UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	))	Docket Nos. ER06-615-___

REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR ON THE DEVELOPMENT OF DEMAND RESPONSE PROPOSALS

On September 21, 2006, the Commission issued an order in this proceeding conditionally approving the tariff to implement the Market Redesign and Technology Upgrade ("MRTU") initiative of the California Independent System Operator Corporation ("CAISO").[1] In the September 21 MRTU Order, the Commission directed the CAISO to work with interested parties to explore avenues for incorporating price-responsive demand in MRTU:

> We believe the continuing development of demand response is an effective route to produce CAISO markets that are competitive and that can be relied upon to produce rates that are just and reasonable for customers. We therefore direct parties interested in further developing demand resources in the CAISO markets to provide proposals to the Commission that detail new avenues for incorporating price-responsive demand in MRTU. We expect that any proposal will fully consider and describe the systems and tools necessary to assure that demand response is measurable, dispatchable and capable of being included in MRTU. We direct the CAISO to collaborate with the interested parties and assist them in developing their proposals. We direct these parties to file these proposals within 60 days of the date of this order.

September 21 MRTU Order at P 690.

The CAISO respectfully submits the instant filing to report on the CAISO's efforts to date in working with interested parties on the development of demand response proposals and to provide initial comments on the integration of demand response into the MRTU market design. Specifically, the CAISO reports on a CAISO sponsored and facilitated November 2, 2006 MRTU workshop on demand response. The CAISO also reports on the benefits to California of

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[1] *California Independent System Operator Corp.* 116 FERC ¶ 61,274 (2006) ("September 21 MRTU Order").

demand response, the CAISO's plan to investigate the idea of forming a California Demand Response Initiative, its plan for supporting Dispatchable Demand Response in MRTU (including enhancing demand response functionality in later releases of the MRTU software), and future opportunities for the greater participation and integration of demand response. The CAISO also intends to review and respond, as appropriate, to other stakeholders' specific demand response proposals filed with the Commission in compliance with the September 21 MRTU Order.

I. COMMENTS

A. Demand Response is an Important Resource to California

To address the long-term reliability needs of California, on May 8, 2003, California's lead state energy agencies *i.e.*, the California Energy Commission ("CEC") and the California Public Utilities Commission ("CPUC"), adopted the Joint Agency Energy Action Plan ("EAP").[2] The EAP, among other things, established a resource procurement priority commonly referred to as the "loading order" that gives highest priority to energy efficiency and demand-side resources. In other words, the EAP establishes a policy to first consider lowering demand before increasing supply to meet the state's growing energy needs. Accordingly, in its long-term procurement proceeding, the CPUC directed the public utilities under its jurisdiction to incorporate price-responsive demand into their resource plans.

To ensure sufficient capacity exists to meet day-to-day operational needs, the CPUC established a resource adequacy program built around system and local capacity requirements that must be met by its jurisdictional Load-Serving Entities ("LSEs"). As part of this program,

[2] The CPUC and the CEC jointly prepared a second Energy Action Plan ("EAP II") to identify the further actions necessary to meet California's future energy needs. EAP II supports and expands the commitment to cooperation among state agencies embodied in the original EAP, which is cited in this filing. The original EAP can be viewed at the CPUC's website at http://www.cpuc.ca.gov/PUBLISHED/REPORT/28715.htm

the CPUC permits LSEs to count dispatchable demand response as a qualifying resource for satisfying resource adequacy requirements.

Additionally, the CPUC has approved approximately $262 million[3] for the continuation and expansion of demand response programs in 2006-2008. This is in addition to the projected multi-billion dollar investments in advanced metering infrastructure contemplated by the Investor-Owned Utilities ("IOUs") and CPUC over the next several years; Pacific Gas and Electric Company's $1.7 billion investment has already received CPUC approval.

These demand response initiatives, along with the level of investment in metering infrastructure, clearly point to the fact that the CPUC intends for demand response to be an enduring and expanding resource for California. The CAISO is eager to collaborate with the state energy agencies, IOUs, and other interested parties to help structure demand response products that provide the greatest value along the entire value chain from the end user to the grid operator.

