

ISO New England Responses to Questions for Panelists

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Panel: Demand Response in Organized Markets (9:20 a.m.)

Panelists:

- The Honorable Robert Lieberman, Commission, Illinois Commerce Commission
- Gordon van Welie, President and CEO, ISO New England
- Richard Doying, Vice President of Market Operations, Midwest Independent Transmission System Operator, Inc.
- William Hogan, Raymond Plank Professor of Global Energy Policy, Harvard University
- David Meade, Manager, Structured Power, Praxair, Inc. and Chairman, Technical Committee, ELCON
- Dan Sharplin, Site Controls
- John Rossi, Vice President of Business Development, Enterprise Group, Comverge, Inc.

Questions for panelists:

1. Do the RTOs and ISOs provide demand response with adequate opportunity to participate in their markets?

ISO New England response:

- Yes, ISO New England provides ample opportunity for Demand Resources to participate in wholesale electricity markets in the following ways.
 - The Day-Ahead Energy Market allows demand to bid in at prices they wish to commit to day ahead. Load may reduce consumption in real time if prices get too high for them.
 - The Forward Capacity Market (FCM) provides ways for all types of Demand Resources to participate in the capacity market.
 - Asset-Related Demand (larger demand resources) can participate in the Reserve and Energy Markets and be dispatched in the manner as a supply resource.
 - The Demand Response Reserves (Small Resource) Pilot Program is presently being conducted to see if small resources, including Demand Resources can provide operating reserves using less costly telemetry and communication systems (e.g., internet-based communication systems).
2. What are the barriers to demand response participation in these markets? What are the barriers that the Commission could address?

ISO New England response:

- Successful markets work because demand buys as much as it wishes at the prices that

are offered. This is happening in today's electricity markets. Customers respond rationally to the prices that they face for electricity. However, the reason that we do not see as much demand response during high load and high cost hours is because customers do not see the true cost of serving them during those hours.

- Much of the region's load is served by regulated Standard Offer Service (SOS). SOS is out-sourced by the state-regulated distribution companies to suppliers under relatively short-term contract (e.g., three months to a year).
- Most of these contracts require that SOS be flat priced, which does not encourage demand response.
- Further, the counter party to the SOS supply contract is the utility, not end-use customers directly. Because SOS suppliers do not have a direct relationship with end-use customers and do not have access to individual customer load data, SOS suppliers cannot identify which end-use customers are good candidates for demand response services.
- In order to recover demand response investment, suppliers need to have a multi-year relationship with customers to recover the cost of investment. However, since SOS is under short-term contract, there is not sufficient time for suppliers to recover demand response investment costs.
- Because most SOS customers are load profiled (not interval metered) to determine their hourly use, whatever savings a subset of customers produce through demand response activity is socialized to the entire group of SOS customers who are on the same load profile because load profiles reflect the average hourly use of the entire group. Because the benefits produced by individual demand response actions are socialized across all customers, this mitigates the incentive for individuals to do demand response.
- Studies conducted by Lawrence Berkeley National Laboratory and others (e.g., Utilipoint International) show that such customers tend to opt for dynamically-priced products from competitive retailers if the SOS is also dynamically priced. Customers that switch from SOS to competitive retail service (typically large C&I customers) tend to opt for a lower-priced retail product, which is designed like the SOS. If the alternative retail product is designed like the SOS product, apples-to-apples price comparisons can be readily made by customers. Conversely, it is difficult for customers (who by and large are not electricity market specialists) to compare a competitive, dynamically-priced product to flat-price SOS -- to them, this is like comparing apples to oranges. In order to promote more demand response, therefore, SOS ought to be priced on a dynamic basis.
- Most customers do not have interval metering. Without data on a customer's consumption pattern, it difficult for a retailer to help a customer improve their consumption pattern and to flow cost savings to those customers.
- The utilities own the metering infrastructure and have little incentive to install more sophisticated advanced metering to promote demand response. In fact, installing more interval meters could increase overall utility costs and could result in stranded assets, especially if the old monthly meters are being depreciated over an extended period of time (e.g., 30 years). As long as the utility rates are designed around one meter reading index per month, they will have little motivation to upgrade their metering infrastructure.
- Similarly, the utilities do most of the billing and have little incentive to upgrade their billing systems to accommodate dynamic pricing.
- Customers on dynamic pricing may use less electricity. Because utilities charge customers on a volumetric basis even for costs that are relatively fixed such as

transmission and distribution costs, less kWh sales translates into lower revenue for the utilities. Accordingly, without a rate mechanism that neutralizes the impact of reduced sales from greater demand response, utilities are not likely to support dynamic pricing. To encourage more demand response, the Commission should encourage states – as it is doing through the FERC-NARUC Collaborative – to adopt:

- More dynamic pricing of SOS and more advanced metering in order to promote market-based demand response;
- An incentive for the utilities to install interval metering;
- An incentive for the utilities to upgrade their billing systems to accommodate dynamic pricing rates; and
- An incentive for the utilities to encourage customer behavior that results in lower electricity consumption.

