



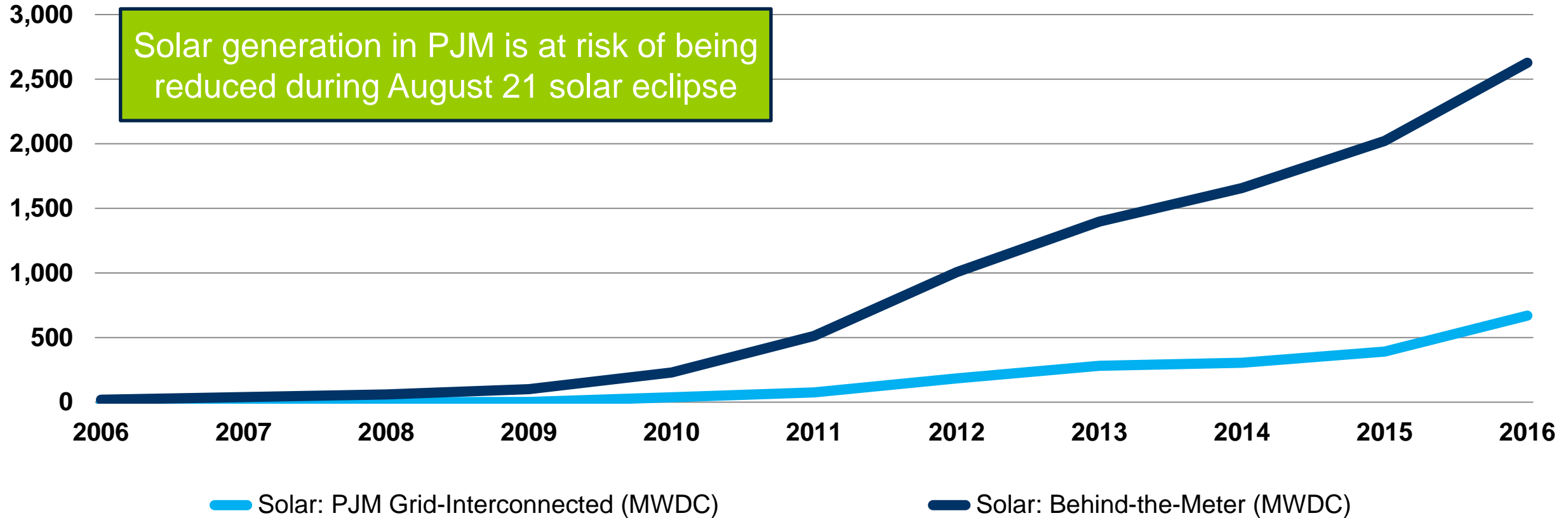
August 21, 2017 Solar Eclipse Impacts on PJM Operations

