

Intermittent Resource Working Group Presentation on System Peak Load Definition

ISO New England Inc.

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Status of IWG Discussions

- Settlement Agreement
- Revised Preliminary Straw Proposal
- Determination of relevant System Peak load period

Settlement Agreement

- Directs development of methodology for determining Qualified Capacity MW of Intermittent Resources
 - ✓ Distinct method recognizing contribution to system reliability over the Winter and Summer periods.

Straw Proposal

- Revised Preliminary Straw Proposal
 - ✓ Defines Intermittent Resources Qualified Capacity MW
 - Median of actual interconnected hourly generation flow
 - during the Winter/Summer Reliability Hours
 - over a historical winter/summer period

IWG Discussions

- Focus: Definition of a System Peak load period.
 - ✓ Consider using the same period as for Demand Response Resources.

Proposed Methods

- **Method A:** Original Straw Proposal
 - ✓ 3 Year rolling average of median resource generation during System Peak hours
 - Summer/Winter: Hours 8:00 a.m. to 11:00 p.m.
 - Non Holiday Business Days
 - Summer: June to September
 - Winter: October to May

Proposed Methods (con't)

- **Method B:** Revised Straw Proposal –
 - ✓ 3 Year rolling average of median resource generation during highest System Peak load hours
 - plus shortage events
 - Summer: 50 Highest Hours
 - Winter: 100 Highest Hours
 - ✓ Fewer hours and more focused on system peak than Method A

Proposed Methods (con't)

- **Method C:** Proposed Demand Response Methodology
 - ✓ 3 Year rolling average of median resource generation
 - Day of monthly System Peak
 - Summer:
 - June & July 2:00 p.m. to 5:00 p.m.
 - August 2:00 p.m. to 4:00 p.m.
 - Winter:
 - December & January 5:00 p.m. to 7:00 p.m.
 - ✓ More Focus on System Peak and few hours than Method B.

Illustration of Methods (Historical Data)

Summer

Method	Name	Hydro	Wind	Sun (1)
A	Original Straw	43%	20%	17%
B	Revised Straw	43%	20%	46%
C	Demand Straw	47%	23%	44%

(1) Note: Derived by CSG from CSG's PV plant at Middletown, R.I.

Illustration of Methods (Historical Data)

Winter

Method	Name	Hydro	Wind	Sun (1)
A	Original Straw	126%	80%	8%
B	Revised Straw	126%	118%	0%
C	Demand Straw	92%	115%	0%

(1) Note: Derived by CSG from CSG's PV plant at Middletown, R.I.

Possible Improvements to Proposed Methods

- Objective: Obtain the best possible estimate of generation from each type of intermittent resource during the hours of system peak load.
- System Peak Load Hours: Specification of the system peak load hours should be the same as that used by demand resource group.

Possible Improvements to Proposed Methods

- Sample Size: The more hours used in estimating the output, the more reliable the estimate.
 - ✓ Sample as many hours as possible in which output is representative of generation during peak load hours.
 - ✓ Each type of intermittent resource is based on different natural phenomenon.
 - Optimum sample of hours yielding the best estimate of peak hours may be different for each type of resource.

Determining the Best Set of Sample Hours: Questions

- Is the output likely to be the same or similar on the peak day and non-peak *days* during the season ?
 - ✓ If so— then more days can be used, and more reliable estimates found
- Is the output likely to be the same during non-peak and peak *hours*
 - ✓ If so— then more hours can be used, with more reliable estimates obtained.

Determining the Best Set of Sample Hours: Answers

- The answers to these questions are likely to be different for different types of intermittent resources.
- ✓ Therefore, to obtain the best set of hours for each resource:
 - Look at the data specific to each type of resource
 - Find separate answers for each type of resource
 - Apply the answers separately if warranted

Next Steps

- Review data to determine the best set of hours to use in rating each type of intermittent resource
 - ✓ Which days should be used ?
 - ✓ Which hours should be used?
 - ✓ How many years of data should be used ?
- Agree that the median output during the selected hours is the appropriate metric
- Report this approach to the ICWG
- Review and analyze the data during summer 2006