Cost Offer Development (ESR)

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Components of a Cost Offer

- No Load
- Incremental Energy
- Start-Up
Total Fuel Related Costs = Fuel Costs + Fuel Related Costs
+ \( SO_2 \) Allowance Cost + \( CO_2 \) Allowance Cost
+ \( NOx \) Allowance Cost + Maintenance Adder
ESR Components of Cost-Based Offer

Cost-Based Offer

Total Fuel Related Costs

- Fuel/Commodity Cost
  - Submitted to PJM: Fuel Cost Policy
  - $/Fuel

- Maintenance Adder
  - Submitted to PJM: Maintenance History
  - $/Fuel

Opportunity Cost

- TBD
  - $/MWh
Fuel Cost Calculation Methods

Fuel Cost

- Inventory
- Replacement
• Hourly Average Basis
  – FIFO – First in first out
  – LIFO – Last in first out
• Average of Previous Day RT Charging LMP
• DA Committed Charging LMPs & MWs
• Rolling Last 1-7 Days RT LMPs
• PJM Western Hub Real-Time Peak/Off-Peak Daily
• DA Next Hour LMP
• Average of Last Hour 5 Minute RT LMPs
• Capacity Market
  – Fixed Maintenance Costs
  – Expenses incurred regardless if the resource runs during the delivery year

• Energy Market
  – Variable Operations and Maintenance Costs (VOM)
  – Includable per Manual 15: *Variable Maintenance cost is the parts and labor expenses of maintaining equipment and facilities in satisfactory operating condition. Only expenses incurred as a result of electric production qualify for inclusion.*
### Example ESR Maintenance Costs

<table>
<thead>
<tr>
<th>Fixed Maintenance</th>
<th>Variable Operations and Maintenance (VOM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Straight Time Labor</td>
<td>Cell Repairs/Replacements</td>
</tr>
<tr>
<td>HVAC</td>
<td>Inverter Maintenance</td>
</tr>
<tr>
<td>Building Maintenance</td>
<td>Operating Costs: Acids, Lithium Ion, etc.</td>
</tr>
<tr>
<td>General Site Maintenance</td>
<td>Generation Owned GSU/ Interconnection Transmission Maintenance</td>
</tr>
<tr>
<td>Predictive Maintenance</td>
<td>Pump Repairs</td>
</tr>
<tr>
<td>Pond/Recreational Maintenance</td>
<td>Generator/Motor Repairs</td>
</tr>
</tbody>
</table>
Appendix
• Basic Fuel Cost – The cost of commodity calculated as stated in the Market Sellers’ Fuel Cost Policy
• A Fuel Cost Policy documents the methodology used by a Market Seller to calculate/estimate fuel related cost and whether other components used in the development of a cost-based offer are included such as:
  – Efficiency - method of development and update frequency
  – Performance Factor - method of development and update frequency
  – Maintenance adder (if used)
  – 10% adder (if used)
  – Any other incremental costs
Regardless of fuel type, a fuel cost policy must include:
- A description of the Market Seller’s fuel procurement practices and how those practices are used to calculate fuel costs including:
  - Whether they are using inventory cost, replacement cost, or a combination
  - Applicable indices
  - A description of any other applicable adders
  - Any alternative measures to document fuel cost and how it is superior to the methods above
  - A numerical example
Fuel Cost Policy Submittal

- Market Sellers can submit a Fuel Cost Policy for PJM and IMM review:
  - 45 Days prior to a new generation resource expected initial submittal of a cost-based offer
  - On an annual basis prior to June 15 for the annual review process
  - Any time outside the annual review period

- All Fuel Cost Policies must be submitted into MIRA for review

- PJM must approve a Market Seller’s Fuel Cost policy prior to it being used in the development of cost-based offers.
• PJM conducts a separate review of maintenance adders. However, PJM requires Market Sellers to document in their Fuel Cost policy whether they use them or not.
  – All maintenance adders must be reviewed by PJM annually.
  – Market Sellers may not use a value in their cost-based offers that has not been approved by PJM.