

# ISO New England: Communicating with States during System Events

U.S. Department of Energy Summer Energy Outlook  
Conference and Workshop on Energy Assurance Planning

April 23, 2008  
Denver, CO

# About ISO New England

- Private, not-for-profit corporation created in 1997
  - Independent of companies doing business in the market
  - Regulated by the Federal Energy Regulatory Commission (FERC)
- Approximately 400 employees headquartered in Holyoke, MA



# Three Primary Areas of Responsibility

## 1. Reliability

- Maintain minute-to-minute reliable operation of the region's bulk power generation and transmission system

## 2. Markets

- Oversee and administer New England's wholesale electricity marketplace, through which bulk electric power is bought, sold, and traded

## 3. Planning

- Plan and ensure the development of a reliable and efficient bulk power system to meet New England's current and future power needs

# New England's Electric Power Grid

- 6.5 million customer meters
  - Population: 14 million
- 350+ generators
- 8,000+ miles of high voltage transmission lines
- 12 interconnections to three neighboring systems:
  - New York, New Brunswick, Quebec
- 31,000 megawatts (MW) of installed generating capacity
- 300+ market participants
- Summer peaking system
  - Summer: 28,130 MW (8/06)
  - Winter: 22,818 MW (1/04)



# State Communications Goal

- Goal is to provide timely, complete and consistent reports to key stakeholders on power system conditions

# Whom do we communicate with?

- Primary contacts at 27 state and federal agencies
  - State public utility commissions and state energy offices
  - Governor's offices
  - Emergency management agencies
  - Federal Government Agencies
    - FERC, U.S. DOE, U.S. EPA, FEMA
  - Reliability Councils
    - NERC and NPCC
- Public via media
- Operations staff communicates with Local Control Centers, local electric distribution companies, pipeline companies, generators and demand resources

# Communications Triggers

- System conditions determine need for ISO procedures
- Several operating procedures/market rules trigger communications with external stakeholders:
  - Shortage of Operating Reserves (OP4)
  - Extreme Cold Weather Conditions (Appendix H)
  - Action During an Energy Emergency (OP21)
- Other conditions can trigger communications:
  - Conservation appeals not triggered by an operating procedure
  - Emergencies that could affect operation or reliability of New England's bulk power system or wholesale markets
    - Storms, potential terrorist alerts, etc.

# Procedures that Trigger Specific Communications and Demand Resources

- Operators implement OP4 actions based on system conditions
  - 16 actions available to help maintain operating reserves
    - Most demand response is available within 30 minutes
      - Implemented when ISO declares a *Power Watch* (Action 9)
      - Emergency generation is called when ISO implements voltage reductions (Action 12), due to state environmental regulations
  - More than 1,600 MW of demand resources currently available
  - Some early actions do trigger communications with states, but do not involve conservation appeals (e.g., Action 1: *Power Caution*)
  - Later actions involve communications with states and conservation appeals (Action 9, *Power Watch*, and Action 15, *Power Warning*)

