

COMMENTS OF COMVERGE, INC.

NEW JERSEY CAPACITY ISSUES TECHNICAL CONFERENCE

Overview

The Board of Public Utilities (BPU) is understandably concerned about the adequacy and composition of electric energy and capacity supplies to meet the future needs of the citizens and businesses of New Jersey. As a result of retail electricity deregulation in the 1990s, there is less opportunity for the BPU to compel the State's utilities to plan for and procure or construct electric supplies at least cost, with the least impact upon the environment, or to achieve other objectives.¹ Similarly, third-party demand side alternatives, which are more cost effective, environmentally friendly, and reliable when compared with conventional power supplies, have not thus far been broadly implemented throughout New Jersey.

The Federal government and the Mid-Atlantic region (through the PJM Market) have properly placed renewed interest in the promotion of demand response resources. Multiple studies demonstrate how various forms of demand response resources can benefit electric consumers by reducing price volatility, increasing grid reliability and safety, reducing wholesale power prices, increasing competition among supply and demand side resources, reducing emissions (to water, air and land) and reducing market power among power suppliers.² These benefits are in addition to, or overlap with the traditional benefits offered by demand response, including the deferral or elimination of generation, transmission, and distribution plant infrastructure. These studies also highlight some of the key obstacles, including regulatory and behavioral forces, to demand response resource development.

New Jersey will not capture the full advantages of demand response simply by relying on regulatory (FERC and other states) or market (PJM) activities of others. Nor will these activities result in the best type of power plant being placed at the optimal location on the grid within the desired time frame. The evolution of the Smart Grid and potential electrification of a large sector of the transportation industry will magnify the importance of getting the right mix of supply and demand side electric resources. The BPU, in its role in revising the Energy Master Plan, can help direct the state toward the realization of a better future mix of supply and demand side resources, including demand response resources. Comverge recommends that New Jersey

¹ RGGI law in NJ allows BPU to compel certain actions by EDCs and provides incentive rate treatments to the EDCs, including certain returns on investment, that may make such utility-sponsored programs expensive alternatives to customers.

² See <http://sites.energetics.com/MADRI/resources.html> which contains a good list of studies, including the FERC Commission Staff's National Action Plan on Demand Response issued on June 17, 2010.

closely examine and work with its EDC's and third-party providers to implement demand management programs on a state wide basis.³

Comverge's Experience in the Development and Implementation of Demand Response Programs

Comverge is a leading clean energy company offering solutions to increase grid reliability, to enhance market efficiencies and to improve customer satisfaction through the use of demand response and energy efficiency measures. In the past thirty years, with over five million load control devices deployed, a client base including over 500 of the top utilities and over 2100 Commercial and Industrial customers, Comverge's solutions are trusted and relied upon throughout the United States.⁴ Our sole mission is to deliver successful demand response and energy efficiency solutions to our utility and end-use clients.

Comverge's turn-key and pay for performance programs allow utilities to shift much of the performance risk to third-party providers who are experts in demand response implementation. Comverge no longer simply manufactures and sells control technology (hardware and software), but has developed a portfolio of turnkey service and pay-for-performance contracts that span all energy customer segments, from residential to very large industrials. In a typical full-scope turnkey service or pay-for-performance contract with a utility or commercial/industrial customer, Comverge supplies all of the control hardware and software and also performs participant marketing/recruitment, call center management, measurement and verification of demand reductions, and installation services. Comverge also performs subsets of these services under partial turnkey contracts.

Comverge has significant pay-for-performance and turn-key contracts with utilities throughout the United States pursuant to which Comverge is paid only after the systems are successfully installed or the contracted megawatts of demand response are delivered. These contracts also include penalties if the delivery of the systems is delayed or the contracted megawatts are not obtained. Contracts like these have been structured with utilities or ISOs in Florida, Maryland, Pennsylvania, Connecticut, California, New Mexico, New York, Arizona, Utah and Nevada.

³ There are multiple avenues for successfully implementing demand management programs, including Pennsylvania Act 129 and its implementation by the Pennsylvania Public Utilities Commission.

⁴ Comverge directly manages in excess of 3300 megawatts through its utility and open market programs. In addition, it has provided hardware and software solutions to utilities allowing for thousands of additional megawatts to be reduced.

Performance-based contracts compel Comverge to rigorously and continuously examine all technology available for deployment, accepted installation practices and procedures, and the manner in which participating customers are recruited and retained. In addition, most of Comverge's commercial and industrial demand response capability stems from execution against performance contracts implicit or explicit to open wholesale markets such as PJM, CAISO, NYISO, ISO NE, and ERCOT.

