

CSP1 and CSP2 Proposals Load Management Testing

CPower and Enel X Comments for 8/7/2019 MIC

Agenda

- Current Testing Protocols
- Key Issues
- Poll Results
- Packages

Current LM Testing Protocols

- CP DR testing required in period June 1 – Oct 31 and following May, if no LM Events occur
- All CSP customers in a zone must be tested at the same time
 - Hundreds of customers at once for a large CSP
- CSP schedules tests, notifies PJM in advance
- CSP qualifies for optional retest if the MW reduction in a zone is greater than 75% of summer average RPM commitment

Key Issues

- CSP1 broadens testing to winter while retaining CSP control over scheduling
- CSP2 broadens to winter and gives PJM control over scheduling, but with parameters to manage costs
- As CSPs, our primary concern is minimizing the cost impacts on customers of proposed changes to testing protocols.
- ALL but one of the proposed design element changes results in **significant increased testing costs** to DR customers.
- We have not seen evidence that very broad changes, such as PJM taking over the scheduling of Capacity Resource testing, will lead to either increased reliability or lower costs to ratepayers.

Key question:

Will the proposed changes result in
lower costs or increased reliability
value to load?

The only quantified “upside” for DR participants is inadequate relative to costs

- The single potential positive element is compensation for the energy value of tests.
 - This compensation is of uncertain value (unknown LMP) and could be more costly to administer than it’s worth.
 - A customer with 1 MW of curtailment capability could be compensated at \$70/ MWh where costs might exceed \$1000/MWh.
 - This compensation is well under the current strike prices and Value of Lost Load.
- There have been no quantified upsides for reliability or load.

Key difference in system conditions between testing and real events

Under Status Quo, CSPs work with customers to identify a common time across a zone to conduct a test. Scheduling testing is a complex job, which takes into account managing the costs to a customer.

For instance, CSPs take into account when a manufacturer is on the last day of a production goal and behind schedule; or for example, for a government facility, not conducting a test if it would compromise national security.

In real grid emergencies, a black out is a serious threat to the full grid, including DR customers. A black out can cause physical damage to customer assets and put employee safety at risk. Customers receive an incentive payment (strike price) for DR performance in addition to their own cost of lost load (difficult to quantify).

Load forecasts 7 days forward provide a week ahead suggestion that an event may be on horizon. In addition, in most grid emergencies, a Hot/Cold Weather Alert generally precedes the DR event.

Notification provisions are a key element for managing costs for customers, if PJM takes on Scheduling

Based on customer survey data, Enel X found **week-ahead participant notification** (in addition to Day-Ahead reservation and Day of dispatch), will limit costs to customer participation. While sharing the exact day of a test is ideal, having knowledge of what week the test will be, will also allow DR customers to plan appropriately.

Survey Results: Customers Prefer Advanced Notice and CSPs Scheduling Tests

“For an emergency event, we understand the need for short notice and are **happy to curtail to protect the grid, but why make us scramble for a test?** We lose \$60,000 per hour of wasted material and lost productivity.”

Large plastics manufacturer

“We lose 100’s of thousands of dollars in **lost production** to shut down the plant with no notice.”

S&P 400 Index: Large food processor/manufacturer

“When you [CSP] send us high alerts during **hot or cold weather alerts**, we plan ahead to have people available.”

Large research university

“We have a minimum 90-minute downtime, which **costs us \$540,000**. The capacity payments for tests make this up if we can plan around it.”

S&P 600: Energy company

Comparability - Gen vs DR Testing Rules

	DR Status Quo	Gen Status Quo	PJM DR Proposals
Duration	1 hour	1-2 hours 1 Hour for infrequently used resources	2 hours
Scheduling Test	Capacity Owner	Capacity Owner	PJM
Seasons	Summer – Jun-Sept	Summer and Winter Winter met through data adjustment	Summer or Winter
Test Limit	No limit	No limit	One
Retest Limit	No Limit	No limit	No Limit / One
Test shortfall Impact	Full year	Until next full test	Full year

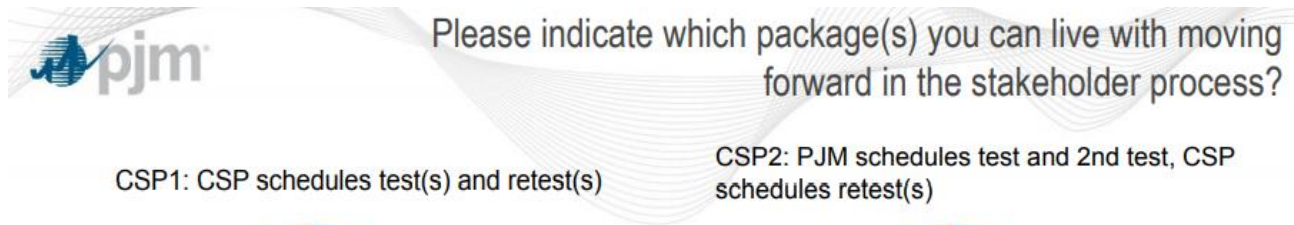
Sources: M18, M21,
Matrix

Packages

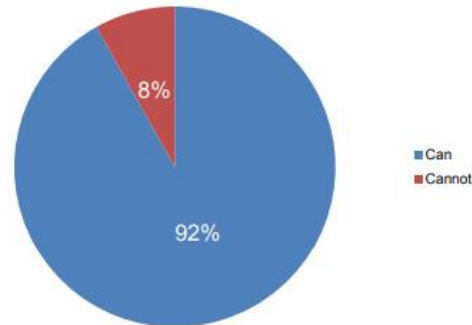
- Package CSP1 received 92% support in polling – more than any other package and enough for consensus.
- Package CSP2 received 66% support in polling - less support than CSP1 - but more than the PJM or IMM proposals.
- CSP2 remains an offering in case subsequent polls/votes indicate that it is preferable to CSP1.

Packages CSP1 and CSP2 Received First and Second Highest Support among all Proposals in Poll

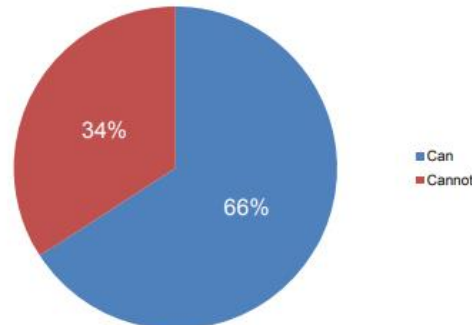
- <https://pjm.com/-/media/committees-groups/subcommittees/drs/20190723/20190723-item-03b-load-management-test-poll-results.ashx>



CSP1: CSP schedules test(s) and retest(s)



CSP2: PJM schedules test and 2nd test, CSP schedules retest(s)



Total Unique Responders:	30
Total Companies Represented:	123
Voting Members	38
Affiliate members	81
Ex Officio Members	4

CSP1: CSP Scheduled Test

- Accepts some PJM elements to toughen testing
 - Summer/ Winter Testing Requirement based on PJM preference for a season
 - 2 Hour testing
- Status quo - CSP schedules test

CSP2: PJM Scheduled Test

- Generally accepts changes from PJM
 - Summer/ Winter Testing Requirement based on PJM preference for a season
 - 2 Hour testing
- PJM schedules test with elements to manage customer costs
 - Up to 2 tests
 - Unlimited re-testing by CSP
 - Narrower windows (3 months per season)
 - Notification
 - Month
 - Week
 - Day Ahead
 - Day of