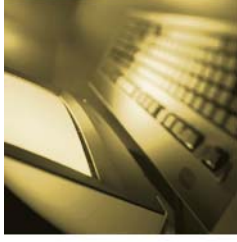


Wholesale Electricity Markets in New England

How They Work and Key Issues They Face



**Commissioner Linda J. Kelly
Department of Public Utility Control
State of Connecticut, U.S.A**

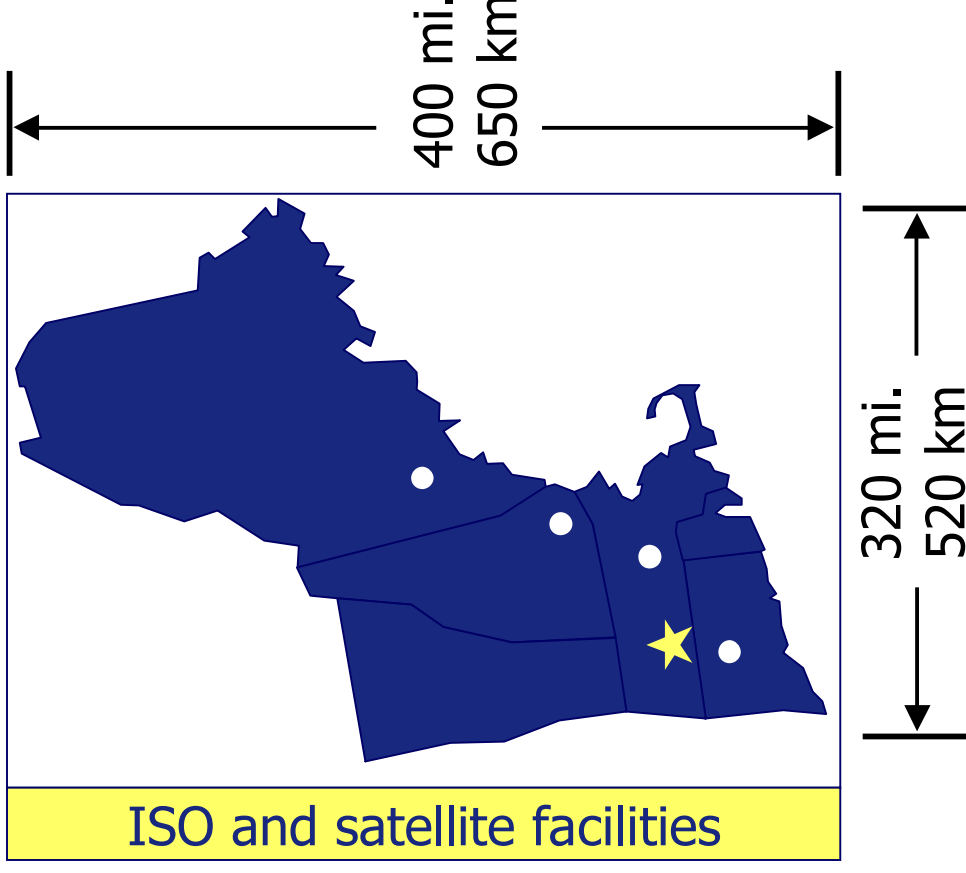
CEER/NARUC Energy Regulators' Roundtable

Rome, Italy

December 6-7, 2001

New England's Electric Power Grid

- 6.5 million customer meters
- 340+ generators
- 8,000+ miles of transmission lines
- 4 satellite control centers
- 11 interconnections to neighboring systems
- 26,239 MW of installed generating capacity
- Peak load: 24,967 MW



