IMM Regulation Market
Recommendations: Alternative Proposal

MRC/MC
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Monitoring Analytics
Majority Proposal

• **Shoulder Hour LOC:**
  • Shoulder Hour LOC should recovered.
    o Shoulder Hour LOC should be recovered via safety net if net regulation revenues are not sufficient to cover them
  • Shoulder Hour LOC should not be part of clearing price.
    o Cannot properly attribute to multiple hour case
    o Cannot be fully calculated for commitment until after the fact

• **Marginal Benefits Factor for Settlement**
• **Benefits Factor should be consistently applied throughout the market construct**
Alternative Proposal: Modifies Majority Proposal

• Complete the consistent application of offer modifiers and units of measure throughout the market construct (as suggested for the benefits factor in the Majority Proposal).

• Make the components of the regulation prices reflect the offers of marginal resources.
Alternative Proposal: Modifies Majority Proposal

• Total Cost = A + B
  • Where
    o A = Total Capacity Cost
    o B = Total Cost of Performance

• Properly defined Total Cost, can then be used to define:
  • Total Cost/MW = $/MW
  • Total Cost/Effective MW = $/Effective MW
  • Total Cost/Mile = $/Mile
Alternative Proposal: Modifies Majority Proposal

• Results in performance price that reflects marginal resource ($/MW)
• Provides regulation at a cost reflective of actual offers to provide service
• Consistent with 755 Requirements (capability and performance offers and capability and performance payments)
• Rank ordering of resources consistent with relative actual costs to system
• Provides consistent application of scalars in pricing and settlement. (miles, MW, benefits factor, performance scores)
Alternative Proposal

- All of “Majority” Items, plus
- Item 1: Use actual cost for relative offers.
  - Expected and actual cost per MW or effective MW should be used consistently for clearing and within hour pricing of performance.
  - (Remove performance factor from denominator of performance component.)
- Item 2: Capacity credits (awarded per MW) should be adjusted by performance.
  - Consistent application of performance factor in pricing and credits.
  - Same logic as consistent application of the benefits factor.
Alternative Proposal, Item 1: Use Actual Cost

Actual cost of provided miles:

\[ \text{Total Performance Cost} = \left( \frac{\text{$/Mile}}{1} \right) \times \left( \frac{\text{Miles}/\text{MW}}{1} \right) \times \left( \frac{\text{Performance} \%}{1} \right) \times \text{MW} \]

IMM and PJM proposal (Alternative):

\[ \text{Total Performance Cost} = \left( \frac{\text{$/Mile}}{1} \right) \times \left( \frac{\text{Miles}/\text{MW}}{1} \right) \times \left( \frac{\text{Performance} \%}{1} \right) \times \text{MW} \]

Current Proposal (Majority):

\[ \text{Total Performance Cost} = \left( \frac{\text{$/Mile}}{1} \right) \times \left( \frac{\text{Miles}/\text{MW}}{\text{Performance} \%} \right) \times \text{MW} \]

- Majority multiplies MW by (1/performance).
- Results in low performers credited with more miles (per MW) than good performers
  - Calculated performance cost would exceed actual performance cost
Alternative Proposal, Item 1: Correct Performance Cost Calculation

<table>
<thead>
<tr>
<th>Example</th>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capability MW</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>$/Mile</td>
<td>$1.00</td>
<td>$1.00</td>
</tr>
<tr>
<td>Signal Miles/MW</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Performance</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Actual Miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miles = Signal Miles/MW * Capability MW * Performance</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Performance Cost = $/mile * Actual Miles</td>
<td>$4.00</td>
<td>$2.00</td>
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<table>
<thead>
<tr>
<th>Option 2 Proposal</th>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles = Signal Miles/MW * Capability MW * Performance</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Performance Offer = $/mile * Actual Miles</td>
<td>$4.00</td>
<td>$2.00</td>
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</table>

<table>
<thead>
<tr>
<th>Option 1 Proposal</th>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles = (Signal Miles/MW * Capability MW)/(Performance)</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Performance Offer = $/mile * Actual Miles</td>
<td>$4.00</td>
<td>$8.00</td>
</tr>
</tbody>
</table>

Poorer performance = More Miles?
Alternative Proposal, Item 2: Capacity Credits Should Be Adjusted by Performance

• **Charge:**

\[ \text{Capability Charge} = \left( \frac{\text{$/MW}}{\text{BF} \times \text{Performance} \%} \right) \times \text{CapMW} \]

If applied here

• **Majority Credit:**

\[ \text{Capability Credit} = \text{CapabilityRMCP}($ / MW) \times \text{capMW} \times \text{BF} \]

Performance scalar

• **Alternative Credit:**

\[ \text{Capability Credit} = \text{CapabilityRMCP}($ / MW) \times \text{capMW} \times \text{BF} \times \text{Performance} \% \]

Must apply here

• **Same logic as uniform application of benefit factor (BF)**
Alternative Proposal: Modifies Majority Proposal

• Price components better reflect actual offers
• Market prices better reflect marginal offers
• Market provides a clearer signal regarding the incremental cost to provide service
• Payments to marginal resources do not exceed marginal resource offers
• Rank ordering of resources consistent with relative actual offers and costs to system.
• Consistent application of scalar adjustments to prices and settlement.
  • Majority Proposal does not completely correct the inconsistencies