology for allocating real-time BCR uplift will more fairly allocate costs based on cost-causation, which should therefore incentivize better market behavior, helping to reduce the overall magnitude of real-time BCR (which has been approximately $50 million per year).

1B. PG&E Suggests Several Formula Modifications to Align the ISO's Two-Tier Allocation

PG&E supports the ISO in its proposed approach and believes that the intent behind the suggested allocation categories are consistent with ISO's principles of aligning cost allocation with cost causation. In reviewing the specific formulas proposed however, PG&E did identify a number of small anomalies that might adversely impact these intended allocations during the implementation stage.

i. <u>Less Load (or More Supply) Than Anticipated</u>

The intent of the proposed ISO formula is to isolate any Real Time Load forecast increases that were not already accounted for in earlier RTUC optimizations. This is done by reducing any forecast increase in a given RTUC interval *i* by any overlapping increase in the interval immediate before *i*:

$$\sum Max\,(0, ((LoadRTUCh, - LoadRUCh,) - (LoadRTUCh,-1 - LoadRUCh,i-1)))/4$$

As currently written however, the ISO's proposed formulas for determining tier 1 allocation quantities appears to inadvertently exaggerate the need for additional unit commitments in real-time. For example, if the load forecast in RTUC interval i-1 is *less* than was forecasted in RUC, this difference (according to the ISO's formula) is implied to *increase* the need for resource commitments in RTUC interval i:

$$\sum Max\,(0, ((LoadRTUCh, - LoadRUCh,) - (LoadRTUCh,-1 - LoadRUCh,i-1)))/4$$

If $LoadRTUCh,= 100$
And $LoadRTUCh,-1 = 80$
And $LoadRUCh,= 100$
And $LoadRUCh,-1 = 100$

$Max\,(0, ((LoadRTUCh, - LoadRUCh,) - (LoadRTUCh,-1 - LoadRUCh,i-1)))$
$= Max\,(0, (100-100) - (80-100))$
$= Max\,(0, 0 - (-20))$
$= 20$

Based on the ISO's stated intent, PG&E does not believes that this allocation outcome is appropriate to the situation since no actual supply commitment would be needed to resolve this situation. For this reason, PG&E recommends that the ISO modify the formulas as follows:

$$\sum Max\ (0, ((LoadRTUCh, - LoadRUCh,) - \mathbf{Max\ (0, (LoadRTUCh,-1 - LoadRUCh,i-1))}/4$$

ii. VER Forecast Allocation in Opposite Direction Than Anticipated

Because the ISO's RTUC optimization uses the forecasted VER production quantities to set expected schedules for EIRP resources, the ISO is proposing to treat changes in these forecast values in a manner similar to that of Load. In this case however, the ISO is proposing to allocate to reductions in forecasted outputs, which would then be accounted for with additional RTUC commitment instructions:

$$Max\ (0,\sum(VERRTUCr,h,i - VERRUCr,h,i) - (VERRTUCr,h,i-1 - VERRUCr,h,i-1)\ r\ )/4$$

Because the ISO's proposed formula is identical to the one proposed for allocation due to Load forecast changes, PG&E feels that the situation identified in comments section 1Bi above, that this formula will also need to be adjusted accordingly.

Furthermore, the process of subtracting the RUC forecast values from the RTUC forecasts appears to imply that an *increase* in the VER forecast between RTUC intervals (relative to RUC) would result in Tier 1 BCR allocation. To PG&E, this appears to be inconsistent with the ISO's stated intent and, for this reason, PG&E recommends that the ISO also modify the sign convention of the VER formula as follows:

$$Max\ (0,\mathbf{\sum((VERRUCr,h,i - VERRTUCr,h,i) - Max\ (0, (VERRUCr,h,i-1 - VERRTUCr,h,i-1)))}\ r\ )/4$$

iii. Intertie Allocation Quantities Allocation

Again, similar to the proposed Load Forecast formula, the ISO's proposed Net Import Allocation process would appear to identify Tier 1 BCR impact whenever an Intertie Resource increases its awarded Net Import position in the hour *h-1*. Because such an increase would not create additional commitment requirements in hour *h*, PG&E believes that the ISO's Net Import formula should be follows:

$$\sum (0, (DANetimph - HASPNetimph\ ) - \mathbf{Max(0,\ (DANetimph-1 - HASPNetimph-1\ )})$$

1C. PG&E Disagrees with Incorporating Uninstructed Imbalance Energy (UIE)

In its proposed methodology for determining tier 1 supply allocation quantities, the ISO has included UIE as an identified qualification for receiving uplift, with the intention to incentivize resources to follow dispatch instructions[1]. On this specific component of the proposal, PG&E respectfully disagrees.

