



# NARUC

*Serving the consumer interest  
by seeking to improve the  
quality and effectiveness  
of public utility regulation  
in America.*

## *The RTO Model Independent System Operator of New England*

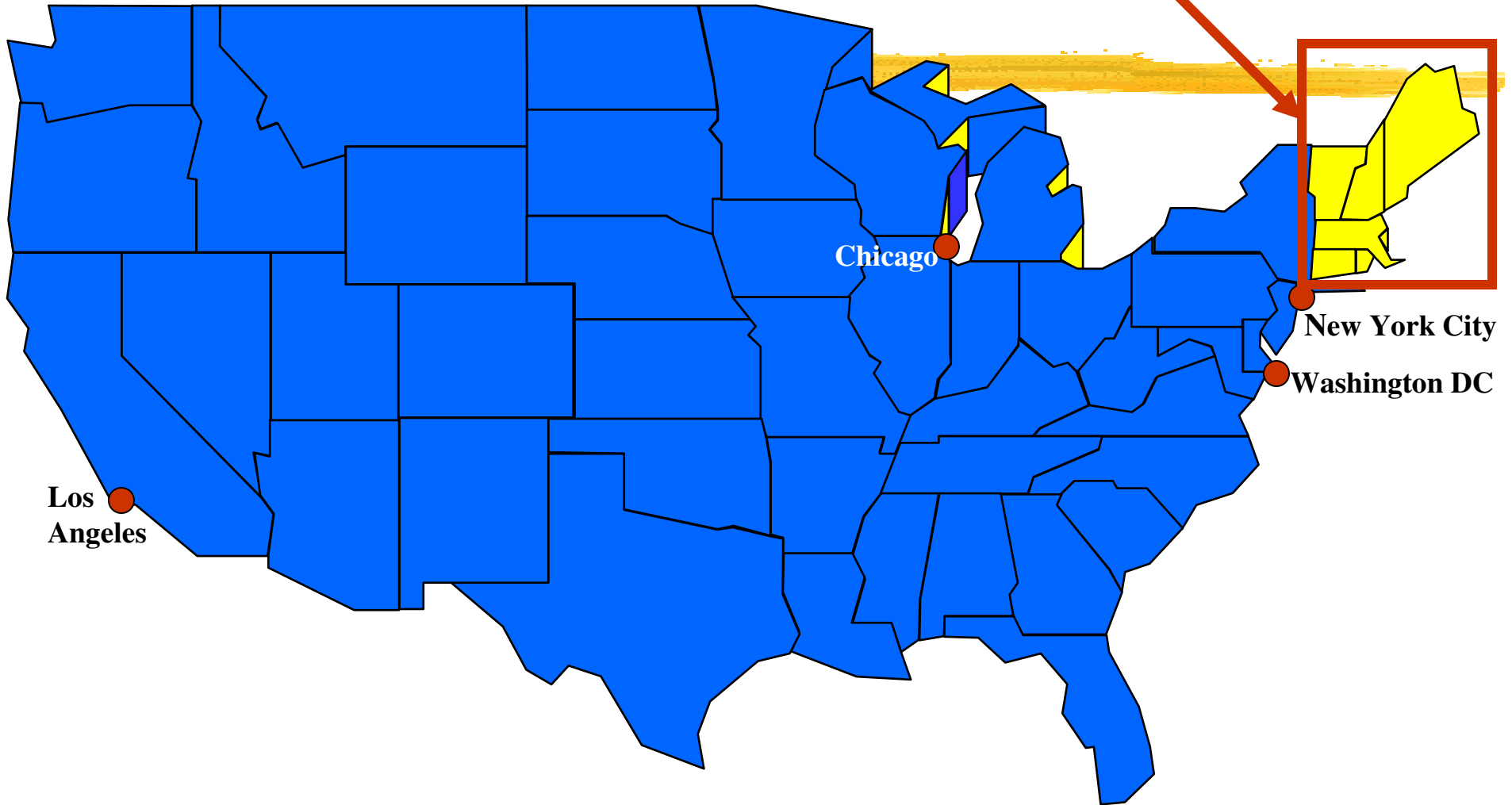
**James Y. Kerr, II**  
**Commissioner, North Carolina Utilities Commission,**  
**Immediate Past President, National Association of Regulatory Utility**  
**Commissioners**