B. MRTU Workshop on Demand Response

On November 2, 2006, the CAISO organized and facilitated a one-day workshop in response to Paragraph 690 of the Commission's September 21 MRTU Order whereby the CAISO was directed to collaborate with interested parties and assist them in developing proposals that explore new avenues for incorporating price-responsive demand in MRTU. Over 90 stakeholders participated in the workshop - a clear demonstration of a high level of interest in the subject matter. As the CAISO emphasized at that workshop, proposals submitted to the Commission should consider and describe the processes, systems and tools necessary to assure that demand response is measurable, dispatchable and capable of being included in MRTU.

[3] *See* Application of Pacific Gas and Electric Company for Approval of 2006-2008 Demand Response Programs and Budgets to the California Public Utilities Commission; A.05-06-006, Appendix A: Amended Settlement of 2006-2008 Demand Response Programs, January 30, 2006, p. 23-27.

In this spirit, the workshop's agenda centered on the CAISO providing interested parties with an overview of, and opportunity to comment on:

- The CAISO's operational needs
- The key MRTU market design features and timeline
- The MRTU Release 1 software's functionality relative to accommodating price-responsive demand resources, and proposed concepts to be incorporated post Release 1
- Demand response activities on-going in California

In addition to these information-sharing topics, the workshop included an open dialogue session designed to tease out the opportunities, challenges, barriers, disconnects and gaps associated with the greater integration of price-responsive demand between the retail and wholesale markets. The CAISO incorporated this session into the workshop to get participants thinking about important issues they may want to address in their respective filings to the Commission. Thus, participants attending the workshop were encouraged to write their thoughts and feedback on Post-it notes and categorize them so that a record of the different issues could be captured and shared amongst the workshop participants. These notes were routed to all participants by e-mail on November 7, 2006; they are also included in this filing as Attachment A, *Demand Response Workshop Stakeholder Feedback.*

C. Investigate the Formation of a Demand Response Working Group in California

Apart from the technical exchange, the November 2 workshop was equally important in that it brought together disparate groups, *i.e.* the traditional demand-side program developers/implementers, market participants, and MRTU market designers, to share their perspectives and to address a common challenge of turning demand resources into a utility grade resource. Cooperation among these groups will be critical to the long-run success of demand response in California. It was also recognized that, while the various subsets of the demand

response community share a common goal, there is no common language. In recognition of this fact, there was consensus at the workshop that a working group should be considered where a range of demand response issues could be addressed and resolved in order to achieve the further integration of retail and wholesale markets necessary for demand resources to truly take root.

The CAISO believes that California would benefit from the CAISO joining with the CPUC, the CEC, California IOUs, municipal entities, third-party aggregators and other interested parties to sponsor and form a California Demand Response Initiative ("CADRI") similar to the New England Demand Response Initiative ("NEDRI") and Mid-Atlantic Distributed Resources Initiative ("MADRI"). In the event this concept has sufficient support from stakeholders, it will be critical for the group to work collaboratively to develop a charter and delineate the "reach" of this organization. Taking an expansive view, CADRI could provide a forum for the state energy agencies, IOUs and interested parties to resolve technical issues, provide feedback on strategic and policy directions for demand response initiatives, and further enable demand resources to compete and fully function in the wholesale electricity market. In other words, to ensure that demand resources can provide reliability and economic value up the entire chain, from the end-user/provider to the utility and grid operator.

D. The CAISO's Plan to Integrate Demand Response into the MRTU Market Design

The CAISO intends to fully support Dispatchable Demand Response ("DDR") in its MRTU software design. Price-responsive demand will be able to participate in the Day-Ahead forward Energy market under MRTU. Such demand resources will be able to submit price-sensitive bids at Load Aggregation Points and then settle any deviations from the final Day-Ahead schedule at the Real-Time Imbalance Energy price for that Load Aggregation Point.

In addition, Participating Loads – *i.e.*, Load that participates in the CAISO's Imbalance Energy and Ancillary Services markets as well as pumped storage facilities – are types of DDR resources that are modeled with added functionality in the CAISO's MRTU software. In the MRTU software Release 1, Participating Load will be able to participate in the wholesale Energy and Ancillary Services markets with certain limitations based on software functionality. The CAISO is working to address some of these limitations in the Release 1 software and intends to develop a more robust and comprehensive integrated solution for the participation of DDR resources in Release 2 of its MRTU software.

The following is a more detailed description of the design challenges and a comparison of the CAISO's planned approach to incorporate DDR in Release 1 and Release 2 of its MRTU software.