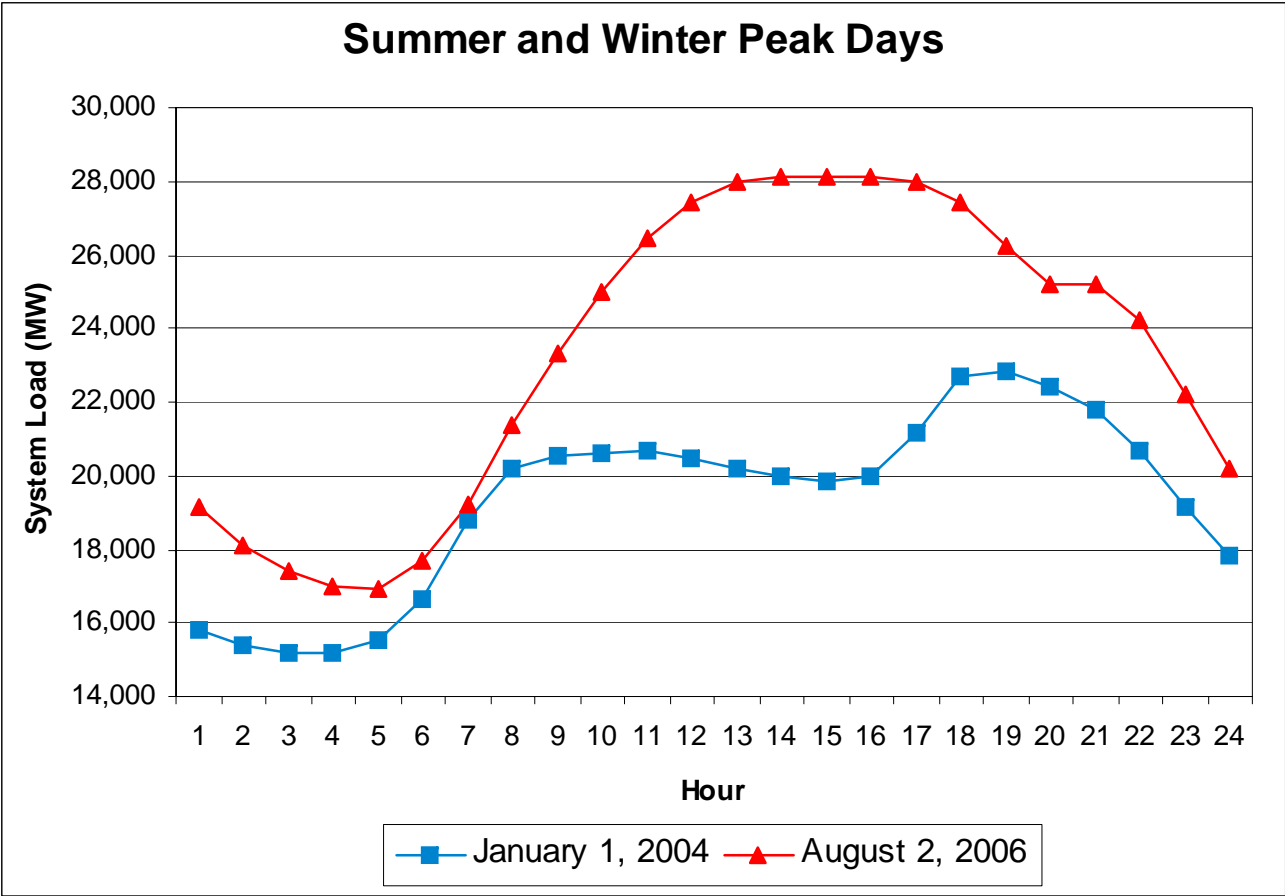
# Biannual Communication Workshops

- Each year, External Affairs holds pre-summer and pre-winter workshops with the states
  - Review ISO's communications plan
  - Coordinate messages in advance of “real time” events
  - Preview the seasonal power supply outlook
  - Exercise drill of ISO's bridgelines
- Helps develop common understanding of the issues so as not to create panic when an issue occurs

# Challenges

- System peak occurs late in the day
  - People we need to contact may have gone home
- System events can occur without warning
  - Late in the evening or on weekends
- Five events in 2007 required communications with states:
  - 1 of 5 occurred late in the day on a weekday and continued past normal business hours
  - 4 of 5 occurred on weekends

# Summer vs. Winter Peak Demand



# Solutions

- Brief states ***before, during and after*** certain periods of extreme high demand for electricity, i.e. heat wave
- ISO maintains 24-hour contact information to reach people at home or by cell
  - States generally welcome communications after business hours
    - Our primary contacts need to keep their decision makers (e.g. PUC chair, governor's office, etc.) informed in a timely manner
- ISO opens bridgelines to brief government contacts when a *Power Watch* or *Power Warning* is declared

