



Friday, December 8, 2017

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Dear Jason:

Each of the undersigned enable the participation of aggregations of residential or other weather-sensitive load resources to participate in markets across North America. We are today submitting comments on the issues raised in the November 16, 2017 Demand Response Working Group meeting. As you may well remember, each of us supporting these comments has previously submitted comments on some of the topics discussed here. You are welcome to publish these comments on the IESO website.

Energy markets work best when they attract active participation of loads. To achieve this participation, market structures must understand and anticipate the unique characteristics and capabilities of the growing array of distributed demand-side resources available to market operators. Residential load resources will likely continue to be dominated by home HVAC loads, and therefore, are sensitive to swings in the weather, particularly temperature. For this reason, we refer to them as weather-sensitive loads (some commercial properties are also weather sensitive in this sense.) These weather-sensitive loads are the very loads that drive peak formation in every ISO, and are therefore the perfect resource to respond when system peak demand stretches available capacity. They are variable, because they are only available to be called upon when weather causes building climate systems to operate, but history shows they are reliable and predictably available when needed most at those very peak times. In many respects, these load resources behave as thermal storage systems, and could be considered such from the perspective of market design.

We support inclusion of HDR on the Emergency Control Actions List.

We support reasonable proposals for market design enhancements that increase the real operating value of demand response. One of the benefits of weather-sensitive load resources (particularly residential) is their flexibility. They can be called more often than large industrial load resources, for example, even more than once a day. We therefore support including Hourly Demand Resources on the Emergency Operation State Control Action (EOSCA) list of available responses. And, we are generally comfortable with HDR resources having the same performance obligations as they would if scheduled based on their strike price.

While we agree it is reasonable to expect residential resource aggregations with a capacity obligation to also be available for emergencies, even if their price is not struck, we caution that the nature of these resources should always be considered. They will reliably and predictably be available in a weather-driven peak, but may not provide as robust a response if already

operating well below their peak demand (as in the case of a cool day and generator outage). This reinforces our comments previously, and those restated further below, that a resource sub-category for weather-sensitive load resources would be beneficial for the IESO, the potential resources, and participating customers.

We Support Adoption of Previously Agreed-Upon Improvements which were Postponed

As we have previously commented, we agree with making other changes to the market design and utilization of HDR resources.

1. We agree it would improve the value of DR to the IESO if the operators were not forced to call HDR for a minimum of 4 hours. We support a change to allow events to be up to four, and as little as one, hour.
2. We agree that the IESO could eliminate its current required Standby Notice, which today must be sent out by 7:00 am of the operating day. Standby Notices are helpful, but the operator cannot always predict how a day will unfold. We support elimination of the 7:00 am notice requirement, and suggest the IESO consider adopting a shorter Standby Notice requirement. We recognize that this may mean that our resources would essentially always have to remain available during normal Availability Assessment Hours.
3. We also agree that our resources would have more value if the Activation Lead Time was reduced. We support the reduction of the lead time from the current 2.5 hours. However, we understand this requirement may prevent some larger loads from participating, so the IESO may do well to consider offering more than one option for Activation Lead Time, or startup time, from which participating load resources may select.

We Support the HDR Testing Parameters Proposed

We support the following testing protocols as presented:

1. Two tests per commitment period
2. Day-Ahead Notice of Tests
3. Tests to occur in current availability window
4. Standby Notice under current or revised protocols as discussed above
5. Non-Performance Charge liability for test results
6. Failure of a test to leads to a retest

The one comment we would add would be to again emphasize that the current “availability window” used for testing should reflect weather-driven peak demand periods when these resources would logically be expected to be available. This is not an unreasonable request. For example, ERCOT tests its weather sensitive load resources during hotter times, when they can test their real capability during peak demand periods. PJM allows aggregators to schedule their own tests, which is another appropriate approach for proving a resource’s full capacity, or range of capacity.

We Support Utilization Payments

If the IESO does not allow capacity resources with a must offer obligation (MOO) to receive energy payment for the energy delivered at peak (as it would any other traditional capacity), the resource aggregator has no incentive to bid below the cap. This effectively makes the HDR product an emergency product, where it might prove more active, even setting price from time to time, were a utilization payment available. The Navigant review presented on November 16 notes several ways in which the benefits of utilization payments outweigh the costs, which we will not discuss again here since it is well documented. Almost all the potential downside of utilization payments discussed there can be offset by simply prohibiting utilization payments to customers on an indexed (real-time wholesale) rate.

We urge the IESO to Develop a Weather-Sensitive Load Resource Classification as part of the Market Renewal Initiative

As we have discussed previously, and do here again in these comments, weather-sensitive resources are unique, and uniquely valuable for addressing peak demand. Other markets have or are developing special protocols to take advantage of these resources appropriately.

- ERCOT has a subcategory of Weather-Sensitive Load Resources that participate in its Emergency Resource Service.
- The California Public Utility Commission has created a Weather-Sensitive Load Resource Working Group to consider the resources dimensions, including calculation of its qualifying capacity, and asked the CAISO to consider how it might need to modify its MOO requirements to better utilize this resource.
- The NYISO is considering the creation of a “peak” capacity resource as part of its Distributed Energy Resources Roadmap initiative to address the characteristic of weather-sensitive loads.
- PJM had historically included a DR product for summer-only resources to help meet its capacity requirements that worked quite well. The removal of that option has created problems that the ISO is still having to address.

