UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

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

TECHNICAL CONFERENCE COMMENTS OF THE CONSUMER DEMAND RESPONSE INITIATIVE

Technical Conference: Panel One – Net Benefits Test

The Consumer Demand Response Initiative would like to thank the Commission for this opportunity to present its views on the questions raised by the Commission in the Supplemental NOPR. CDRI has provided the Commission with a "proof of concept" market design that addresses most of the questions posed by the Supplemental NOPR. I note that although this panel is focused on the need for, and potential designs of, a net benefit test, CDRI's algorithms also address the appropriate allocation of costs for DR and resolution of the missing money problem that will be discussed in the later panel today.[1]

With respect to the net benefits test, which is the subject of this panel, I will make five main points;

1. The Commission's NOPR correctly focuses on fully integrating DR into the wholesale markets. Such integration requires head to head competition between demand and supply resources on an equal footing. This is the correct approach, and it is the approach adopted by the CDRI algorithms. Other approaches which set special or different tests for DR and for generation do not permit the full competition which is the ultimate goal of the Commission's rule.

[1] Integration of Demand Response into Day Ahead Markets-A Supply Side Approach on Behalf of the Consumer Demand Response Initiative, September, 2009.

2. The CDRI approach integrates the customer into wholesale market to the maximum extent possible. The CDRI approach includes a test for determining if demand response providers will participate in the wholesale market, with participation occurring only if it will result in a per megawatt rate reduction for customers. This is a benefits test. It is based on the merit order marginal cost clearing mechanism that is used to clear generation bids. It is a direct application of the marginal cost pricing principles advocated by Dr. Kahn and many others.

3. Regardless of whether a benefits test is adopted, or the form of any such test, the CDRI Pricing and Settlement algorithms can transparently reflect the costs of DR in the day ahead price, promote finality of settlements and solve the missing money problem without resort to uplift. These functions of the algorithms are independent of whether or not the Pricing algorithm is used as a means to clear resources.

4. As noted by the Public Interest Organizations, also on this panel, bidding parameters and other factors such as minimum run times may require optimization over extended intervals. The CDRI algorithms can be used to evaluate results over any given time frame under an optimization process.

5. The CDRI approach is compatible with the Commission's desire to dispatch DR resources in every hour in which they clear. By incorporating billing unit costs that would otherwise have to be collected as uplift, the pricing algorithm does nothing more than reflect, at the time of dispatch, the marginal cost of the resources being selected. It places no non-competitive restrictions on when resources may clear.

All of these points and many concerns raised by parties other than CDRI who are pressing for a net benefits test are addressed in detail in CDRI's paper *Integration of Demand Response in Day-Ahead Markets*, which was included in CDRI's original filing with the Commission. I welcome questions on its content during the panel's question and answer session. For now, I would like to feature some of its high points.

First, I would emphasize the importance of marginal cost pricing. The importance of marginal cost pricing for all resources has been emphasized by Dr. Alfred Kahn in his recently filed affidavit. As he notes, all consumers benefit when lower marginal cost resources are dispatched rather than higher cost resources. The marginal cost "test" applied by the traditional bid stack under LMP pricing, is itself a "benefit test" that assures consumers benefit from lowest

cost dispatch. This is the test that is used for generation, and we agree with Dr. Kahn that it is the appropriate test to be used for demand resources as well. The CDRI approach accurately reflects the marginal cost to consumers of each resource dispatched, whether DR or generation, and allows the market to clear with the least cost mix. This results in DR being dispatched only when it lowers costs to consumers.

We have laid out this approach in the Whitepaper provided to the Commission as an attachment to our initial comments in the NOPR proceeding. The approach developed in the Whitepaper arose initially out of CDRI's effort to solve what has been referred to as the "missing money" problem.[2]

The missing money problem arises because the dispatch of DR reduces the amount of load available to pay for the resources dispatched. The CDRI Pricing and Settlement Algorithms roll the costs associated with the billing unit effects of DR into the Day Ahead price for power, so that sufficient revenue is collected from day ahead load to cover the cost of all resources dispatched and hold LSEs harmless for the effects of DR in the settlement process.

Because the costs of all resources dispatched must be collected from load, the billing unit impacts of DR should be considered as part of the cost of the resource when it is dispatched. Because of billing unit impacts, a generation resource and Dr resource who both bid at $100 nonetheless have different marginal cost implications for consumers. These costs can be precisely calculated at the time of dispatch, and can be made transparent to the market. Not including these costs may place generators at a disadvantage and result in dispatch of resources

[2] For a fuller discussion of this issue I would refer the Staff to the Whitepaper, but for our purposes here, it is sufficient to note that CDRI took seriously the concerns expressed by LSE's that their ability to hedge their obligations could be adversely impacted if the billing unit mismatch associated with the dispatch of DR were not addressed. Our usual approach when confronted with what we believe are legitimate concerns, is to seek to develop specific solutions that can answer those concerns consistent with the competitive market principles we espouse. The CDRI algorithms accomplish this.

which are not least cost to consumers. The algorithms adjust the day ahead price to take these costs into account so that an appropriate "apples to apples" comparison can be made between generation and DR. We note again, however, that this is not the establishment of a separate test. It is simply the application of correct marginal cost based clearing to all resources.

The "threshold", if there is one, is simply the rule that we dispatch resources, all resources, in order of increasing marginal cost to consumers. This is a competitive market test that will fully integrate DR into the markets in every hour on the same basis as generation.

Turning to the practical need for there to be any such test, the algorithms demonstrate that at reasonably anticipated levels of load and current levels of DR penetration, the adjustment created by the pricing algorithm is often very small. This is because the incremental costs associated with the billing unit effect of DR is very small when spread across reasonably anticipated loads. Because the price adjustments will often be very small, the Commission may find that a simple "tie breaker" rule, such that if a generation and a DR resource have identical bids, the generation resource is dispatched first, solves 95% of likely cases at reasonably anticipated loads. These are empirical questions which the Commission might reasonably decide based upon analysis. If the number of hours in which a different result would occur because of application of the algorithm to the clearing process were diminimus, then the cost associated with implementation may not be justified. We hope that the mathematical relationships developed in the algorithm can provide the Commission with a reasonable framework in which to analyze likely outcomes and make a reasoned determination on the practical need for any such test.

As we have said above, even if there is no benefits test, or if a different test is used, the billing unit impacts of DR will have to be accounted for in the settlement process. Whatever

amount of DR winds up being dispatched, each MW of DR will have a precise and readily calculated billing unit impact upon load in any given interval in which it is dispatched. If these costs are not rolled into the price at the time of dispatch, they will not be visible to the market. More importantly, if DR becomes a substantial part of the market (as we hope it will), Day Ahead settlements will increasingly become non-final as after-the-fact settlement protocols including uplift will be required.

For these reasons we believe the CDRI algorithms offer a comprehensive, competitive market based solution to the full integration of DR into the Day Ahead markets and provide a superior pricing solution that reflects the marginal cost of consumption transparently to the market at the time of dispatch.

Again, CDRI greatly appreciates this opportunity and we look forward to the discussion with the Staff and other members of the panel.

Respectfully Submitted,

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