ISO New England Overview

Massachusetts Wind Working Group

March 28, 2007

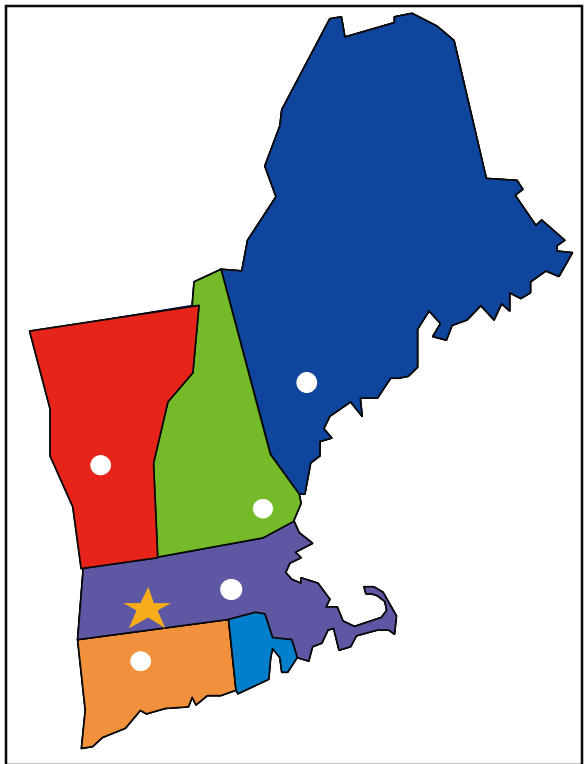
ISO new england

ISO New England

- Private, not-for-profit corporation created in 1997 to oversee New England's deregulated electric power system and bulk power grid
  - Independent of companies doing business in the market
  - Regulated by the Federal Energy Regulatory Commission (FERC)
- Major Responsibilities:
  - Maintain system reliability
  - Administer wholesale electricity markets
  - Conduct regional system planning

New England's Electric Power Grid

- 6.5 million customer meters
- 350+ generators
- 8,000+ miles of high voltage transmission lines
- 5 local control centers
- 12 interconnections to three neighboring systems:
  - New York
  - New Brunswick
  - Hydro Quebec
- 32,000 MW of installed generating capacity
- System peak:
  - Summer: 28,127 MW (8/06)
  - Winter: 22,818 MW (1/04)



ISO and Local Control Centers

History – Industry Timeline

1965 Northeast Blackout shuts down power to 30 million

1971 New England Power Pool (NEPOOL) created to establish a central dispatch system and enhance system reliability. Utilities and municipals own generation, transmission and distribution lines

1997 ISO New England created to manage the regional bulk power system and new wholesale markets, and ensure access to transmission lines

1998 MA state legislation required utilities to sell off generation; other NE states pass similar legislation for 'unbundling'

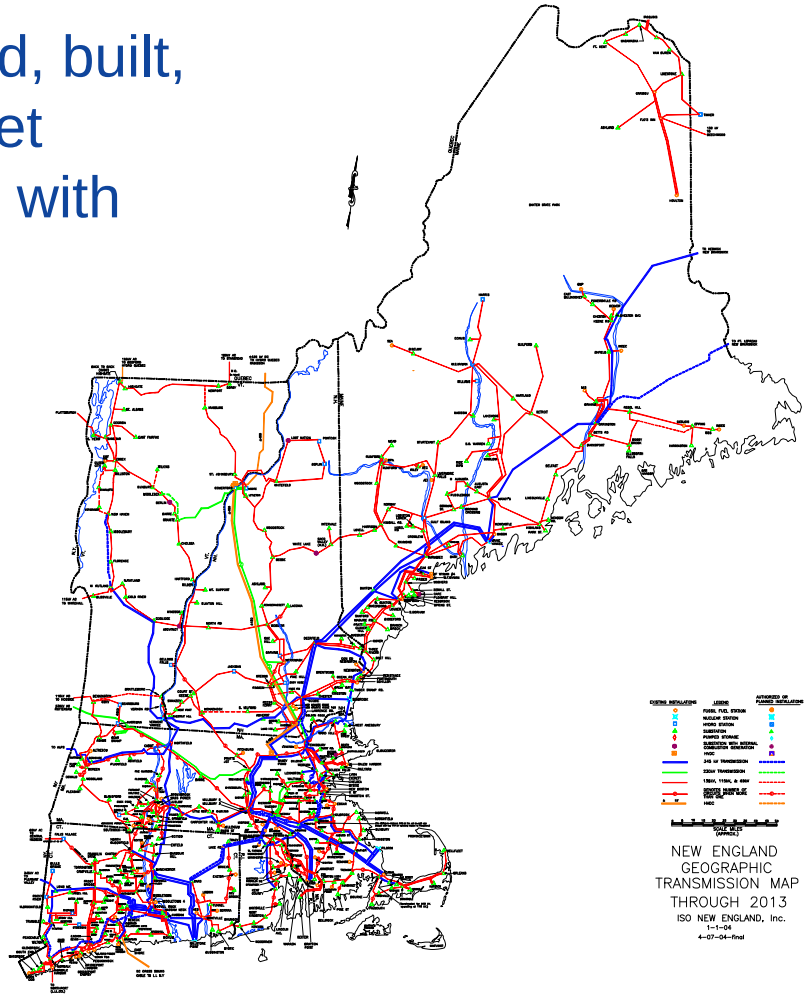
1999 ISO New England begins managing restructured regional wholesale power markets ("Interim Markets")

