

United States of America
Federal Energy Regulatory Commission
Technical Conference on Demand Response Compensation in Organized
Wholesale Energy Markets
Remarks of Commissioner Paul A. Centolella
Public Utilities Commission of Ohio

Thank you for this opportunity to comment on the Commission's proposal for demand response compensation and related cost allocation issues.¹

The ability of demand to respond to changes in energy prices is an essential characteristic of an efficient, competitive market. Demand response provides significant economic and reliability benefits. It can avoid the need to rely on more expensive resources, mitigate market power,² and improve power system reliability.³

In its March Notice of Proposed Rulemaking (NOPR) the Commission proposed requiring RTOs to pay economic demand response (DR) program participants, in all hours, the energy market price or full LMP. Where the DR program participant is not reselling already purchased energy, paying LMP, instead of LMP less the avoided generation portion of their retail rate, will compensate the participant by an amount that substantially exceeds the marginal cost of energy and the price being paid to generators.⁴ The extent to which each participant's total compensation exceeds the energy market price depends on their retail rate and therefore will vary widely in ways unrelated to demand response policy objectives.

¹ The Public Utilities Commission of Ohio (PUCO) has filed comments in this docket and joined in the comments of the Organization of MISO States.

² Rassenti, S., V. Smith, and B. Wilson. 2003. "Controlling Market Power and Price Spikes in Electricity Networks: Demand-side Bidding" *Proceedings of the National Academy of Sciences* 100(5) 2998-3003, March 4; see also: Borenstein, S., & J. Bushnell. 1999. "An Empirical Analysis of Market Power in a Deregulated California Electricity Market", *Journal of Industrial Economics*, 47, September.

³ When a generator trips off or power flow is curtailed, the initial impact is to increase LMPs where supplies are reduced. Both price responsive demand and demand resources participating in real-time energy market can respond to such price changes by reducing energy consumption, thereby helping to maintain system stability.

⁴ A consumer who avoids paying the generation portion of its retail rate and is compensated in the wholesale market for any difference by which the wholesale price exceeds the generation portion of the consumer's retail rate will receive the same economic compensation as if the customer had offered the equivalent MWh of generation into the energy market. To ensure consistency with applicable retail rates, the retail rate deduction (or the calculation of the deduction) should be established in advance of the wholesale transaction, if practicable, and should be submitted to the state retail rate authority for validation.

The Ohio Commission has not opposed RTO demand response programs that provided additional limited, temporary incentives designed to support the initial development of demand response. However, RTO programs should seek to provide an efficient level of total compensation to program participants. Any additional incentives should be reasonably required to achieve other carefully defined policy objectives. Requiring all RTOs to pay full LMP does not meet this test.

The net benefits test reflects the recognition that paying full LMP may over compensate demand response and increase costs to consumers. Its proponents have not clearly defined how a standardized net benefits test might work. While demand reductions could lower LMP if the slope of the supply curve is sufficiently steep, this will not occur uniformly above any certain price point. And, there is no guarantee that reductions energy market prices will reduce costs to consumers. In PJM, where capacity prices are based on the Cost of New Entry net of energy revenues, the effect could be to shift revenue from the energy to the capacity market, making the system less efficient.

A. Supporting the Expansion of Demand Response

The Ohio Commission is concerned that FERC's exclusive focus in this docket on payment of LMP for demand response resources could have the unintended consequence of retarding the development of price responsive demand. Ohio is among the states pursuing investments in advanced metering infrastructure and price responsive demand. Ohio's electricity statute specifically encourages the development of advanced metering infrastructure and time-differentiated pricing.⁵

