

STATEMENT OF COMVERGE, INC.

ON DEMAND RESPONSE IN ORGANIZED MARKETS

FERC Technical Conference

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Summary Statement

Good morning. Let me first thank the Commission for this opportunity to comment. Comverge fully supports the Commission's focus on how appropriately valued Demand Response (DR) resources can increase the benefits available in organized competitive electric markets. DR offers tremendous opportunities to resolve many serious market problems.

The statement "appropriately valued" suggests comparable value for comparable services provided, for all resources including DR. The short answer is, however, that DR fails to be appropriately valued. The result is insufficient DR in organized markets. The details in market rules – which frankly take us into the weeds – make all the difference for DR.

Comverge offers eight points regarding RTO/ISO actions that, when approved by the Commission, diminish DR value and limit DR participation in markets:

1. ISONE does not allow DR to participate in operating reserve markets.
2. ISONE imposes annual requirements for DR to be available in the Forward Capacity Market, and it is relatively expensive for DR to comply by partnering with generators.
3. ISONE uses average FCM prices, which fail to reflect the incidence of loss-of-load, and pose disadvantage to DR that seeks to respond to seasonal thermal load.
4. While PJM allows for some concurrent DR benefits to accrue, it has adopted market rules that diminish DR benefits, as follows
 - o i) changes to zonal Synchronous Reserve boundaries (without sufficient public review) – which confers market advantage to generators,
 - o ii) use of Tier I Synchronous Reserves before Tier II, and a 25% limit on DR participation in this market, which again confer major advantage to generators,
 - o iii) removal of transmission benefits from the PJM Economic Program, though transmission benefits are not a subsidy (according to PJM's Market Monitor),
 - o iv) excessive metering and communication requirements that are unjustified,
 - o v) lack of ramp-rate limits in RPM and ILR markets, to the disadvantage of DR that provides dispatchable ramping capacity,
 - o vi) a newly adopted Customer Baseline (CBL) approach, that exempts specific problematic DR behavior and fails to capture full DR value,

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- vii) the proposed Supplemental Reserve product seems appropriate, but is again limited to 25% participation by DR, and generation is taken first before DR,
 - viii) FCM and RPM prices that are insufficient to enable investment in DR, in part because they are relatively uniform over the year.
5. CAISO has delayed use of DR as operating reserves and as Participating Load.
 6. The primary overarching problem is that RTO/ISO governance, and committee voting, result in market rules that cut against comparable and fair treatment of DR resources, to the advantage of supply-side resources.
 - Board and committee voting needs to reflect the minority view of DR interests.
 7. Adopted RTO/ISO market rules, in general, diminish the impact of DR on market prices and reduce the role of DR in market power mitigation, both of which are essential for workably competitive electricity markets.
 8. In summary, as a result of the governance and decision making of RTOs/ISOs, specific market rules severely undercut the value and the use of DR in organized markets.

Level 1 Assessment: DR Should Be Able to Capture Concurrent Value Streams

As explained elsewhere¹, greater value can be captured by DR resources of DR can tap concurrent value streams. Generation qualifies for planning reserves, operating reserves, and when dispatched energy and congestion benefits. High value DR may concurrently provide major benefits from the following seven benefit streams:

- 1) generation capacity and energy/congestion;
- 2) transmission capacity and losses;
- 3) distribution capacity and losses;
- 4) environmental benefits;
- 5) lower market prices for capacity and energy;²
- 6) market mitigation (price volatility and market power); and
- 7) option value to hedge risks and provide insurance.

Level 2 Assessment: DR Limitations and Purposes

Most DR resources have characteristics similar to a limited hydropower resource, which uses a finite quantity of water each season and thus might best serve peak capacity needs. Optimizing its use is a challenge. Likewise, most DR is constrained by the number of hours and the specific times when it is available. This suggests DR's value depends on optimizing its use for several key purposes:

¹ Much of the rest of this statement has previously been provided in E. Woychik, *Optimizing Demand Response, Public Utilities Fortnightly*, Vol. 52, May, 2008, a copy of which is attached.

- Meeting planning reserve margin (15 to 17 percent) or resource adequacy needs;
- Reducing super-peak prices and obtaining congestion benefits, directly or through congestion revenue rights (CRR) contracts;
- Displacing non-spinning or spinning reserves;
- Avoiding T&D capital and operating costs on specific circuits;
- Reducing emissions of NO_x, SO_x and GHG;
- Serving scarcity pricing or market-purchases at superpeak periods; and
- Exploiting the option value of load reduction.