2003 ISO implements Standard Market Design with locational pricing

2005 ISO begins operation as Regional Transmission Organization

Operation of the Power System

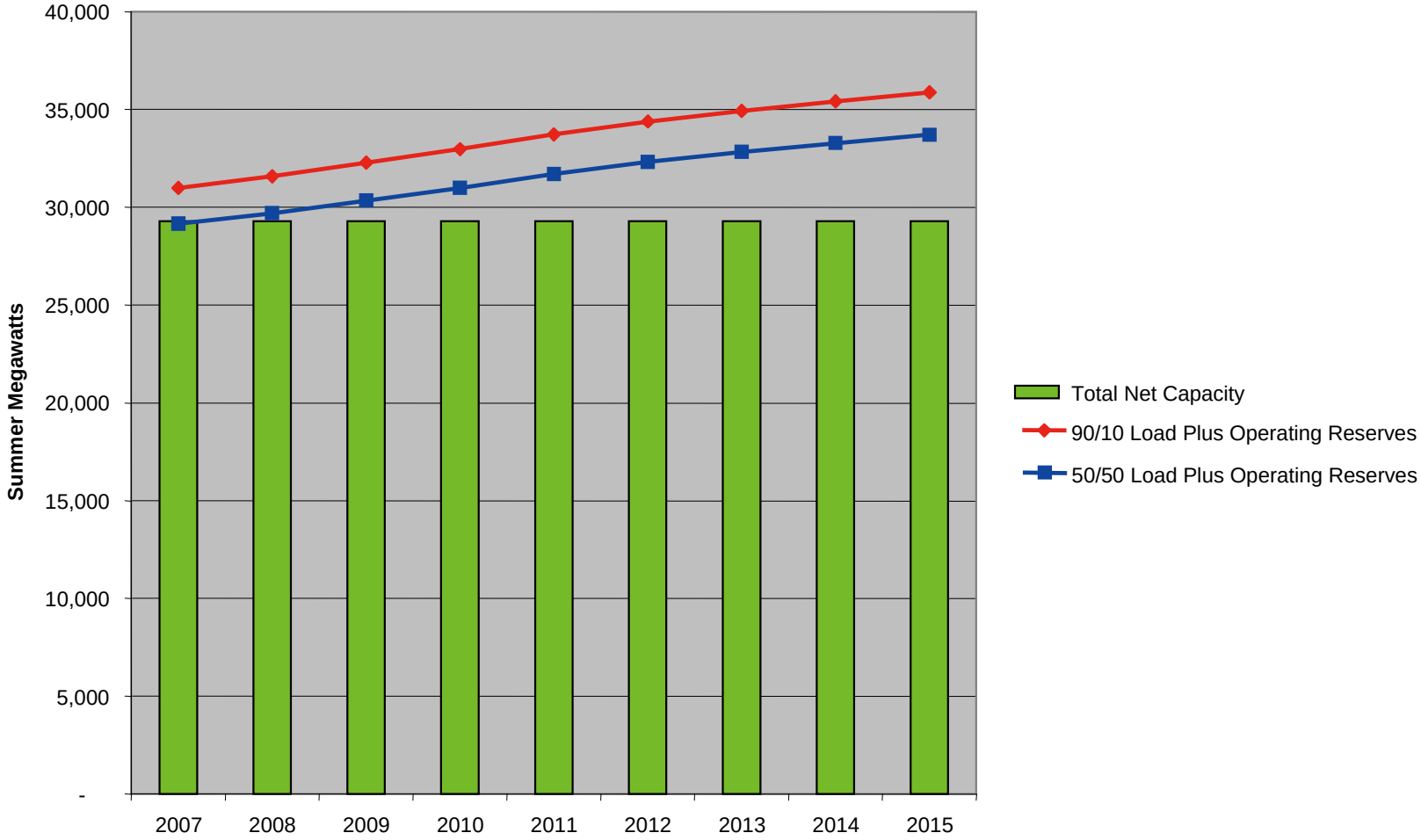
- Bulk power system designed, built, and operated to reliably meet power needs in accordance with established industry criteria