While significant, RTO economic demand response programs reach a small percentage of consumers. Advanced metering and dynamic retail rates could give many more consumers control over their electricity costs. Electricity markets would increasingly resemble competitive markets in other sectors of the economy where consumers see and respond to changing prices. Millions of advanced meters have been and are being installed. Initial dynamic pricing experiments have shown promising results. And, utilities in collaboration with the U.S. Department of Energy and state commissions are undertaking carefully structured experiments to identify the best combinations of dynamic retail rates, information, and enabling technology for residential and small commercial consumers. The FERC Staff's National Assessment of Demand Response Potential examined the potential for dynamic retail pricing and found that, "The largest gains in demand response impacts can be made through pricing programs," and that the greatest potential is in the residential sector.⁶ The cost of reductions in peak demand to residential consumers appears to be substantially lower than the cost of curtailments to the commercial

⁵ Section 4928.02(D), Ohio Revised Code.

⁶ FERC Staff Report, *A National Assessment of Demand Response Potential* (June 2009) at 29.

and industrial energy users, who provide the majority of the demand response offered in RTO programs.⁷ Moreover, when implemented in a smart grid, demand response can provide a broader range of economic and distribution system benefits, not available from RTO demand response programs.

This Commission has recognized that, “the lack of appropriate coordination between the wholesale and retail markets ... can operate as a barrier to demand response participation.”⁸ However, this Commission has not yet removed resource adequacy requirements that force price responsive loads to carry capacity for demand that would not be present at higher energy prices, ensured the non-discriminatory treatment of price responsive demand, or completed the implementation of scarcity pricing under Order 719.⁹ These steps should be the Commission’s priority for enabling the expansion of demand response. Failure to complete them in a timely manner could undermine the business case for smart grid investments.

In addition to diverting focus from these key issues, payment of full LMP programs could retard the development of price responsive demand in two ways. First, the purchase of demand response resources at full LMP effectively discriminates in favor of RTO program participants over consumers responding to retail prices and will displace price responsive demand that would have curtailed for less than the total incentive received by the RTO program participants. Second, the additional incentives for demand response resources will increase RTO costs that flow back to utilities and consumers, leaving fewer resources with which to make the necessary investments in metering and enabling technologies.

B. Cost Allocation

The costs for DR programs should be allocated to those who benefit, with allocations dependent on the objectives and nature of the incentives provided.

Where compensation is limited to LMP less the generation portion of retail rates, the allocation of the DR program costs to the participant’s LSE of record puts that LSE in a revenue neutral position relative to the costs it would have incurred to serve the participant’s expected energy consumption.

⁷ See: Centolella, P., M. Farber-DeAnda, L. Greening, & T. Kim. 2006. “Estimates of Customer Outage Costs for the Midwest Independent System Operator,” April.

<http://www.hks.harvard.edu/hepg/Papers/2010/VOLL%20Final%20Report%20to%20MISO%20042806.pdf>

⁸ *PJM Interconnection, L.L.C.*, 129 FERC ¶ 61250 (December 18, 2009) at ¶ 93.

⁹ Comments of the Public Utilities Commission of Ohio on PJM’s Compliance Filing, PJM Interconnection, L.L.C., Docket No. ER09-1063-004 (July 30, 2010). See also: P. Centolella and A. Ott. 2009. “The Integration of Price Responsive Demand into PJM Wholesale Power Markets and System Operations,” (March 9).

<http://www.hks.harvard.edu/hepg/Papers/2009/Centolella%20%20Ott%20PJM%20PRD%2003092009.pdf>

Where an RTO uses limited incentives to support the initial development of demand response in a zone or region, the cost of these incentives may be allocated across that zone or region to reflect shared market benefits. Despite the difficulties previously mentioned, where there may be a legitimate basis for tracking net benefits, such benefits could be used as a basis for cost allocation.

If the Commission directs all RTOs to pay full LMP, there may not be a single, standard approach that is appropriate for all RTOs.

C. Conclusion

To focus narrowly on wholesale prices for demand response, while ignoring the retail price signals seen by actual consumers will ensure an inefficient outcome. Efficient markets require coordination between FERC and state commissions. Such coordination can support development of the next generation of demand response based on a broad implementation of price responsive demand.