These value streams can be captured during normal DR operations with proper triggers. A dispatchable DR resource concurrently can provide local resource adequacy, non-spinning reserves, and T&D avoidance, and then be dispatched to provide energy and congestion benefits, reduce grid losses, and lower NO_x, SO_x and GHG emissions.

A continuum of DR services – from fast, firm dispatchable DR to uncertain voluntary, non-firm price response -- illustrates its relative value in comparison to the supply-side capital and operating costs it can avoid. The ability of DR to reduce supply-side costs is largely a function of the following:

- The specific changes in load shape that result from DR.
- The long-term certainty (predictability) of DR over time.
- The short-term reliability of DR over time—*i.e.*, the equivalent of planned and forced outage rates.
- The response rate of DR—*i.e.*, the ramp-rate or loadshift rate.
- The type of supply-side resources avoided and the subsequent costs reduced.
- That DR sources like AC load control track peak demands to provide maximum benefit.

The ability to avoid supply-side capital cost is directly related to the certainty and predictability of the DR, its availability, and the speed of the DR response. DR that is highly certain and in place for a predictable time has the potential to avoid major supply-side capital costs. In the short-term, neither voluntary price response nor voluntary curtailment can avoid capital-cost additions, because neither are certain enough for planning purposes.

Level 3 Assessment : Gaps in the Comparable Treatment of DR

Specific gaps in the comparable treatment of DR and supply side resources are as follows:

- Rules that limit any single DR resource from obtaining the concurrent benefits that generators obtain (e.g., both planning reserve and operating reserves).

- Rules that limit DR from ancillary services markets (e.g., ISONE, CAISO).
- PJM's rules that restrict DR from participating in Tier 1 Synchronous reserves.
- Governance on rule changes regarding DR economic benefits (e.g., PJM).
- Year-round performance requirements for seasonal, heat-sensitive DR.
- Averaging of capacity prices for residential and small commercial DR.
- Rules to ensure resource adequacy needs can be met and are monetized for DR.
- Proper measurement and evaluation of DR to reduce concerns of gaming.

What DR Providers Need in Organized Markets

As explained at the 7 May 2008 Commission Technical Conference on capacity markets, the needs of Comverge as a DR provider can be summarized in the following seven points:

1. Access to the same revenue flows and benefits as generators, including equitable settlement²;
2. Fair market rules that enable DR to provide maximum market value and to transmit data needed for effective market response³;
3. Market fundamentals to ensure stable prices and transparency⁴;
4. Effective RTO/ISO governance to support decisions that enable DR⁵;
5. Capacity prices that reflect the full market benefits that DR resources offer⁶;
6. The ability to provide capacity only during summer months or for the entire year, depending on the kind of DR offered (e.g., residential vs. industrial)⁷;
7. Capacity prices that reflect locational constraints (local resource adequacy)⁸.

² For example, generators that operate in capacity and energy markets may receive settlements for both, however, DR may be excluded from some operating reserve markets and be forced to net-back G&T revenues, as in PJM.

³ DR that is fast, ramping capacity should be given higher payments than generators that respond slowly, which suggests ramp-rate requirements to ensure comparable treatment for all resources.

⁴ Basic parameters such as level of generation reserve margin, transmission constraints, and prices in operating reserve markets should directly correlate with capacity market prices, and consistent with the rational expectations.

⁵ Effective governance to enable DR will fully enable all major DR resources to be integrated and will avoid undue discrimination by parties who vote to allow for a generation dominated market.

⁶ Capacity prices should be a direct function of reliability and economic needs, including scarcity and customer value, consistent with the different kinds of DR resources that are available in the various market.

⁷ The distinct needs of the DR provided by both residential and C/I customers are well known, as residential DR is largely available during the 100 or so summer super-peak hours, consistent with loss-of-load expectation/probability, while C/I customers can offer DR over a much larger range of hours, consistent with the need to respond to contingencies (forced plant or transmission outages) year-round.

⁸ Capacity needs are increasingly recognized as locational, to address voltage needs, must-run requirements, stability limits, congestion, out-of-merit generation, and transmission criteria violations.



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