

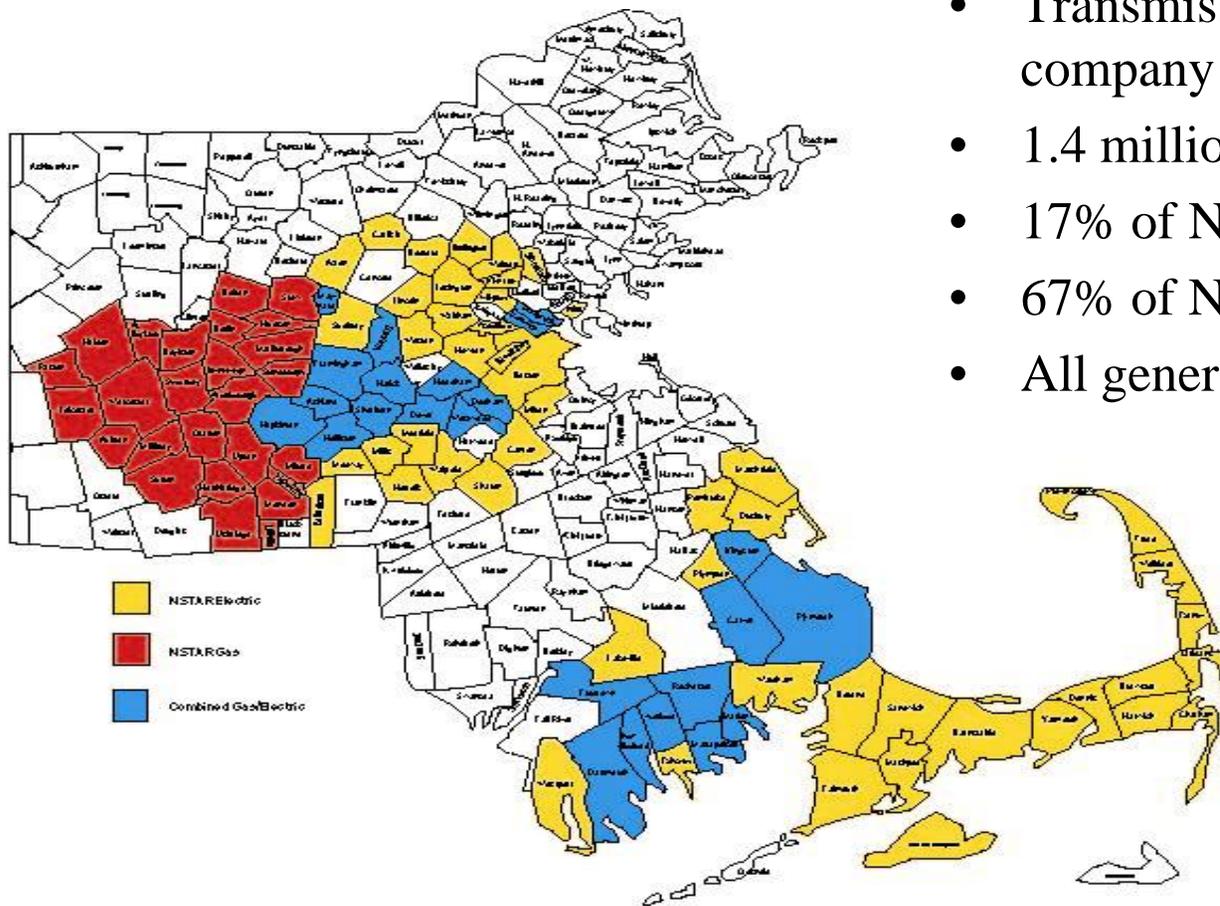
# FERC State Joint Board Meeting Security Constrained Economic Dispatch