**kerr@ncuc.net**

**EU-US Energy Regulators Roundtable**  
**December 5-6, 2007, Athens, Greece**



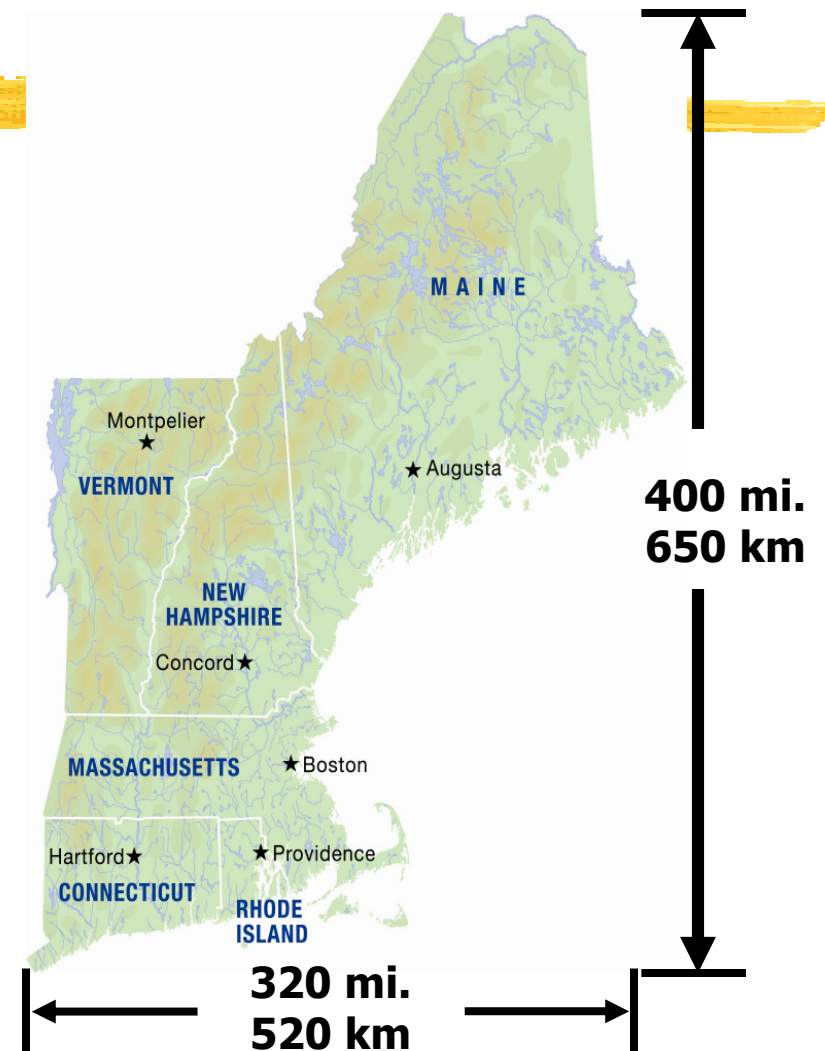
# New England, USA





# 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 3 neighboring systems:
  - New York, New Brunswick, Quebec
- 31,000 megawatts (MW) of installed generating capacity
- 5 satellite control centers
- 300+ market participants
- Summer peaking system
  - Summer: 28,130 MW (8/06)
  - Winter: 22,818 MW (1/04)





# Electric Industry Restructuring 1996: FERC Issued Order 888

- **Required all vertically-integrated Investor Owned Utilities (IOUs) to file an Open Access Transmission Tariff (OATT) that would provide universal access to the transmission grid for all qualified users**
- **Foundation for creating competitive Wholesale Power markets**
- **Introduced market-based rates for Wholesale power sales**



# Electric Industry Restructuring 1996: FERC Issued Order 888 (cont.)

- **Provided non-discriminatory access to the power transmission system**
- **Developed guidelines for recovery of stranded costs**
- **Promoted transparency of information about the bulk power transmission system**
- **Also provided guidance regarding the formation of the independent system operators (ISOs)**
- **Efforts by FERC and the States to bring competition to the electric power industry are collectively referred to as restructuring**



