

DOCKET NO. 13-IEP-1F
CALIFORNIA ENERGY COMMISSION
INCREASING DEMAND RESPONSE CAPABILITIES IN CALIFORNIA

I. Introduction

Comverge, Inc (“Comverge”) files these comments in response to the issues raised at the June 17 technical conference hosted by the California Energy Commission (“Commission”), in which the Commission sought information from stakeholders about increasing Demand Response (“DR”) capabilities in California. Comverge appreciates this opportunity to submit comments and will focus on the expansion of Automated Demand Response (“ADR”) resources available to California system operators. We commend the Commission’s efforts to expand ADR in California, and look forward to working with the Commission and other stakeholders to realize these goals.

As a leading provider of both residential and commercial and industrial (“C&I”) DR services, Comverge has a unique breadth of knowledge and experience across customer classes. Comverge has recruited over 1.25 million residential customers for direct load control programs and has deployed over 5 million direct load control devices nationally. Comverge’s experience in particular with the deployment and use of ADR in the residential customer sector provides us with critical insights into the values such deployments can provide to the grid operator as well as the programmatic needs of customers in the residential sector.

Since 2007 Comverge has successfully run a C&I DR program in California with proven curtailment ranging from approximately 25MW to 50MW. Additionally, Comverge is an approved aggregator of DR with all three IOUs in the Capacity Bidding Program and in the Base Interruptible Program in PG&E. Additionally, Comverge provides C&I load reduction to each of the ISOs across the country, with the exception of CAISO and MISO, through their respective DR programs. In the markets that allow direct customer participation, Comverge has aggregated the load of thousands of C&I customers, providing DR and ADR resources that participate in capacity, energy and ancillary service markets. Comverge’s technical experience across all customer classes allows us to provide input to this process that is unique among leading DR providers.

FERC has estimated that the potential for DR in California is as high as 8,000 MW of additional DR resources.¹ Much of this remains unrealized despite the prevalence of advanced metering, and a well-established market need for these resources. Many of the customers who are able to provide demand response resources are simply not able to bring these resources to market in the current energy policy framework. Comverge commends the Commission's work to remedy this issue.

II. **General Demand Response Opportunities in CA**

Comverge's comments submitted in response to this workshop are intended primarily to discuss in greater detail the attributes of ADR that make it an ideal resource to address the market needs identified by the Commission. As the Commission has noted, ADR must play a critical role in aiding the response to the San Onofre Nuclear Generating Station ("SONGS") shutdown. ADR is an appropriate tool to help resolve some of the issues created by the shutdown. Particularly, ADR can provide low-cost, automated peaking resources that support the response to contingency events and peak load events. Additionally, ADR is a tool that can be deployed to assist in the integration of intermittent renewable energy resources. While ADR can be a valuable tool, market changes are required to fully implement comprehensive and meaningful ADR capabilities. Comverge will highlight some of the elements that are necessary to expand DR programs in California in a manner that supports the Commission's objectives.

Demand response, and in particular automated demand response provides California system operators with a resource that is clean, reliable and less expensive than more conventional alternatives. As noted in the workshop the CAISO has outlined several important ADR characteristics that are needed to increase system reliability, grouping those characteristics into two major bins: "supply-side" and "demand-side" DR products.

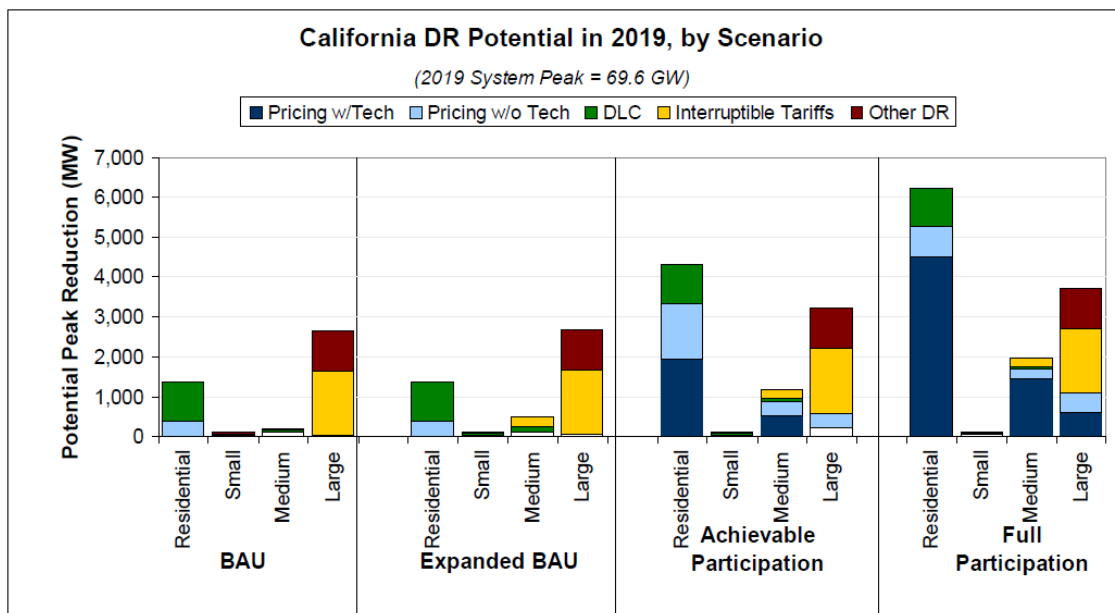
"Supply-side" DR can be used to maintain resource sufficiency by providing resources that meet a variety of system needs including flexible capacity and a greater diversity of locational resources. "Demand-side" DR can help shape the load curve to mitigate the CAISO's concerns about a rapidly changing "net load" curve resulting from increasing levels of renewable energy. As was discussed at the workshop, ADR is able to meet both these needs at a competitive price,

