Comments on Aliso Canyon Gas-Electric Coordination Draft Final Proposal

Department of Market Monitoring

April 29, 2016

The Department of Market Monitoring (DMM) appreciates the opportunity to review and comment on the ISO's Draft Final Proposal for Aliso Canyon Gas-Electric Coordination. DMM supports many elements of the draft final proposal, though we have areas of concern. In this whitepaper, we emphasize key areas of the ISO's draft final proposal rather than covering elements of the ISO's proposal that were discussed in DMM's prior comments on the straw proposal.[1]

Recommendations

DMM makes the following recommendations on the draft final proposal. These recommendations concur with, further emphasize, or provide for changes with the ISO proposal.

- Modify criteria for adjustment of gas prices used in real-time commitment costs
- Use different criteria for adjusting gas prices used in real-time default energy bids
- Don't base commitment cost caps and default energy bids on gas penalties
- Allow for use of estimated natural gas prices in the day-ahead market
- Establish rules or guidelines for rebidding of commitment costs in the real-time market
- Establish authority to deem constraints uncompetitive based on gas limitations
- Request expanded authority to limit virtual bidding based on market impacts
- Limit sale of congestion revenue rights
- Limit time period of proposed actions

Modify criteria for adjustment of gas prices used in real-time commitment costs

Units are committed (or kept on-line for additional hours) in the real-time market by the market optimization based on a combination of three-part bids: start-up, minimum load and energy.[2] While generators can in most cases affect unit commitment decisions by submitting energy bids up to the $1,000/MW energy bid cap, generators can currently submit commitment cost bids only up to 125

[1] For further information on DMM's positions, see *Comments on Aliso Canyon Gas-Electric Coordination Straw Proposal*, Department of Market Monitoring, April 22, 2016: http://www.caiso.com/Documents/DMMComments_AlisoCanyonGasElectricCoordinationStrawProposal.pdf.

[2] Once a unit is on-line startup bids are treated as a "sunk" cost.

percent of proxy costs.[3] Thus, the ISO is proposing to increase this 125 percent cap on the real-time market for resources in the SoCalGas region to facilitate management of incremental gas usage in the real-time market by these units.

Under the ISO's proposal, this increased gas price headroom would be set based on the maximum of:

- the increased bid amount necessary to only dispatch generators affected by the Aliso Canyon situation for local needs and not system needs, and
- any real-time price premium to account for systematic differences between day-ahead and same day gas prices that materialize.

To avoid commitment and dispatch of resources within a gas constrained area for system needs that could be met by other resources, it is only necessary that total costs for resources in the gas constrained area (based on three part bids) be marginally higher than total costs for resources in the non-gas constrained areas.

DMM is in the process of analyzing the relative costs of units outside vs. inside the affected areas to assess the degree that cost-based bids in the affected areas in Southern California might need to be increased to ensure most of these units are slightly higher in the economic merit order than other units that could be committed to meet system needs instead of units in the gas-constrained area. Based on this analysis, an increase in the gas index of about 50 to 75 percent appears to be sufficient to achieve this approach. However, DMM cautions that calculating the appropriate value to achieve this result is not a science and requires a number of assumptions about the impact of different market conditions, unit characteristics, and components of each unit's three-part bids (start-up, minimum load and energy).

DMM strongly recommends that the ISO should have the flexibility necessary to adjust this number based on observed and systematic market conditions. However, unlike the ISO, DMM does not believe that the ISO should set the maximum value of the commitment cost cap up to the cost at the operational flow order penalty. Based on current gas prices, when combined with the 25 percent headroom already applied to commitment costs, this would represent an increase of about 300 percent in the gas prices used in calculating commitment cost bid caps to 4 times the gas price index value.[4]

Setting bid caps based on this potential gas imbalance penalty price represents a "worse case" scenario and could reduce the incentive to avoid such penalties. DMM notes that under the ISO's proposal, any commitment costs that are not recovered through the market or through bid cost recovery should be

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[3] As discussed in the following section, energy bids are only subject to mitigation when local market power mitigation procedures are triggered. When mitigated, bids are frequently not mitigated down to cost-based default energy bids, but are instead lowered only to a competitive market price that is usually greater than the cost-based default energy bids of many units.