We urge the IESO to consider the design of a separate weather-sensitive load resource, or a peak capacity resource as part of the Market Renewal initiative. As the demand response market is merged with the planned capacity market for Ontario, it would be appropriate to introduce protocol changes to fully integrate weather-sensitive load resources so that the IESO can take advantage of all possible resources. In the past, we have submitted comments highlighting the unique character of residential resources, and outlining the needs of residential aggregations (see Comments of Residential Demand Response Stakeholders Following the DRWG Meeting of May 30, 2016, submitted July 13, 2016).

The market structure needs to permit and enable aggregators to offer bids that reflect the full value of the resource’s capacity at peak. If the weather sensitive product is designed correctly it will avoid creating obligations for availability and performance that are out of character with the resource, and will not penalize the resource for acting as should be expected. We have noted previously a few potential approaches:

1. **Explicit Definition of Product:** PJM's previous Limited Summer and Base Capacity markets specifically recognized that the capacity obligation of a weather-sensitive load resource was to reduce to a Fixed Service Level (FSL) from a predefined Peak Capacity Level. If the resource was at or below its FSL during a capacity event, it would be given full credit for availability and performance. Creating a separate bid stack allows seasonal products to reach their own price level through competition with like resources.
2. **Explicit Compensation Adjustment for Resource Limitations:** ERCOT uses 8 tests or events in the summer contract period to determine compensation for weather-sensitive loads. The resource is allowed to bid its peak capacity, and then is paid based on average performance across the contract period or season. If events occur during mild weather, the payment to weather-sensitive load resources is adjusted in proportion to the average performance. In considering the application of penalties, aggregated resource performance is also based on peak conditions.
3. **Implicit Compensation Adjustment for Resource Limitations:** In the current CAISO Proxy Demand Response market, for example, DR resources must be available during certain Availability Assessment Hours at their Net Qualifying Capacity. Resources generally respond to this requirement by derating their capacity offered or bidding at the cap and risking penalties that reduce net capacity compensation received. This has the downside that resources tend to moderate the capacity offered, reducing transparency and value of their real peak capacity to the ISO. It therefore also necessarily raises the bid price for such resources per unit of capacity, doubly reducing the availability and value of resources to CAISO.

California is now pursuing a separately defined resource category, which could lead to a separately defined market for weather sensitive load resources. PJM's elimination of its seasonal capacity market opportunities has left virtually all residential demand response unable to participate in the PJM market, and curtailed aggregation activity significantly. ISO-NE has no residential demand response for a variety of reasons, but primary among them is its adoption of the same participation requirements for resources as PJM's annual Capacity Performance Rules, which provide challenges to its market as well.

There are a variety of ways to accommodate weather-sensitive load resources. We would specifically caution the IESO, however, that it must choose a combination of resource capacity definition, availability obligations, and performance criteria that match the expectations of a well performing weather-sensitive load resource. If the IESO chooses to acquire resources annually, for example, then it should define capacity for these resources as the difference between their Peak Demand and a Fixed Service Level. An option would be to acquire capacity resources by season, using an explicit or implicit payment adjustment based on performance. We suggest the IESO consider adopting the NYISO approach of acquiring monthly capacity on a seasonal basis, which also allows seasonal resources to adjust their capacity bids appropriately. It allows other weather-impacted resources like gas turbines or wind to adjust their offers based on weather, as well, increasing available winter capacity.

Furthermore, we urge that the IESO consider other ways to maximize residential participation in the IESO DR markets when designing these products, which were referenced in "Comments of Residential Demand Response Stakeholders" Following the DRWG Meeting of May 30, 2016, submitted July 13, 2016. Among market features of note, it is crucial that the bid size minimum be reduced to 100kW (typical for most markets), and availability of other baseline methodologies besides the Random Control Group so that aggregators can maximize the size of the load they bid and not forgo the amount that must be set aside for the Control Group.

We Urge the IESO to facilitate the input of DR Providers through the DRWG

Finally, although some of us have attended multiple meetings of the Market Renewal initiative, the IESO should make every effort to allow demand response providers to participate in the larger initiative planning through the DRWG. The Market Renewal process is simply too demanding for any of our emerging companies to keep pace with the incumbent, or established stakeholders, and IESO staff dedicated to the creation of the new market. Furthermore, those that attend the DRWG are demand response experts and are best equipped to define the new DR products in the capacity market. Given the aging of traditional resources, the timeline for the Market Renewal process, and the work of the Energy Ministry on data access, we see the potential for our resources to provide increasingly valuable contributions in the future. The proper design of the market mechanism of our participation, however, will be critical, and we encourage the IESO to facilitate our input through the DRWG.

Thank you for the opportunity to make these comments. Please do not hesitate to contact any of us with further questions.

With best regards, from the following signatories:

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