# Appeals for Conservation

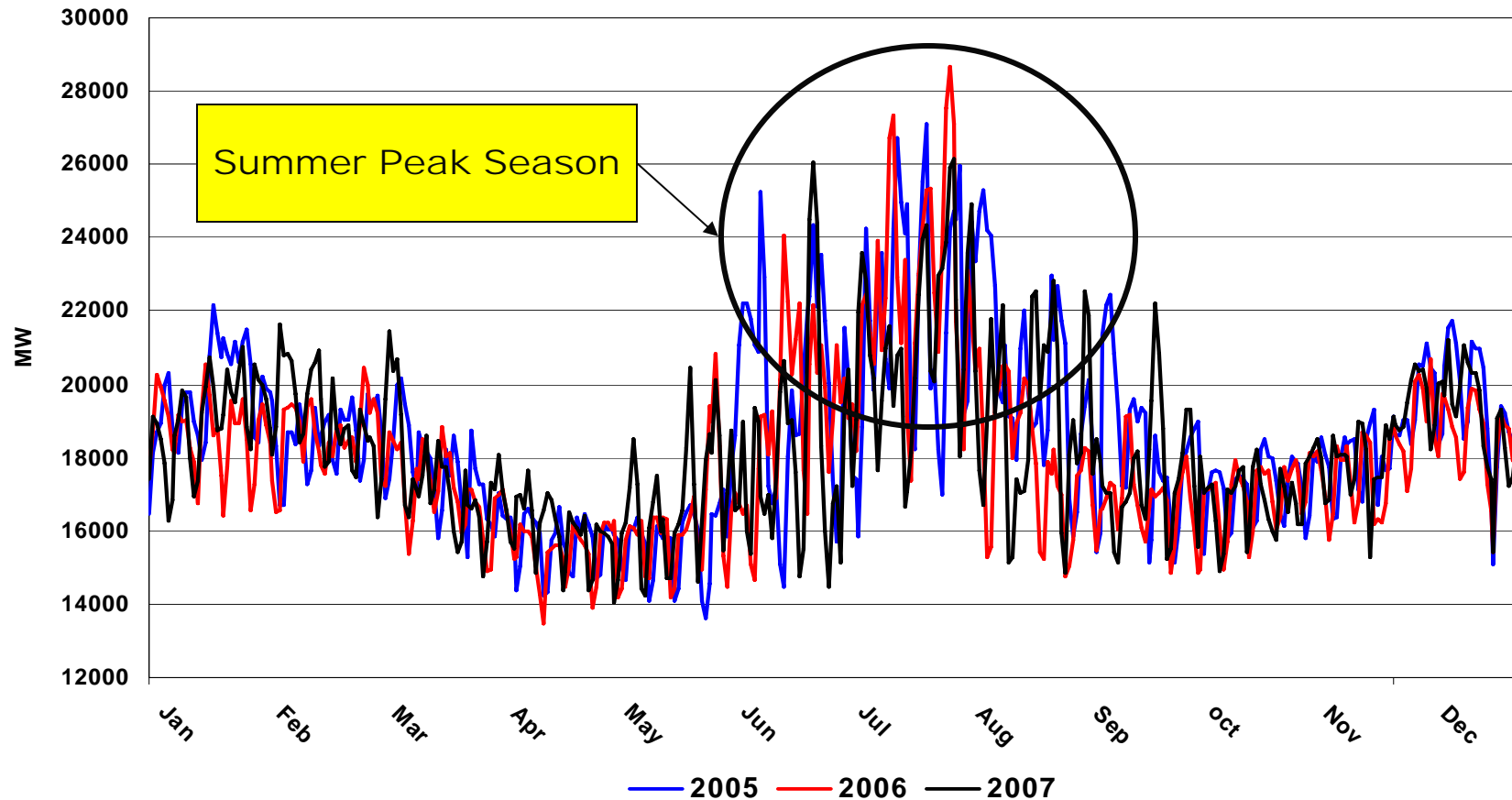
- Types of appeals:
  - Voluntary request for consumer conservation (Power Watch)
    - Notify public via media
  - Urgent request for consumer conservation (Power Warning)
    - Notify public via media
  - Request for Governors to reinforce ISO appeals
    - Used after all other operating procedures have been exhausted
    - Last step available before operators must take emergency actions
    - Ongoing training for states is essential so Governors are prepared
  - Discretionary requests for conservation
    - Unrelated to operating procedures

# Communications During Peak Demand

- Record-setting demand may or may not trigger operator actions
  - ISO usually communicates with states about system conditions during these times
    - States are highly attuned to system conditions during extreme weather conditions
  - Examples:
    - July 18, 2006 set a record at the time, but didn't require OP4 actions
    - Aug. 2, 2006 all-time record required OP4 actions

