NRG Energy, Inc. Comments on
July 11, 2012 Flexible Ramping Product Supplemental: Foundational Approach

Submitted By	Company	Date
Brian Theaker	NRG Energy, Inc. ("NRG")	July 25, 2012

NRG submits the following comments on the CAISO's July 11, 2012 Flexible Ramping Product ("FRP") Supplemental: Foundational Approach White Paper ("FRP-WP").

Real Ramp vs. Unexpected Ramp.   According to the FRP-WP:

"Option 1 is what the ISO had proposed in the previous draft final proposal. Under this option, the ISO intends to use the flexible ramping product to cover the difference between the RTD net load and RTUC net load in interval t+5. RTUC assumes a flat net load for each 15-minute interval, and when the RTD net load deviates from the RTUC level, it creates a ramp need. (FRP-WP at 4)

"Option 2 is another way to quantify flex ramp. Under this option, flex ramp product is to cover the real ramp from RTD interval t to interval t+5, which is the RTD net load at t+5 minus the RTD net load at t." (FRP-WP at 4)

Figure 1 shows that there is no difference in total FRP procurement between Option 1 and Option 2. The difference is how much FRP is procured as upward and how much is procured as downward.
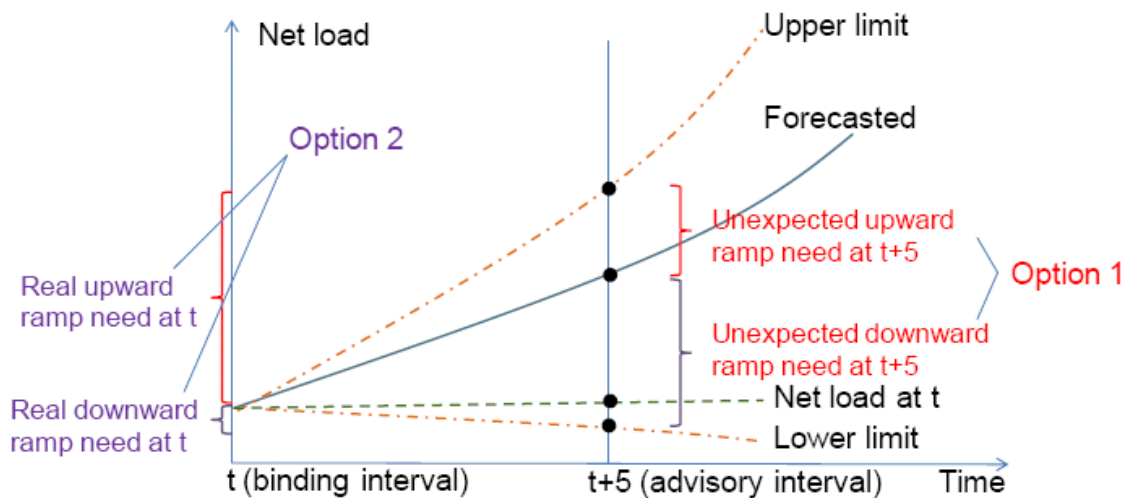

FIGURE 1: RTD UNEXPECTED RAMP NEED VS RTD REAL RAMP NEED

As NRG understands, if the CAISO had procured FRP at time t based on Option 1, it would have procured more downward capability than upward capability. Such procurement would not seem to align with the projected trajectory of the net load. Option 2, therefore, seems more rational.

Further, as the CAISO notes:

"However, the advisory interval model may cause false opportunity cost payment. The only option to model flex ramp without incurring false opportunity cost payment is to model flex ramp in the energy binding interval meeting the real ramp need of the next interval." (FRP-WP at 8).

From these two observations, Option 2 seems the better approach.   However, NRG is puzzled by the description of Option 2 as the "real ramp" approach. The CAISO is procuring FRP in advance based on its random variable *expectation* of net load, not on what "real-ly" occurs. Perhaps it would be better if the CAISO differentiated between the two approaches by referring to Option 1 as the "Advisory Interval" or the "t+5" approach and Option 2 as the "Binding Interval" or "t" approach.

Use of A Demand Curve.   The discussion of the use of a demand curve in the FRP-WP is focused on adjusting the total FRP procurement quantity (Day-Ahead (DA) plus Real-Time (RT)).   As NRG understands, a demand curve could also be used in conjunction with an explicit procurement quantity to shift FRP procurement from DA to RT.

NRG remains concerned about the use of a demand curve. Using the demand curve to adjust total procurement of FRP effectively converts FRP from a reliability product (as the CAISO had argued for the Flexible Ramping Constraint) to a price-control product. Using a demand curve to shift DA-RT procurement runs counter to the CAISO's policy of procuring all need ancillary services in the DA time frame.

Cost Allocation.   NRG supports the CAISO's direction on FRP cost allocation away from deviations.   NRG is still considering whether movement, as proposed by the CAISO, is the right allocator.

As the CAISO notes, "The expectation of potential movement across all market participants results in the procurement of the flexible ramping product." (FRP-WP at page 12).

Given that it is the *expectation* of potential movement that drives FRP procurement (and FRP costs), the allocation of FRP costs would be most closely aligned with cost causation if it was tied to the method by which the CAISO assesses that expectation and adjusts FRP procurement.   As an example, assume the CAISO determined how much FRP to procure in Month B by assessing the potential variability of demand by looking at 10-minute changes in observed load over Month A.   Further assume that Load Serving Entity 1's load was highly variable in Month A, and the CAISO increased its procurement of FRP for Month B accordingly. Next, assume that the variability of LSE 1's load decreased in Month B, such that while the CAISO increased the FRP it procured for Month B, LSE 1 had lower FRP costs in Month B relative to other LSEs, whose load was not as variable as LSE 1's in Month A.   This example presumes the CAISO is going to adjust its FRP procurement monthly, which may not be the case. The example also presumes that variability of demand will change significantly month to month, when it may be that the overall variability of demand or generation is relatively constant month to month. But this example is intended to raise the question about whether allocating FRP costs in Month B based on realized conditions in Month B is the right approach, when it was conditions in Month A that affected Month B procurement.

NRG appreciates the opportunity to provide these comments.