Comments of Viasyn
Commitment Cost Enhancements Phase 3 // Straw Proposal

Submitted by	Company	Date Submitted
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Viasyn appreciates the opportunity to comment on the Commitment Cost Enhancements Phase 3 Straw Proposal.

Estimated price distribution error necessitates cap headroom

The ISO proposes to not apply headroom to the opportunity cost adder citing i) catastrophic maintenance can be reflected in the major maintenance adder ("MMA") and ii) FERC requires justification for headroom applied to costs used in the ISO markets.[1] Catastrophic maintenance does not apply to our argument in support of an opportunity cost headroom, and we believe it is reasonable to provide justification to FERC for market design enhancements, including opportunity cost headroom.

The ISO should strongly consider either modifying the price distribution methodology or include an opportunity cost headroom. The opportunity cost methodology is based on a rudimentary estimate of the future Fifteen Minute Market ("FMM") price distribution, an estimation that is known to contain significant error. The ISO's methods of minimizing the error, including the use of future natural gas prices and GHG allowance prices, cannot address the bulk of the estimation error, which is founded in:

- Temporal distance between the future distribution and the underlying distribution;[2]
- Small data sets, particularly for monthly distributions;
- Market design changes result in different market characteristics in the future distribution and underlying distribution;
- Use of implied heat rates tying estimated distribution to underlying distribution is inaccurate due to the nature of the FMM as an imbalance market, which is characterized by distribution tails that are difficult to model; and
- Use of natural gas futures prices and the power price conversion factor results in an erroneous sense of improved modeling accuracy.[3]

These factors result in significant modeling error, particularly in the tails of the estimated distribution—the portion of the distribution that we rely on most when committing use-limited resources ("ULRs"). These issues become even more acute when we attempt to model monthly price distributions to determine opportunity costs for monthly limitations.[4]

Furthermore, the frequency of price spikes in 2016 cannot be known in advance and the risk of there being a greater number of price spikes in 2016 than in 2015 is very real—i.e. the direction of the error is not at all guaranteed to be in the conservative direction.[5] If price spikes were to increase, utilizing the opportunity cost estimate as the cap would constrain participants' ability to optimize commitment around the actual price distribution that materializes. Therefore

[1] Straw Proposal page 6.

[2] The underlying distribution is the historic prices used to create the estimated distribution. The estimated distribution attempts to approximate the future distribution.

[3] The FMM is an imbalance market and complex changes in the market distribution cannot be reflected in the linear adjustment of natural gas and emission allowance prices.

[4] Monthly data sets are significantly smaller resulting in larger relative errors, and variations in future vs. underlying distribution characteristics may disconnect across arbitrary monthly boundaries due to seasonal variability.

[5] Because the current proposal is as a cap: estimated price spikes > actual price spikes is the conservative direction because a resource bidding at the cap will be under-committed—incentivizing the operator to lower the opportunity cost bid below the cap. When estimated price spikes < actual price spikes, the error term is the binding factor in the cap and the model is harmful to the resource fleet and grid optimization.

to the same extent that price spikes increase in the future, the error term will become the binding factor in the opportunity cost model, causing over-commitment of ULRs while constraining participants ability to optimize resource commitment to reflect the increased occurrence of price spikes—resulting in the failure of the mechanism.

Opportunity cost headroom above the level supported by the price distribution and optimization calculation is therefore not an unnecessary inefficiency—it is a tool necessitated by the risk associated with relying on a price estimating mechanism that has significant sources of error, and it allows participants to mitigate the probability that the error term will be the binding and determinant factor in the dispatch of the resource fleet. Headroom will allow the participant to optimize resource dispatch around the estimated opportunity cost—an important activity given the uncertainty of the frequency of positive price spikes in relation to the previous year.

The value of the modeling methodology is in providing a stake in the ground marking the order of magnitude and region within which the actual opportunity cost will reside, and cannot be a point estimate of the exact value of the opportunity cost—given the nature of price estimation. Given this inherent fuzziness (in both the positive and negative direction) of the accuracy of the opportunity cost value estimation, the calculated value should not be a cap, but should be a stake to which the cap is anchored above.

Modeling runs should be in same granularity as limitation window; managing actual dispatch should be performed by participation below the cap

The modeling runs should only be performed as frequently as the granularity of the use-limitation. Annual use-limitations should utilize one modeling run per year and monthly use-limitations should utilize one modeling run per month. Market participants should be allowed to manage the risk that actual commitment differs from estimated commitment by modifying the opportunity cost bid as constrained by headroom above the opportunity cost calculation.

The modeling run should only be performed in the same level of granularity as the underlying use-limitation because if the opportunity cost value is updated within the limitation window the opportunity cost estimate will systematically inflate and the accuracy of the value will significantly drop in the latter portion of the modeling interval.

For example, if an annual limitation is re-modeled every month, the result will be a lower opportunity cost value in the first months of the year and a significantly higher opportunity cost value in the latter months of the year. This will result in a significantly less accurate opportunity cost value in the latter months of the year. This occurs because the opportunity cost value is calculated based on the marginal value of an incremental start, run-hour, etc. As those limited commitments are used-up over time, the marginal value will rise on the positive tail of the estimated distribution. This systematic increase would be a strange characteristic of the market. More importantly however, as the opportunity cost value rises as we approach the binding use-limit of a resource, the estimate will drop dramatically in accuracy. This is because the modeling errors inherent in the methodology, as described above, are heavily weighted towards the tails of the distribution.

For these reasons we encourage the ISO to restrict modeling runs to the same level of granularity as the underlying limitation, and to utilize an opportunity cost headroom to allow market participants to optimize their resources around actual resource commitments.