

Briefing on commitment cost enhancements

Commitment Cost Issues

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Critical thinking at the critical time™

TOPICS

- Long-Run Goal
- Other Choices
- Mitigating Market Power

LONG RUN GOAL

The California ISO's straw proposal for calculating commitment costs is reasonable from the standpoint of what can be implemented prior to this coming winter:

- Increasing the proxy cost calculation used to cap start up and minimum load offers to be 125% of the calculated cost will reduce the frequency and extent to which the offer prices of suppliers lacking market power will be mitigated below the supplier's actual gas costs.
- This change in the cap will reduce the likelihood of inefficient outcomes which could adversely impact electric or gas system reliability.

LONG RUN GOAL

These changes will not be adequate in the long-run, however, and the California ISO needs to continue moving forward to implement additional changes.

- A 125% cap based on the proxy cost will at times overstate costs and enable suppliers possessing market power to raise their offer prices and potentially receive additional uplift payments or energy market revenues.
- A 125% cap based on the proxy cost may not be large enough to cover all variations in gas costs nor to cover the start related costs or opportunity costs of all resources.

The goal of bringing an opportunity cost calculation design to the February board meeting is a good start, but this is not the only improvement needed in the long-run.

LONG RUN GOAL

The California ISO needs to constrain or mitigate the start-up and minimum load offers of resources potentially able to exercise locational market power.

- The California ISO should try to improve its calculation of the proxy costs it uses to constrain the offer prices of resources potentially possessing locational market power, but resource operators lacking such market power will always be better able to account for their resource costs than will be the California ISO.
- Hence, the California ISO needs to move expeditiously to a design that does not cap the start-up and minimum load offers of resources that lack market power.

OTHER CHOICES

Other design choices have been discussed in the stakeholder process, including:

- Providing bid cost recovery payments for gas costs in excess of default energy bids;
- Retaining the registered cost option until opportunity cost based proxy cost bid caps are in place and/or other improvements in proxy cost calculations have been implemented.

OTHER CHOICES

Bid cost recovery payments (uplift) for gas costs in excess of proxy cost bid caps can be desirable from the standpoint of assuring gas-fired generators that they will be able to recover the cost of gas they are scheduled to burn based on default energy bids for their minimum load and start-up costs. BUT:

- Relying on bid cost recovery to compensate for understated start up or minimum load costs is not a good or workable long-run solution.

OTHER CHOICES

An approach based on bid cost recovery payments to ensure recovery of gas costs would have the properties that:

- Actual gas costs would not be reflected in offers, so the CAISO could not choose the least cost commitment;
- Assuring the resource owner of cost recovery while not considering actual gas costs in CAISO commitment decisions would have the potential to adversely impact gas system reliability during OFO conditions;
- Resources dependent on market revenues can not compete with gas-fired resources that recover their start-up and minimum load costs through uplift payments.

OTHER CHOICES

Should the registered cost option be retained in the short-run?

- The registered cost calculation provides a much worse representation of current gas costs than does the proxy cost option.
 - Most market participants can calibrate their overall offer to the level of current gas prices by offering a few megawatts above minimum load at an appropriate discount to the registered cost;
 - The registered cost calculation therefore has the biggest adverse impact on offers when gas prices spike substantially as they did last winter;
 - The registered cost option is also less effective in constraining the exercise of locational market power because it binds so loosely.

OTHER CHOICES

However, some suppliers currently use the higher offer prices permitted by the registered cost option to manage the operation of their use limited resources while making them available for economic dispatch.

- Eliminating the registered cost option without replacing it with a workable opportunity cost methodology could be a step backward for those managing use limited resources.
- Why employ a “market power mitigation” design that requires market participants to physically withhold their use limited resources from the market in accordance with a “use plan” in order prevent excessive dispatch based on understated default energy bids!
- Given the unpredictability of dispatch needs, any “use plan” will inevitably withhold capacity at times when it is needed.

OTHER CHOICES

There is no good resolution involving either keeping or eliminating the registered cost option.

- Hence, there needs to be a sense of urgency in implementing changes in the proxy cost methodology such as including a better representation of opportunity costs, better accounting for major maintenance costs, and eliminating the constraint on the start-up and minimum load offers of those lacking market power.

MITIGATING MARKET POWER

The preferred approach to bidding in the day-ahead market would be to allow market participants to adjust their start-up and minimum load offer prices from day-to-day to reflect variations in costs, including the estimated opportunity costs of use limited resources and the resource operator's assessment of start-related costs.

- The only apparent impediment to implementing such an approach is the need to preclude the exercise of locational market power in these offer prices.

MITIGATING MARKET POWER

There are two complications in mitigating start-up and minimum load costs to prevent the exercise of material locational market power.

- The level of start-up and minimum load offer costs can affect energy prices in any hour, not just the hour in which the resource starts or stops operation.
- Excessive start-up and minimum load offer costs can be used to transfer wealth through uplift payments even if no transmission constraint is binding in the final dispatch solution.

Both complications can be addressed with minor changes to the California ISO's current market power mitigation design.

MITIGATING MARKET POWER

The first complication can be addressed by triggering mitigation of start-up and minimum load offer prices for all hours of the IFM if the resource provides counterflow on a constraint that is binding in the energy market in any hour of the IFM.

- The test for identifying resources impacting a constraint can be applied to start-up and minimum load costs in the same manner as to energy offer prices.

MITIGATING MARKET POWER

There are at least two distinct approaches that could be used to address the potential for excessive start-up and minimum load offer prices to affect uplift costs without any transmission constraint binding in the IFM's final dispatch.

- The first approach would apply mitigation to minimum load and start-up cost offer of any resource relieving a constraint that was active in IFM at any time, in any hour, in iterating to the final unit commitment and dispatch, even if the constraint was not binding in the final dispatch step of the market power mitigation pass.
- Units that could not have been committed to relieve a constraint would be able to submit market based offers and accurately reflect both gas and start related costs.

MITIGATING MARKET POWER

The second approach would:

- Only apply mitigation in the IFM to the minimum load and start up costs offers of a resource that relieves a constraint in the IFM's final dispatch solution. However, uplift/bid cost recovery would be calculated using start-up and minimum load costs capped by the calculated proxy cost.
- The resource owner would not be compensated for its as bid start-up and minimum load costs if it was committed uneconomically, but its as bid costs would be used for commitment decisions, allowing these costs to be used to manage start limits and avoid the potential for units to be committed as a result of using understated gas costs to calculate start-up or minimum load costs.

MITIGATING MARKET POWER

An even better market power mitigation design would be to combine the two approaches.

- Only apply mitigation in the IFM to the minimum load and start up costs offers of a resource if the resource relieves a constraint in the IFM's final dispatch solution.
- If a resource relieves a constraint that was not binding in the final dispatch but the constraint was active in the IFM at some point in iterating to the final unit commitment and dispatch, then calculate uplift payments for that resource based on start-up and minimum load offers capped by the calculated proxy cost.
- This design would allow cost recovery based on as-bid costs for units lacking market power that are committed uneconomically, while allowing all resources to use their offer to manage their commitment.

CONCLUSION

Beyond this winter:

- Implement a opportunity cost calculation for use limited resources;
- Continue to work on improving the representation of costs, such as major maintenance costs, in the proxy cost bid cap;
- Implement a design that only applies the proxy cost bid cap to those potentially possessing market power.

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