FERC State Joint Board Meeting
Security Constrained Economic Dispatch

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NSTAR

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NSTAR

- Transmission and distribution company
- 1.4 million customers
- 17% of New England load
- 67% of NEMA load
- All generation divested
NSTAR Perspective on SCED

- SCED has long history in New England
- Critically important to efficient wholesale markets
- System design is necessarily complex
- Optimum (ie, least cost) outcomes are not easy to achieve
- Market participant behavior is a key concern
NEMA: A Case Study

NEMA Load: 5,300 MW

NEMA Generation: 3,800 MW

NEMA Transfer Capacity:
- 2000: 3,200 MW
- 2001: 3,700 MW
- 2006: 4,500 MW
- 2007: 4,700 MW

NEMA Generation + Transfer Capacity exceeds Peak Load by 60%
2004 Impact of Unit Flexibility on SCED in NEMA/Boston

NEMA Uplift Costs Have Increased Dramatically

![Bar chart showing costs across different years](image)
Implications

• Is lack of dispatch flexibility behavioral?
  – Minimum load levels too high; minimum run times too long
  – Solution is tighter ISO rules

• Is lack of dispatch flexibility structural?
  – Wrong type of units in place
  – Solution is more differentiation in capacity payments (eg, forward reserve market targets payments to flexible units)
Bidding Behavior Can Also Impact Congestion Costs

• Security constraints create need to dispatch high-bid units that are “out of merit”
• Out of merit bid costs translate to increased clearing price in load pockets
• Concern: is high bid driven by high marginal cost or market power?
Conclusion

• SCED is a critically important part of the market
• Both structural and behavioral factors can contribute to sub-optimal dispatch
• The cost impact on customers is significant
• Increased transparency of ISO market data will help create solutions