Operating Committee Meeting
July 11, 2017

Joseph Mulhern
Elizabeth Anastasio

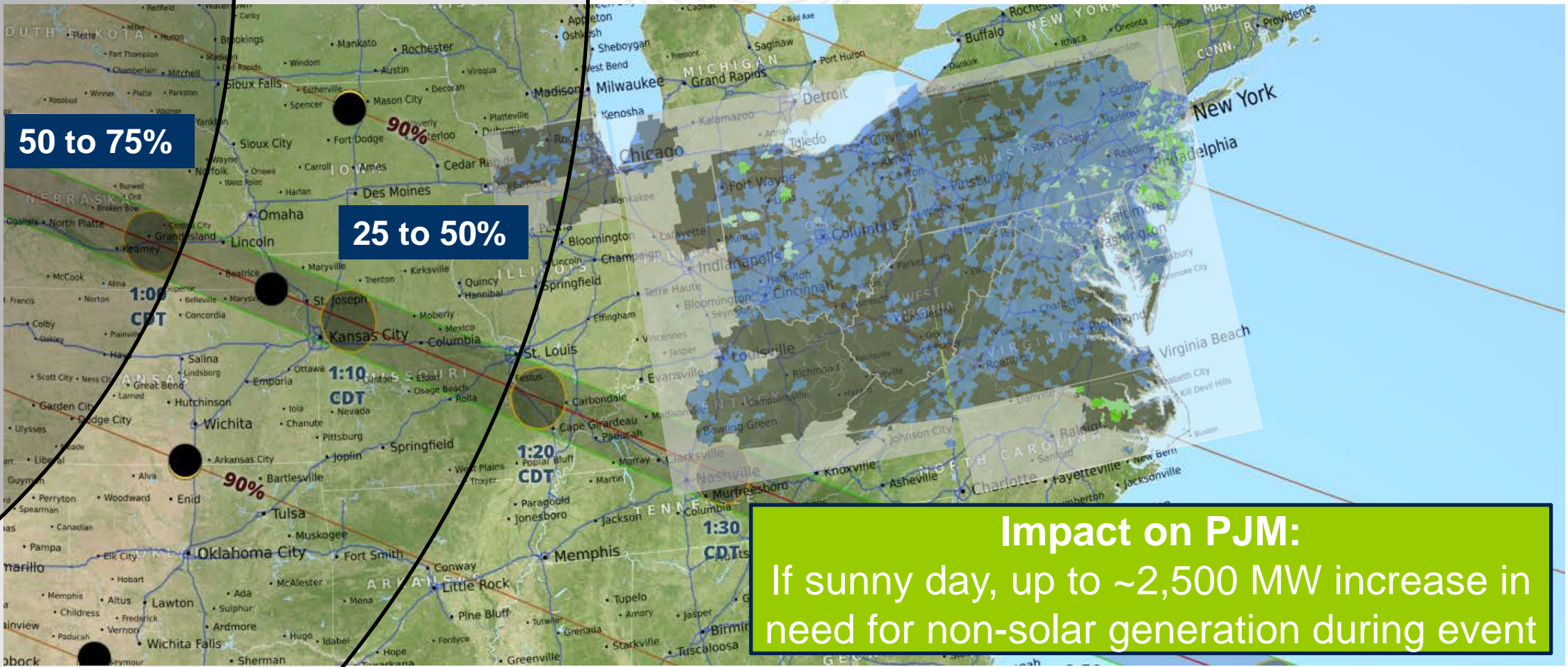


Installed Capability of Solar Facilities in PJM



Source: Generator Attribute Tracking System, PJM Environmental Information Systems, 2016

13:30 13:40 13:50 14:00 14:10 14:20 14:30
 14:40 14:50 15:00 15:10 15:20 15:30 15:40



50 to 75%

25 to 50%

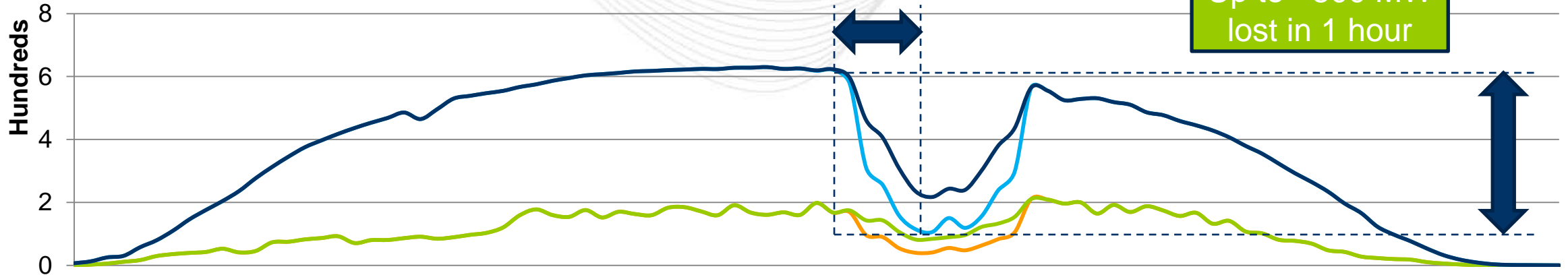
Impact on PJM:
 If sunny day, up to ~2,500 MW increase in need for non-solar generation during event

- Analysis showed no reliability impacts to BPS operations
- Specific states (i.e., North Carolina) will experience the greatest impact to photovoltaic resources and system operations
- Utilities should perform studies and retain necessary resources to meet the increased and varying load
- Advanced coordination to address ramp issues and secure non-photovoltaic resources for balancing BPS

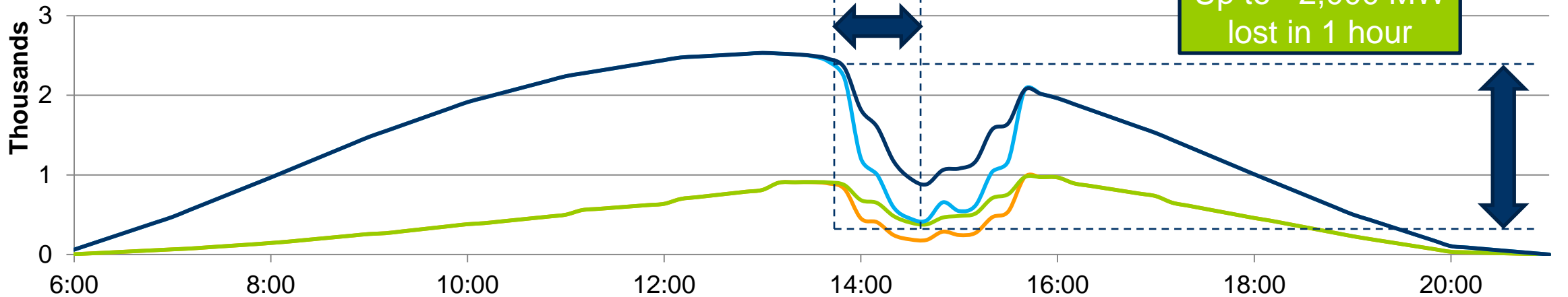
Source: [A Wide-Area Perspective on the August 21, 2017 Total Solar Eclipse](#)