1. Description of Limitations

A full DDR model is not incorporated into Release 1 of the MRTU software design. In 2005, consultants to the CAISO identified a design issue related to Participating Load that would have resulted in inequities between prices settled at Load Aggregation Points and those settled at individual nodes if a full DDR model was included in Release 1. Based on this finding, the CAISO recognized the need to get the design, rules and validation for DDR "right" and therefore deferred the full implementation of DDR to Release 2. However, recognizing that most of the existing Participating Loads are large hydro pumps, the MRTU Release 1 will support having participating pump load (or other Participating Load that can operate like a pump) participate as DDR using what the CAISO refers to as the "pump/storage" model. While the pump/storage model is able to provide some desired attributes of a DDR resource (*e.g.*, multi-part bids and some inter-temporal constraints), it has limitations including an inability to aggregate loads that

share common metering. Therefore, as an alternative to the pump/storage model, the CAISO is also prepared to support Participating Loads using the same Energy Bid structure as non-participating Loads, and to support the eligibility of Participating Loads to provide Non-Spinning Reserve through a manual work-around, provided that metering and the network topology support this arrangement.

2. The Pump/Storage Model for MRTU Release 1

The pump/storage model characterizes a pump as a negative generator when in the pump mode and as a normal generator otherwise. For a simple pump or demand response resource, the negative generator mode of the pump/storage model would be used.

The full DDR model would allow a pump to curtail a portion of its base load in the Day-Ahead Market. The pump/storage model, however, will only allow for a pump to bid to buy/pump in the Day-Ahead Market at its full capability, and only allow curtailment in the Real-Time Market based on its Day-Ahead schedule. If a pump is not scheduled in the Day-Ahead Market, it can offer to buy/pump in the Real-Time Market.

In addition, the full DDR model will support Bids at different operating levels and incorporate a variety of inter-temporal operating constraints, while the pump/storage model supports only a single on/off state in pump mode (as a negative generator) with inter-temporal constraints limited to: (1) minimum pumping time, (2) the maximum pumping energy per day, and (3) the maximum number of pumping cycles.

3. Alternative Non-Participating Load with Non-Spinning Reserve Eligibility Model for MRTU Release 1

For some market participants, the attributes of a full DDR model are critical (*e.g.*, multi-segment bid curves or aggregation of multiple Loads). The CAISO will offer an alternative model to these market participants, allowing them to submit Energy bid curves as if they are

non-participating Loads, and also to submit bids for Non-Spinning Reserve. The CAISO will work with individual market participants to ensure that the metering arrangements to implement this approach are in place and that the CAISO's network model can be configured appropriately. This alternative involves adding a "pseudo-generator" to the CAISO's network model to support bidding and dispatch as Non-Spinning Reserve. In the case of aggregated Loads, the CAISO must also be able to distinguish Participating Loads in its network model, so that the Energy Bids for the Participating Load can be distinguished from other Loads for purposes of scheduling.

4. Full Dispatchable Demand Response Model Proposed for Release 2

Table 1 below draws a comparison between the CAISO's proposed full DDR model for Release 2 and the initial pump/storage model and alternative non-Participating Load model to be implemented in Release 1.

Table 1

Attribute	**Pump/Storage Model (Release 1)**	**Extended Non-Participating Load Model (Release 1)**	**Full Dispatchable Demand Response Model (Release 2)**
Model	• Pump model as negative generator mode of pump/generator model where positive generator mode is not used	• Load operates as non-participating Load • Manual work-around by CAISO allows participation as Non-Spinning Reserve	• Base Load as Price-Taker • Logical Generator represents generator dispatch capability from Base Load
Number of operating bid segments supported	Single Segment (Pump is on or off)	Up to 10 segments	Up to 10 segments
Aggregate physical resources?	No	Yes	Yes
Bid Components	Two-part bid: • Shut-Down Curtailment Cost • Pump Energy Costs	One-part Energy Bid for Load Two-part Bid for Non-	Three-part bid: • Load Curtailment Cost • Minimum Load

