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May 13, 2010

Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: Demand Response Compensation in
Organized Wholesale Energy Markets
Docket No. RM10-17-000

Secretary Bose:

Please find for electronic filing, the Comments of the Joint Consumer Advocates, in the above-referenced proceeding. For the Purposes of this filing, the Joint Consumer Advocates include the Pennsylvania Office of Consumer Advocate; the State of Connecticut – Office of Consumer Counsel; the Office of the Ohio Consumers' Counsel; and the Maryland Office of People's Counsel.

A copy has been served on each person on the designated official service list.

Respectfully submitted,

/s/ David T. Evrard

David T. Evrard
Assistant Consumer Advocate

Enclosure
cc: All parties of record

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Demand Response Compensation in Organized : Docket No. RM10-17-000
Wholesale Energy Markets :

COMMENTS OF
JOINT CONSUMER ADVOCATES

I. INTRODUCTION

The Pennsylvania Office of Consumer Advocate, the Office of the Ohio Consumers' Counsel, the Connecticut Office of Consumer Counsel and the Maryland Office of People's Counsel (collectively, "Joint Consumer Advocates" or "JCA") file these comments in response to the Federal Energy Regulatory Commission's ("Commission") Notice of Proposed Rulemaking ("NOPR") in the above-captioned docket. In this NOPR, the Commission proposes that independent system operators ("ISO") and regional transmission organizations ("RTO") compensate demand response resources that participate in ISO or RTO-operated wholesale energy markets at the market price for energy, *i.e.*, the Locational Marginal Price ("LMP"), in all hours. JCA submits that the Commission's proposal sets the proper level of compensation for demand response resource participation in the wholesale energy market.¹ In order to elicit the optimal quantity of such resources to realize the many benefits of demand response to the competitive wholesale markets and to yield just and reasonable rates as mandated by the Federal

¹ The Office of Ohio Consumers' Counsel limits its support of the full LMP compensation for demand response programs to customers on fixed retail rates participating in demand response programs through the local electric distribution utility or a third party demand response provider ("DRP").

Power Act, JCA supports the compensation approach proposed by the Commission and urges the Commission to move the proposal forward to formal rulemaking.

It is well-established that competitive markets work best when there is both a well-functioning demand side and a well-functioning supply side of the market. In its NOPR, the Commission recognizes that demand response resources can improve the functioning and competitiveness of wholesale energy markets in a number of ways. The Commission notes that demand response can lower prices, mitigate market power on the part of generators, support system reliability and resource adequacy, and help meet resource management challenges brought on by the unexpected loss of generation. Further, effective demand response program design can elicit changes in consumer behavior through greater transparency and understanding of wholesale market prices. To the extent that demand response has the effect of increasing the competitiveness of the market, it can reduce price volatility, lower energy production costs, defer investments in generation, transmission, and distribution facilities, and assist in mitigating market power. Further, demand response can provide environmental benefits by reducing carbon emissions and increasing utilization of renewable energy resources. The realization of the full benefits of demand response can occur only if optimal levels of demand response are brought to market, and inducing such optimal levels is a direct function of consumer education, enabling technology, appropriate market design for the unique characteristics of demand response, and setting the proper level of compensation. JCA agrees that full LMP is the appropriate compensation to support demand response programs in wholesale energy markets.

At the same time, JCA submits it is critical that demand response that is paid LMP, or any compensation for that matter, must be subject to strict measurement and verification (M&V) requirements. It is relatively easy to count kilowatts and kilowatt-hours that come from a

generating plant, but more difficult to measure demand and energy that is *not* used as a result of demand response. As a result, strict M&V requirements tied to demand response compensation are critical and necessary. Further, JCA supports the establishment of periodic reviews by the Commission of demand response compensation.