# Peak Drives Need to Build Capacity: Creates Inefficient System

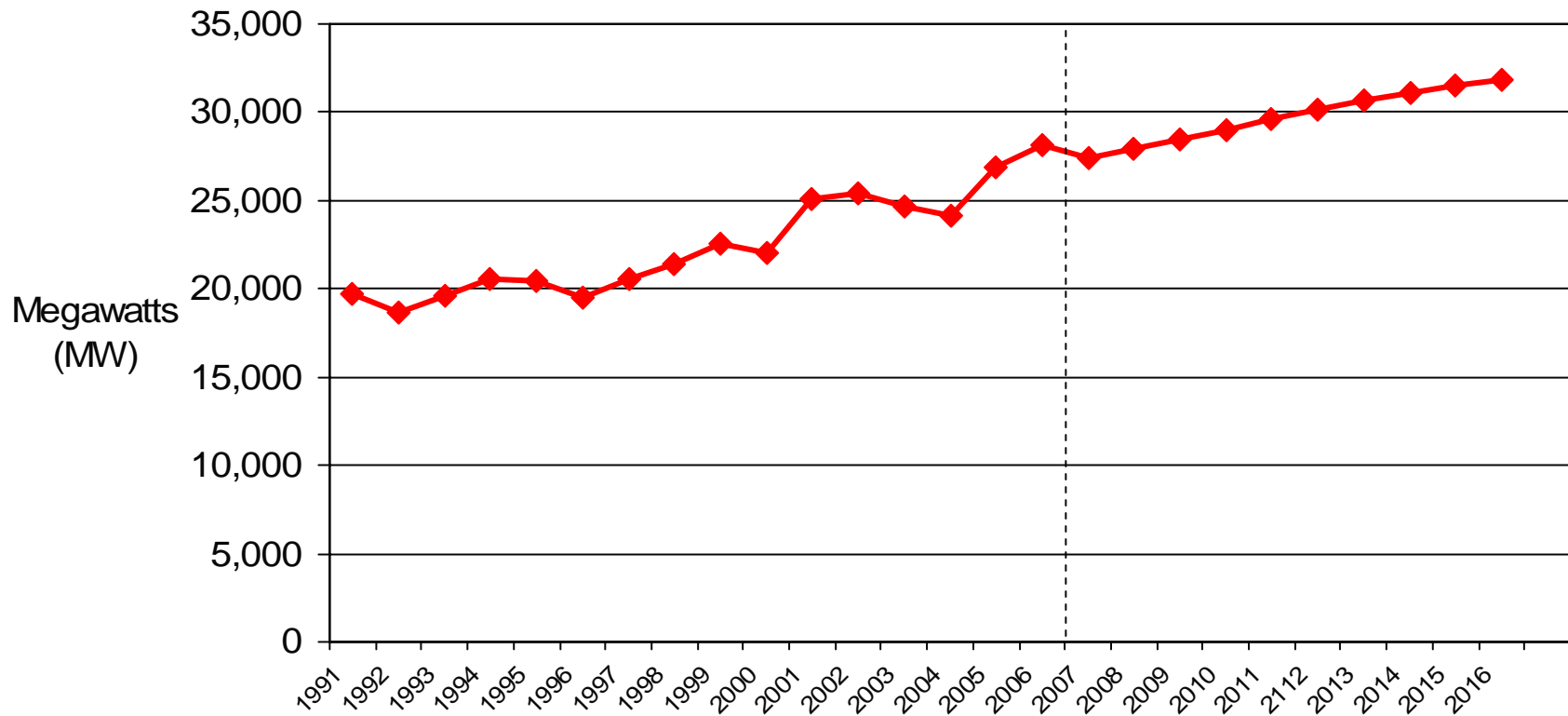
New England Daily Peak Loads 2005-2007



