Changes to Bidding and Mitigation of Commitment Costs

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Stakeholder Conference Call
May 13, 2010
Agenda

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

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

We are here

Opportunities for Stakeholder Input

Project is triggered
Background

- At the start of the new market in April 2009
  - Excessive cycling of units
  - Commitment to Pmin and then shutdown
- Changes considered to SU and ML
  - Daily bidding?
  - More frequent election to proxy/registered?
  - Account for opportunity costs?
- Since then…
  - Improvements to software and processes
  - Fewer generation and transmission outages
  - SU/ML changes set aside
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
  - Registered O&M option
  - Gas delivery points granularity
  - Opportunity costs for use-limited resources

- Rules for MSG Transition Costs
  - Two rules that bound costs within the MSG transition matrix
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
  - Every three years
  - Negotiated option remains
  - No PJM-style O&M cost submission

- SU and ML: Refinement to Gas Prices
  - Change the SP15 delivery point from SoCal Border to SoCal CityGate

- Opportunity Costs for use-limited resources (SU)
  - Based on forecasted prices and use limitation plan
O&M Costs Component of MinLoad

- Current ISO defaults
  - Gas Turbine – $4/MWh
  - All others (including Combined Cycle) – $2/MWh
  - Negotiated – $6/MWh

- Default values updated once every three years
Gas Prices – Adding SoCal CityGate
Gas transport costs

- Gas transport costs
  - Highly locational – essentially resource-specific
  - Prescribed by multiple FERC tariffs

- Current gas transport component of proxy SU/ML
  - Based on PG&E, SCE and SDG&E rates
  - **Does NOT currently include** a 10% adder to account for other additional costs

- The ISO requests Stakeholder feedback
  - Justification for a 10% adder on natural gas transport costs
  - Spatially differentiated?
Opportunity Costs for Use-Limited Resources

- Methodology for valuing run-hours for use-limited resources
  - Forecasted prices
  - As run-hours get scarcer, value increases

- Objections and concerns from Stakeholders, MSC

- Clarifications from Stakeholders
  - Not additive to SU – rather, the greater of proxy/OC is used
  - Not based on use-limitation plans
  - Prepared by Potomac for MSS
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
  - Avoid rigid rules
    - Difficult to prescribe parameters
    - Onerous to validate data

- **Changes since the Straw Proposal**
  - No downward transition costs
  - No negotiated maxSU
  - Proxy + 10% SU for each start-able configuration
  - Constrained between 100% and 125%
# MSG Transition Matrix

<table>
<thead>
<tr>
<th>“From” Configuration</th>
<th>Offline</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offline</td>
<td></td>
<td>Proxy + 10%</td>
<td>Proxy + 10%</td>
<td>Proxy + 10%</td>
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<tr>
<td>1</td>
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<td>3</td>
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</tbody>
</table>
MSG Transition Cost Rules

- **Rule 1**: Each start-able configuration will have a calculated SU cost + a 10% adder. The sum of transition costs along any feasible path from offline to the start-able configuration must be between 100% and 125% of the configuration’s proxy + 10% SU value.

- **Rule 2**: For any feasible transition from i→j, feasible transitions that nest within it must be between 100% and 125% of the cost of the transition from i→j.
**MSG Transition Cost – Rule 1**

- **Rule 1**: The sum of transition costs along any feasible path from offline to the start-able configuration must be between 100% and 125% of the configuration’s proxy + 10% SU value.

- **Advantages:**
  - Objective, eliminates need for negotiation
  - SU values and boundaries limit “lumpiness”
  - Note that proxy SU values + 10% adder are not used for commitment or BCR – only for Rule 1.

- **Example**
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.

- **Example**
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.
Transition Costs and Proxy SU values

- To validate Rule 1, the ISO will calculate proxy start-up values for each start-able configuration.
- If participant submits a fuel burn rate or energy value, those will be used to calculate proxy SU.
- If participant has elected registered cost, a fuel burn rate or energy value must be supplied.
- 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.
## 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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<tr>
<td>May 21</td>
<td>Comments due</td>
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<tr>
<td>June 2</td>
<td>Draft Final Proposal posted</td>
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<td>July 26-27</td>
<td>CAISO Board of Governors</td>
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Questions, Comments, Concerns & Compliments…

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