Electricity Use on the Rise

- New England set new records for electricity use in 2006
- Projected annual growth in peak demand: 2006-2015
  - New England: 1.9%

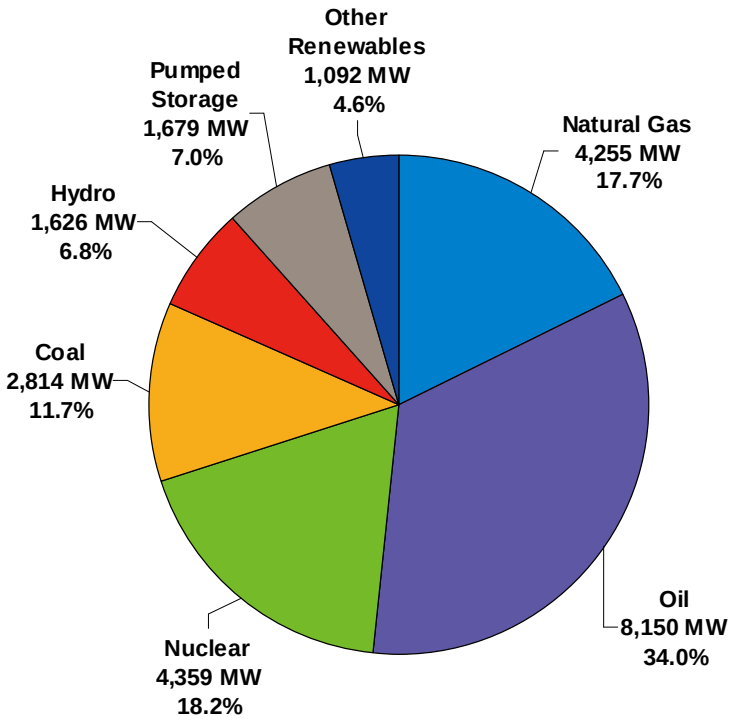
Regional Outlook: New Supply Needed



The results above do not reflect generation unit additions, retirements, or deactivations that could occur during the study period.

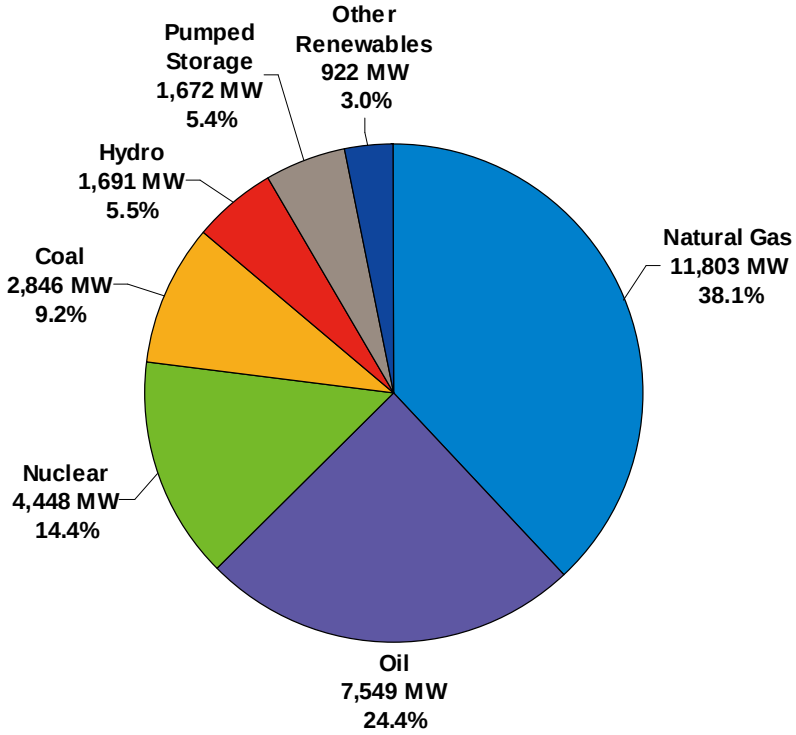
Heavy Reliance on Gas/Oil for Generation