Douglas Horan  
Senior Vice President  
NSTAR

November 29, 2005



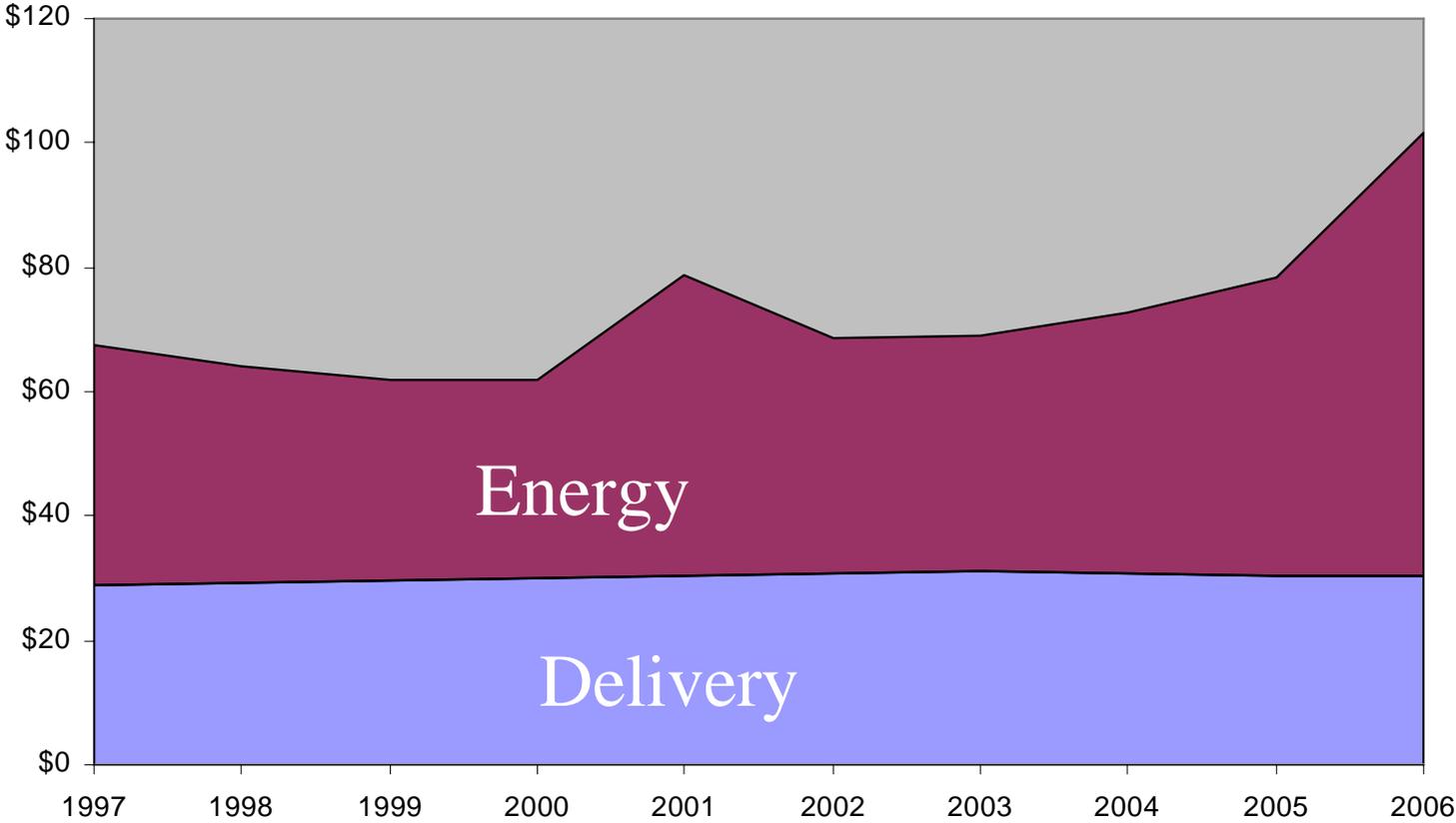
# NSTAR



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



# NSTAR Residential Rates



Monthly Bills



