



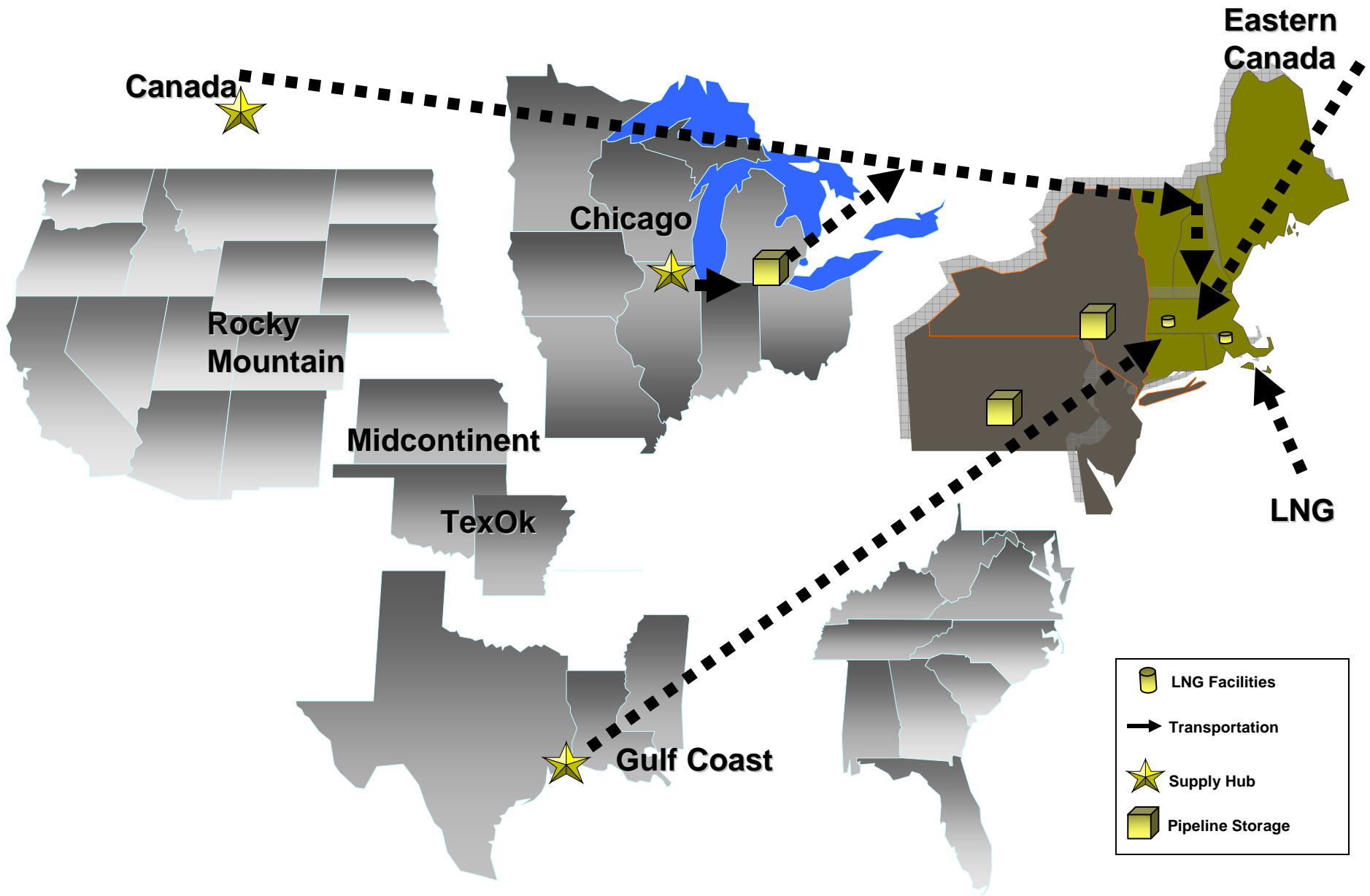
NARUC

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

Meeting Natural Gas Demand Demand Response A New England Perspective

***W. Robert Keating,
Commissioner, Massachusetts***

**7th EU-US Energy Regulators Roundtable
Nov. 14-16, 2008, New Orleans, LA, USA**

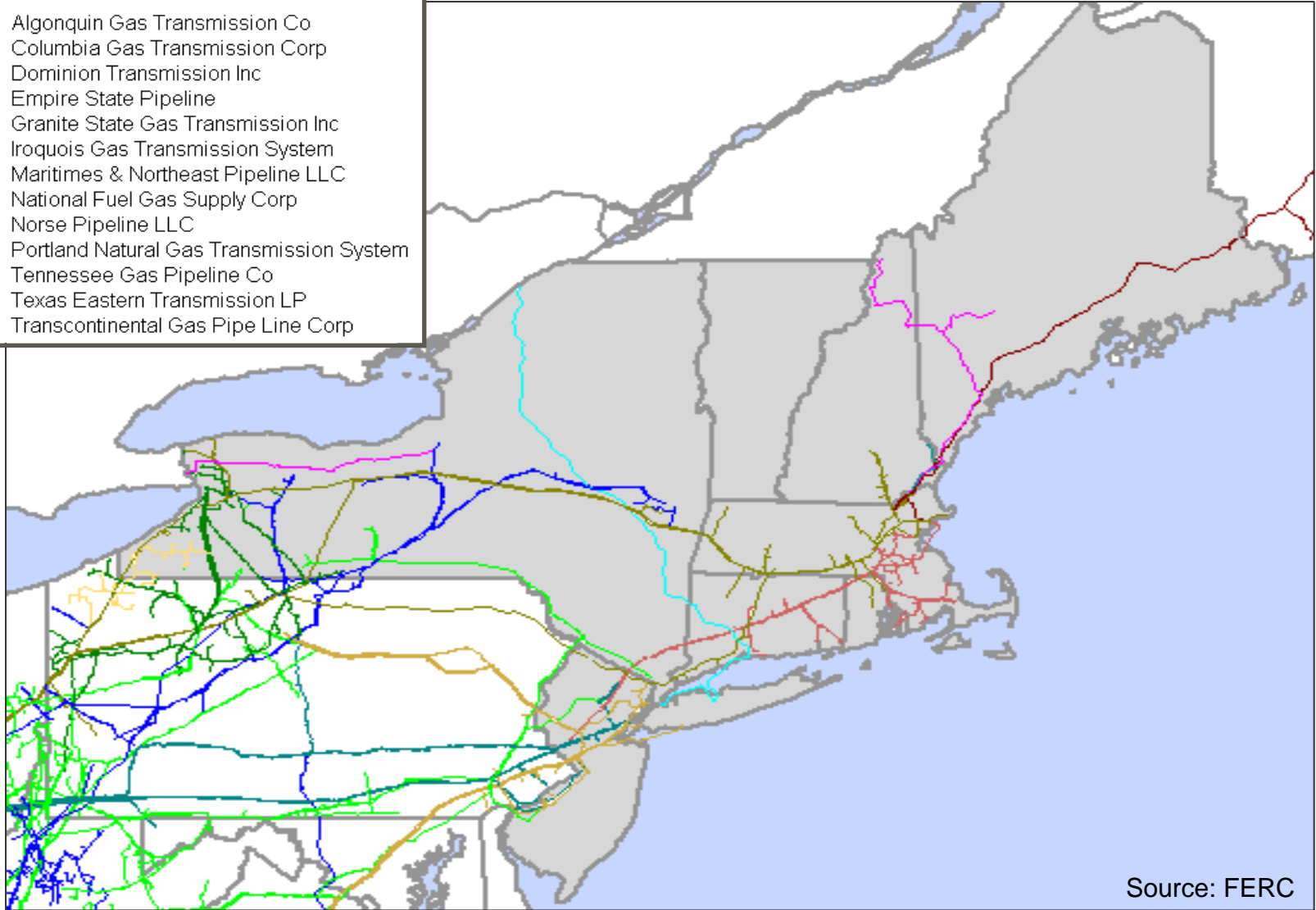


Access to many major supply basins in North America

Storage in key locations to support customer needs

Northeast Gas Pipelines

- Algonquin Gas Transmission Co
- Columbia Gas Transmission Corp
- Dominion Transmission Inc
- Empire State Pipeline
- Granite State Gas Transmission Inc
- Iroquois Gas Transmission System
- Maritimes & Northeast Pipeline LLC
- National Fuel Gas Supply Corp
- Norse Pipeline LLC
- Portland Natural Gas Transmission System
- Tennessee Gas Pipeline Co
- Texas Eastern Transmission LP
- Transcontinental Gas Pipe Line Corp

