MARKET SURVEILLANCE COMMITTEE

RUC Pricing Design: Cost Shifting and Market Efficiency Considerations

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Overview

There has been discussion of the merits of recovering RUC availability costs in market prices based on offers or in the terms of RA contracts by requiring that RUC supply be offered at zero cost by RA resources

- This discussion of alternatives does not appear to have considered the impact of requiring zero cost RUC supply on cost shifting between load serving entities, and on shifting RUC supply costs on to flexible resources, adversely impacting the CAISO supply mix between flexible and inflexible resources
- Requiring that RUC supply be offered at zero cost by RA resources also has the potential to produce several other market inefficiencies

RUC Pricing

The cost of resources being available in real-time to provide RUC capacity is extremely low for unloaded coal fired generation and for quick starting oil fired combustion turbines

- The cost of being available in real-time is not zero for gas fired resources on days when the gas system is expected to be constrained, nor is it zero for proxy demand response resources that may need to take costly actions day-ahead in order to be able to reduce load in real-time
- If RA suppliers are required to offer supply in RUC at zero, the expected level of RUC availability costs that will not be recovered in the RUC clearing price will be recovered in the terms of RA contracts

RUC Availability Cost Incidence

The incidence of unrecovered RUC availability costs is not uniform across resources

- These costs will, of course, not fall on intermittent resources, nor on other must take resources
- More importantly they may not fall symmetrically on flexible and inflexible thermal resources and on flexible PDR resources
- To the extent that these unrecovered RUC availability costs are disproportionately borne by flexible quick start resources (including PDR resources) rather than by long start OTC resources, the recovery of RUC availability costs in RA contracts will raise the cost of flexible resources providing RA relative to inflexible resources, favoring the retention of inflexible resources relative to flexible resources

RUC pricing impacts

In addition to the recovery of availability costs in RA contract costs favoring the retention of inflexible capacity, the lack of market pricing of RUC availability costs has five adverse impacts on the CAISO market. Inefficient RUC pricing:

- Causes cost shifting between load serving entities
- Favors the retention of resources with high minimum load costs, long minimum run times and high start up costs relative to more flexible resources
- Adversely impacts loading serving entity bidding incentives in the day-ahead market
- Understates the actual RUC cost of net virtual supply bids, incenting an inefficient level of net virtual supply bids and shifting RUC costs from net virtual suppliers onto load serving entities
- May result in inefficient procurement of RUC capacity across RA and non-RA resources

RUC Pricing Impacts

First, cost shifting across LSEs

- The requirement that RA resources offer their capacity into RUC at zero reduces the cost of RUC supply and therefore reduces the cost of underbidding expected load by LSEs
- The recovery of RUC availability costs through RA capacity contract payments instead of through RUC capacity payments therefore shifts part of the cost of underbidding expected load from the underbidding load serving entity onto other load serving entities that do not engage in such underbidding
- In particular, the cost of load serving entity underbidding is shifted on load serving entities that procure flexible gas capacity as RA who thereby bear inflated RA costs due to underbidding by other load serving entities
- Clearing less than expected load in the IFM can be efficient if additional low cost supply is expected to be available in real-time, but the underbidding load serving entity should bear the cost of having back up capacity available to meet its load if the expected additional supply is not available in real-time

RUC Pricing Impacts

Second, suppressed RUC pricing favors the retention of resources with high minimum load costs, long minimum run times and high start up costs relative to more flexible resources

- Resources with high minimum load costs, long minimum run times and high start up costs are less likely to be committed in RUC than flexible resources with lower commitment costs. Resources with high commitment costs will therefore bear lower costs of procuring gas to be available when needed
- In addition, resources with high commitment costs would not benefit from a RUC clearing price as any RUC market revenues would simply reduce the uplift payments required to cover their high commitment costs
- Flexible resources with low commitment costs and low availability costs would, on the other hand, earn net RUC revenues with a RUC clearing price design, favoring their retention as RA resources

RUC Pricing Impacts

Third, the fact that load serving entities that underbid their expected load do not bear the full costs of their actions incents higher levels of underbidding by load serving entities than is warranted by expected system conditions

Fourth, the fact that virtual traders submitting net virtual supply bids do not bear the full costs of their actions incents the submission of a higher level of virtual supply offers than is warranted by system conditions. Moreover, this underpricing of RUC capacity shifts part of the cost of the net virtual supply bids onto load serving entities through higher RA contract costs

Fifth, the fact that the full cost of scheduling RA capacity to provide RUC capacity is not included in the RUC resource evaluation means that higher costs may be incurred in meeting RUC needs than would be the case if the RUC capacity were provided by non-RA capacity or possibly by different RA capacity. This inefficiency is borne by the California load serving entities that procure flexible RA capacity that is frequently scheduled to provide RUC capacity

RUC Pricing Impacts

We have been discussing these changes for several years. Among RA contracts, there should only be a small number of long-term CPUC procurement contracts whose terms would not reflect these changes