Shutdown Costs for Demand Response Resources

Cost Development Subcommittee
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Emerging Markets
Any costs associated with reducing load, including direct labor and equipment costs, opportunity costs, and costs associated with the minimum number of contiguous hours for which the load reduction must be committed.

Definition is current not included in the Manuals
• Shutdown Costs and Minimum Down Times are optional, and will default to zero (0) if not submitted.

• Shutdown Cost will be expressed in dollars ($), and represents the fixed cost associated with committing a load response resource.

• For emergency participation, Shutdown Costs are determined prior to deliver year and are not updated.

• For economic participation, Shutdown Costs will be changeable only every six (6) months (same as priced-based Start-up Costs for generators) in eMKT.

Shutdown costs need to be submitted prior to the bi-annual enrollment
Changes allowed only every six months (economic)

Jan 1

April 1
(Period 1)

Oct 1
(Period 2)

Dec 31
Effective Dispatch Rate used to determine when to dispatch DR resource in energy market through Security Constrained Economic Dispatch (SCED) tool

Equation:

\[
\left( \frac{\text{Shutdown Costs}}{\text{Min Down Time}} \right) \times \frac{1}{\text{Load Reduction}} + \text{Offer Price} = \text{Effective Dispatch Price}
\]

**Definition to follow**
## Shutdown Costs

<table>
<thead>
<tr>
<th>Market</th>
<th>Shutdown Costs in Market Clearing &amp; Dispatch</th>
<th>Shutdown Costs in Settlements</th>
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</thead>
<tbody>
<tr>
<td>Energy</td>
<td>Yes (effective dispatch price)</td>
<td>Yes</td>
</tr>
<tr>
<td>Day-ahead Scheduling Reserve</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Synchronized Reserve</td>
<td>No</td>
<td>Yes, unless already dispatched for energy then will receive shutdown cost from energy dispatch as indicated above</td>
</tr>
<tr>
<td>Regulation</td>
<td>No</td>
<td>No</td>
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</tbody>
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