Comverge's rich experience in developing turnkey and pay-for-performance demand response programs makes Comverge uniquely qualified to offer recommendations and comments regarding the availability of demand response resources as an alternative to the development of conventional supply resources, and how to increase the benefits of demand response resources once they are deployed.

Demand Response Resource Non-price⁵ Advantages Over Conventional Power Plants

1) Timeliness and Environmental Impacts

Conventional power plants require extensive and time-consuming environmental permitting and siting approvals. Depending on the type of power plant (eg., gas-fired peaker or gas-fired combined cycle or other) permitting can take from 1 to 2 years or more to complete, followed by a 1-3 year construction period. Coal or nuclear plants would involve considerably more permitting and construction lead time. Moreover, even the most efficient gas-fired plant will cause the release of greenhouse gas emissions.

In contrast, a commercial or industrial customer-targeted demand response resource can provide almost immediate demand reduction without any harmful environmental impact. Residential and small commercial targeted demand response also requires no significant permitting or siting and can commence at a pace limited only by the recruitment of program participants and the installation of the demand response measures. Regardless of the class of customer involved, however, demand response provides significant environmental benefit due to the avoidance of generated power. Depending on the type of power displaced, an expanded demand response program could result in a dramatic decrease in greenhouse gas emissions, an important goal of the Energy Master Plan.

2) Geographical Location

⁵ Using PJM Base Residual Auction results (May 2010), demand response resources will be developed and deployed at lower cost than the cost of building, owning and operating new peaking generation (as depicted in PJM's Cost of New Entry). Residential programs can offer similar cost savings when properly implemented.

A power plant proponent must choose a very specific location and perform air modeling and water use/discharge studies. Those major environmental permits do not allow flexibility as to location of emission stacks or water discharge points. In addition, significant transmission planning, modeling, impact studies, siting and necessary municipal, state, and federal approvals must precede power plant construction in order to assure the plant is optimally located. In contrast, a demand response resource can be targeted to the exact locations where the transmission or distribution grids experience delivery problems. Moreover, because the demand reduction for a demand response resource is “distributed” or spread among thousands of customer locations, particularly for residential programs, there is reduced risk of nonperformance of the demand response resources in a given control event.

An expanded demand response program would have the additional benefit of increasing the reliability of power supply and decreasing energy costs otherwise inflated by constraints or load pockets located in particular geographic areas. A well-designed demand response program can also be instrumental in minimizing threats of brownouts or blackouts during critical system load conditions.

3) Local Employment Opportunities

A demand response resource is most appropriately compared to a peaking generation plant⁶. However, as a job creation device, it is anticipated that the deployment of residential/small commercial demand response resources will create more jobs during program rollout than would be expected for the construction phase (one year or less) of a gas-fired combustion turbine of the same size in megawatts. Moreover, because most modern peaking plants are almost fully automated and can be controlled remotely, demand response would also be expected to create more permanent employment than a comparably sized peaking plant, as the yearly operating costs are not fuel-related and require local workers to ensure that the system is functioning.

As an illustration, consider a 500 MW gas-fired peaking plant. Given the availability of sophisticated control systems, the plant could operate with zero or only one permanent full time employee on site after construction and between overhauls. By way of contrast, a 500 MW residential-targeted smart thermostat direct load control program would be expected to create a substantial number of full time positions during a typical four-year program launch period. In addition, with continued marketing, quality audit and control, program management, and installations for program churn, permanent steady-state employment would also be created.

Finally, it is more likely that the employment for a demand response resource would have more “local” content, especially during the launch/construction phase or the project (DR or plant).

⁶ A combined demand response program –focused on peak reduction, and an energy efficiency program—focused on base load reduction is also comparable to a combined cycle power plant.

Power plant construction normally entails the importation of workers with special skills who may not be drawn from the local community. In contrast, most residential demand response deployments entail extensive use of local contractors and their employees.