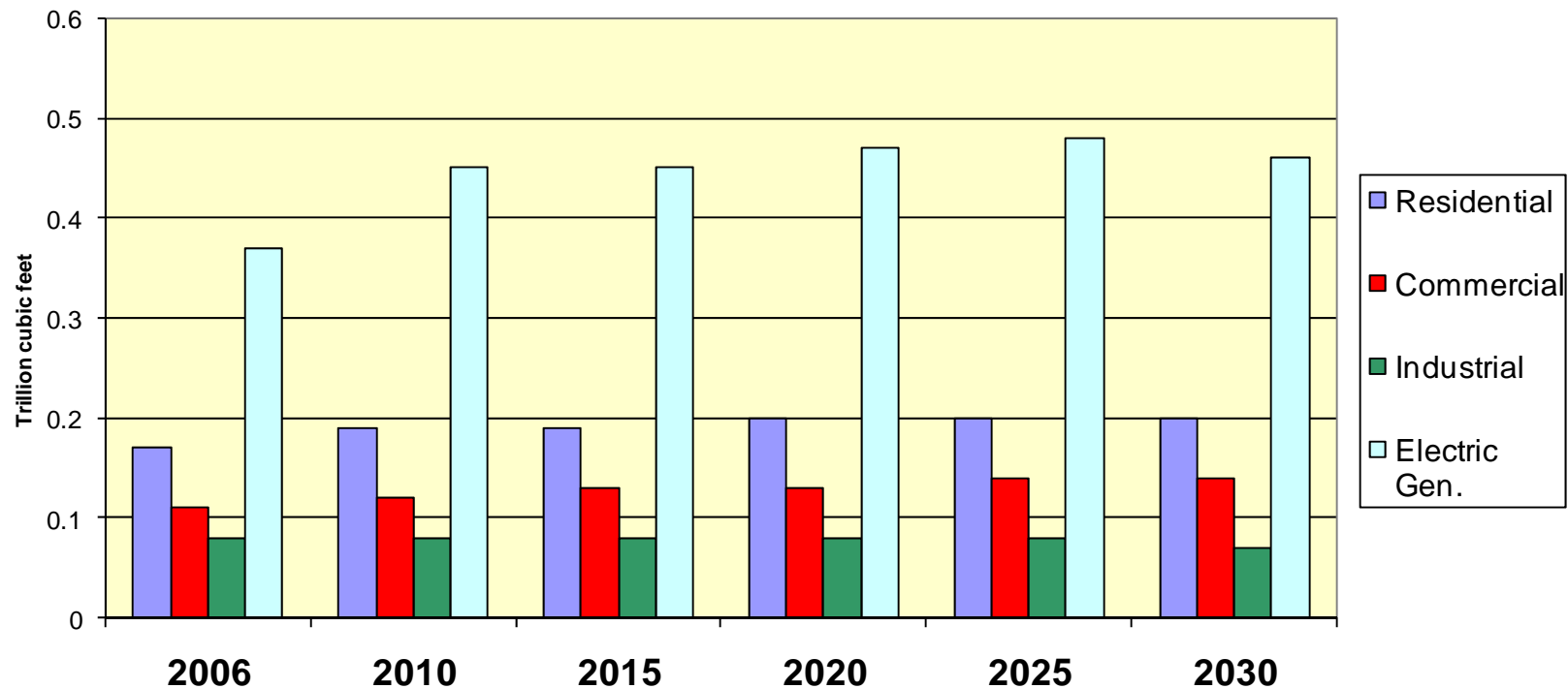


Source: FERC



Projected Gas Demand Growth by Sector, New England Region

U.S. EIA projects 0.7% annual growth for the 6 New England states (CT, ME, MA, NH, RI, VT) over the next 25 years, the 2nd greatest rate of regional growth in the U.S. Natural gas demand is projected to grow by 22% in the period from 2006 to 2025, from approx. 740 Bcf to 900 Bcf (just under 1 Tcf).