# Electric Industry Restructuring 1999: FERC Issued Order 2000

- **Required each public utility that owns, operates, or control facilities for the transmission of electric energy in interstate commerce make certain filings with respect to forming & participating in an RTO**
- **RTOs control & operate the grid; They promote efficiency, reliability, and ensure non-discrimination in electric transmission services & regional system planning**



# Electric Industry Restructuring 2002: FERC Standard Market Design

- **Rule-making proposal only**
- **Docket RM01-12-000, October 25, 2002**
- **Proposed standardized & uniform design of markets for ISOs/RTOs**



# Electric Industry Restructuring

## 2005: FERC Terminates Docket RM01-12-000

- **July 19, 2005: FERC terminates docket RM01-12-000**
  - **FERC: “We are exercising our discretion to terminate this proceeding. FERC calls for wholesale markets & RTO development to move forward voluntarily in the regions where they have not been developed**
  - **Today, while some observers argue that deregulation should be scrapped, others argue that deregulation is a noble endeavor & that these problems can be solved with structural adjustments to the markets**

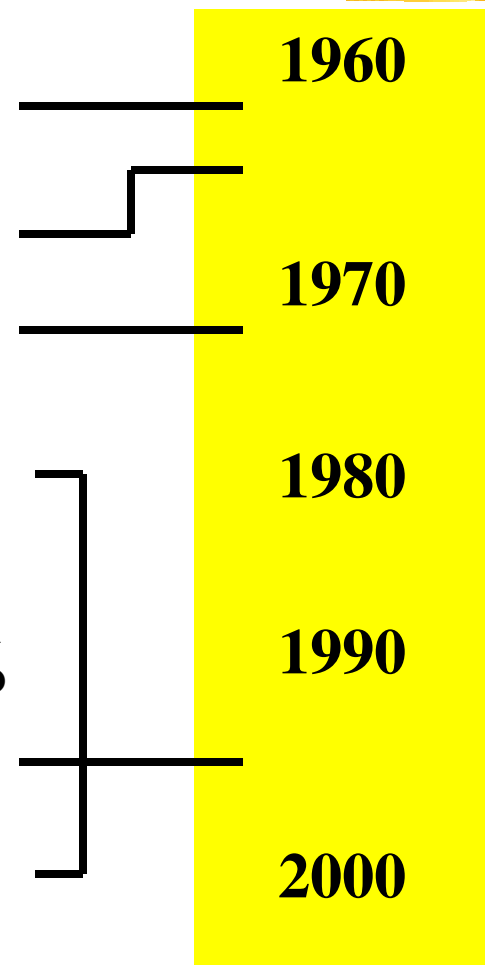




# RTO Model

## Independent Operator of New England (ISO-NE)

- **November 9, 1965**: Northeast Blackout shuts down power for 30 million customers
- **January 1966**: Northeast Power Coordinating Council (NPCC) formed to improve system reliability
- **1971**: New England Power Pool (NEPOOL) created to establish a central dispatch system & enhance system reliability
- **1996**: FERC Order 888 deregulates generation portion of the wholesale electric power market & implements open access for transmission lines
- **July 1, 1997**: ISO-NE created to manage the regional bulk power system & new wholesale markets & ensure access to transmission systems
- **May 1, 1999**: ISO-NE begins managing restructured regional wholesale power markets





# RTO Model

## Independent Operator of New England (ISO-NE)

- **June 2001**: ISO-NE proposes Standard market design, rules to govern new wholesale markets ————— **2001**
- **January 2003**: ISO-NE Board of Directors votes unanimously to pursue creation of an RTO for New England ————— **2002**
- **March 2003**: ISO-NE implements Standard Market Design ————— **2003**
- **March 2004**: FERC conditionally approves ISO-NE as an RTO ————— **2004**
- **February 2005**: ISO-NE begins operation as an RTO ————— **2005**

