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Panel 1 – Value of and Appropriate Compensation for Demand Response in Organized Electricity  
Markets

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Thank you for the opportunity to express ISO New England's views on valuing and compensating Demand Resources.

Increasing the role of demand response in the electricity marketplace has been a longstanding federal and state policy goal. In New England, we are making significant progress towards achieving that policy goal. As a result of the first Forward Capacity Auction, we will have almost 10% of our 2010 resource base in Demand Resources. This could grow to up to 13% in 2011, depending on the outcome of the second Forward Capacity Auction later this year. With this many Demand Resources in New England, determining their proper value and compensation is essential to realizing their benefits and achieving market efficiency and reliable system operations.

In determining the value and compensation of demand response, it is helpful to start with basic market principles. An efficient market clears at the price where the marginal cost of production is equal to the marginal benefit of consumption. For the electricity markets to be efficient, all resources must be priced at their marginal value. For supply resources, the marginal value is the cost of producing the next megawatt. For Demand Resources, the marginal value is the benefit of consuming the next megawatt hour.

As we develop market rules for compensating Demand Resources, it is essential to apply these market principles. If not, we risk inefficient production and consumption decisions. For example, if demand response is undercompensated, there will be too much supply and prices will be too high. However, if demand response is overcompensated, then efficient production will go unused, prices will be too low and investment in new resources may not occur. Therefore, in determining compensation for Demand Resources, the benefits of not consuming energy must be properly considered.

Importantly, the value and compensation for Demand Resources depends upon the specific product the resource is providing. In New England, Demand Resources can participate in all three wholesale energy markets; capacity, energy and ancillary services. I'd like to discuss each of these markets in turn.

The capacity market rules compensate Demand Resources based on their load reduction during hours when the seasonal peak loads are highest. These demand reduction values are then increased to reflect both transmission and distribution losses and the planning reserve margin, resulting in the capacity value of the resource. Demand Resources are then paid the capacity clearing price from the Forward Capacity Auction. In this case, compensation for Demand Resources is clearly comparable to supply resources.

There are two options for demand to participate in New England's energy market. Larger resources greater than 5 MWs can participate fully in the energy market, submit a dispatch price and be curtailed based on the energy price. There are also a number of price responsive demand programs that compensate load reductions during times of high prices at the Locational Marginal Price. These programs expire on June 1, 2010, when payments begin under the Forward Capacity Market. As the region discusses their extension, it will be important to stick to the principle of compensating resources at their marginal cost or marginal value as I mentioned earlier.

There are similar options for resources to participate in the Ancillary Services Market. Larger resources can participate fully in the market, while we have developed a pilot program to enable smaller Demand Resources to participate in the reserves market. The initial results show that small resources, including demand, can provide operating reserve. However, we are extending the program to learn more about how much reserve each resource can reliably provide. One of the things we've learned is that the megawatt rating for the resource for providing operating reserves during all hours is generally lower than the megawatt rating for providing capacity during on-peak hours. In this case, to ensure comparability with supply resources, Demand Resources in these markets must be compensated based on their actual performance during reserve activation events.

To date, most Demand Resources have been dispatched based on a specific reliability trigger, for example running short of operating reserves. The resources ISO New England has purchased in the Forward Capacity Market have this type of trigger and this approach has proven useful to encourage demand to participate in the markets. However, as the amount of Demand Resources grows, more sophisticated approaches will be needed to achieve full comparability and integration of demand into all wholesale markets.

We will be addressing these problems as we prepare for dispatching the system with Demand Resources in June 2010. The ideal solution, which would achieve full comparability, fully integrate demand into the energy market and properly compensate Demand Resources, would be to have all Demand Resources submit a price at which they would stop consuming. If this occurs, then demand would be responding to price signals and prices would reflect the intersection of marginal costs and benefits. Obstacles to realizing efficient pricing for Demand Resources remain, including flat rate retail tariffs and a lack of interval meters. The challenge in the short-term will be to develop mechanisms that appropriately value and compensate demand as the region works to remove these obstacles to demand's full participation in the market.

Thank you.