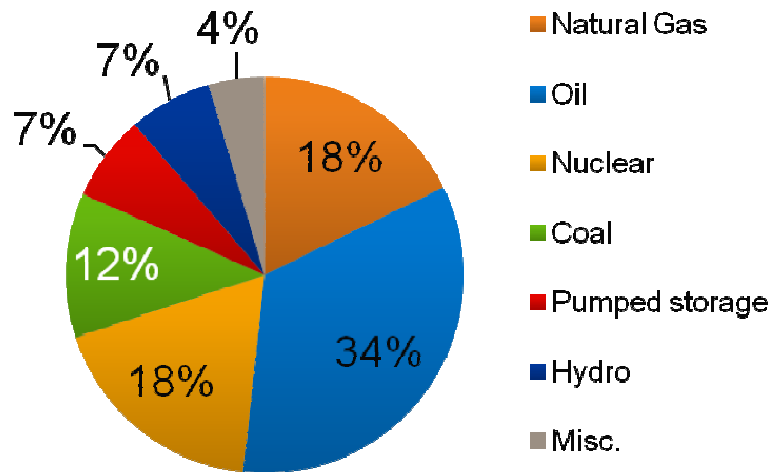


Source: U.S. Energy Information Administration, "2008 Annual Energy Outlook"

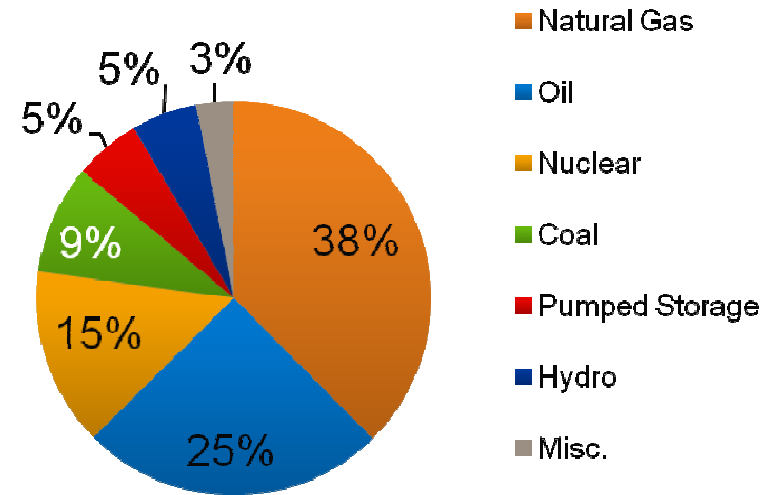


Increasing reliance on natural gas in New England

2000



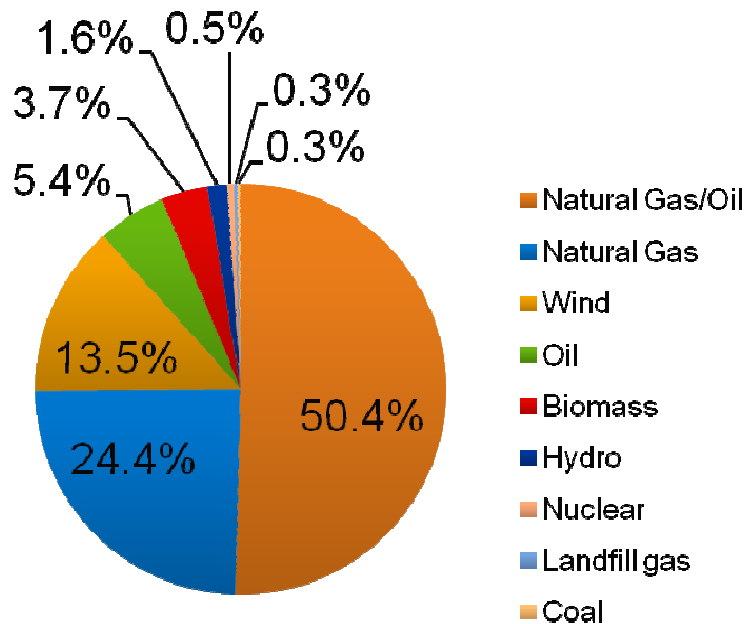
2008





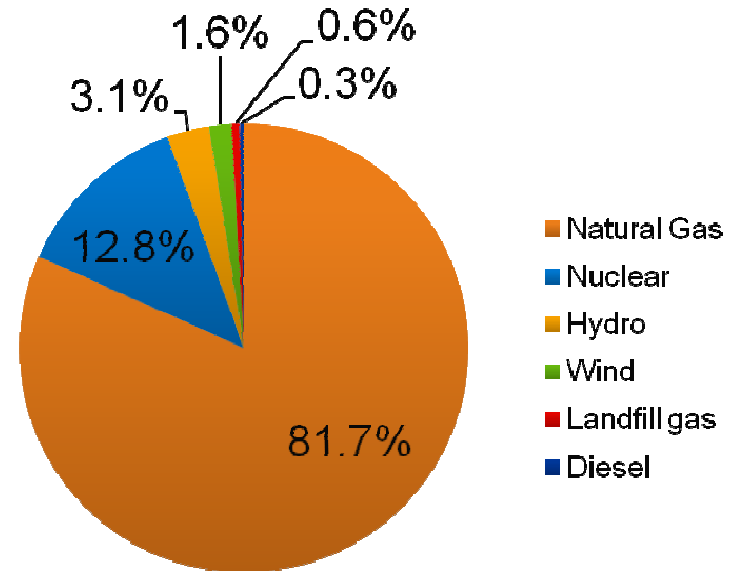
But Natural Gas Still Dominates New Supply Proposals... Continues to be economic resource

Generator Queue



Total Resources in the Queue: 13,700 MW

FCA-1



Total new supply resources in FCA-1: 626 MW

Source: ISO New England



The Green Communities Act Chapter 169 Of The Acts Of 2008 Signed Into Law On July 2, 2008

Goals:

**Meet 25% of Electric load through DEMAND
Resources by 2020**

**Meet 20% of Electric Load through Renewable
And Alternative Generators by 2020**

Reduce use of Fossil Fuels in buildings by 10% by 2020



Energy Efficiency Section of The Green Community Act

- 2.5 mills per KWH for all consumers to fund Energy Efficiency Programs including D.S.M
- FCM and RGGI Cap and Trade Funds also available
- DPU Authorized to approve and fund Gas Energy Efficiency Programs proposed by gas companies



Energy Efficiency Continued...

- Requires that all electric and natural gas resource needs to be met first through all available energy efficiency and demand reduction resources that are found to be cost effective and less expensive than supply.
- Requires Energy Efficiency Plans to be prepared jointly by distribution companies every 3 years.
- Plans submitted to newly established Energy Efficiency Advisory Council – pass them on to the Department of Public Utilities for final approval.



Department of Public Utilities Decoupling Order

- Investigation into Rate Structures that will promote Efficiency Deployment of Demand Resources
- All Companies to move to Decoupled Rates
- Require Full Decoupling
- Shareholder risk issues
- Orderly transition



Integration of Demand Resources into Energy Markets

- ISO has long recognized that accommodating high levels of demand resources would require rule and operational enhancements
- The FCM has been successful in incenting the participation of demand resources in the capacity market - 2,279 MW cleared in FCA#1 and an additional 1,386 MW have been qualified for FCA#2
- Additionally, current price-response programs, the Real-Response Program, are set to expire on May 31, 2010
