

Energy Resource Curtailment Manual Changes

The following changes will be incorporated within the PJM manuals to supplement the Energy Curtailment Tariff change.

1. PJM Balancing Operations Manual (M12), Attachment B: Transmission Constraint Control Guidelines, Section B.2 (v20 page 73). The existing Note Box:

Note 1: During Constrained Operations, Wind Resources will reduce redispatched cost-effectively to economic minimum based on their bid parameters as follows:

Economic Minimum = Minimum capacity based on available wind turbines in-service (i.e. minimum value based on blade feathering capability or other control limit as available).

Emergency Minimum = 0.

Note 2: Cost-effective redispatch (\$/MW effect) objective is to minimize the function = (Current Dispatch Rate – Unit Bid)/Unit Generation Shift Factor.

Note 3: The unit default cost/price bid will be assumed 0 unless provided via eMkt.

Note 4: Wind Farm Curtailment should be achieved within 15 minutes or within a timeframe that the wind farm technology permits. PJM should be notified if curtailment is expected to exceed 15 minutes.

Will be replaced with:

Note 1: In order to ensure Energy Resources do not force emergency procedures they must be dispatchable in the range between their CIR and MFO (i.e. fixed gen flag must not be selected).

Note 2: Resources may not submit an economic minimum that exceeds the level of their CIR in the real-time energy market. This restriction does not apply to the day-ahead market.

Note 3: Energy Resources with no CIR have Economic Minimum = 0.

Note 4: Intermittent resources Emergency Minimum should be set to 0.

Note 5: During Constrained Operations, Resources will redispatched cost-effectively based on their bid parameters.

Note 6: Cost-effective redispatch (\$/MW effect) objective is to minimize the function [(Current Dispatch Rate – Unit Bid) ÷ Unit Generation Shift Factor].

Note 7: The unit default cost/price bid will be assumed 0 unless provided via eMkt.

Note 8: Intermittent resource curtailment should be achieved within 15 minutes or consistent with the resources ramp rate bid. PJM should be notified if curtailment is expected to exceed 15 minutes.

2. Emergency Operations Manual (M13), Section 2.4.2 Minimum Generation Alert (v38 page 32). The existing Note Box:

During Normal Operations, Wind Resources will reduce economically to economic minimum based on their bid parameters as follows:

Economic Minimum = Minimum capacity based on available wind turbines in-service (i.e. minimum value based on blade feathering capability or other control limit as available).

Emergency Minimum = 0

Will be replaced with:

Note 1: In order to ensure Energy Resources do not force emergency procedures they must be dispatchable in the range between their CIR and MFO (i.e. fixed gen flag must not be selected).

Note 2: Resources may not submit an economic minimum that exceeds the level of their CIR in the real-time energy market. This restriction does not apply to the day-ahead market.

Note 3: Energy Resources with no CIR have Economic Minimum = 0.

Note 4: Intermittent resources Emergency Minimum should be set to 0.