Changes to Bidding and Mitigation of Commitment Costs

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Stakeholder Conference Call
June 24, 2010
Agenda and Logistics

- Overview
- Start-Up and Minimum Load (SU and ML)
- Modification of Proxy Cost Option
- Multi-Stage Generation (MSG) Transition Costs
- Next Steps

**Teleconference Information**
Dial-in Number: (800) 230-1951
International Dial-in: (612) 332-0107

**Web Conference Information**
Web Address: www.webmeeting.att.com
Meeting Number: 5114682337
Access Code: 9842446
ISO Stakeholder Process Overview

1. Issue ID Paper
2. Straw Proposal
3. Revised Straw Proposal
4. Draft Final Proposal

Project is triggered

Opportunities for Stakeholder Input

We are here
Overview

- Changes to Start-Up and Minimum Load
  - Independent election to proxy or registered
  - Daily bidding of proxy SU and/or ML **IF** bid price below proxy
- Changes to the proxy cost option
  - **ML**: O&M default values reviewed and updated as necessary every 3 years
  - **SU and ML**: Change SP15 gas delivery point from SoCal Border to SoCal CityGate
- Rules for MSG Transition Costs
  - Two rules that bound upward costs within the MSG transition matrix
  - Downward transition costs
Election of Proxy or Registered SU and ML costs

- Independent election of SU and ML costs
  - A registered cost can be submitted for start-up which can account for non-fuel costs such as maintenance
  - Proxy cost can be elected for minimum load costs as these costs are highly dependent on fuel costs
  - Unanimous Stakeholder support
Daily bids for SU/ML

- Resources that have elected the **proxy** cost option for SU and/or ML
- Can bid in on a **daily** basis
- As long as those bid values are **below** the proxy cost value
- No Stakeholder opposition
Modification of the Proxy Cost option

- **ML**: Adjustment of O&M costs
  - Revisit default values every three years, revise as necessary
  - Negotiated option remains

- **SU and ML**: Refinement to Gas Prices
  - Add SoCal CityGate for SP15
  - Drop SoCal Border for SP15
Other natural gas costs – Transport

- The ISO requested Stakeholder feedback on the extent to which more granular natural gas transport costs are needed
  - 2 stakeholders provided feedback, 1 empirical
  - ISO recognizes that there are location-specific intra-state natural gas transport costs – potential future enhancement
  - Adder is not an efficient methodology for capturing these costs
Other natural gas costs – Day Ahead / Real Time

- DA versus RT gas price differences
  - RT balancing, storage, and procurement of natural gas
  - The extent and magnitude of this potential concern is not known
  - If exceptionally dispatched, settlement is designed to help cover costs of unanticipated operation in RT
  - Adder is not an efficient methodology for capturing these costs
Other natural gas costs – OFO

- Operational Flow Orders (OFO)
  - Potentially legitimate costs to include in the proxy cost option
  - Difficult to incorporate
    - Identification of impacted units
    - Extent of OFO cost impact on participant
    - Timing of OFO relative to ISO market timelines
    - Automatic feed of OFO information to ISO systems
  - Potential future enhancement
Multi-Stage Generating Resource Background

- **MSG Resources**
  - Units with multiple configurations
  - Only one configuration operates at a time

- **Transition Matrix**
  - Maps costs and operating parameters associated with transitioning between configurations
  - Transition costs are static in the Master File for 30 days
MSG Transition Costs

- Design principles
  - Prevent economic withholding
  - Provide flexibility
- TC are validated upon submission to MF
- TC “float” with the daily GPI
- Changes since the Revised Straw Proposal
  - Can specify a heat input for downward transition
  - Rule 1 constraint is 100% and 125% for NOT start-able configs, $0 and 125% for start-able configs
  - Clarification that Heat Input values are used to determine proxy SU values
### MSG Transition Matrix

