Wind and Solar Resource Dispatch in Real-time Market Clearing Engines

Issue Source

Issue charge being brought forth by PJM.

Issue Content

Review and enhance existing practices and/or propose new rules regarding the dispatch methodology of Wind and Solar Resources. As Wind and Solar Resources continue to integrate into PJM, operational issues arise due to inconsistent controllability of these resources. A dispatch methodology to more efficiently manage this uncertainty is needed.

The following challenges exist in real-time:

1. High ramping capability complicate constraint control;
2. Different levels of performance and capabilities for existing Wind and Solar Resources;
3. Accuracy of input data (ramp rate, economic maximum, etc.)
4. Accuracy of forecast (PJM or Participant)
5. Differences in plant configurations ranging from controlling agents set-ups to inverter settings that have led to issues in communications, following PJM instructions, and resilience in responding to disturbances

Key Work Activities and Scope

1. Provide education sessions on status quo business rules of real-time market clearing engine methodology and concerns related to Wind and Solar Resources.
2. Provide education on operational rules and requirements for Wind and Solar resources with examples of specific operational challenges experienced.

2.3. Review other RTO/ISO Real-time Market Clearing Engine (MCE) treatment of Wind and Solar Resources.

3.4. Determine potential solution packages and appropriate governing document and/or business manual language to enhance the Wind and Solar Resource dispatch process in PJM's real-time market clearing engines.

Areas in scope:

- Methodology in which PJM dispatches Wind and Solar Resources ~~for constraint control and power balancing~~in real-time
- Ability to communicate dispatch mode and instructions
- Expectations of Wind and Solar Resources for market data submissions and performance
- To the extent necessary, applicable ~~M~~market settlements calculations ~~including but not limited to uplift eligibility~~

Areas not in scope:

- Capacity accreditation business rules
- Reserve capability and methodology calculations
- New market products

Decision-Making Method

Tier 1, consensus

Stakeholder Group Assignment

Distributed Resources Subcommittee (DISRS)

Expected Duration of Work Timeline

Six to twelve months.

Start Date	Priority Level	Timing	Meeting Frequency
Click here to enter a date.	☒ High	☐ Immediate	☐ Weekly
	☐ Medium	☒ Near Term	☒ Monthly
	☐ Low	☐ Far Term	☐ Quarterly

Charter

(check one box)

☐	This document will serve as the Charter for a new group created by its approval.
☒	This work will be handled in an existing group with its own Charter (and applicable amendments).

More detail available in M34; Section 6