Energy Storage Discussion

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The New York Battery and Energy Storage Technology Consortium

MISSION: To catalyze and grow the energy storage industry and establish New York State as a global leader.

NY-BEST will do this by:

1. Communicating information and facilitating connections
2. Accelerating Commercialization
3. Educating policymakers and stakeholders
4. Promoting New York’s capabilities and markets

If you’re interested in further information, visit www.ny-best.org
Energy Storage is the key enabling technology to transform the Transportation and Electricity Industries.
Electricity Grid Architecture

YESTERDAY >> CENTRALIZED POWER

TOMORROW >> NETWORKED, CLEAN, LOCAL POWER
Changing Electricity Grid

Key Goals supported by Energy Storage

- Improving the efficiency and capacity factor (utilization) of the electric grid
- Integrating an increasing amount of renewable energy
- Enhancing the reliability and resilience of the electric grid
Peak Power is expensive

Generation and Transmission built to serve peak demand

The Public Service Commission Estimates that the top 100 hours cost New Yorker $1.2 to $1.7 billion per year

Source: Consolidated Edison
Renewable Integration

50% Renewable energy by 2030 and a need to go further to meet 80x50 greenhouse gas goal

Capacity factors drive high nameplate capacity requirement

Firming and smoothing

Energy shifting
Energy Storage Use Cases

Building Applications

- Reduces Demand Charges on electricity bill
- Allows participation in demand reduction programs
- Provides emergency power for lights, elevators and other critical items.
Energy Storage Use Cases

Distribution grid support

Applications

- Non-Wires Alternatives (NWA) for Utility Asset Deferral
- Hosting Capacity (being developed).
Energy Storage Use Cases

System Level Applications

- Peaker plant hybrid and replacement
- Flexible asset to support high renewable energy generation
# Energy Storage Roadmap

**NY-BEST Goals and Recommendations**

<table>
<thead>
<tr>
<th>Goal Description</th>
<th>Year</th>
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<tbody>
<tr>
<td>Establish Standardized Safety Regulations</td>
<td>2017</td>
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<tr>
<td>Modify NYISO rules for Storage Participation in Wholesale Markets</td>
<td>2018</td>
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<tr>
<td>Provide Detailed Distribution Data with Locational Pricing</td>
<td>2019</td>
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<tr>
<td>Reduce Energy Storage Soft Costs by 33%</td>
<td>2020</td>
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<tr>
<td>Reach 1GW installed Storage capacity</td>
<td>2022</td>
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<tr>
<td>Reach 2GW installed Storage capacity</td>
<td>2025</td>
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<tr>
<td>Reach 4GW installed Storage capacity</td>
<td>2030</td>
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<tr>
<td>50% power from renewables; 40% GHG emissions reduction</td>
<td>2030</td>
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<tr>
<td>80% GHG emissions reduction</td>
<td>2050</td>
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</tbody>
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**New York State Goals**

- 50% power from renewables
- 40% GHG emissions reduction
- 80% GHG emissions reduction
Thank you