- These demand resources and programs must be efficiently integrated into the energy market



Benefits of price-Responsive Demand

- It improves economic efficiency
 - Encourages/Discourages consumption based on spot prices
- It improves system reliability
 - Lowers the peak load, reducing the likelihood of system shortages
 - Provides additional resources to respond to shortage conditions
- It reduces the need for investment in reserves and generation capacity
 - More efficient and lower levels of peak load
- It improves competition in energy markets through price – elastic demand
 - Reduces the ability and incentive to exercise market power through physical and economic withholding



Energy Market Price Formation: Challenge of Integrating Demand

- In a standard market, demand participates by deciding whether or not to consume and no actions are required by a market operator
- In wholesale electric markets, demand has been treated as a supply resource, largely because of flat-rate retail prices
- Objective is to integrate demand into the market so that the market clears at the price where the marginal cost of production is equal to the marginal benefit of consumption



Energy Market Price Formation Challenges

- Three key challenges confront integration of demand resources into the energy market as a supply resource
 - Sending the right price signals in the energy market
 - Preferred solution would be to have each demand resource submit a price at which it would stop consuming
 - Determining what compensation should be paid to the resources in the energy markets
 - How should demand reduction be measured?
 - E.g. what is the customer baseline?



Energy Market Price Formation Challenges

- Energy market price formation
 - Demand resources have been dispatched based on administrative rules rather than prices
 - This indirectly affects price, but doesn't allow demand to fully participate in price setting
 - Real-time dispatch algorithms and price-setting algorithms that fully incorporate demand bids must be formulated
 - Demand resources are not required to bid into the energy market



Next Steps

- The ISO has initiated a stakeholder process to review the future of demand response programs in the context of the FCM
- By Feb 16, 2009, the ISO will file with FERC a status report on the stakeholder process and preliminary recommendations



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