

REGIONAL TRANSMISSION ORGANIZATION

DEMAND RESPONSE

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ABATE GENERAL MEMBERSHIP MEETING

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Overview

- Relevance to End-Use Customers
- MISO
- PJM
- Aggregators
- Utility usage

Relevance to End-Use Customers

- Existing utility interruptible and demand response rates and riders for bundled customers must work within the Regional Transmission Organization (RTO) market rules for demand response
- RTO demand response provisions form the basis of any interruptible service or demand response associated with taking retail open access through Alternative Electric Suppliers (AESs)
- RTO demand response provisions can potentially offer new opportunities for savings for bundled customers through aggregators
- RTO demand response provisions can potentially offer new opportunities for savings for bundled customers through new utility demand response tariff offerings

MISO Demand Response

- LMR Demand Resources
- Emergency Demand Response
- Demand Response Resources
- Self-curtailment

MISO – LMR Demand Resources

- LMR means Load Modifying Resource
- When called upon during a system emergency, must curtail: (i) down by no less than the specified MW amount or (ii) down to no higher than the specified firm service level
- Must be able to do so for at least 5 times in summer season
- Must be able to be curtailed for at least 4 hours with no more than 12 hours notice

MISO – LMR Demand Resources (cont'd)

- Zonal Resource Credits (ZRCs, MISO's capacity currency) are awarded to the market participant (utility, AES or aggregator)
- ZRCs can be offered or self-scheduled in the MISO's annual Planning Resource (i.e., capacity) Auction, used in a Fixed Resource Adequacy Plan (FRAP) or sold bilaterally to other market participants
- There is no direct energy market compensation for LMR Demand Resources curtailments (However, see MISO EDR and Self-curtailment)
- Traditional utility interruptible load is typically registered with MISO as a LMR Demand Resource

MISO – Emergency Demand Response (EDR)

- Participating load only has to curtail during emergencies if its offer is accepted by MISO
- EDRs are paid for energy they provide by curtailing when their offer is accepted by MISO
- EDRs are not compensated unless they are called on by MISO to curtail
- However, EDRs may also be LMR Demand Resources (and, thus, receive ZRCs)
- EDRs may not also be DRRs
- Some utilities have tariff riders to allow bundled customers to participate as MISO EDR (e.g., NIPSCO Rider 782 in Indiana)

MISO – Demand Response Resources (DRRs)

- Two types:
 - Type 1 – On or Off
 - Allowed to provide capacity (ZRCs), energy, spinning operating reserves and supplemental operating reserves
 - Type 2 – Dispatchable within a range
 - Allowed to provide the same products as Type 1 plus Regulation
- If it clears ZRCs in the Planning Resource Auction (PRA) or has ZRCs used in a FRAP, the DRR must offer energy into the MISO day-ahead and real-time energy markets just like a Generation Resource that has similarly had ZRCs committed to PRA or FRAP
- There is no curtail down to a firm service level option for DRRs

MISO – DRRs (cont'd)

- Must meet certain additional requirements in order to be able to offer spinning reserve, supplemental reserve or regulation into the MISO day-ahead and real-time energy markets
- Some utilities have filed tariff riders to allow bundled customers to participate in the MISO energy market as a MISO Type I DRR (e.g., NIPSCO Rider 781 in Indiana)

MISO – Self-curtailment

- Not an explicit MISO Tariff option, but rather a customer behavior in reaction to price signals in the MISO energy markets
- If a customer can shift its energy consumption from higher Locational Marginal Price (LMP) hours to lower LMP hours, it can provide savings for its utility or AES
- If a customer can shift its demand away from the days of the year when the MISO annual peak is likely to occur, it can provide MISO capacity savings to its utility or AES by reducing the utility's or AES's total Planning Reserve Margin (i.e., capacity) Requirement.

MISO – Self-curtailment (cont'd)

- A variant of both of these are traditional interruptible tariffs that permit economic interruptions -- Utilities typically call the allowed economic interruptions to either reduce their net MISO energy costs or to lower their demand when it is likely MISO will have its annual peak

PJM Demand Response

- Energy
 - Day Ahead
 - Real Time
- Ancillary Services
 - Synchronized Reserve
 - Day Ahead Scheduling Reserve
 - Regulation
- Capacity
 - Offer into auction up to 3 years in advance (or use in a Fixed Resource Requirement (FRR) plan)
- Self-curtailment (same as in MISO)

PJM – Energy and Ancillary Services

- Broadly works similar to MISO EDR and DRRs
- Some utilities have tariff riders that allow bundled customers to participate (e.g., I&M Economic Rider D.R.S. 2 and Ancillary Rider D.R.S. 3 in Indiana)

PJM -- Capacity

- Broadly works similar to MISO LMR Demand Resources
- Has to be committed to PJM three or more years in advance of the Delivery Year
- However, PJM Members can submit a plan to acquire and/or install the demand response prior to the Delivery Year
 - This allows the signup of end-use customers by PJM Members between the time the plan is accepted by PJM (in the PJM Base Residual (i.e., capacity) Auction or in a FRR plan) and the start of the Delivery Year
- Some utilities have tariff riders that allow firm bundled customers to participate (e.g., I&M Emergency Rider D.R.S. 1 in Indiana)

Aggregators

- Aggregators are a type of MISO Market Participant or PJM Member that specializes in aggregating demand response by directly contracting with end-use customers
- Not retail open access – only involves contracting with retail customers for curtailments that meet RTO demand response provisions
- Aggregators have been very effective in PJM (and more recently in Illinois within MISO) with respect greatly expanding customer participation in demand response
- An end-use customer can choose to become its own aggregator
- Aggregators are called Aggregators of Retail Customers (ARCs) in MISO and Curtailment Service Providers (CSPs) in PJM

Aggregators (cont'd)

- Aggregators are sometimes restricted by state law or action by a state regulatory body
 - For example, in Indiana, the IURC has restricted ARCs and CSPs to aggregating customers pursuant to utility RTO demand response riders
 - In Michigan, ARCs and CSPs (outside of AES service) are currently not allowed by the MPSC to directly sign up customers to participate in the MISO and PJM demand response provisions
- State regulatory bodies and utilities are notified of Aggregator customer signups received by MISO and PJM and the signups will be denied where a state regulatory body is not allowing them

Utility Usage

- Utilities can expand their retail tariff offerings to allow customer participation in RTO demand response provisions
- This unlocks new resources which helps to lower market prices for capacity, energy and ancillary services by increasing competition in the wholesale power markets
- Michigan could go much further than it has to date with respect to allowing bundled customers to participate in RTO demand response provisions directly through ARCs and CSPs and indirectly through tariff riders.



QUESTIONS?

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