II. COMMENTS

A. Demand Resources Should Be Compensated at Full LMP.

Among the many benefits of demand response, JCA considers the market price-reducing effect to be critical to the analysis of the appropriate level of demand response compensation. In the PJM Docket, EL09-68 (“PJM proceeding”), which was terminated by the instant docket, the record included information that demonstrated the dramatic effect that demand response can have on market price.² In a 2007 report prepared by the Brattle Group for PJM³, Brattle found that curtailing 3% of load in the BGE, Delmarva, PECO, PEPCO and PSEG zones during the top twenty 5-hour price blocks in 2005 would yield the following results:

- Curtailing 3% of each selected zone’s super-peak load, which reduces PJM’s peak load by 0.9%, yields an energy market price reduction of \$8-\$25 per megawatt-hour, or 5-8% on average, during the 133-152 hours in which curtailment occurs in at least one zone. The range depends on market conditions.
- Assuming all loads (i.e., customers or their retail providers) are exposed to spot prices, the estimated price reductions could benefit non-curtailed loads in MADRI states by \$57-\$182 million per year. The potential benefits to the entire PJM system amount to \$65-\$203 million per year.
- The market impact in each zone would be substantially smaller if it curtailed its load in isolation from the other zones. By the same token, the market impact would be larger if more than five zones implemented DR programs or if greater amounts of DR participation were achieved.⁴

² At ¶ 23 of the NOPR, the Commission states that it will take administrative notice of the record in the PJM proceeding.

³ “Quantifying Demand Response Benefits in PJM,” prepared by the Brattle Group for PJM Interconnection L.L.C. and the Mid-Atlantic Distributed Resources Initiative (“MADRI”), January 29, 2007.

⁴ Id. at 2-3.

Also, in 2007, PJM Vice President of Markets, Andrew L. Ott presented testimony at a Commission Technical Conference on Demand Response in Wholesale Markets in which he referred to an analysis performed by PJM of the effect of demand response on market prices during the heat wave that occurred between July 31 and August 4, 2006.⁵ That analysis demonstrated that on August 2, 2006 alone, the participation of demand response in the market reduced LMP by \$600/MWh at the peak and produced energy cost savings for the day of more than \$239 million. PJM extended its analysis to cover the entire week of the heat wave and determined that the price reductions brought about by demand response participation in the market resulted in a total of \$650 million in equivalent energy payment reductions. While the calculated savings were not actual savings because all load does not pay real-time prices, Mr. Ott noted that the price reductions were nevertheless significant because spot prices do impact forward energy prices.

It must be noted that there is a multiplier effect associated with the single market clearing price mechanism used in the wholesale electricity markets. When a high cost generating unit is dispatched and sets price in the energy market for the hour, that higher price is multiplied across (and the additional revenues flow to) every generating unit that is operating in the hour the high cost unit comes on. With demand response, the exact opposite occurs – that is, the *avoided* incremental market clearing price is multiplied across every unit and the savings flow to customers. Consequently, the potential savings from full-scale participation by demand response in the wholesale energy markets can be profound. The dampening effect of demand response on clearing prices will make all customers better off. The principal beneficiaries of the

⁵ Demand Response in Wholesale Markets, Docket No. AD07-11-000, Testimony of Andrew L. Ott, Vice President, Markets, PJM Interconnection, L.L.C., April 23, 2007.

price-reducing effect of demand response thus include both participating and non-participating customers.

The PJM analysis of the 2006 heat wave involved a very high load scenario with high prices, but the principle applies to other scenarios as well. Increased demand participation in the markets, even when prices are moderate, increases the competitiveness of the markets and can reduce clearing prices, albeit at smaller levels of potential savings when clearing prices are lower. However, whether the savings are larger at high prices or smaller at lower prices, the point is that increased participation by demand response will lower LMP to the benefit of all customers.

To JCA, this price-reducing effect of demand response participation in the energy markets argues strongly for achieving optimal levels of such participation.

As the Commission recognizes in its NOPR, however, demand response activity in the energy markets has yet to realize its full potential. The Commission notes that despite its own efforts and those of the RTOs and ISOs to address barriers to and compensation for demand response participation, “demand response providers collectively play a small role in wholesale markets.”⁶ The Commission further notes that after observing a variety of demand response compensation structures, “the Commission is concerned that some existing, inadequate compensation structures have hindered the development and use of demand response.”⁷ The NOPR states that “there are indications that demand response resources react correspondingly to increases or decreases in payment.”⁸

⁶ NOPR at ¶ 9.

⁷ Id.

⁸ Id. at ¶ 10.

