



New England Wholesale Capacity Market: The Role of Demand Resources

**Tim Woolf,
Commissioner
Massachusetts Department of Public Utilities**

**Northeast Energy and Commerce Association
2008 Power Markets Conference
October 30, 2008**

Disclaimers

1. This presentation reflects my personal observations, and does not necessarily reflect the positions of the Commonwealth of Massachusetts, the Department of Public Utilities, or other members of the Commission.
2. My views on these matters are still evolving.



Overview

- The role of demand resources in the FCM.
- The value of price-responsive demand in wholesale markets.
- Challenges of implementing price-responsive demand.
- Dynamic pricing versus wholesale price-response programs.

- No specific recommendations at this time – just some concepts for consideration as ISO-NE proceeds with investigations of demand resources.



Price-Responsive Demand in Wholesale Markets

- Ability for customers to reduce electricity demand in response to high prices.
- Demand resources provide the means for customers to respond to prices.
 - Energy efficiency
 - Demand response
 - Distributed generation
- But customers also need the appropriate market structures and rules to give them the incentives and opportunities to respond to prices.



Benefits of Price-Responsive Demand in Wholesale Mkts.

- Reduces wholesale market prices.
- Improves economic efficiency of wholesale market.
 - Consumption and production decisions better reflect the marginal value and marginal cost of electricity.
- Improves system reliability.
 - Reduces the likelihood of system shortages.
 - Provides additional resources to respond to shortage conditions.
- Makes wholesale markets more competitive.
 - Mitigates potential for market power problems.
 - Reduces the need for administrative market power mitigation or price caps.
- Reduces the need for reserves and generation capacity.
- Enable the development of new technologies.
 - distributed generation, renewables, advanced metering.



How to Achieve Price-Responsive Demand

- While there are many options, they fall into two general categories:
- Wholesale Price-Response Programs:
 - Example: demand resources in the FCM.
 - Demand resources bid into a wholesale market and receive payments.
 - Demand resources are treated as if they were another source of electricity supply.
 - Programs administered by ISO-NE.
- Retail Dynamic Pricing:
 - Examples: real-time pricing, critical peak pricing, time of use rates, seasonal rates, peak time rebates, etc.
 - If customers are given the proper price signals, then they may reduce demand in order to reduce electric costs.
 - Customers do not receive payments from the wholesale market.
 - Rates administered by retail suppliers.
 - Distribution companies' rates (basic service) overseen by regulators.



Challenges to Implementing Dynamic Pricing

- In order to fully respond to dynamic pricing, customers require:
 - Appropriate price signals.
 - Sufficient information:
 - How does the market work?
 - What are the costs and benefits to them?
 - Additional technologies:
 - Advanced meters, two-way communications, automated load curtailment systems, etc.
 - Sufficient capital to invest in technologies.
 - Sufficient incentive to curtail load, given size of electric bill and other budget concerns.
- Basic Service Customers are typically not offered dynamic pricing:
 - Regulators may be reluctant to impose volatile prices on customers.
 - Distribution companies do not have the incentive to reduce supply costs.
 - Many small customers may have few curtailment options.



Likely Development of Dynamic Pricing in New England

- NE may see a hybrid system evolving, with increasing amounts of customers on some form of dynamic pricing.
 - Advanced meter initiatives will increase the role of dynamic pricing.
- However, many customers will probably not be offered dynamic pricing for a long time, if ever.
- Key question: will this evolution of dynamic pricing be enough to provide a sufficient level of price-responsive demand in the New England wholesale markets?
- If the answer is “no,” then wholesale price-response programs become more important.
 - Wholesale price-response programs can help provide the market incentives and mechanisms for customers to overcome the barriers to dynamic pricing.



Challenges to Wholesale Price-Response Programs

Having to make wholesale payments to demand resources creates (at least) two challenges:

- Monitoring and verification of savings, i.e., getting the appropriate baseline for quantifying the customer curtailment.
- The “double-compensation” (excess-compensation) issue. Participating customer is potentially compensated in two ways:
 - (a) with a payment from the wholesale market, and
 - (b) with reductions on electric bill.



A Framework for Evaluating Wholesale Price-Response Programs

1. FERC's principle of comparability: demand resources should be offered comparable treatment and compensation relative to other resources.
2. All resources (demand and supply) should be compensated for the value that they bring to the market.
3. Proper consideration should be given to the costs and benefits to wholesale market customers. Do the benefits outweigh the costs?
 - Benefits: reduced prices, reliability, increased competition, etc. These benefits accrue to all customers.
 - Costs: what are the costs to non-participating customers?



Excess Compensation Issue

- Compensation may not be double.
 - It depends upon what electric rates are avoided.
 - But the compensation could be described as “excess.”
- If demand resources are treated comparably to supply resources, then excess compensation should not be a concern.
 - Supply sources can earn “excess” revenues, i.e., beyond what is required to cover their costs and profit requirements. Especially with the combined effect of the wholesale energy, capacity and ancillary services markets.
- While allowing for excess compensation may seem overly generous, the key question is whether all customers are better off:
 - Do the incremental benefits of allowing excess compensation outweigh the incremental costs ?



Costs and Benefits of Excess Compensation in the FCM

- Primary benefit to customers: the reduction in market price from the increased participation of demand resources.
 - Can be significant.
- Primary cost to customers:
 - The total costs of the capacity market do not increase (they decrease).
 - The share of the capacity payments may shift between load serving entities.
 - Therefore, it is an equity issue between load serving entities and between customers.
 - However, if all load serving entities implement the same amount of demand resources (proportional to their load), then there will be no shifting of capacity payments as a result of “excess compensation.”
 - Experience in the first Forward Capacity Auctions indicates that the demand resources are dispersed across states roughly proportionately to load.
 - It is quite possible that this “cost” (i.e., equity issue) is quite small in practice.
 - Those load serving entities or customers that get allocated larger shares of the capacity market costs will have an increased incentive to bid demand resources into the FCM. In other words, this may be a self-correcting issue.



Additional Benefits of Wholesale Price-Response Programs Relative to Dynamic Pricing

- Provide clear identification and quantification of demand resources.
 - Helpful for policy-makers as well as market players.
- Allow demand resource providers to directly obtain revenues that can be used to market programs to customers.
- Allow for a regional approach to price-responsive demand.
 - As opposed to state-by-state, or LSE-by-LSE retail approach with dynamic pricing.