# 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

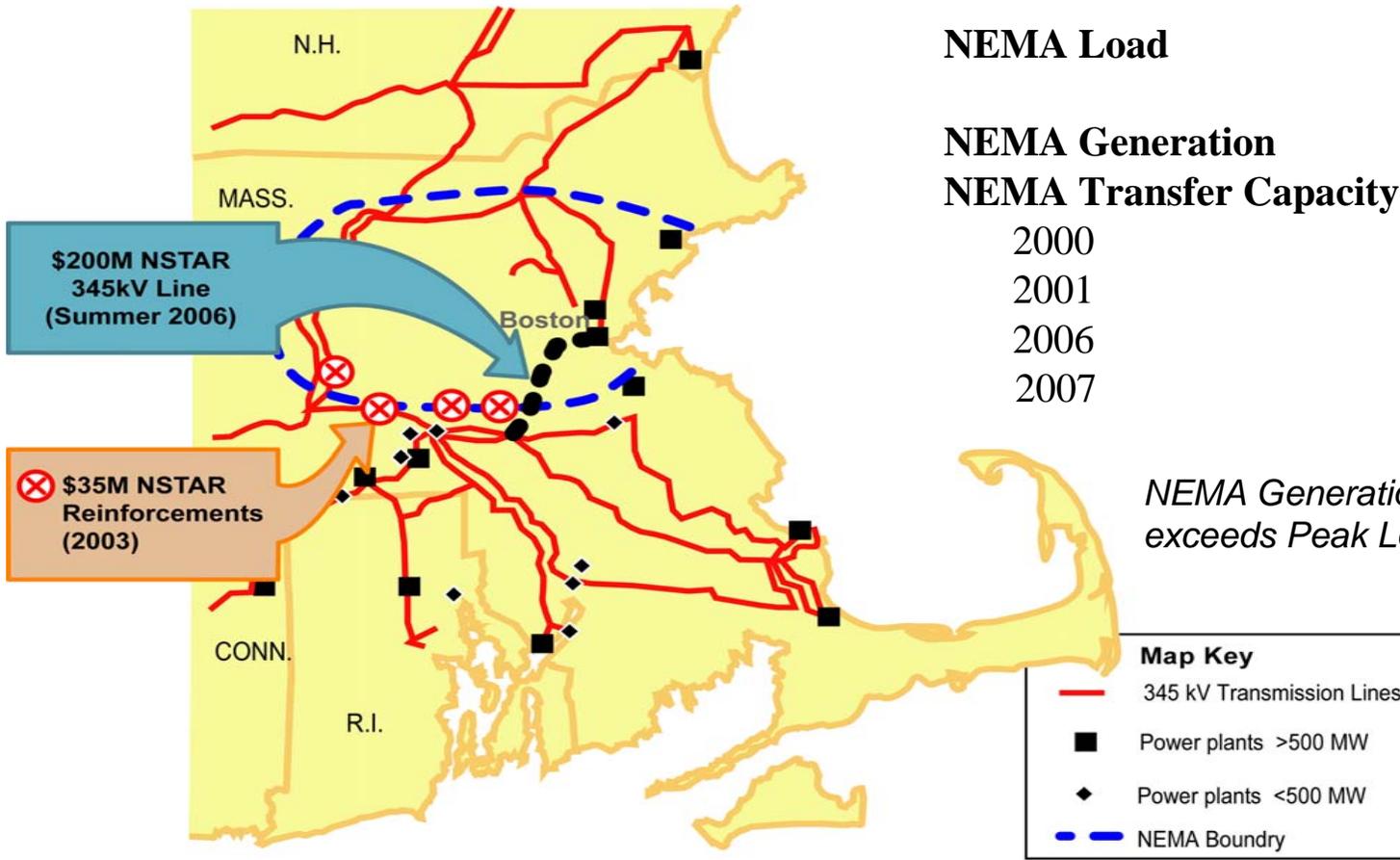
**NEMA Load** 5,300 MW

**NEMA Generation** 3,800 MW

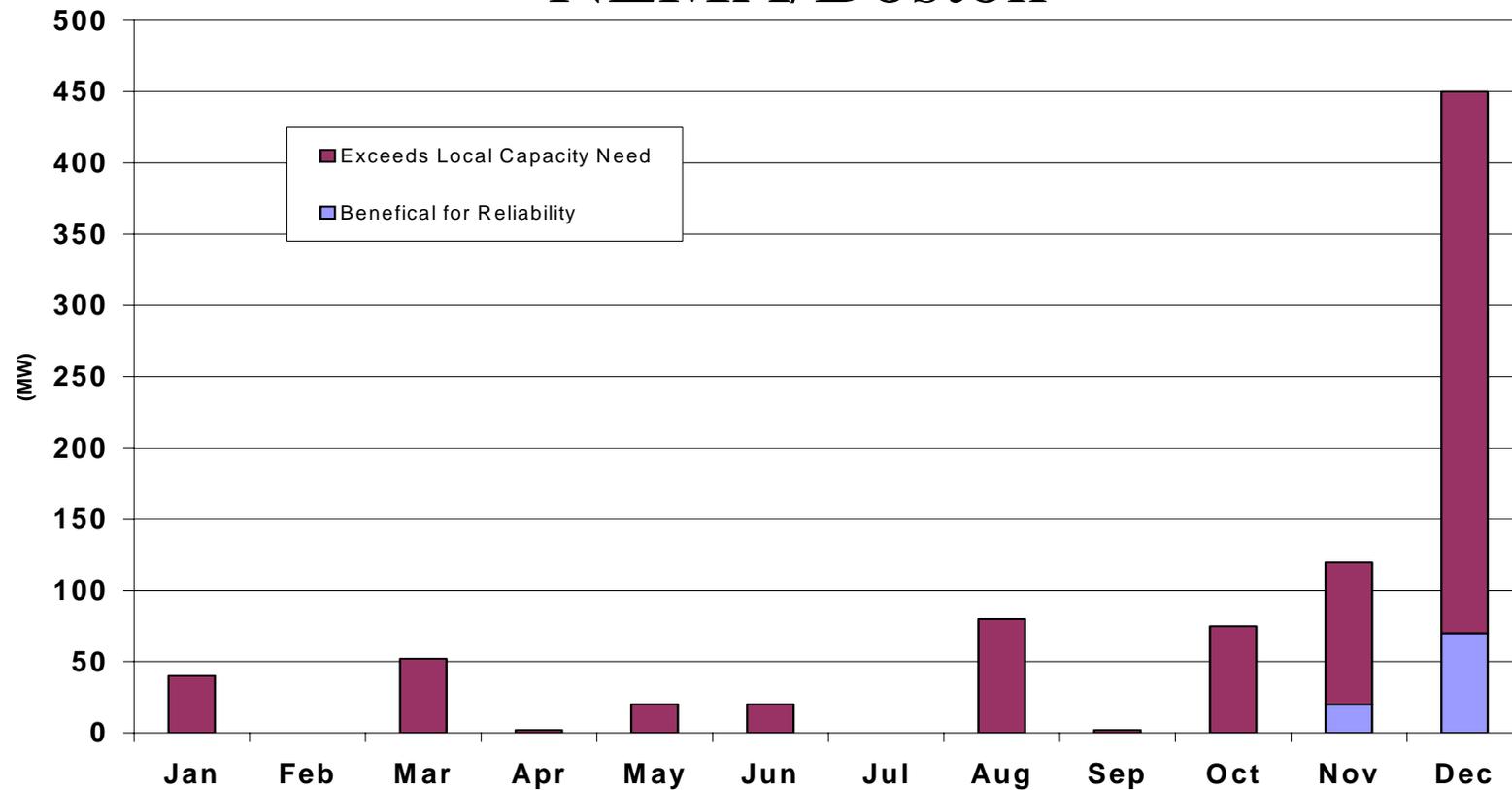