[4] Given a $2.50/MMBtu gas price we understand that the low inventory operational flow order penalty at a 5 percent tolerance level in the SoCalGas system is $2.50 plus the daily balancing standby rate, which is equivalent to the InterContinental Exchange (ICE) Day-Ahead Index (including FF&U and brokerage fee) for the SoCal-Citygate, rounded up to the next whole dollar (see Sheet 12 https://www.socalgas.com/regulatory/tariffs/tm2/pdf/4822.pdf). Thus, if the ISO inflated its gas price index on this penalty it could result in an increase of 300 percent ($2.50/MMBtu for the gas + ($2.50 for the penalty at a 5 percent tolerance + $3/MMBtu for the daily balancing standby rate)) x 1.25 for the existing proxy cost adder = $10/MMBtu. This is an increase of 300 percent over a $2.50/MMBtu gas price.

recoverable as part of ISO's proposal on after-the-fact bid cost recovery. While DMM agrees that cost-based bid caps should be set high enough to result in efficient unit commitment and dispatch – and recover full cost under most cases – these caps also need to be set at levels that protect against local market power and excessive costs for consumers.

DMM has recommended that the ISO explicitly address whether any penalties should be eligible for inclusion in cost recovery. DMM supports explicit provisions including gas penalties in cost recovery rules or guidelines when such penalties are incurred due to an ISO real-time commitment, exceptional dispatch or real-time energy dispatch when a unit was subject to bid mitigation. This approach provides more protection against local market power, potential gaming of commitment costs, and excessive costs to consumers in excess of actual incurred gas procurement costs.

Limit adjustment of gas prices used in real-time default energy bids

While generators can currently submit commitment cost bids up to 125 percent of proxy costs, generators can submit energy bids up to the $1,000/MW bid cap. These energy bids are only subject to mitigation in the event that congestion occurs and the supply that can relieve this congestion is deemed uncompetitive under the ISO local market power mitigation procedures. If subject to mitigation, bids are capped by the higher of a competitive market clearing price or their default energy bid.[5]

Thus, unlike commitment costs, energy bids are only subject to mitigation and can only be dispatched based on a mitigated bid if they are needed to meet a local need within an uncompetitive area. Increasing default energy bids above actual cost in this situation simply raises prices, but does not decrease the amount of additional generation (and gas) needed from suppliers within the uncompetitive area to relieve congestion and ensure local reliability.

However, under the ISO's draft final proposal, the ISO would use the same gas price index for default energy bids that is used for calculation of commitment costs.[6] DMM believes that gas prices used in calculating default energy bids should not be set based on the same criteria that the ISO has proposed for commitment cost bids. Specifically, since units can only be dispatched based on default energy bids for local needs, it is inappropriate to inflate default energy bids in the SoCalGas area to avoid having units in this area dispatched for system rather than local needs.

In addition, it is important the note that – unlike commitment costs—energy bids set the market price for the entire market. Generators would earn this higher price for all sales, but may incur an actual penalty only on the incremental amount of gas burned in excess of the 5 percent tolerance band. In addition, higher prices in the real-time market can raise prices in the day-ahead market if virtual bidding is allowed.

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[5] As noted in the prior section, energy bids are only subject to mitigation when local market power mitigation procedures are triggered. When mitigated, bids are frequently not mitigated down to cost-based default energy bids, but are instead lowered only to a competitive market price that is usually greater than the cost-based default energy bids of many units.

[6] See *Aliso Canyon Gas-Electric Coordination Draft Final Proposal*, April 26, 2016, p. 21: http://www.caiso.com/Documents/DraftFinalProposal_AlisoCanyonGas_ElectricCoordination.pdf.

For these reasons, DMM recommends a different price index and criteria be used to determine any increase in default energy bids than are used for commitment costs. DMM suggests that it is only appropriate to increase the gas price index for default energy bids to (1) reflect any systematic premium observed in same day gas prices relative to next day prices used to calculated default energy bids, or (2) allow generators with units in the SoCalGas region to manage the merit order of resources that can meet local needs in the SoCalGas area to avoid potential penalties. DMM believes that the gas index used in calculating default energy bids in the SoCalGas area would need to be inflated by a much lower amount that the gas index used in calculating commitment costs to achieve these goals.