ISO-NE

New England Power Pool - NEPOOL

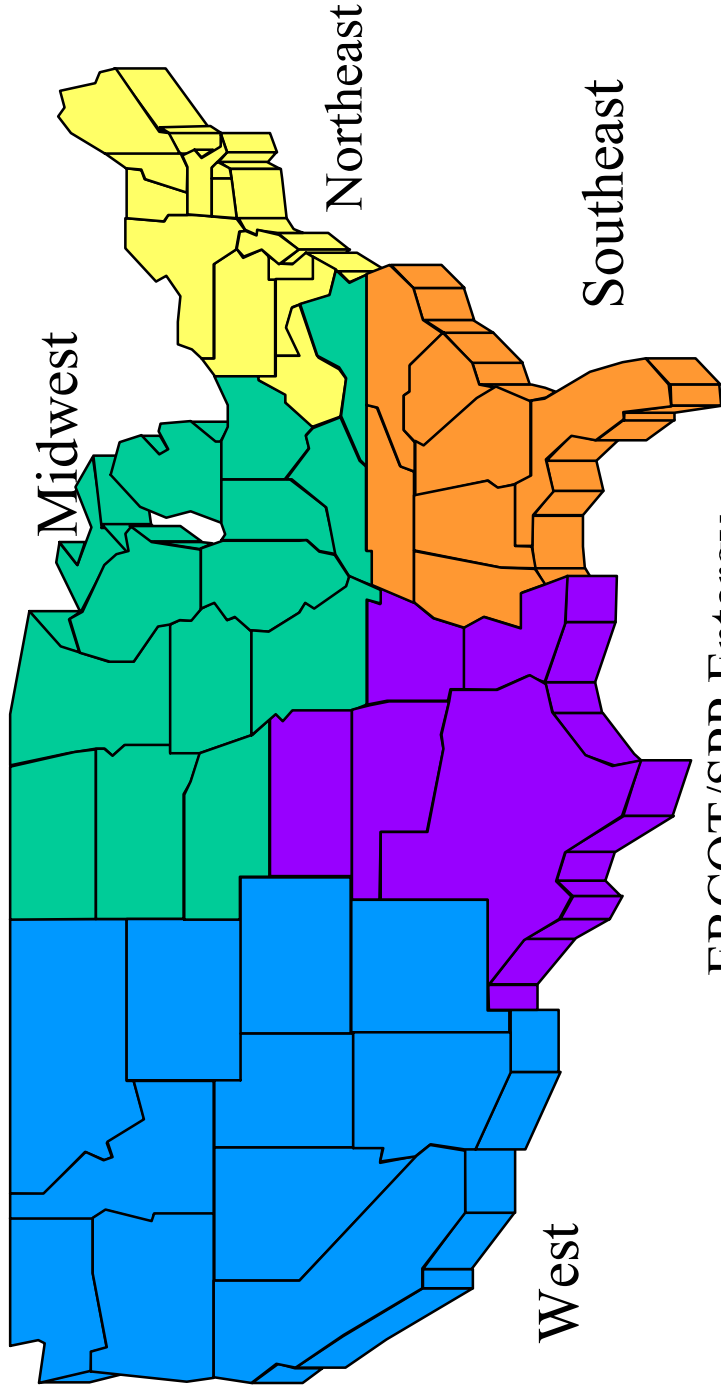
- Formed in 1971
- Voluntary Association
- Single network for bulk power system
- Electric companies in 6 New England States

ISO-NE formed in 1997

- Not-for-profit corporation
- Approved by FERC
- Manages New England regions electric bulk power generation and transmission systems
- 1999 began administering the restructured wholesale electricity marketplace

FERC Order 2000

- Independence
- Appropriate scope and regional configuration
- Operational authority
- Short-term reliability