<table>
<thead>
<tr>
<th>“From” Configuration</th>
<th>“To” Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Offline 1 2 3</td>
</tr>
<tr>
<td>Offline</td>
<td>Offline  Proxy + 10% Proxy + 10% Proxy + 10%</td>
</tr>
<tr>
<td>1</td>
<td>Heat Input $ Value $ Value</td>
</tr>
<tr>
<td>2</td>
<td>Heat Input Heat Input $ Value</td>
</tr>
<tr>
<td>3</td>
<td>Heat Input Heat Input Heat Input</td>
</tr>
</tbody>
</table>

**Legend:**
- Proxy + 10% indicates a configuration with 10% proxy
- $ Value indicates a monetary value
- Heat Input indicates a heat input configuration

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*Note: The table above represents the transition matrix for different configuration states.*
MSG Transition Cost Rules

- **Rule 1**: Each start-able configuration will have a calculated SU cost + a 10% adder
  - NOT start-able configuration, $\sum TC$ must be between 100% and 125% of the configuration’s proxy + 10% SU value
  - Start-able configuration, $\sum TC$ must be between $0$ and 125% of the configuration’s proxy + 10% SU value

- **Rule 2**: For any feasible transition from $i \rightarrow j$, feasible transitions that nest within it must be between 100% and 125% of the cost of the transition from $i \rightarrow j$

- **Downward TC**: can submit heat input associated with a downward transition
MSG Transition Cost – Rule 1

- **Rule 1**: The sum of transition costs along any feasible path from offline to the NOT start-able configuration must be between 100% and 125% of the configuration’s proxy + 10% SU value (between $0 and 125% for start-able configurations)

- **Notes**:
  - Proxy SU based on heat input values from participants
  - Note that proxy SU values + 10% adder are not used for commitment or BCR – only for Rule 1.
  - Rationale for different lower bound for start-able configs
Transition Costs and Proxy SU values

- To validate Rule 1, the ISO will calculate proxy start-up values for each start-able configuration.
- Participant submits a heat input value or energy value, to calculate proxy SU.
- SIBR will apply the daily gas price index, energy index.
- A 10% adder will be applied to the proxy start-up values.
- The proxy values used for Rule 1 validation will not be used for commitment or BCR.
- Future enhancement will be to add a daily energy index.
MSG Transition Cost – Rule 2

- **Rule 2**: For any feasible transition from $i \rightarrow j$, feasible transitions that nest within it must be between 100% and 125% of the cost of the transition from $i \rightarrow j$

- **Rationale for 100% lower bound**: The sum of transition costs for incremental transitions is at least as expensive as the direct transition
Downward Transition Costs

- Participants can submit a heat input value associated with a downward transition
- Those values are not governed by the TC rules
- Constraining downward TC using rules led to lumpiness
- Important to include downward transition costs separately for several reasons
  - Upward paths and downward paths not necessarily the same
  - Optimization should be informed by downward transition costs when evaluating whether or not a downward transition is economic
MSG Transition Costs and Bid Cost Recovery

- Transition Costs will be included as costs when net revenues are calculated for an MSG resource.
- The settlement intervals in which the resource reached the PMin of the target configuration will be eligible for BCR.
- A three-percent (or 5 MW, whichever is greater) tolerance band will be applied around the resource’s operating level when determining whether or not the resource has achieved the PMin of the target configuration.
Commitment Costs Stakeholder Process

<table>
<thead>
<tr>
<th>DATE</th>
<th>EVENT</th>
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<tbody>
<tr>
<td>May 5</td>
<td>Revised Straw Proposal posted</td>
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<tr>
<td>May 13</td>
<td>Conference call</td>
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<td>May 21</td>
<td>Comments due</td>
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<td>Draft Final Proposal posted</td>
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<td>Final comments due</td>
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<tr>
<td>July 26-27</td>
<td>CAISO Board of Governors</td>
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Questions, Comments, Concerns & Compliments…

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