¹ "A National Assessment of Demand Response Potential," FERC, 2009

reducing overall costs for all electric customers while providing additional savings for those customers willing to participate in DR programs.

III. Residential Demand Response Characteristics

The Federal Energy Regulatory Commission (FERC) found in its 2009 “National Assessment of Demand Response Potential” that California has among the highest potential for DR in the nation due to high peak demand. According to that analysis if California wishes to expand DR to simply the “achievable” level projected in the Assessment, residential DR enabled by technology deployments is necessary. Comverge has reached penetration levels in excess of 30% of the addressable market in some ADR programs, and in 2012 Comverge controlled 32 GWh of peak energy. Comverge believes fully that the potential DR identified in the 2009 Assessment is readily achievable in California with the appropriate regulatory framework in place.



Source: “A National Assessment of Demand Response Potential,” Federal Regulatory Energy Commission

Residential demand is a significant driver of peak demand in California, meaning that on the hottest days when the CA ISO reaches peak conditions the residential DR resource is largest, providing an important “need-appropriate” resource in high demand situations. Further, well designed residential DR programs can develop incremental capacity immediately. Comverge has installed as many as 220,000 devices (equivalent to approximately 220 MW) in a single year.

Importantly, ADR programs provide incremental load management value as they are developed – the portfolio adds value from the moment the first customer is enrolled in the program. .

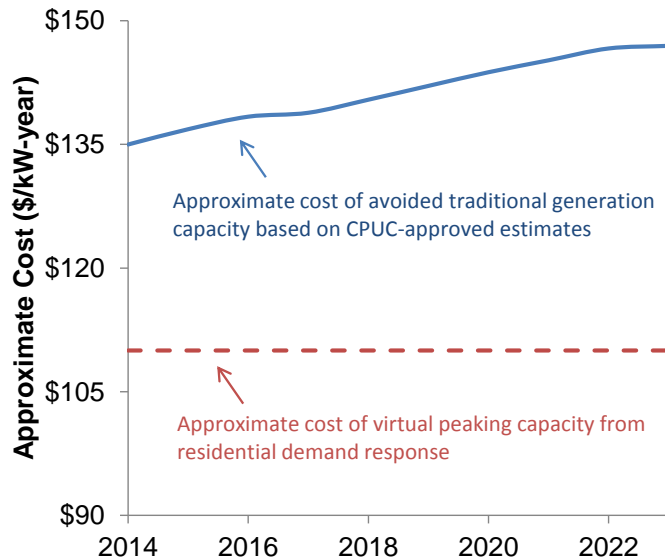
The reliability and value of ADR has been proven throughout the country for years, and demonstrates the persistence of the resource as well as a capability for repeated deployments. Our experience with ADR deployments ranges across the nation from programs in the Northeast all the way to the Southwest regions, operating under a variety of weather conditions and program structures. In one program we have provided over 75 hours of DR, and this year one of our programs is already approaching 50 hours and our contractual limit is 100 hours.

A kilowatt of load reduction at the customer site is more valuable than a kilowatt of generation capacity, as the load reduction also avoids losses on transmission and distribution system and reduces the required level of system operating reserves.

Additionally, the CPUC cost effectiveness protocols for IOU-sponsored DR programs recognize that DR (including residential and small commercial) reduces the need to build new generation regardless of whether it explicitly counts towards the LSE's RA requirement.³ Programs that do not count as RA capacity nonetheless reduce the LSE's demand forecast and therefore reduce the LSE's total RA requirement.