Summer 2000



Total: 23,975 MW

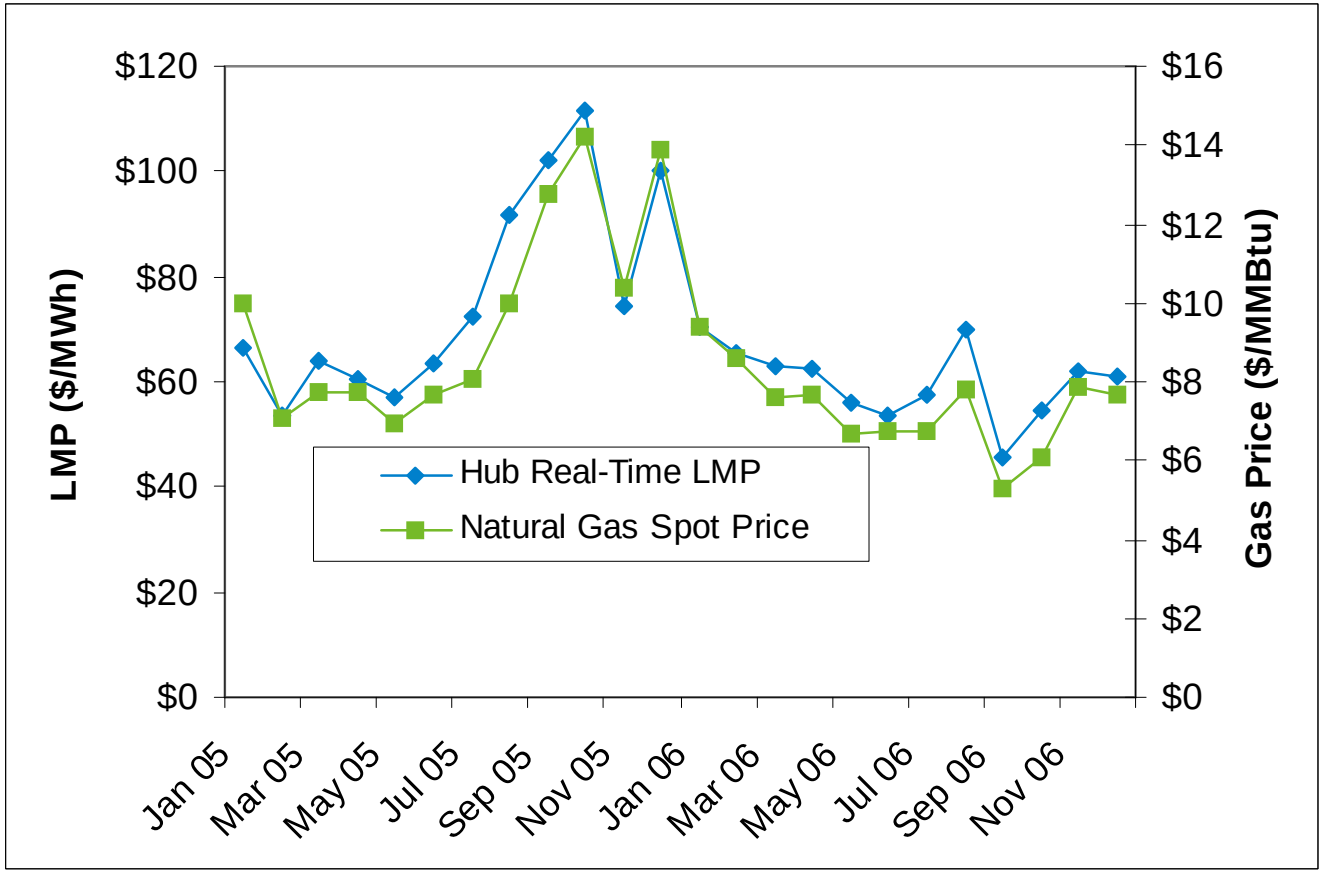
Summer 2006



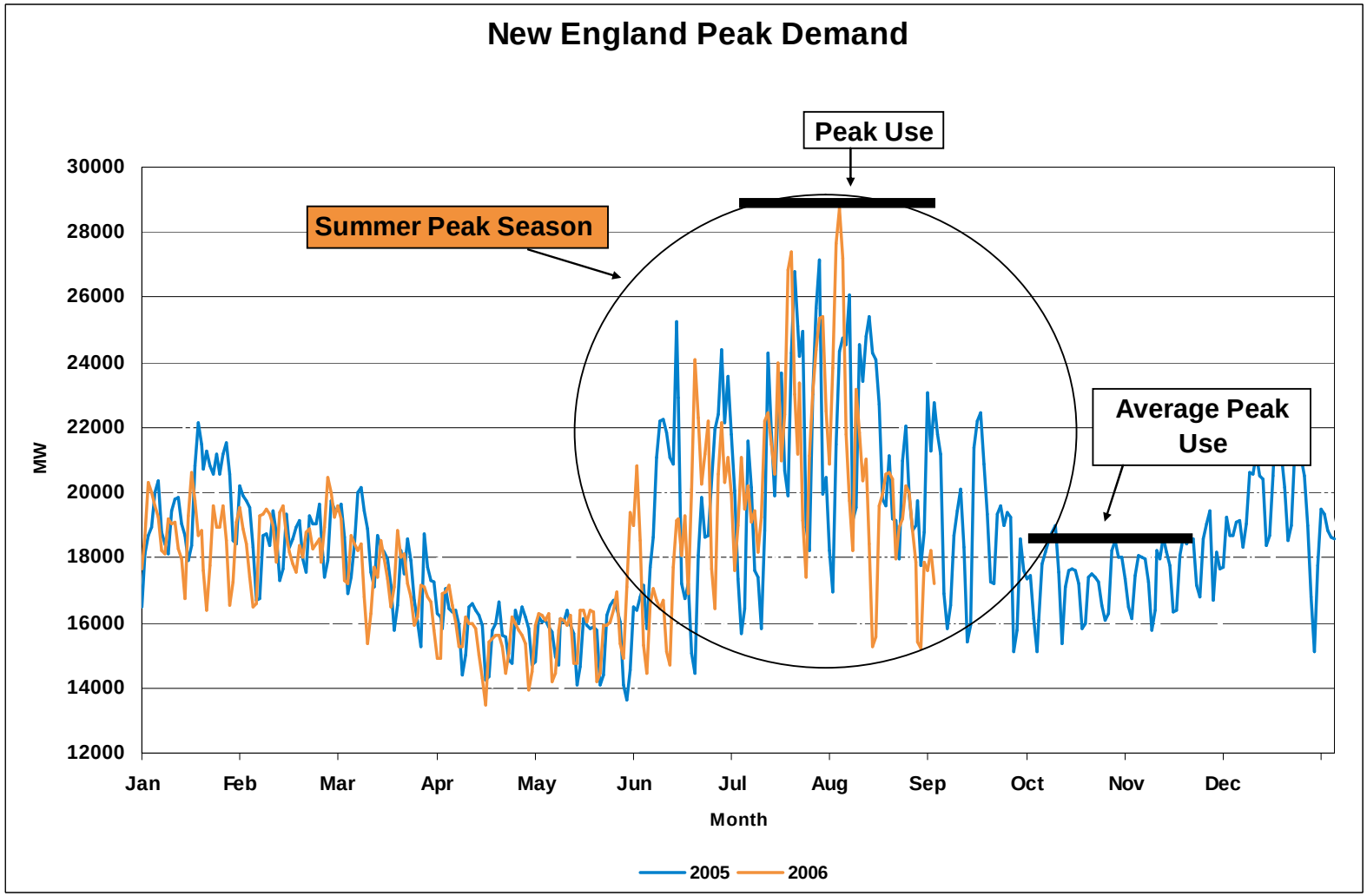
Total: 30,931 MW

Note: Units in the “Other Renewables” category include those fueled by biomass, refuse, and wind.

Wholesale Electric vs. Gas Prices: 2005-06



Peak Drives Need to Build Capacity: Creates Inefficient System



New England: 2% Growth in Peak Demand Annually Creates Need to Add Approximately 600 MW Per Year