Analysis by DMM indicates that historically the same day market in the SoCalGas area is very thin and that prices do not tend to exceed next day prices on average – and have significantly exceeded next day prices on a very small portion of days. DMM questions whether the additional gas restrictions created by Aliso Canyon will change this and questions the degree to which available data on same day trades will provide a basis for determining if same day prices are systematically higher than next day prices. However, to the extent that there is an actual market for same day gas (for which prices are available) and these prices reflect potential gas penalties, then DMM agrees default energy bids should reflect these price.

Don't base commitment cost caps and default energy bids on gas penalties

The ISO proposal states that it will inflate gas prices used to calculate default energy bids "to values that better reflect intraday gas price variations relative to the gas index price used to calculate these values and to reflect limitations on gas imbalances imposed on generators subject to the constraints due to the Aliso Canyon situation."[7] DMM understands this to mean that the ISO might seek to set the gas indices used in calculating default energy bids and/or commitment costs up to a level that could cover potential operational flow order penalties. As described above, DMM does not support setting the gas prices used in calculating default energy bids and/or commitment costs up to a level that could cover potential operational flow order penalties. This would simply remove the incentive for generators to avoid penalties and be likely to result in much higher energy prices – without decreasing the amount of generation (and gas) actually needed to meet local needs within non-competitive areas.

As noted above, DMM has recommended that the ISO explicitly address whether any penalties should be eligible for inclusion in cost recovery. DMM supports explicit provisions including gas penalties in cost recovery rules or guidelines when such penalties are incurred due to an ISO real-time commitment, exceptional dispatch or real-time energy dispatch when a unit was subject to bid mitigation. This approach provides more protection against local market power, potential gaming of commitment costs, and excessive costs to consumers in excess of actual incurred gas procurement costs.

Allow for estimate of natural gas prices in the day-ahead market

The ISO proposes to update the manual price spike procedure to allow it to base gas price indices on a determination of a gas price spike based on an approximation of the ICE next day gas price index currently used in the procedure. This approximation would be based on ICE data available the morning

[7] Ibid.

of each day prior to the start of the day-ahead market. This next day gas index would be used for calculating proxy commitment costs and default energy bids in the day-ahead market.

However, in the stakeholder presentation of the ISO's draft final proposal the ISO has indicated it will initially only use this as an approximation of the ICE next day gas price index when prices appear to have increased 25 percent, and may use it on a routine basis once the calculation is "completely automated."

DMM believes that full automation is not feasible in the current timeframe. Consequently DMM recommends that the ISO maintain flexibility to use an estimate of next day price based on ICE data even when prices are less than 25 percent higher before full automation is available. For instance, if prices appear to be about 20 percent higher and the ISO can reasonably estimate this 20 percent increase based on ICE data (without full automation), it should have authority to increase the gas prices used in the day-ahead market.

Establish rules or guidelines for rebidding of commitment costs in the real-time market

The ISO is also considering allowing generators to re-bid commitment costs in the real-time market. This change would allow generators to utilize the higher caps on commitment costs being allowed in the real-time market.

Allowing generators to change commitment cost bids throughout the operating day in real time will create significant new opportunities for generators with intertemporal constraints (such as minimum up and minimum down times) to exploit bid cost recovery. This could result in generators receiving payments in excess of the generators' actual commitment costs. This potential for exploiting bid cost recovery will be further exacerbated by the ISO's proposal to increase the commitment cost caps above 125 percent of proxy costs.

Therefore, we have encouraged the ISO to develop real-time commitment cost bidding guidelines that strike a balance between allowing flexibility for generators to bid costs they would expect to incur if dispatched and safeguarding against unreasonable bid cost recovery uplift payments.

The ISO is considering versions of the following real-time commitment cost bidding guidelines:

1) No changing of day-ahead commitment costs in real-time for trading hours in which the generator has a day-ahead award; and
2) No changing of real-time commitment costs for the duration of the minimum up time of a unit (or configuration) after the unit (or configuration) has been committed in real time.

DMM supports these guidelines, but notes that these guidelines will not prevent some of the potential additional opportunities for exploiting bid cost recovery that will be created by the ISO's proposal to allow real-time rebidding of commitment costs. Therefore, we recommend that the ISO clarify that the upcoming increased commitment cost caps do not represent safe harbors under which any commitment cost bids are deemed acceptable.

DMM will be closely scrutinizing changes to commitment costs in real time that coincide with bid cost recovery payments. However, there are inherent difficulties and shortcomings in relying on behavioral

monitoring to differentiate between (1) legitimate use of real-time commitment cost bidding flexibility; and (2) exploitative use of real-time commitment cost flexibility to inflate bid cost recovery payments.