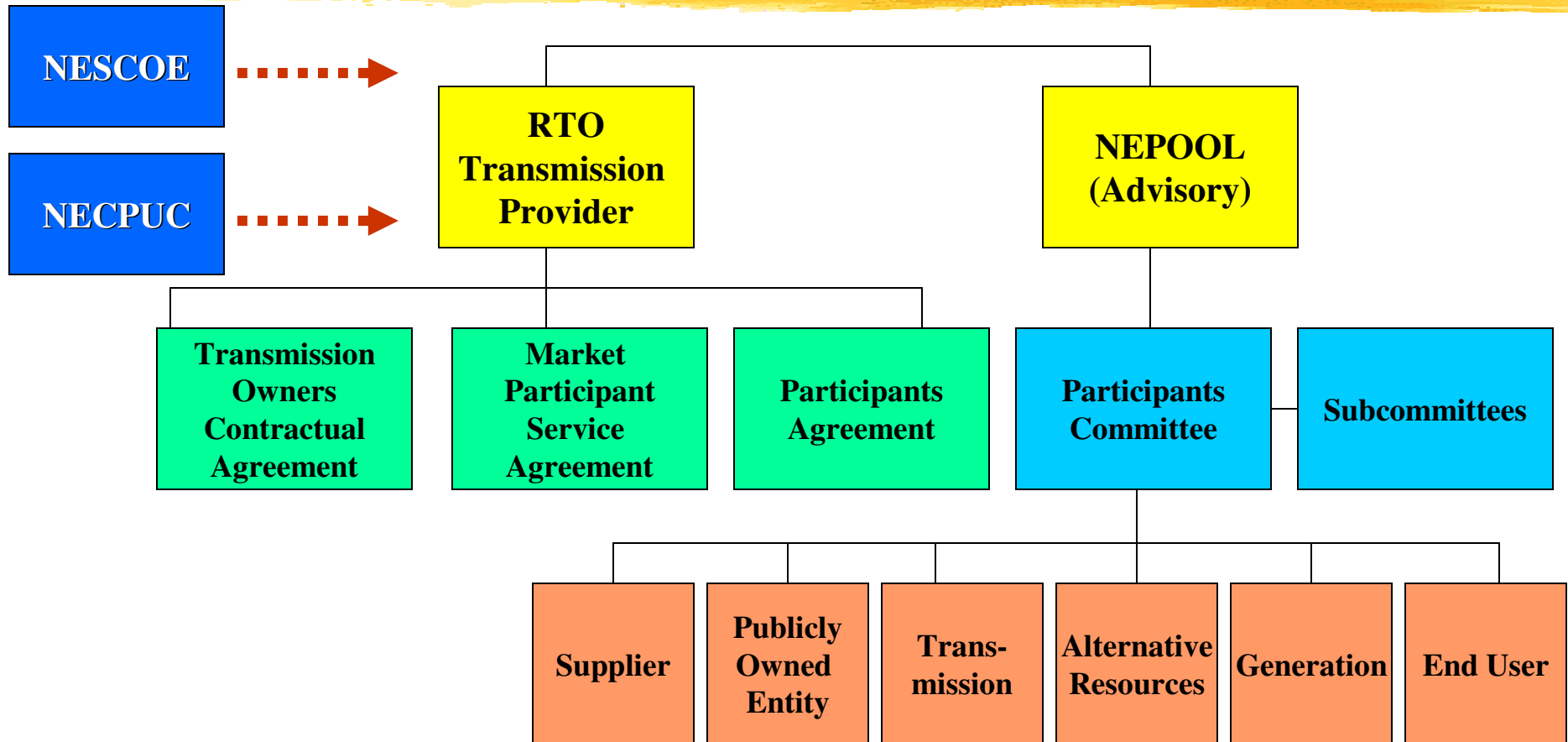


# An RTO: What Changes?

- **RTO becomes “Transmission Provider”**
  - **Role defined in Transmission Operating Agreement**
  - **Increased operational control & authority for reliability**
  - **Responsible for Tariff, manuals, Operating Procedures & Info Policy**
- **New Market Rule development process**
  - **RTO develops & files market rules with FERC**
  - **NEPOOL becomes advisory, although Participants’ alternative proposals are submitted in certain instances**
- **Enhanced seams resolution & regional planning**



# Overview of ISO-NE RTO Structure





# Role of ISO-New England

- **ISO-NE has three primary responsibilities:**
  - **Operation of New England's bulk electric power system, including centrally dispatched generation & management of the region's interstate high-voltage transmission lines**
  - **Development, oversight, and fair administration of New England's wholesale electricity marketplace through which bulk power has been bought, sold, and traded**
  - **Management of planning processes of the bulk power system & wholesale markets**



# ISO-NE Operations

- **24/365 Power System Operations**
  - **Dispatch bulk power system to continuously balance supply & demand**
  - **Analyze power system to react to power system events**
  - **Provide hourly updates on load forecast & available generation**