# Continued Growth in Peak Demand

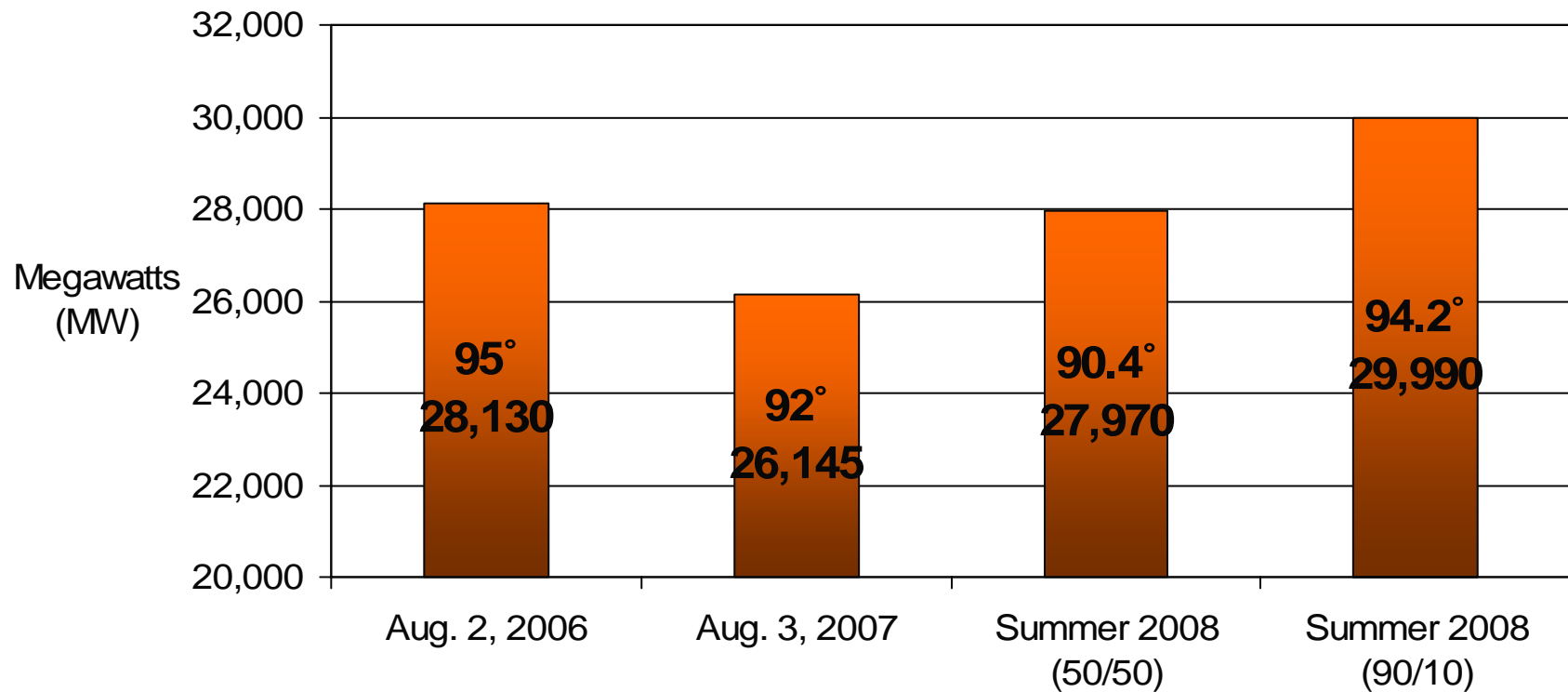
*Approx. 500 MW per year over the next decade*