Moreover, the Commission expressed concern that reduced demand response participation, in the ISO and RTO markets, “may be the result of compensation that is no longer just and reasonable, because, ... the existing and varying levels of compensation generally fail to reflect the marginal value of demand response resources to ISO and RTO energy markets.”⁹ The Commission further states that the “current wholesale compensation levels may therefore be leading to under-investment in demand response resources, resulting in higher, and unjust and unreasonable, prices in the organized electric markets.”¹⁰ JCA shares the Commission’s concerns.

As noted above, the Commission’s proposed remedy to this concern is to pay demand response resources the market price for energy, that is, full LMP for demand reductions made in response to price signals in the wholesale energy market. JCA agrees with this approach.

In support of its proposal, the Commission reviews the function of LMP:

It is a well-established practice in the organized wholesale energy markets to rely on LMPs to encourage efficient behavior by market participants. The LMP represents the value of additional supply or reductions in consumption at each node within the RTO or ISO and, thus reflects the marginal cost of the last unit necessary to efficiently balance supply and demand. The LMP is therefore the primary mechanism for compensating generation resources clearing in the organized electricity markets....

Given that LMP represents the marginal value of the resource being used by the RTO or ISO to balance supply and demand, it follows that the LMP should be paid to any resource clearing in the RTO’s or ISO’s energy market.¹¹

The Commission notes that in terms of balancing supply and demand, a one megawatt reduction in demand is equivalent to a one megawatt increase in supply for purposes of meeting load requirements and maintaining a reliable electric system. The ISO or RTO can avoid dispatching

⁹ Id.

¹⁰ Id. at ¶ 13.

¹¹ Id. at ¶¶ 14 and 15.

resources with higher bids, whether demand or supply side resources, by accepting a lower bid to either reduce consumption or increase generation. In this way the Commission expresses its view that demand and supply resources are effectively interchangeable at the margin and comparable and therefore deserving of equal compensation, specifically LMP. JCA agrees with this view.

Customers who curtail electric usage should be compensated for the service they provide to the system – and to all other customers. There is only one comparable, competitively determined value for that service – LMP. Just as an increment of supply is paid LMP, a decrement of load which displaces a higher priced supply resource should be paid LMP. The decrement of load has the same value to the grid as the increment of supply. LMP represents the least expensive means available for maintaining the balance between load and supply. The RTO is pricing the next megawatt needed to keep the grid in balance. The service that a demand responder provides when it removes MWs from the grid is just as valuable as a generator that injects MWs. Hence, a decrement of demand has the same market value as an increment of supply.

To compensate demand resources at something less than LMP not only deprives the providers of these resources of the full value of the service they render, but it threatens a market-wide underinvestment in these resources that will keep wholesale energy prices higher than they otherwise would be, and it denies the market of the many other benefits, identified earlier, that having optimal levels of demand response can bring. In its Protest in the PJM proceeding, a group identifying themselves as Demand Response Supporters, stated in reference to PJM's existing program, which pays less than full LMP to demand resources:

The current compensation arrangement stifles demand response participation in PJM and by doing so perpetuates inelastic demand, which leads to more volatile

and higher prices than necessary. The current compensation arrangement operates as a barrier to demand response and produces outcomes that are inefficient; ...¹²

JCA shares that concern and supports the payment of full LMP as a means of stimulating optimal levels of demand response so that the full potential and benefits of demand response participation in the market can be realized.

Another fact that the Commission appropriately recognizes in the NOPR, is that demand response is not necessarily free. Just like generators, demand responders have to make investments in technologies to enable their participation in the energy markets, and they must incur costs to modify their operations to provide the demand resources when needed. The Commission comments that in those markets paying less than LMP to demand resources, these resources have less revenue to support the investment in demand response-enabling technology. The Commission posits that where compensation is inadequate, demand resources will be reluctant to make investments in demand response technology. It then states paying demand resources LMP should allow more demand resources to cover their investment costs and increase their ability to participate in the wholesale markets. JCA submits that the Commission is correct in this regard and that this consideration too supports the payment of full LMP.