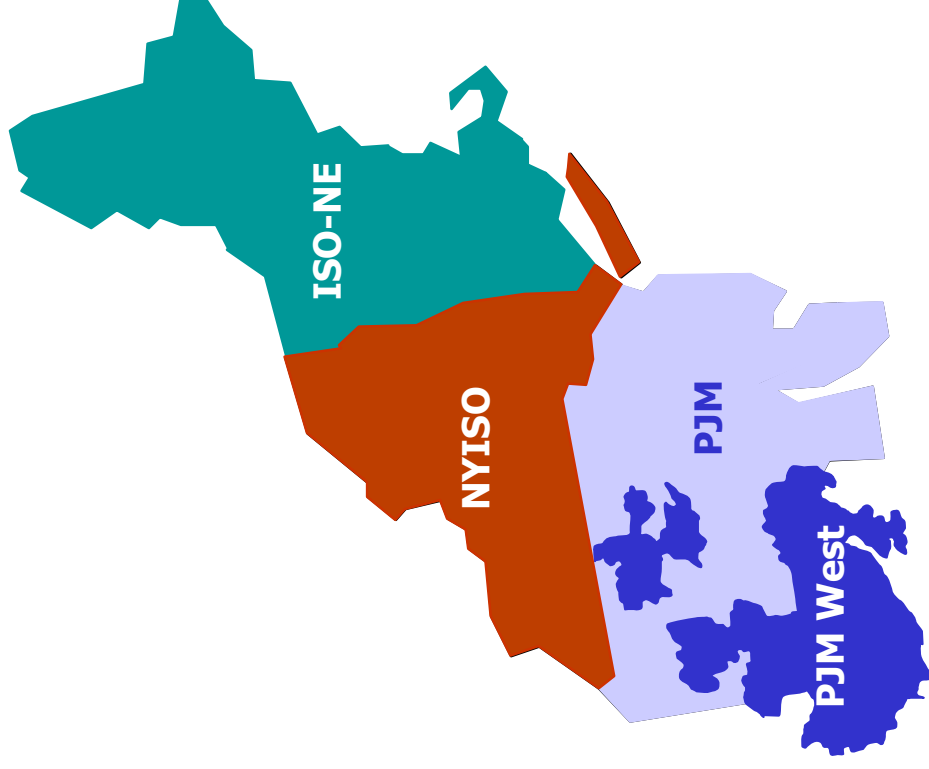
FERC Northeast RTO Order

July 2001

- Merge three ISOs into one Northeast RTO
- Use PJM's Standard Market Design as "platform", improve with "best practices" from the 3 control areas
- Must be independent of any market participant
- Must serve an appropriate region
- Operational authority for all transmission facilities under its control
- Exclusive authority for maintaining short term reliability of the grid
- Administer transmission tariff employing pricing systems that promotes efficient use and expansion of transmission and generation facilities
- Market mechanisms to manage transmission congestion (1 year)
- Provider of last resort
- Planning and expansion

What an RTO would mean for the Northeast

- A multi-regional wholesale electric power market for the Northeastern U.S.
- Combine existing markets in PJM, New York and New England: 14 states and D.C.
- Produce the world's largest wholesale power market, with 20%+ of U.S. population
- \$20 billion+ market with 140 gigawatts of installed generating capacity

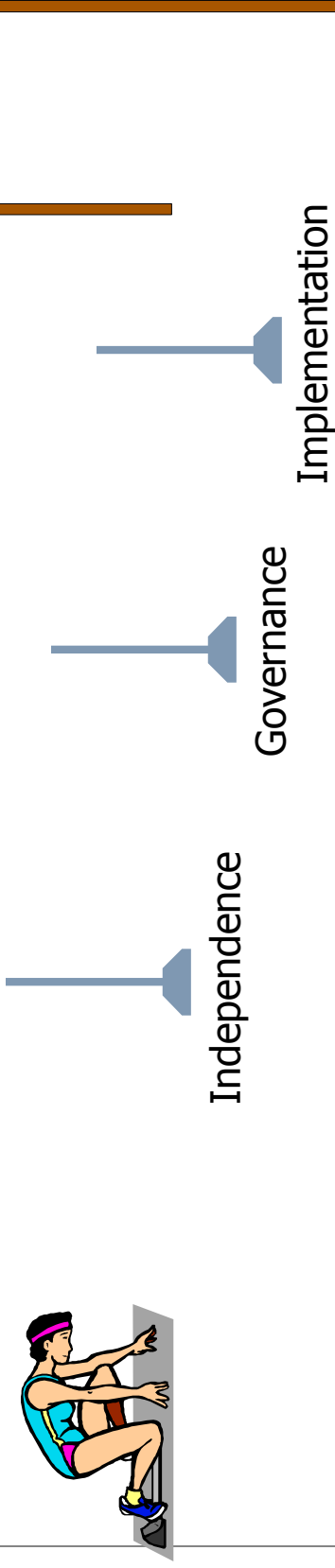


Considerations in Creating an RTO

- **The process for creating an RTO should:**
 - Provide time for meaningful stakeholder input to the plan
 - Uses best practices to ensure success
 - Ensure that a realistic scope, schedule and cost are determined up front
 - Ensure maximum possible risk mitigation
 - Provide a way to manage potential conflicts – such as resource allocation between existing ISOs and new RTO
 - Provide controls, checkpoints and a structured, measured transition that safeguards reliability

RTO Issues

- Independence of the new organization
- Governance of the new organization
- Planning and implementing the world's largest electricity market - how should it be approached?