		Spinning Reserve: • Start-up Cost, and Minimum Load Cost	Reduction Cost • Load Energy Bid
Base Load Supported	No	No	Yes
Settlement	• In DAM pump can only submit a Demand Bid . If scheduled, pump load is charged DAM LMP. If not scheduled in DAM no charge. • In real-time any curtailment from DAM schedule will be paid nodal LMP plus shutdown curtailment cost. If pump not scheduled in DAM, pump resource may submit a Demand Bid to pump in RTM.	• CDWR pumps will have separate Load Aggregation Points (LAPs) for DAM and RTM LMP calculation. For other potential Participating Loads, CAISO will determine feasible level of LMP disaggregation on a case-by-case basis. • Schedule in DAM is settled at locational DAM price. • Difference between DAM and actual RT Demand is settled at locational RTM price. Participating Load is not subject to Uninstructed Deviation Penalty.	• Base Load at nodal LMP as price-taker. (DAM or RTM) Note: Prior to LECG review Base Load settled at LAP. • Curtailment from Base Load is settled at Minimum Load Reduction Cost for energy plus Load Curtailment Cost • Dispatch below minimum load reduction is settled at the nodal LMP in DAM/RTM
Day-ahead Market Treatment	Model as a negative generator and can only submit Demand Bid in DAM	• Energy is scheduled in DAM as non-participating Load. • Participating Load is eligible to submit Bids offing Non-Spinning Reserve, using pseudo-generators placed at the locations of Loads.	Base Load must be price-taker. Therefore, Dispatchable Demand Response can be dispatched from Base Load in DAM and be compensated for curtailment/dispatch accordingly in DAM
Real-time Market Treatment	In real-time, pump may submit Bid to curtail from DAM schedule (if scheduled in DAM) or submit Demand	• Loads determine RTM operating point by monitoring RTM price. • CAISO dispatches Non-Spinning	May submit Bids bid to curtail/dispatch load from either DAM level or RTM Base Load level.

	Bid to pump in RTM if not scheduled to pump in DAM. However, same Energy Bid used in the Day-Ahead Market must be used in all hours. As a result, there is no opportunity for a pump to shape its offer price for different hours.	Reserve as contingency-only reserve, using pseudo-generators placed at the locations of Loads. Actual response will be expected as a reduction in Demand.	
Inter-temporal Constraints	Yes • Minimum Up Time (minimum time to stay in pumping mode after switching to that mode) • Maximum status changes (maximum switches into pumping mode) • Daily Energy Limit	No	Yes • Load Curtailment Time (time to curtail load) • Minimum Load Reduction Time (minimum time after load curtailment) • Minimum Base Load Time (minimum time after load restoration) • Maximum Number of Daily Load Curtailments
Load Ramping	No	No	Yes • Load Drop Rate • Load Pickup Rate
Ancillary Service Eligibility	Eligible to provide Non-Spinning Reserve	Eligible to provide Non-Spinning Reserve	Eligible to provide Non-Spinning Reserve

In summary, the CAISO's proposed full Dispatchable Demand Response model could incorporate the following:

- A three-part bid consisting of:
    - Load curtailment cost
    - Minimum load reduction cost
    - Load energy bid
- Load curtailment time (time to curtail load)
- Minimum load reduction time (min time after load curtailment)
- Minimum base load time (min time after load restoration)
- Maximum number of daily load curtailments

- Load drop rate
- Load pickup rate
- Maximum Non-spinning reserve capacity (load reduction within 10 minutes)

The DDR model could also incorporate the following additional features:

- The base load component is a price taker, *i.e.*, it is charged the relevant aggregate LMP as any non-participating load irrespective of dispatch
- When the DDR is dispatched from the base load, it is eligible for recovering its load curtailment cost and its hourly minimum load reduction cost
- When the DDR is dispatched, it is paid its LMP for the load reduction

Thus, one possible way to compare and contrast a DDR resource with a generator is as follows:

DDR Resource	Generator Resource
Load Schedule	Base Load
Minimum load reduction	Minimum generator output
Minimum load	Maximum generator output
Load curtailment time	Start-up time
Minimum load reduction time	Minimum up time
Minimum base load time	Minimum down time
Maximum number of daily curtailments	Maximum daily start-ups
Load drop rate	Ramp up rate
Load pickup rate	Ramp down rate
Load curtailment cost	Start-up cost
Minimum load reduction cost	Minimum load cost

E. Opportunities for Greater Participation and Integration Between the Wholesale and Retail Electricity Markets

The CAISO will be looking to contribute toward greater integration between retail demand response programs/pricing and the wholesale market. One way this can be done is for the CAISO to convey to state regulators, policy makers and product developers what the CAISO needs and values from the reliability products it purchases, *i.e.*, the CAISO can be the product specifier. In this role the CAISO would work with stakeholders to clearly delineate what attributes and qualifications demand response products must offer to participate in the CAISO's

Real-Time and Ancillary Services markets, both in the short and long-term given known software limitations, etc. Additionally, stakeholders may want discuss how price-responsive demand resources can participate in the CAISO's Day-ahead forward energy market.