1991-2006 History, 2007-2016 RSP07 50/50 Forecast

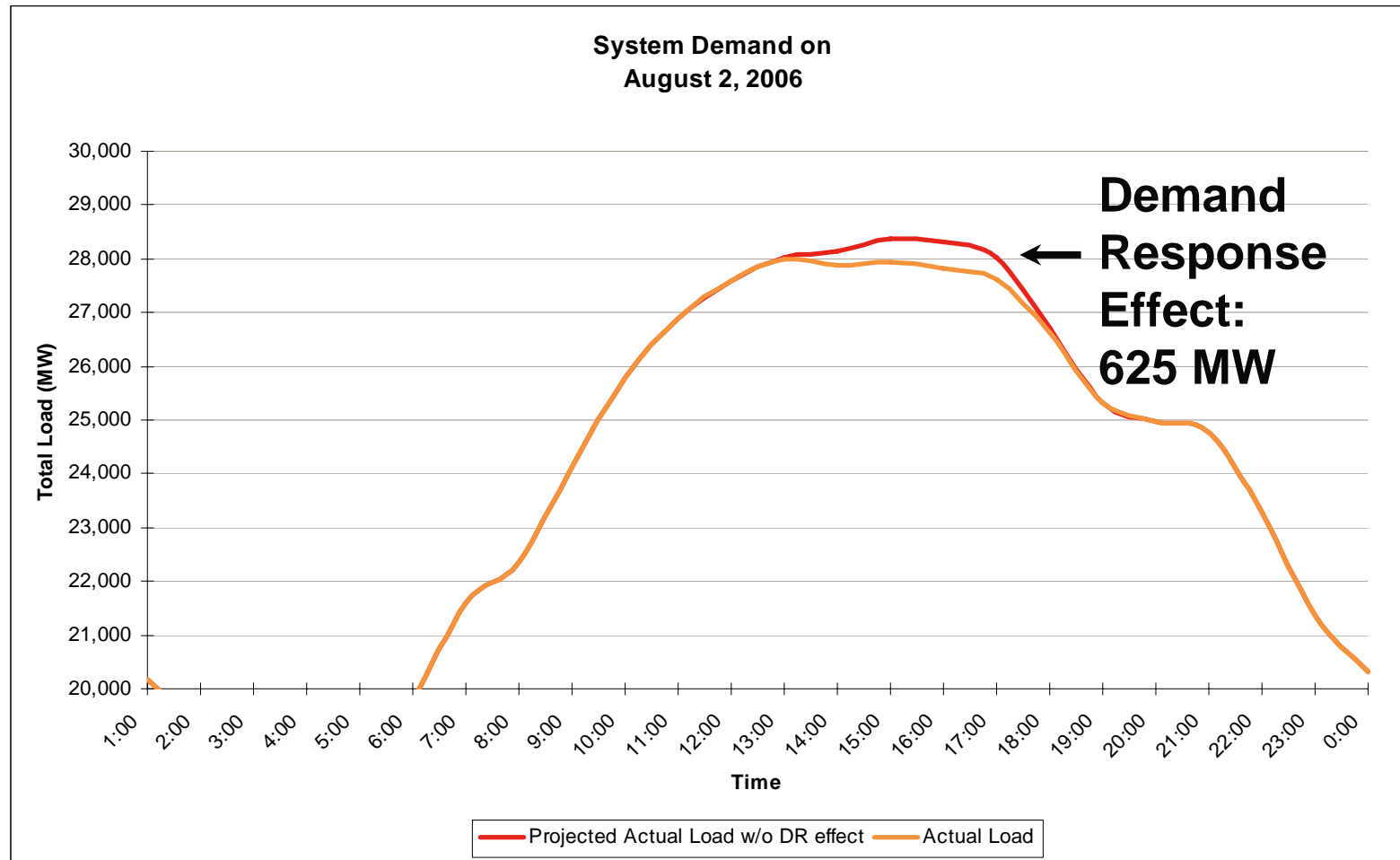


# Summer Peak Demand

*Historical and Projected Peak Demand in New England*



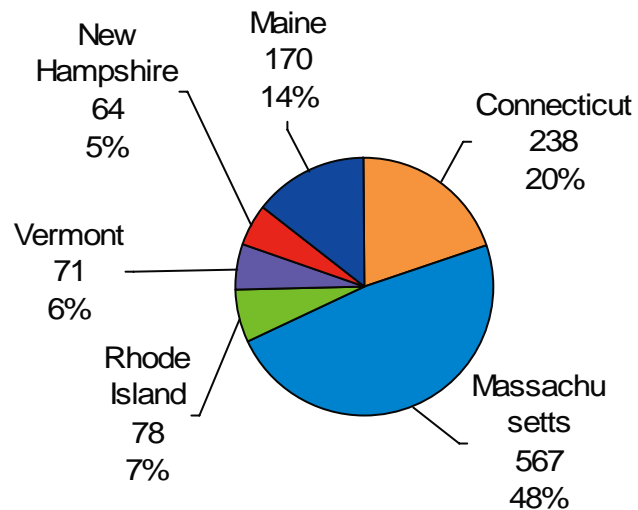
# Effect of Demand Response on System Peak



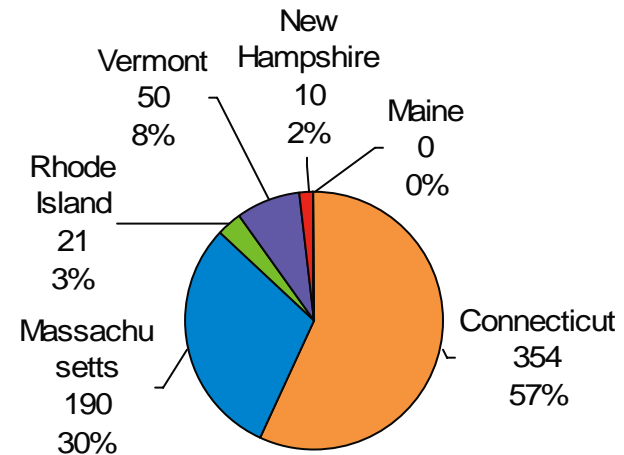
# Resources Cleared in 1st Capacity Auction

## Resources by State and Type (MW and %)

**New Demand Resources**  
(1,188 MW)



**New Supply Resources**  
(626 MW)



# Conclusion

- Exercising ISO's communication plan regularly prepares stakeholders for "real time" events
- Timely and proactive communications are essential to reach decision makers in the states to secure conservation appeals
- Demand Resources are becoming increasingly important to system reliability in New England