The research provided by the ISO[2] indicates that generation deviations are not a primary factor of real-time unit commitments contributing to real-time BCR uplift costs. PG&E believes that the ISO's existing market rules already provide the necessary incentives for resources to meet dispatch instructions and that any Tier 1 BCR allocation should be driven specifically by cost causation.

[1] Bid Cost Recover Enhancements Straw Proposal, page 16
[2] *Ibid*, page 13.

1D. PG&E Believes the Tier 1 Allocation Should Be Limited to Uneconomic Schedule Changes

In reviewing the formulas above, PG&E has noted that there are no provisions to limit the proposed Tier 1 Allocation process specifically to uneconomic schedule changes. Since any Real Time Resource schedule changes based on economic bids (be they economic bids on interties or "curtailment" bids on VER resources) are fully considered and co-optimized by the ISO market optimization process, PG&E believes that the identification of BCR allocation quantities should specifically exclude such changes.

PG&E is uncertain of how the proposed formulas could be modified to specifically exclude these economic schedule adjustments, but feels that this is an important process distinction that should be incorporated during the final implementation.

1E. PG&E Questions Moving from an Hourly to Daily Allocation

The ISO has proposed to allocate real-time BCR uplift on a daily basis to "recognize the fact that a resource committed in one interval may be addressing an issue for an interval later in the day as a result of the RTUC look out horizon." While PG&E believes that the intent behind this specific proposal is valid, and that the true drivers for a given dispatch may not align directly with those intervals where a resource incurred loses covered by BCR, PG&E is concerned that a daily allocation is too coarse in granularity.

As an example, a VER Forecast reduction for a solar resource in hour ending 11 would certainly contribute to the ISO's need to commit additional resources in that hour but would not be a driver for additional unit commitment needs in hour ending 22. Under this modification, the SC for this solar resource would nevertheless be charged for a portion of the commitment costs incurred in hour ending 22. To PG&E, this does not seem appropriate.

PG&E believes that the existing hourly allocation process represents a more accurate way of identifying drivers of resource commitment, and a more accurate way of allocating resulting uplift costs. Furthermore, PG&E believes that the existing hourly allocation process more accurately provides an incentive for market participants, which helps reduce the overall magnitude of BCR.

1F. PG&E Supports the Use of a Rate Cap in the Determination of a Tier 1 Rate

The ISO's proposed tier 1 allocation methodology also considers a rate cap, which would protect market participants from excessive BCR uplift allocations. This element of the market design is important, especially given that the ISO has identified several factors that contribute to real-time unit commitment (such as congestion redispatch and transmission outages) but will not be included in the tier 1 allocation. For this reason, PG&E strongly supports using a rate cap to help insulate Tier 1 market participants from these secondary commitment drivers.

2. PG&E Supports Not Changing the Calculation of BCR for Units Operating Across Multiple Days

Under the existing ISO tariff, BCR is calculated based on a resource's revenues and costs within a particular trade date, irrespective of whether a resource's commitment period goes into the following day. In its straw proposal, the ISO outlined a modified methodology for calculating BCR, which efficiently addresses the situation in which a commitment period crosses two trade dates.

While PG&E theoretically supports the modified methodology outlined by the ISO (which would reduce overall BCR), PG&E agrees with the ISO that the expected benefits of such a change are not worth the

potential implementation costs. For this reason, PG&E supports the ISO's proposal not to change the calculation methodology at this time.

3. PG&E Does Not Support the Change in Methodology for Allocating IFM BCR

Under the existing ISO tariff, the first tier of IFM BCR uplift is allocated to "scheduling coordinators based on the portion of their demand (including virtual demand) that is not served by self-scheduled generation and/or imports but is served by energy supplied through the market." In other words, there is a deduction for self-scheduled generation and/or imports, which is justified by the fact that such supply reduces the reliance on energy supplied through the market.

In response to stakeholder comments, however, the ISO has proposed to modify the way tier 1 allocations are calculated for IFM BCR uplift. More specifically, the ISO has proposed to remove the deduction for self-scheduled generation and/or imports, based on the rationale that such supply "contributes to, rather than minimizes, the commitment of other resources."

While PG&E agrees that self-scheduled resources generally do not provide the ISO with additional flexibility, PG&E does not agree that load served by self-scheduled resources is driving the ISO's need for additional flexibility in the first place. Furthermore, PG&E believes that BCR allocation rules are not the most effective tools for incentivizing flexibility, whereas other aspects of ISO market design do incentivize economic bidding and flexibility. Finally, PG&E believes that a change of this magnitude would be better evaluated as part of a separate initiative.

4. Closing Comments

PG&E greatly appreciates the time and effort the ISO has put into the straw proposal, and is very supportive of the changes being proposed. We believe that this Straw Proposal outlines a strong path towards an efficient 2-Tier Real Time BCR process, and we look forward to working with the ISO and other stakeholders to move this proposal forward.