As a result of the difficulties of relying on behavioral market rules, the ISO's proposal to allow rebidding of real-time commitment costs throughout the operating day may result in significantly higher bid cost recovery payments for commitment costs than more restrictive proposals for rebidding real-time commitment costs. An alternative option would be to only allow rebidding of real-time commitment costs until bids are due for the first hour of the operating day.

DMM also notes the potential for behavior designed to trigger excessive bid cost recovery due to the provision allowing re-bidding of commitment costs in real time would be exacerbated if the ISO inflated the gas index used to calculate commitment cost caps to higher levels (e.g. significantly more than the 75 percent level mentioned in the ISO draft final proposal). This would be of particular concern to DMM if the ISO inflated this gas index based on potential penalties for excessive gas imbalances.

Establish authority to deem constraints uncompetitive based on gas limitations

The ISO's current local market power mitigation procedures include an automated assessment of the structural competitiveness of each constraint on which congestion is projected to occur. However, this procedure will not incorporate the impact of special gas usage constraints being proposed on restricting the actual amount of gas-fired generation available in Southern California to relieve congestion and meet local needs. As a result, constraints such as Path 26 could be deemed competitive when in fact the amount of supply in Southern California that can be dispatched to relieve congestion on these constraints is more restricted and uncompetitive. Thus, DMM recommends that the ISO seek special tariff authority to deem selected constraints uncompetitive (e.g. for specific days or hours) based on a determination that actual supply conditions may be uncompetitive due to special gas usage constraints being imposed in Southern California.

Expand authority to limit virtual bidding based on market impacts

The ISO tariff currently outlines the reasons for suspension of convergence bidding related to System Reliability or grid operations "if such activities contribute to threatened or imminent reliability conditions" (Section 7.9.2).

The draft final proposal indicates that "the ISO will monitor the impacts virtual bidding has on its use of the mechanism. The ISO will clarify its discretion in the tariff to suspend virtual bidding in the event adverse market or reliability impacts are identified."[8]

As a general principle, DMM believes that when modeling, structural or market rule differences exist between the day-ahead and real-time markets, virtual bidding can often be profitable but provide little or no benefits – and can actually decrease market efficiency, make it more difficult to manage system reliability and result in inequitable market outcomes. Consequently, DMM strongly recommends the

[8] *Aliso Canyon Gas-Electric Coordination Draft Final Proposal*, p. 18.

ISO modify its tariff to clarify its authority to suspend or limit virtual bidding – including at specific locations or regions – to prevent or protect against potential detrimental or inequitable market impacts.

Moreover, DMM recommends that the ISO closely monitor the impacts of virtual bidding and be prepared to quickly exercise this authority to suspend virtual bidding – including at specific locations or regions.

Limit sale of congestion revenue rights

The draft final proposal indicates that the "ISO is evaluating the impact reserving portion of transfer capability on Path 26 will have on congestion revenue right (CRR) revenue sufficiency. It will likely address this by limiting the amount of additional CRRs it releases in the monthly process."[9]

Given the uncertainty about the capacity in the north-to-south direction on Path 26 that will actually be available, DMM recommends that the ISO assess the amount of capacity that may be unavailable due to outages and any transmission reserved in the day-ahead market due to gas limitations in southern California. The ISO should then ensure that capacity in the north-to-south direction on Path 26 that is be released in the monthly auctions for June and subsequent months does not exceed the levels that are likely to be available with a high level of confidence.

Auctioning more capacity may cause additional revenue inadequacy that would be allocated to load-serving entities. Since the bulk of CRRs are purchased by purely financial entities, auctioning off more CRRs would appear to provide few benefits to participants interested in purchasing CRRs as a hedge for physical load or generation. In addition, parties are free to contract directly with other parties for such hedges.

Limit time period of proposed actions

As noted by the ISO in its stakeholder call on April 27, the ISO intends to sunset the provisions in its proposal in November and to reevaluate the effectiveness and the need for continuing the provisions moving forward. We agree with the ISO's proposal and recognize that some elements of the ISO's proposal could translate into more permanent changes.

[9] *Aliso Canyon Gas-Electric Coordination Draft Final Proposal*, p. 18.