In the NOPR, the Commission requests comment on whether LMP should be paid to demand resources in all hours, as proposed. JCA supports the Commission's proposal. As noted earlier, while the market price-reducing effect of demand response is greatest in the highest price hours, its effect is not limited to those hours, and while the impact will be correspondingly lower in lower priced hours, it nevertheless has an effect. Even a modest reduction in clearing prices brought about by demand response participation in the markets can produce substantial savings when that reduction in clearing prices is multiplied by many thousands of MWhs. Obviously,

¹² Comments and Protest of Demand Response Supporters, Docket No. EL09-68, at 10.

the change in clearing price is greatest at higher LMPs when the supply curve is steep, but it is still valuable at other hours of the year as well.

Further, to pay LMP to demand resources only in certain hours would be contrary to the notion that there should be comparability between supply-side and demand-side resources. If a demand resource is dispatched in a lower priced hour, the value it provides to the system is no less than the value a dispatched generator would provide and, accordingly, the demand resource should receive the established market value of its resource – LMP. In this regard, JCA is persuaded by the comments of the New Jersey Board of Public Utilities (“NJBPU”) and the District of Columbia Public Service Commission (“DCPSC”) in their Protest in the PJM proceeding:

There should be no limitation on the amount or number of hours that a demand-side resource can bid into the PJM energy markets. If a demand-side resource bids into the market and the bid clears then that resource should be used. The single clearing price should be the sole determinant of what resources are used to balance the PJM system.¹³

JCA submits that it is proper to pay demand resources full LMP in all hours.

B. Payment of LMP Less Components of the Retail Rate Does Not Compensate Demand Resources the Market Value of the Service They Provide.

In the NOPR, the Commission acknowledges that the appropriate level of compensation for demand resources has been the subject of debate. The Commission notes that some parties have advocated payment of LMP minus components of the retail rate, generation (G), transmission (T), or both. As discussed above, this was the key issue in the PJM proceeding and the record in that proceeding contains numerous arguments against paying less than LMP to demand resources. Among these are that generation and transmission offsets are matters related to retail rates and are therefore outside the Commission’s jurisdiction, or that allowing any

¹³ Protest of the New Jersey Board of Public Utilities and the District of Columbia Public Service Commission, Docket No. EL-09-68, at 6.

generation or transmission offsets produces rates that are unduly discriminatory when compared to the compensation paid to supply-side resources. JCA submits that to pay LMP minus G or minus G and T is to pay demand responders less than the market value of the service they provide. Any such reduction of LMP reduces the market value by an individualized measurement of the value of electricity to a particular demand responder. This is contrary to the concept of the single market clearing price. The payment of LMP reduced by retail rate components fails to treat demand responders as sellers of a service to the market. Rather, it views customers as purely buyers of electricity and does not fairly reflect the market value of the service they offer when they curtail their usage. Instead of crediting demand responders with the market value of the service they provide, it engages in a customer by customer review of retail prices, and it does not treat demand response as comparable to supply side solutions for balancing the grid.

On the point of engaging in a customer by customer review of retail prices, if a similar rule were applied to generation sources, something other than the single clearing price market would prevail and generators might be paid on the basis of their individual costs rather than the market clearing price. In that case, each generator would receive a different price based upon its individual costs and, compared to the single clearing price system, low cost generators would earn less money. This, however, is not the prevailing rule for generation, and comparable treatment of demand response requires that it be compensated at LMP – just as generation is.

All generators that clear the market are paid LMP, even though their individual costs may vary, and just as the particular circumstances of individual generators are irrelevant to what they are paid, the particular circumstances of individual demand responders (*i.e.*, the particulars of their retail contract) should likewise be irrelevant to the compensation they receive.

The proposal to reduce wholesale compensation based upon retail purchase prices makes evident the failure to treat usage reduction as the sale of a service in the wholesale market. If the dual roles of a customer as a buyer of electricity at retail and a seller of curtailment service at wholesale were to be truly viewed as unbundled transactions, the sale to the wholesale market would be compensated at the prevailing wholesale price, LMP, and the retail contract would be a separate transaction having no impact on the value of the wholesale transaction.

JCA submits that there are considerable questions about the justness and reasonableness of any demand response compensation formula that reduces LMP by the components of the demand responder's retail rates.