Recommendations for Increasing the Value of Demand Response Resources for New Jersey Electric Customers

Encourage/Require Participation of Demand Response Resources in PJM Markets

The PJM RPM Base Residual Auction provides a forward market for demand response resources to realize revenues and provide targeted resources focused upon areas in which capacity is most constrained. Demand Response resources allow New Jersey the opportunity to create capacity resources in precisely the areas where they are needed the most. New Jersey's utilities should be encouraged to sell their capacity as a demand response resource or decrease the utilities' capacity obligations through the newly developing Price Responsive Demand product in the annual Base Residual Auctions. Such forward capacity sales revenues and decreased capacity obligation help offset the costs of building and maintaining the demand response resources. More importantly, having the demand response resources directly participate in the PJM auctions or provide a decreased capacity obligation in the PJM auction contributes to lower regional (Eastern MAAC) and subregional (New Jersey) capacity and energy prices.

Create Mechanisms for Demand Response Resources to More Directly Impact BGS Auction Prices

BGS auction prices reflect the amount of electricity that New Jersey electric customers are expected to use and the shape of their demand. BGS suppliers offer to supply a slice or tranch of the aggregated shaped demand which varies by price, time of day and season of the year. Having the utilities design and create demand response programs that entail "dispatch" decisions outside of the control of BGS suppliers creates a "gap" that will result in BGS suppliers offering higher prices in the BGS auctions because they cannot depend on the "improvement" in the load shape. The suppliers will tend to assume the worst case scenario for the load shape and offer prices accordingly.

PJM demand response products that a utility could employ to impact the BGS Auction Prices include both the proposed Price Responsive Demand as well as traditional demand response programs such as Direct Load Control or demand response. By employing both types of demand

response, the utility could reduce both the overall demand and the prices established in the annual BGS auction.

In order to impact the capacity obligation, the utilities could contract with a demand response aggregator to provide a set amount of capacity targeted in their most constrained regions to participate in PJM's Price Responsive Demand program. For a price-responsive type of demand response program such as critical peak pricing, the auction "gap" could be reduced if BGS suppliers are permitted to assume that the utility would call upon the contracted demand response resources whenever the PJM locational marginal price exceeded a certain pre-determined price threshold. The Price Responsive Demand would decrease the capacity obligation for the utility in the most expensive regions and correspondingly reduce prices to end-use customers.

Additionally, with the more traditional demand response and the Direct Load Control programs, the "gap" could be reduced if BGS suppliers are permitted to assume that if a utility's overall load exceeds a certain pre-determined threshold identified to BGS suppliers before the auction commences, the utility will call upon the demand response resource to shed a pre-established quantity of load. If this reduction were included as part of the BGS suppliers' bids, it would enable the suppliers to reduce the scope of their capacity obligation through demand response and thereby reduce the overall price to the customers.

Shift the risks of demand response resource performance away from New Jersey electric customers and to demand response providers

While utilities can use the very best procurement practices to design and purchase the components of a demand response program, the risks associated with the demand response resource's performance under most such programs will still likely to fall on retail electric customers. For instance, consider a 50 MW residential air conditioner cycling demand response program. Under the typical utility model, the utility would issue an RFP for turnkey program implementation services and control equipment. If the winning service provider is only able to deliver 40MW of demand response during a particular 95 degree day in Newark, utility customers generally assume the risk of such nonperformance, because the utility is assured of cost recovery even though customers do not receive the full program benefit.

Comverge recommends that the BPU encourage and allow the utilities to instead use pay-for-performance contracts, measured in dollars per MW per year payments, to procure demand response resources. Pay for performance contracts shift the burden of resource performance away from electric customers and towards the utility's service provider, which is in a far better position to assume and mitigate the risks of nonperformance. This will be an even more important consideration to the extent the BPU requires the utilities to sell forward in the PJM

markets, which impose penalties for under performance, and/or to incorporate expected demand response-related load reductions in the BGS auction process.

Conclusion

Through its role in the upcoming revision of the Energy Master Plan, the BPU will be in a position to enhance the benefits that New Jersey can derive from increased reliance on demand response resources. Although Comverge does not recommend delaying the utilities' current plans to implement demand response programs, we urge the BPU to implement a broad range of programs that will fully leverage the many conservation, reliability, price, and environmental benefits that demand response can offer to the State.

Consistent with the findings of the Energy Master Plan, Comverge urges that the benefits associated with increased demand response resources compel the conclusion that going forward, the BPU should emphasize the broad implementation of demand response programs as the most efficient and cost-effective vehicles to increase the reliability and efficiency of the power grid, thereby reducing the high cost of energy and spurring economic development in New Jersey. Comverge welcomes the opportunity to work cooperatively with the BPU and the State's utilities in developing and implementing demand response programs that are responsive to the needs of the State.

Respectfully submitted,

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