F. DRBizNet Project

Lastly, the CAISO notes that it is engaged in ongoing efforts with the three IOUs (Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric), to further refine the California Demand Response Business Network (DRBizNet).[4] Managed by the California Institute for Energy & Environment ("CIEE") on behalf of the CEC, DRBizNet is a research and development project aimed at enabling and facilitating business transactions among demand response participants and providers in California. Business transactions can range from end-users enrolling in a utility's demand response program to an ISO/RTO program that would query demand response availability and dispatch the resource in real-time.

By establishing a communications infrastructure/network and standardized protocols, DRBizNet will increase demand response business transactions through the low-cost and easy exchange of information among multiple parties engaged in demand response. By significantly reducing transaction costs and increasing speed and functionality, the DRBizNet project will enable greater participation from demand response resources and create value by linking end-users, aggregators, and utilities to the CAISO.

A DRBizNet proof of concept test was conducted in August 2006, involving the CAISO, California's IOUs and simulated end-users. The test was highly successful and proved the infrastructure capable of delivering its intended functionality.

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[4] Further information on the DRBizNet technology and project can be found at: http://www.drbiznet.org/

The CAISO and the IOUs, along with utility end-use customers, will pilot DRBizNet over the summer of 2007 to further enhance and refine the product and make it acceptable to the users of this product, including LSEs and the CAISO itself. Given a successful pilot, DRBizNet could become the commercial backbone for demand response business transactions in 2008 and beyond, linking end-users, aggregators, utilities and the CAISO through a network built on the shared interest of eliminating barriers between users and providers of demand response resources in California.

As the CAISO's MRTU software matures and the CAISO expands its demand response capabilities, it will be important that a communicating infrastructure, like that offered by DRBizNet, be available in order to integrate demand resources into the wholesale market. As such, the CAISO, through its support of DRBizNet, is preparing for the future by anticipating greater participation and integration of demand resources in the wholesale market.

II. CONCLUSION

Wherefore, for the foregoing reasons the CAISO respectfully requests that the Commission accept this report in compliance with Paragraph 690 of the September 21 MRTU Order delineating the CAISO's efforts to date working with interested parties on the development of demand response proposals and the CAISO's initial comments on the integration of demand response into the MRTU market design.

Respectfully submitted,

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Date: November 20, 2006

Certificate of Service

I hereby certify that I have this day served a copy of this document upon all parties listed on the official service list compiled by the Secretary in the above-captioned proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated this 20th day of November 2006 at Folsom in the State of California.

/s/ Sidney M. Davies
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Attachment A

Demand Response Workshop
Stakeholder Feedback

California Independent
System Operator Corporation

MRTU Workshop on Demand Response- November 2, 2006
Post-it® Notes Feedback

Listed below is the "Post-it® notes" feedback the CAISO received from the workshop participants. The comments have been compiled within each of the noted buckets as requested by the CAISO in the workshop. In a few cases, the CAISO took very minor liberty in clarifying some misspellings and missing words; for the most part, however, these notes are verbatim.

Opportunities

- ISO should have mechanisms to address over-generation problems. When over-generation problems are solved, in some degree, the over-load problem will be mitigated assuming total load keeps the same.
- Better coordination between ISO and LSE's on how demand response will be used/incorporated into the RUC (Residual Unit Commitment) process. This should be coordinated and written down so there is no confusion.
- Research ISO's in other States and copy successful programs.
- Allow aggregators to participate in all DR programs.
- How to get automatic DR to happen?
- Permanent peak load shifting?
- Can CAISO notify of an emergency a day-ahead?
- CAISO and stakeholders can:
- Define standards for the DR product
- Integrate and synchronize DR with the MRTU (Market Redesign and Technology Upgrade) and RA (Resource Adequacy) processes... and more
- Develop different types of DR products – ISO specified.
- ISO could expand opportunities for DR to qualify as participating load.