3. Which features of existing RTO and ISO markets are particularly beneficial features, or “best practices,” for demand response participation?

ISO New England response:

- ISO New England’s Forward Capacity Market (FCM) for capacity markets;
- ISO New England’s Demand Response Reserves (Small Resource) Pilot Program for small Demand and Generating resources to participate in the Ancillary Services Markets; and
- Dynamic pricing to promote demand response in the Energy Markets.

4. At peak times, can demand curves for operating reserves or increased pricing flexibility enhance reliability and elicit additional demand response?

ISO New England response:

- Demand curves for operating reserves help create the proper price signals for both demand and supply to respond when reliability is at risk.
- ISO New England had an operating reserve demand curve in 2001 and 2002, and has more recently implemented an operating reserve demand curve in October 2006. Accordingly to the recently implemented demand curve, the energy price reaches \$850/MWh when the system is short of ten-minute reserves and reaches \$1,000/MWh when the system is short of ten-minute spinning reserves.
- Such a demand curve will improve the response of generation resources participating in the wholesale market, but does not address the disconnect between retail prices and wholesale power costs in which retail customers do not see the wholesale prices and therefore do not respond as such prices change in real time.

5. How are demand response providers compensated in organized markets?

ISO New England response:

- There are two ways in which demand response providers are compensated. All demand response providers in the market receive the same compensation as all other players in the market, e.g. those in the FCM or Ancillary Service Market will receive the same payment as generation resources participating in those markets. Those that reduce demand in the day-ahead energy market or in the real-time energy market avoid the cost of buying the electricity. The other way in which demand response providers are compensated is through demand response programs. ISO New England has two types of

demand response programs, capacity-based programs and energy-based programs, both of which expire at the beginning of the first FCM Capacity Commitment Period (June 1, 2010). Demand Resources participating in capacity-based programs receive a payment based on the price of capacity. Demand Resources participating in the energy-based programs are paid the LMP for reducing their consumption of energy.

6. Is compensation appropriate and adequate?

ISO New England response:

- Compensation to Demand Resources participating in ISO New England's current capacity-based demand response programs is appropriate and adequate – the price of capacity paid to Demand Resources is the same as that paid to generators. Furthermore, when the Forward Capacity Auction is implemented, capacity prices would be market-based – i.e., based on the interaction of resource supply and demand. However, payments to Demand Resources participating in energy-based programs are not consistent with efficient markets as it requires others to pay money to those who do not use electricity, and results in a double payment for reduced energy consumption – program participants reduce their energy bill by consuming less while receiving a payment for the same energy that is not consumed. To avoid these issues – cost allocation and double compensation – retail prices charged to customers should reflect the actual cost of power. We must resolve the policy contradiction of trying to keep prices artificially low while wondering why we have little demand response in the market.

7. If not, what should the compensation be? Should the type of compensation depend on the type of demand response program?

ISO New England response:

- Compensation should be based on market price of the service provided (energy, capacity, ancillary services) rather than on program-based payments. Program-based payments rely on administrative determination of the value of a service, which is generally incorrect. Markets should be enhanced to facilitate demand participation.

8. Who pays for demand response programs?

ISO New England response:

- In general, network load on a system-wide basis presently pays the incentive payments made to ISO New England Load Response Program participants. In contrast, payments made to capacity resources – both Generation and Demand Resources – under the Forward Capacity Market are allocated pro-rata to load serving entities based on each entities' contribution to system peak. Demand response programs should be phased out as quickly as possible to eliminate the double compensation and the cost allocation problems identified above. As markets replace programs, those that benefit from participating in the market will participate, which eliminates the need to subsidize participation.

9. What actions should the Commission take, within its jurisdiction; to enhance the use of demand response in organized markets? What complementary actions, if any, would others have to undertake?

ISO New England response:

- The Commission should encourage innovative market designs that facilitate the direct integration of demand into the market. The Commission should work with NARUC to encourage decoupling of sales and revenue, and the installation of interval metering and the implementation of dynamic pricing.