Estimated Solar Output on August 21, 2017

Grid-Connected Solar Output

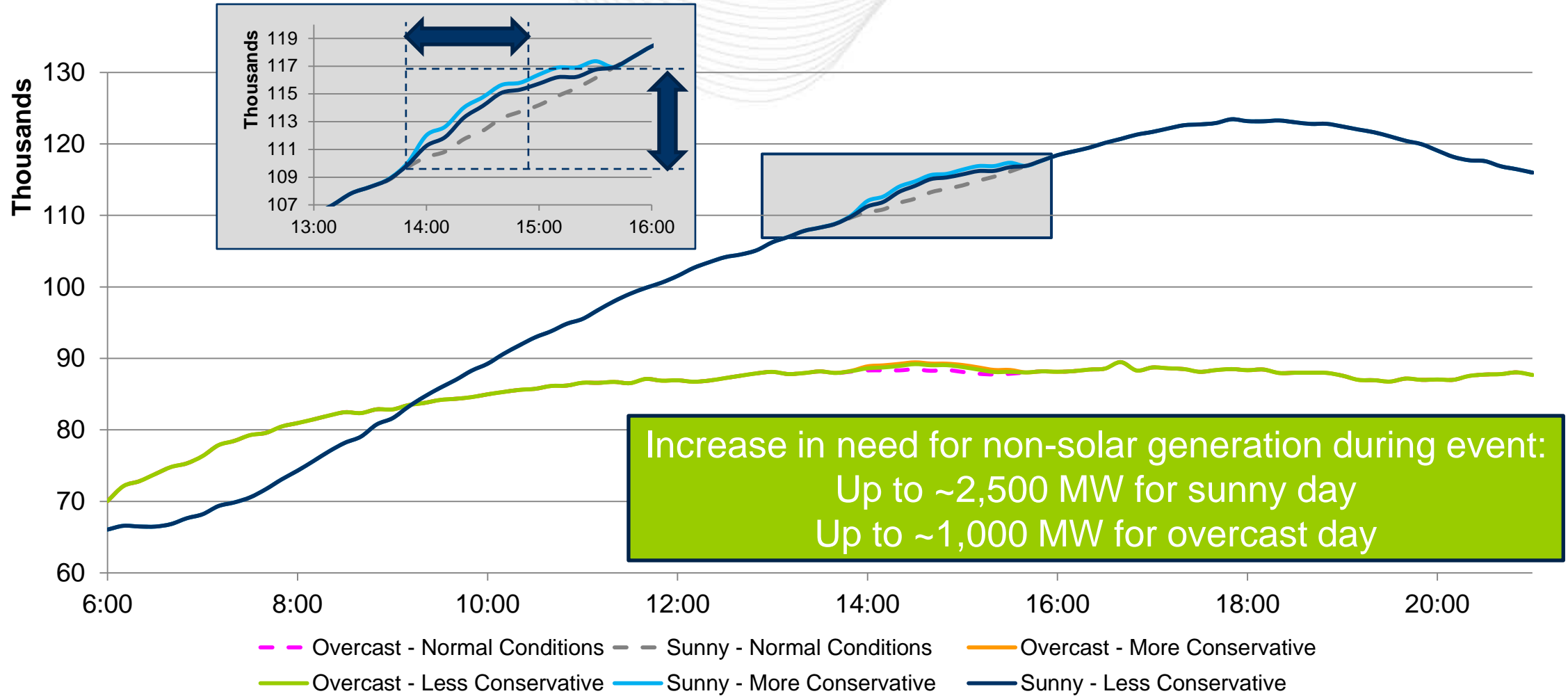


Behind-the-Meter Solar Output



— Overcast - More Conservative
 — Overcast - Less Conservative
 — Sunny - More Conservative
 — Sunny - Less Conservative

Estimated Non-Solar Generation on August 21, 2017



Internal evaluation

- Perform power flow studies with Transmission Operations
- Work with Markets to ensure sufficient unit commitment
- Refine analysis in week prior with up to date weather forecast
- Assess lighting and temperature impacts on load

External coordination

- Discuss impacts with affected Transmission Owners / neighbors
- Work with solar forecast vendor to accurately predict impacts

Post-event analysis

- Use results to validate behind-the-meter solar forecast
- Integrate lessons learned into 2024 eclipse planning