Challenges and Barriers

- Demand response certainly seems like a burden and not an opportunity. Until this changes, can we expect wide spread adoption/use of demand response?
- What do we file on 11/20/06 (the date when the FERC filing is due)? A timeline for further work?
- What is the "end state" that parties see for DR?
- Ensuring DR products are least cost.
- How will load reductions that have a "shape" over a number of hours be accounted for in the ISO market? (e.g. a thermostat set-up for a large building or for a PCT program?)

- Market rules too complex.
- MRTU timeline designed for generator operations. Need to consider revisions to better align with demand response products.
- Process for qualifying new participating load/Dispatchable Demand Response (DDR)
- Considering the problem DR solves, that is, either peak load or a system emergency resulting from a technological failure (transmission line or generator outage), how can the ISO market redesign address the differences characterizing those needs yet utilize some the same DR resources?

Barriers

- Participating load inter-temporal constraints should include minimum down time.
- The ISO Day-Ahead Market and/or RT price alone in the few hours of the year where demand reduction is most beneficial is not sufficient to stimulate DR program participation by customers.
- Cost-effectiveness: need new approach to value DR at peak. Customer's value proposition is different than generator's. Incentives may need to exceed the avoided combustion turbine (CT) cost.
- The ISO model for participating load (i.e. resource ID for scheduling and reporting meter data) will be difficult, if not impossible to implement for Demand Response offered from Non-Participating load.
- Price cap imposed on demand response.
- Raise bid cap for all (load and generation).
- Damage control caps discourage DR participation. "Why bother if I'm protected from real high prices?"
- Develop markets without raising rates.
- Triggers for DR not transparent.
- Metering.
- Forecasting real time prices. Real time prices now have high variability.
- Load aggregation points (LAP's) versus nodal pricing.
- Limiting aggregation to a local area.
- Participating Load should be able to bid into the RTM.
- Telemetering requirements.
- SCADA, etc. requirements for participating load.

Disconnects

- Price/Demand relationship is erratic.
- If there are no meter installed, DR will be hard to implement and it will be hard to track UFE.
- Side payments for cost-recovery (start-up etc.) dilute prices. All costs should be recovered from market prices.
- DR should count toward resource adequacy, always.
- How do real time settlements work for non-participating load?

- Why call the baseline program in MRTU “non-participating load” – even this is a resource participating in ISO markets.
- I don’t think ISO “learning” software for forecasting DR use for RUC purposes can ever be as good as pre-coordination with LSE’s.
- Time schedules and disconnects (e.g. demand bidding at 2:00 pm) after market clears.
- Is market power mitigation placed on load bids?
- Wholesale and retail markets disconnected.
- What is the real difference between price responsive and reliability type DR?
- The success of the demand response programs from non-participating load does not rely on specific settlement for demand reduction by ISO outside of normal settlement for load
- What will the procedure be to ensure LSE and ISO communications to allow for manual adjustments in the RUC processes.

Gaps

- Resource adequacy credit.
- Process for bundled and unbundled customers in MRTU – how to handle?
- What level of prices has been shown to produce large amounts of DR?
- ISO publishing the heat rates (so customers could know when they might be called).
- Posted real time price versus settled real time price.
- More data on system conditions but disaggregated geographically (by zone, load area, transmission line, etc.)
- ISO role is to facilitate demand response and the will of the LRA’s (Load Regulating Agencies) and Load Serving Entities (LSE’s).
- Wholesale prices don’t reflect scarcity (gap).
- Does not appear that the potential for double payment has been properly thought out on days a DR program is called. Need more transparency in how DR activation is forecast in ISO load forecasts.
- How do you measure the DR you actually got?
- Integration of DR & resource adequacy under MRTU.
- Education – Bridge gap between MRTU and DR industry.
- There should be three parts for participating load: shut down, opportunity costs, and energy cost.
- Can DR resources be treated like generation resources in a resource planning framework in terms of order of dispatch – i.e. creation of a DR resource stack where the least cost resource is dispatched first.
- Price responsive DR needs price signal first. Without price signals, DR cannot respond to price signals.
- Long term price signal in TAC to shift load from peak to off-peak.