Resource Obligations in RPM

June 10, 2014
Training Objectives

• Determine the UCAP value of an RPM resource

• Describe the market obligations arising from an RPM commitment
Unforced Capacity (UCAP) value of a generating unit is calculated as:

\[
\text{Unforced Capacity Value of Unit X} = \text{SUMMER Installed Capacity (ICAP) Rating} \times (1 - \text{EFORd}^*)
\]

For Example:

\[
96 \text{ MW} = 100 \text{ MW} \times (1 - 0.04)
\]

Unforced Capacity Value For Unit X = 96 MW

*EFORd = Equivalent Forced Outage Rate
Unforced Capacity (UCAP) value of a solar resource is calculated as:

\[
\text{Unforced Capacity Value of Solar Unit} = \text{SUMMER} \times (38\%\*)
\]

For Example:

\[
38 \text{ MW} = 100 \text{ MW} \times (0.38\*)
\]

Unforced Capacity Value For Solar Unit = 38 MW

*Based on 3yr rolling average capacity factor. Default is 38%
Unforced Capacity (UCAP) value of a wind resource is calculated as:

\[
\text{Unforced Capacity Value of Wind Unit} = \text{SUMMER Installed Capacity (ICAP) Rating} \times (13\%)*
\]

For Example:

\[
13\text{ MW} = 100\text{ MW} \times (0.13\%)*
\]

Unforced Capacity Value For Solar Unit = 13 MW

*Based on 3yr rolling average capacity factor. Default is 13%
The nominated value is the maximum load reduction of an end-use customer site. The process to determine this value is consistent with the process for the determination of the capacity obligation for the customer.

The maximum load reduction for each resource is adjusted to include system losses.

<table>
<thead>
<tr>
<th>Load Management Product Type</th>
<th>Nominated Value</th>
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</thead>
<tbody>
<tr>
<td>Direct Load Control</td>
<td># Customers * Per Participant Impact * Loss Factor</td>
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<tr>
<td></td>
<td>* Load Research and Switch Operability Study must be submitted to PJM and approved in order to determine the Per Participant Impact.</td>
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<tr>
<td>Firm Service Level</td>
<td>Peak Load Contribution – (Firm Load Level * Loss Factor)</td>
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<tr>
<td>Guaranteed Load Drop</td>
<td>Min (Peak Load Contribution, Customer Load Reduction Value * Loss Factor)</td>
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</table>
Unforced Capacity (UCAP) value of a Load Management Product is calculated as:

\[
\text{Unforced Capacity Value Of DR X} = \text{Nominated DR Value} \times \text{DR Factor} \times \text{Forecast Pool Requirement (FPR)}
\]

For Example:

\[
10.4 \text{ MW} = 10 \times 0.955 \times 1.0902
\]

Unforced Capacity Value For DR Resource = 10.4 MW
Unforced Capacity (UCAP) value of an EE Resource is calculated as:

\[
\text{Unforced Capacity Value Of EE Resource} = \text{Nominated EE Value} \times \text{DR Factor} \times \text{Forecast Pool Requirement (FPR)}
\]

For Example:

\[
104.1 \text{ MW} = 100 \times 0.955 \times 1.0902
\]

Unforced Capacity Value For EE Resource = 104.1 MW
**Generation Resources**

All generation resources that have an RPM Resource commitment must offer into PJM’s Day Ahead Energy Market.

**Demand Resource**

Demand Resources that have an RPM Resource Commitment must be registered in the Full Program Option of the Emergency Load Response Program and thus be available for dispatch during PJM-declared emergency events.
Questions?