# ISO-NE Markets

- **Market Administration**
  - **Administer “Day Ahead” & “Real Time” energy spot markets**
  - **Capacity market**
  - **Ancillary service markets**
- **Market Settlement**
  - **Financial settlement of wholesale markets valued at \$7 billion annually**
- **Market Monitoring**
  - **Mitigate when appropriate**



# Essential Features of New England Wholesale Electric Energy Markets

- **Multi-Settlement Energy Market**
  - **Day Ahead and Real Time**
- **Locational Marginal Pricing (LMP)**
  - **LMP is designed to reveal the price of producing power at the specific location**
  - **Over 900 locations**
- **Enhanced Risk management Tools**
  - **Bilateral Transaction**
  - **Day Ahead Market (DAM)**
  - **Financial Transmission Rights (FTRs)**
- **Market Monitoring and Mitigation**





# Ancillary Services Markets

- **Services that ensure reliability & support transmission**
  - **May include: load regulation, spinning reserve, non-spinning reserve, replacement reserve, and voltage support**
  
- **Markets**
  - **Forward Reserve Market**
  - **Regulation Market**



# Forward Capacity Market (FCM) Objectives

- **Procure enough capacity to meet New England's forecasted Installed capacity Requirements three years in the future**
- **Select a portfolio of Supply & Demand Resources through a competitive Forward Capacity Auction (FCA) process**
  - **The selected Supply & Demand Resources are paid the market clearing price**
- **Provide a long-term (up to 5 years) commitment to Supply & Demand Resources to encourage investment**



# ISO-NE System Planning

- **Makes assessments on annual and on-going basis detailing the needs of the power system today and in the future**
- **Creates a Regional System Plan (RSP) to preserve reliability**
  - **current plan includes approximately 250 transmission projects, with a cost estimate of between \$1.5 billion and \$3 billion**



# Role of the New England Power Pool (NEPOOL)

- **Voluntary association of 300 Participants that buy and sell in New England's wholesale markets**
- **Primary stakeholder advisory group to ISO-NE**
- **Six Sectors of NEPOOL**
  - **End User**
  - **Publicly-Owned Entity**
  - **Supplier**
  - **Transmission**
  - **Generation**
  - **Alternative Resources**



# **New England Conference of Public Utility Commissioners Role in RTO**

- **New England Conference of Public Utility Commissioners (NECPUC)**
  - **A non-profit corporation comprising the utility regulatory bodies of the 6 New England states (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont).**
  - **Represents the policy perspectives of the New England Governors & their collective interests in promoting a regional electric system that assures the lowest reasonable long-term cost for customers while maintaining reliable service & environmental quality**
  - **Each state may have one or more representatives appointed by each Governor, but each state will have a single undivided vote to cast in arriving at NESCOE determinations**



# **New England States Committee On Electricity Role in RTO**

- **New England States Committee On Electricity (NESCOE)**
  - **Establishes formal role for states participation on an ongoing basis in the decision-making process of the RTO**
  - **Represent the policy perspectives of the New England Governors & their collective interests in promoting a regional electric system that assures the lowest reasonable long-term cost for customers while maintaining reliable service & environmental quality**
  - **Each state may have one or more representatives appointed by each Governor, but each state will have a single undivided to cast in arriving at NESCOE determinations**
  - **States will have process for input on Resource Adequacy and System Planning & Expansion**



# FERC Advanced Notice Of Proposed Rule Making

**Advance Notice of Proposed Rulemaking (ANOPR), June 22, 2007**

## **Wholesale Competition in Regions with Organized Electric Markets**

- **FERC identified specific concerns and presented preliminary views on proposed reforms in four areas:**
  - **Role of demand response in organized markets**
  - **Increasing opportunities for long-term power contracts**
  - **Strengthening market monitoring**
  - **Responsiveness of RTOs to customers and other stakeholders**
- **FERC accepted comments from numerous organizations, including NARUC and NECPUC, and will review these to determine whether to issue a NOPR**



# Resources

- **Connecticut Department of Public Utility Control**

[www.state.ct.us/dpuc](http://www.state.ct.us/dpuc)

- **Independent System Operator of New England**

[www.iso-ne.com](http://www.iso-ne.com)