**NEMA Transfer Capacity**

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%*



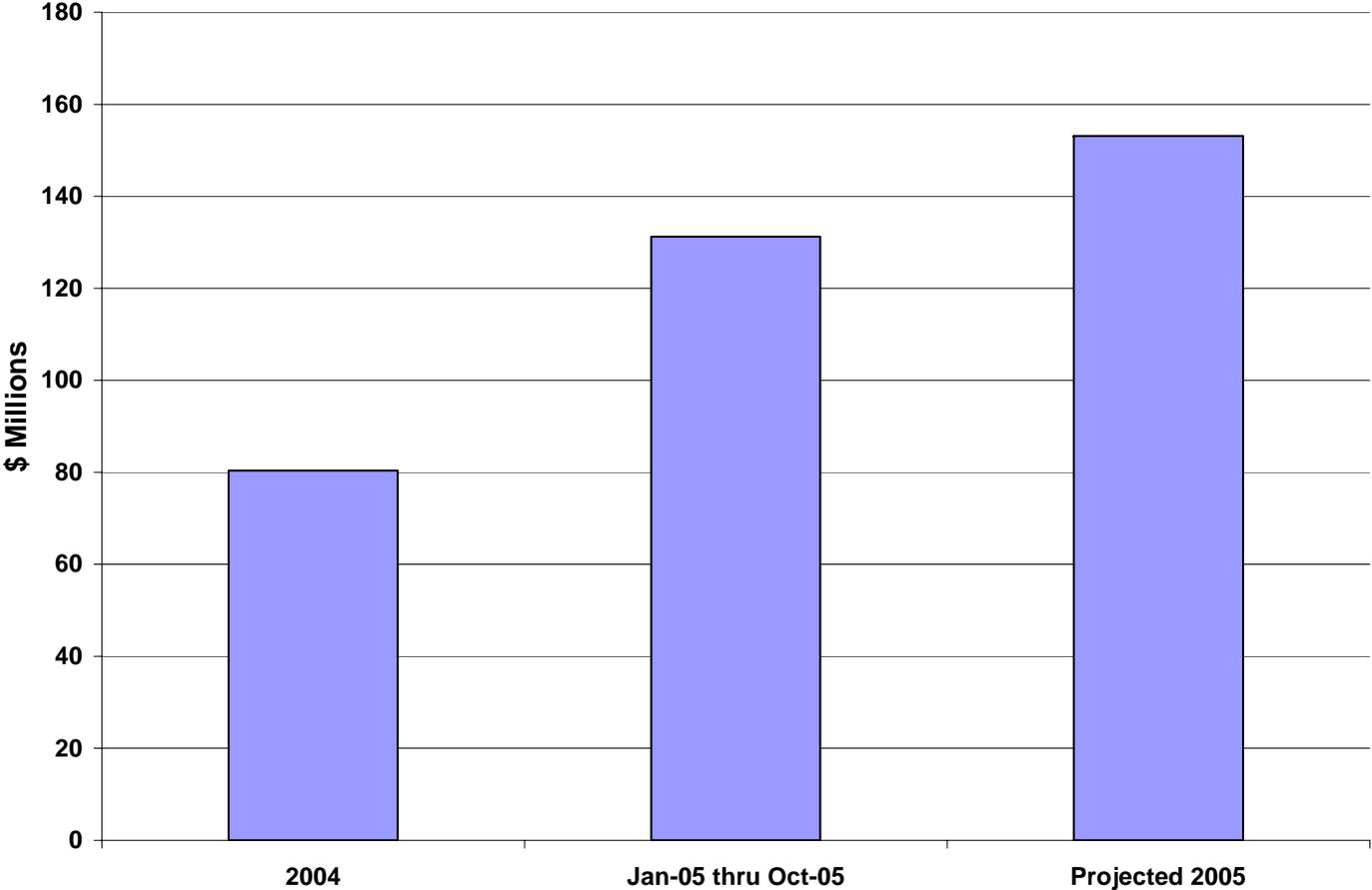
# 2004 Impact of Unit Flexibility on SCED in NEMA/Boston



Source: David Patton, ISO-NE Independent Market Monitoring Unit. *2004 Assessment of the electricity Markets in New England.*



# NEMA Uplift Costs Have Increased Dramatically



# 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

