



# ECOMAX and LOC Solution for Hybrids and Batteries

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| <p>16 Operating requirements for Hybrids and Storage</p> | <p>Same as hybrids phase 1, plus:</p> <ol style="list-style-type: none"><li>1. Wind/solar hybrid ECOMAX should not exceed <i>battery_nameplate_MW</i> plus <i>anticipated_wind/solar_availability</i>.</li><li>2. Wind/solar hybrid ECOMAX should not exceed anticipated wind/solar availability when the State Of Charge of the battery component is at or below the Minimum State Of Charge (i.e., it is empty), or if there is no battery (i.e., wind+solar hybrid).</li><li>3. ECOMAX of an Energy Storage Resource Model Participant should not exceed 0 when the State Of Charge is at or below the Minimum State Of Charge (i.e., it is empty).</li></ol> |
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## 11a Uplift for Hybrids and Storage

Categorical eligibility is same as hybrids phase 1. Quantity of solar+wind hybrid LOC cannot exceed sum of wind+solar forecast. Quantity of storage+variable hybrid cannot exceed  $\text{variable\_forecast} + \text{storage\_nameplate}$ , except when state of charge is zero or resource is in "variable only" mode, the LOC quantity cannot exceed  $\text{variable\_forecast}$ .

To the extent that a wind/solar hybrid or battery parameter does not properly reflect the unit's capability, PJM reserves the right to limit LOC to the more accurate parameter value.

- a. E.g., an empty battery has LOC limited to 0 MW
- b. E.g., A solar/wind hybrid with empty battery (or no battery) has LOC limited to the solar/wind backcast
- c. E.g., a solar/wind hybrid with non-empty battery has LOC limited to the solar/wind backcast plus  $\text{battery\_nameplate\_MW}$

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## **ECOMAX and LOC Solution for Hybrids and Batteries**



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