

Submitted By	Company	Date
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NRG appreciates the opportunity to submit these comments on the CAISO’s August 9, 2012 Revised Draft Final Proposal for the Flexible Ramping Product.

NRG supports the development of a bid-based flexible ramping product (FRP”) that allows the CAISO to meet projected ramping needs. The FRP currently under consideration has changed from the product procured through the deployment of the Flexible Ramping Constraint and the initial proposed design of the FRP. Initially, the CAISO implicitly took the position that there should be no violations of the power balance constraint due to insufficient ramping capability. The CAISO’s thinking has changed to where it now seems to find some number violations of the power balance constraint acceptable, and is has proposed a demand curve approach to procuring FRP, indicating that it is unwilling to procure FRP above a certain price to prevent such violations. However, while it seems clear that the allowed number of power balance constraint violations is now some number greater than zero, there has been no meaningful discussion about the “optimal” number of power balance constraint violations. If the optimal number of power balance constraint violations is simply determined as an economic tradeoff between the real-time prices that would result from a power balance constraint violation and the cost of procuring FRP to avoid such violations, this begs the question: is setting the real-time price to the offer cap the right penalty price for a power balance constraint violation? Does that penalty price reflect the risk to, or burden placed upon, the interconnection, from a power balance constraint violation?

Use of a demand curve. NRG would appreciate additional detail on how the CAISO proposes to set the minimum requirement for FRP. NRG understands that the minimum requirement is the projected change in net load across the interval. However, it is not clear how that projection is determined – for example, what confidence level of the maximum range of change in net load does the projection capture? Is it the median projected load change?

Page 9 of the CAISO’s August 16th presentation indicates that the CAISO’s maximum procurement of FRP would cover a 97.5 percent confidence level. However, assuming that the CAISO uses a demand curve to determine how much FRP it will procure, how often will the CAISO expect to have insufficient FRP and incur a power balance constraint? The development of the FRP would benefit from a discussion of all of the implications of using a demand curve, not just the pricing implications.

Buy-back. As NRG understands, the CAISO uses the term “buy-back” to refer to FRP capacity that was procured day-ahead, but from which energy is dispatched in real-time. Such capacity from which energy is dispatched in real-time will pay back the real-time FRP price, such that the resource’s scheduling coordinator earns only the energy payment and not a payment for holding FRP capacity from which energy is dispatched. As NRG further understands, the CAISO will use a \$0/MW RT bid for FRP procured in the Day-Ahead unless the resource’s scheduling coordinator submits a different RT bid for FRP. NRG would appreciate the CAISO to confirm that, as the CAISO envisions how these market settlements would work, a party providing FRP would never lose money for providing FRP – that is, the

amount of FRP money they were required to pay back because energy was dispatched from the DA FRP capacity in RT would never exceed the payment they received for providing the service in the DA market. If this is not the case, it should be.

Participating Intermittent Resource Program (“PIRP”) decremental bidding. NRG supports the CAISO’s proposal to allow PIRP resources to submit decremental bids. NRG questions whether, when a PIRP resource’s decremental bid is dispatched, its uninstructed imbalance energy (which is now subject to settlement in that interval and not eligible for monthly netting) should be measured solely relative to the change in the resource’s output across the interval (i.e., how well it is following the instruction, which NRG understands is referred to as UIE1) instead of relative its forecast reference level. The true measure of performance – and deviation - should be how the resource responds to the decremental instruction in that interval, not how its output differs from its forecast output in that interval. Consistent with the intent of the PIRP program, the difference between the resource’s output and its forecast output should continue to be netted across the month.

FRP Cost Allocation. NRG appreciates that the CAISO’s thinking with regards to cost allocation has evolved, and that the CAISO is now trying to develop an FRP cost allocation that is better synchronized with its procurement of FRP. The CAISO’s proposed cost allocation *is* more synchronized with how it procures FRP, though the complexity of the allocation has increased to the point that the “rational” guiding principle may come into play.

At the August 16 meeting, the CAISO responded to comments suggesting that deviations that are “helping” the CAISO – i.e., are in the opposite direction of the overall deviation – should not be allocated FRP costs by observing that the CAISO’s multi-interval optimization may be moving a resource in a direction counter to the overall need because the optimization is positioning the resource for a anticipated future need. NRG observes that the CAISO’s multi-interval optimization positions resources based on its expectation of future conditions – which may or may not come to pass. If a resource is allocated costs for a deviation that is actually in a beneficial direction in one interval, but that resource is deviating opposite to the instruction from the multi-interval optimization setting up the resource for future conditions that never materialize – such allocation would be ironically painful.