The CPUC-approved method of calculating the avoided generation capacity benefit of DR involves estimating the levelized cost of building a new simple-cycle combustion turbine net of its expected energy and ancillary service revenues. The avoided cost on a \$/kW-year basis compares favorably to a hypothetical virtual peaking contract backed by residential and small commercial DR:

³ Based on the 2010 cost effectiveness protocols posted here:
<http://www.cpuc.ca.gov/PUC/energy/Demand+Response/Cost-Effectiveness.htm>



Source: http://ethree.com/public_projects/cpucdr.php, accessed July 1 2013; costs are not adjusted for avoided transmission losses and operating reserves

IV. Non-ADR Demand Response can play a Critical Role in Meeting California's Energy Needs as well

We encourage the Commission to explore non-ADR demand response opportunities as well, which remain substantial in California largely as a result of the state's large C&I load. According to the FERC analysis, large and medium C&I DR total technical potential is approximately 5,700 MW, with almost 3,000 MW of that potential remaining unrealized to date. While a fair amount of C&I load reduction can be automated, much of it can not be automated. For example, there are significant health and safety concerns associated with curtailing C&I load. However these resources are significant and can still play a meaningful role in California's electric market.

While non-automated C&I DR resources have different characteristics than ADR resources, those differences should be seen as an advantage, providing a range of DR opportunities to the grid operator. The CAISO Roadmap highlights the benefit of a broad and diverse DR market and the substantial remaining C&I resources in the state indicate that more work is needed to maximize C&I DR participation.

V. Residential and Small Commercial Demand Response has Strong Potential for Energy Efficiency Synergies

Energy Efficiency is a high priority in California and a resource that is aided by the expansion of DR. The CPUC authorized the IOUs to direct \$3.1 billion of ratepayer funds to energy efficiency efforts between 2010 and 2012. As of the end of 2011, the IOUs had spent \$262 million on residential programs and realized nearly 600 GWh of residential energy savings.⁴ Demand response programs can help increase the adoption of energy efficiency measures, particularly in the residential and small commercial sectors, in two ways: (1) incentives earned from DR can be used as financing tool for more permanent EE projects and retrofits, and (2) marketing efforts for DR and EE programs can be combined to reduce program costs. Reaching customers to make them aware of the benefits of DR or EE and to entice them to sign up represents a significant portion of the cost of both types of programs. Often, DR and EE programs are marketed separately, but there are significant advantages to combining these efforts to promote both DR and EE through the same channels, thereby economizing on certain costs (e.g., promotional materials and advertising). Metrics that evaluate EE and DR programs in isolation, without considering these potential marketing synergies, may understate the programs' true benefit-to-cost ratios.

VI. Market Improvements Needed

- a. A measured transition -- Establish a clear path for market rule changes that will recognize the value of existing successful programs, including the retail DR programs. Converge is encouraged by the discussions at the Commission and CAISO to expand DR. However, it will be important for both to recognize the value of existing DR resources and the need for companies (and potentially customer resources) to plan for any transitions.
- b. Simple market rules – DR Customers (the resources) are not in the energy business. These customers understand well the reliability obligation that they are taking on. They rely on straightforward rules clearly stated that allow them to engage in a complex market that is almost always outside the scope of their core business. In order to expand DR to new customers

⁴ "2010 – 2011 Energy Efficiency Annual Progress Evaluation Report", CPUC, September 2012; figures exclude expenditures and savings realized from lighting programs, which are reported separately from other residential programs.

in California, customers will need relatively simple and stable mechanisms.

- c. Stakeholder Input – The input of load aggregators and customer resources is particularly relevant in evaluating the potential success of any wholesale market design changes intended to enhance DR. As the stakeholders directly involved in expanding DR, the economic attractiveness of any new design must be viewed through the lens of a potential participating customer or aggregator. Forward price visibility will be critical in attracting the kind of long term investments needed to substantially grow DR in California, particularly if automated demand response is expected.
- d. Accept what works -- While California has a dynamic electric market with some unique needs, the experience in other regions that have successfully expanded their use of DR is instructive. Comverge encourages the Commission to avoid completely 'reinventing the wheel'. California could successfully build onto the work of other markets to adapt them to California's unique needs. The Commission should understand that while its electricity market may be unique, the customers that will provide load resources to it are not necessarily so. In fact, developing something anew is more likely to keep large national resources out of the market than it is to bring them in.
- e. Diversify -- It will be important for the Commission and the CAISO to optimize across a wide variety of resources with significant operational differences whether the resource in question is generation, efficiency or DR. Comverge encourages the Commission to recognize that these differences are an asset, creating a broad base of reliable and diverse resources. Market structures and products designed to meet the needs of generators without taking into account the needs of loads will hamper the growth of DR in California.

VII. Conclusion

Comverge appreciates this opportunity to provide the Commission information and perspective in addition to our workshop presentation and we look forward to continuing to work with the Commission, the CAISO and the California utilities to expand DR across customer classes in the state. As our experience has demonstrated, when customers are provided access to well-structured markets for their DR resources, the resource can grow quickly and provide substantial value to the market and customers. We encourage the Commission to work with the CAISO and stakeholders to develop broad and diverse DR resources. Comverge's experience across multiple markets working with a variety of programs and customer classes provides us with insight into the characteristics and needs of DR programs that few other providers possess. We look forward to using our experience to inform the development of new opportunities for DR in California and would be happy to provide the Commission with additional information as needed.

Respectfully Submitted,

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