The NOPR makes reference to an argument advanced in the PJM proceeding that payment of LMP without offset for some portion of the retail rate overcompensates individual demand response providers and that it could result in eliciting more demand response than is efficient. In response to this argument, the Protest of the NJBPU and DCPSC made what JCA considers a very compelling point. The Protest stated:

PJM...[focuses] on the risk that customers... will receive incentive payments greater than the minimum needed to produce demand response. The more important risk to focus on, and the one PJM should be concerned with, is the risk of losing out on the benefits that demand response will provide. Under the PJM's proposal, the incentive payment to the customer will never be more than the minimum necessary to produce demand response. However, the full benefits of demand response will never be realized because demand-side resources are not treated equally with supply-side resources. However, by paying demand-side resources LMP, the benefits of demand response are realized and the only risk is that some customers may get more revenue than is necessary to produce demand response.¹⁴

JCA shares this view. If, for the sake of argument, some demand responders are paid more than necessary under a full LMP payment system, the benefits to *all customers* of the market price-reducing effects of the demand response activity are likely to far outweigh any amounts by

¹⁴ Id. at 7.

which individual demand responders may be paid. Under such circumstances, JCA would encourage the Commission to err on the side of that which produces the greatest benefit for customers as a whole.

C. Strict M&V Requirements Are Critical

JCA wishes to make clear that while it supports the broad deployment of demand response by way of compensation at full LMP, it also supports the responsible deployment of demand response through the establishment and enforcement of rigorous M&V standards. The lack of stringent M&V rules can result in compensating demand resources when no verifiable usage reduction took place, or when a usage reduction occurred for reasons other than in response to the market price. Such occurrences can undermine the credibility and ultimately the viability of demand response programs. Full LMP compensation should only be paid to demand resources that intentionally and directly reduce energy usage in response to the market price. Stated differently, only if the demand response truly avoids costs on the system should it be compensated. JCA recognizes the significant challenge faced by RTOs and ISOs in accurately measuring and verifying demand response activity to meet this standard. Nevertheless, if the many benefits that demand response can bring to the market are to be achieved, demand response must be carried out responsibly, and the key to ensuring such responsibility is the formulation and adoption of rigorous M&V requirements. JCA encourages the Commission to demand such requirements of the RTOs and ISOs.

D. Periodic Review of Compensation Level

In its NOPR, the Commission states that it may be necessary at some point in the future to reassess the appropriate level of compensation for demand response resources. It therefore asks for comment on whether, and under what circumstances, it should conduct periodic reviews

of demand response compensation. JCA supports the establishment of periodic reviews of demand response compensation by the Commission to ensure that the compensation method selected continues to provide benefits to consumers. One method may be to simply establish biennial reviews of demand response compensation to measure whether such compensation is actually producing the benefits that demand response can provide (i.e., lower prices) and whether the compensation method selected is encouraging demand response investments. Such a review could be included as part of the FERC staff report “Assessment of Demand Response and Advanced Metering” that is published biannually. Another method may be for the Commission to review demand response compensation once demand response has achieved a certain level of market penetration (i.e. 10% or 20%) or after an established number of years if that level of penetration has not been met within a set amount of time. Whatever method the Commission selects, JCA encourages periodic reviews to ensure that consumers see the benefits of demand response compensation and are not unduly burdened from potential unnecessary rate recovery.

III. CONCLUSION

JCA supports the Commission’s proposed approach of paying demand resources that participate in the wholesale energy markets full LMP in all hours. This approach will optimize the deployment of demand resources which in turn will lead to realization of the multiple benefits demand response can bring to the market. There must, however, be rigorous measurement and verification mechanisms in place in the RTOs to ensure that the demand response activity being compensated is intentional and is implemented directly in response to price signals. Finally, the level of compensation paid to demand resources is something that should be reviewed periodically, either biennially, in conjunction with the Commission’s

biannual assessment of demand response, or, alternatively, upon reaching pre-set levels of market penetration or after a set period of time if the penetration levels are not reached.

Respectfully submitted,

/s/ filed electronically

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CERTIFICATE OF SERVICE

Demand Response Compensation in Organized : Docket No. RM10-17-000
Wholesale Energy Markets :

I hereby certify that I have this date served the foregoing document upon each person designated on the official service list compiled by the Secretary in the above-referenced proceeding. Copies of this document have been served upon all parties designated on the Commission's official service list, in accordance with Rule 2010 of the Commission's Rules of Practice and Procedure.

Dated at Harrisburg, PA this 13th day of May 2010.

Respectfully submitted,

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