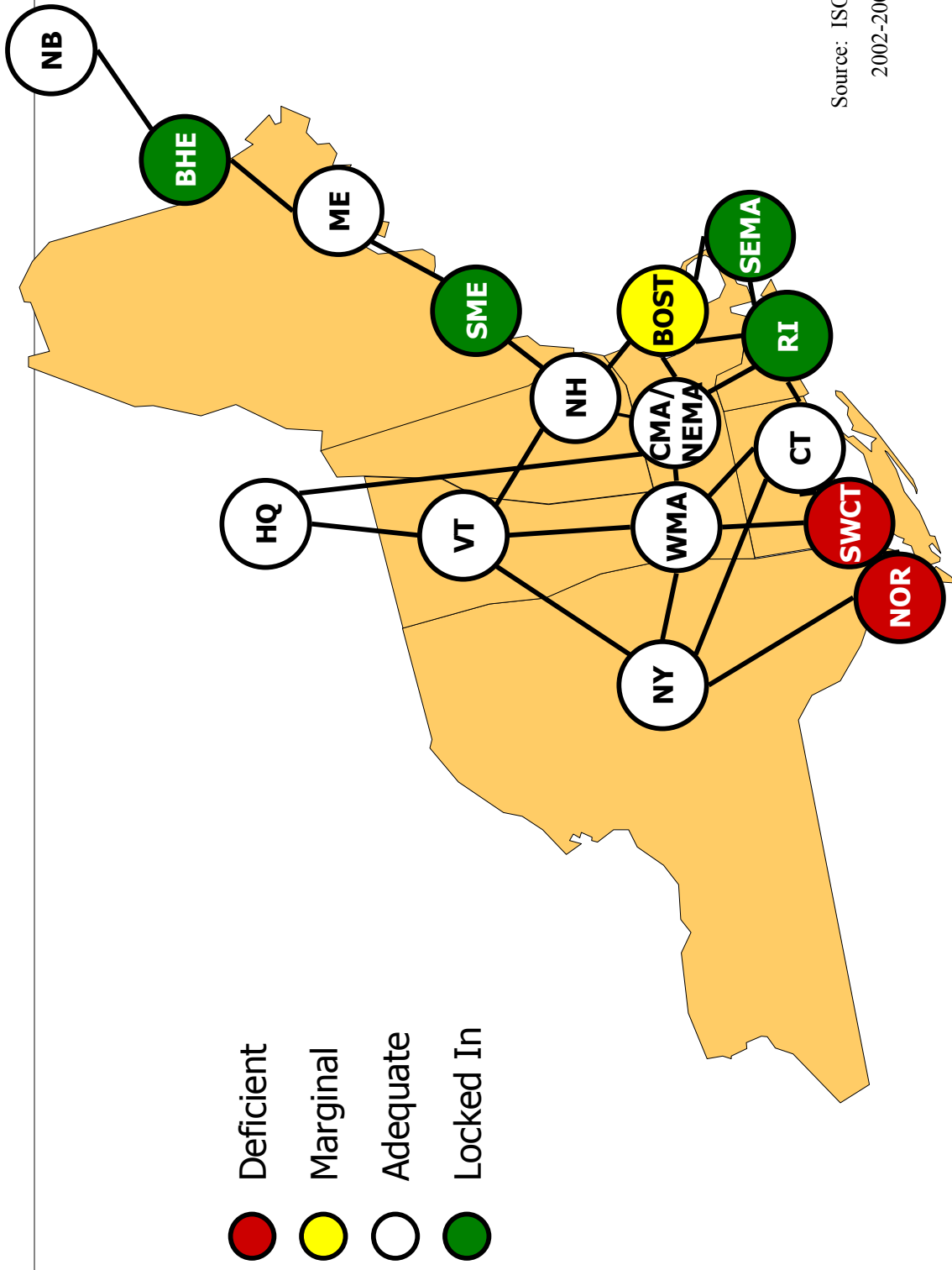
Top Issues Facing New England's Wholesale Electricity Marketplace

- **Regional Transmission Organizations (RTO)**
 - FERC initiative to promote large, “natural” electricity marketplaces in the U.S. based upon a consistent market platform
- **Standard Market Design (SMD)**
 - Enhancements to wholesale market design in New England in order to promote consistency and standardization of wholesale markets
- **Regional Transmission Expansion Plan (RTEP)**
 - Assessment of the interstate highway system for electricity in order to identify bottlenecks and attract a market-based response to alleviating them

Standard Market Design (SMD)

- Wholesale markets launched in May '99 as “interim”
 - Need for improvements known from outset
- SMD proposed by ISO-NE in April 2001
 - SMD is a standard market model based upon PJM platform
 - PJM is the ISO-NE counterpart in Pennsylvania-New Jersey-Maryland
- Key market features under SMD are:
 - Transmission congestion management via locational marginal pricing (called ‘CMS’)
 - Forward and real-time market for electricity (called ‘MSS’)
- SMD directly addresses ‘seams’ issues
 - Inconsistencies between wholesale markets in different regions
 - Puts New England on track for a larger, more consistent market

New England's Electric Capacity



Source: ISO-NE
2002-2006



Benefits of CMS/MSS Under SMD

- **Price signals that accurately reflect transmission congestion**
 - **Locational prices (rather than as a region-wide socialized charge) will provide an efficient, market-based response**
- **Incentives for increased generator availability created by a financially binding, day-ahead market**
- **Improved market efficiency, a more balanced marketplace, and vastly improved ability of participants to manage risks**

Wholesale Markets Convergence

- **CMS/MSS under SMD is suitable for broader application and will utilize the latest releases of required software**
- **Modular architecture of SMD allows computer system components to be relocated and re-used if necessary**
- **New England implementation will familiarize ISO-NE and New England market participants with the PJM platform - the recommended standard for the anticipated larger marketplace (RTO)**

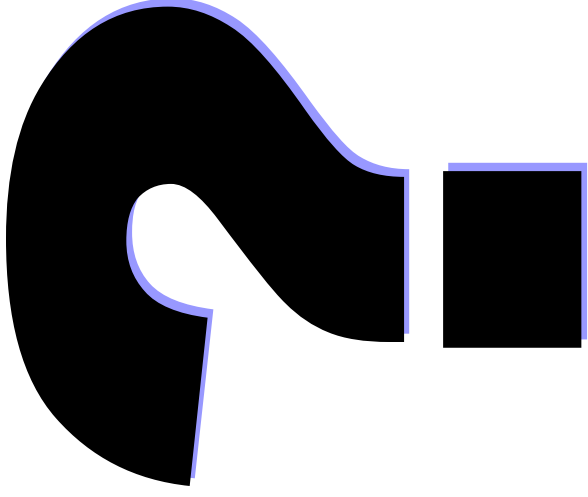
Regional Transmission Expansion Plan (RTEP)

- ISO-NE led effort with input from stakeholders and transmission owners
- Assess reliability and economics of the New England system
- Transmission constraints are impacting the efficiency of the wholesale markets: added costs, decreased reliability, increased uncertainty
- Transmission congestion solutions are needed
 - Transmission additions
 - Generation additions
 - Demand-side responses
- Strong transmission infrastructure provides backbone for increased efficiency and competition

FERC November 2001 Order RM01-12-000

- **Resolve geographic scope and governance issues**
- **Transmission tariff and market design rulemaking**
- **Immediate steps to move process along**
 - **RTO functions fulfilled**
 - **Better state/federal dialogue**
 - **Further cost/benefit studies**
 - **Standardization areas**
 - **Time line for RTO implementation**
- **Create & institute state-federal RTO panels**

Questions?



The Connecticut Department of Public Utility Control