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Federal Energy Regulatory Commission

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FERC's Focus on Demand Response in Wholesale Electricity Markets

The Federal Energy Regulatory Commission (FERC) has shown an increased focus on demand response in wholesale electricity markets in the last few years. This is reflected in a number of initiatives, ranging from measures that are intended to provide a better sense of the potential impact of demand response and current barriers to participation in wholesale markets to measures requiring reforms to tariff language designed to broaden demand response participation in certain markets.

The U.S. Department of Energy (DOE) defines demand response as "changes in electric usage by end-use customers from their normal consumption patterns in response to changes in the price of electricity over time, or to incentive payments designed to induce lower electricity use at times of high wholesale market prices or when system reliability is jeopardized." In simple terms, through demand response, customers reduce or increase consumption of electricity (or change the times in which such electricity is consumed) when motivated by changes in the price of electricity. In an electric system, supply and demand must be in balance at all times. Demand response allows the system operator to achieve balance by adjusting consumption, when ordinarily the system operator would adjust supply. Thus, from the point of view of the operator of a control area, demand response can be a valuable alternative to traditional generation resources during peak hours or at times when the reliability of the system is at risk.

From the point of view of the consumer of electricity, demand response can be a powerful tool to enable such consumers to control costs. Depending on how demand response programs are structured, consumers are able to forego consumption at certain price levels. This is particularly important for those entities that consume electricity in large amounts as part of an industrial process and for whom electricity is a significant portion of the production cost. For such entities, it

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may make economic sense, at certain price levels, to interrupt the industrial process and forego consumption of electricity.

In addition, when used in connection with new technologies, demand response may increase the ability of the transmission system to handle larger amounts of variable generation sources (such as wind power, for example) by providing the system operator greater flexibility in the balancing of system supply and demand. Allowing the system to integrate larger amounts of variable resources could ultimately contribute to the reduction of greenhouse gas emissions.

As noted, FERC has taken a number of initiatives to promote demand response. In this article, we will focus on FERC's Order No. 719 issued in October 2008 and on FERC's staff National Assessment of Demand Response Potential issued in June 2009.

FERC Order No. 719

In Order No. 719, FERC required changes to the terms and conditions of service by independent system operators (ISOs) and regional transmission organizations (RTOs) to eliminate barriers to demand response participation in the markets administered by such entities. FERC explained that it does not intend to grant preferences to demand response resources, but rather to ensure that such resources are treated comparably to other resources participating in these markets. FERC also recognized the potential for demand response to provide competitive pressure to reduce wholesale power prices, increase awareness of energy usage, provide for a more efficient operation of electricity markets, mitigate market power, enhance reliability and, in combination with certain new technologies, support the use of renewable energy resources, small scale, localized generation resources (distributed generation) and advanced metering that allow for two-way communication with the electric grid.

Through prior orders, FERC has already approved a number of demand resource programs in RTOs and ISOs. For example, FERC approved programs to allow demand response to be used as a capacity resource and as a resource during system emergencies (essentially by replacing the need for additional supply with load reductions), to allow wholesale buyers and qualifying large retail buyers to bid demand response directly into the day-ahead and real-time energy markets and certain ancillary service markets, as well as programs to accept bids from aggregators of retail customers (ARCs). When demand response is bid into a market, the system operator is able to count on that load reduction in the same manner it counts on supply resources. The requirements in Order No. 719 are intended to move those markets even further in the direction of comparable treatment of demand response resources.

Among other things, in Order No. 719, FERC required RTOs and ISOs to (a) accept bids from demand response resources in their markets for certain ancillary services, on a basis comparable to other resources; (b) eliminate, during a system emergency, certain charges to buyers in the energy market for voluntarily reducing demand; (c) permit ARCs to bid demand response on behalf of retail customers directly into the RTO's or ISO's organized markets; and (d) allow the market-clearing price during periods of operating reserve shortage (when the system operator does not have sufficient capacity to meet increases in peak demand) to more accurately reflect the true value of energy.

These requirements are intended to level the playing field for demand response providers and encourage greater participation. Bids by ARCs on behalf of retail customers are conditioned by state law permitting such activities by retail customers. Such bids must meet the same requirements as bids from any other types of demand response resources.

In Order No. 719, FERC also directed each RTO or ISO with an organized energy market to ensure that market prices for energy accurately reflect the value of such energy during an operating reserve shortage. The RTOs and ISOs are required to make a compliance filing reforming or demonstrating the adequacy of their existing market rules according to certain criteria specified by FERC, and to address potential market power issues. In response to commenters, FERC noted that this requirement does not eliminate or otherwise revise existing market power mitigation measures and none of the four approaches suggested by FERC as potential ways of reforming market rules precludes the imposition of a limit on prices. FERC also allowed RTOs and ISOs to phase in any new pricing rules for a period of a few years, provided that this period is not protracted.

Finally, FERC directed RTOs and ISOs to assess and report on any remaining barriers to comparable treatment of demand response resources and submit findings and any proposed solutions, along with a timeline for implementation. The RTO's and ISO's market monitors were also directed to submit a report describing their views on the same issues.

Existing RTOs and ISOs have made compliance filings in response to Order No. 719 which are being considered by FERC. In some of these cases, industrial customers have argued that the proposed modifications are not sufficient to eliminate the barriers to demand response programs in those markets. A key issue for industrial customers is the definition of comparable treatment. In most cases, they claim, comparable treatment has been interpreted as imposing requirements for participation that are identical to those imposed on generation resources without regard for the differences in operations of demand response resources. FERC specifically declined to define "comparable treatment" and noted that it would have an opportunity to review any concerns in the context of the compliance filings that would be made to implement the rule.

National Assessment of Demand Response Potential

In June 2009, in response to a statutory requirement in the Energy Independence and Security Act (EISA 2007), FERC staff, with the assistance of various consulting groups, conducted a National Assessment of Demand Response Potential and reported to Congress on the potential for demand response on a state-by-state basis. FERC's report also examines existing barriers to demand response providers. The assessment finds the potential for peak electricity demand reductions across the country is between 38 gigawatts (GW) and 188 GW, up to 20 percent of national peak demand, depending on how extensively demand response is applied. The study also makes recommendations for overcoming barriers to more use of demand response.

This article is intended only as a general discussion of these issues. It is not considered to be legal advice. We would be pleased to provide additional details or advice about specific situations. For additional information on this important topic, please feel free to call upon your Dewey & LeBoeuf relationship partner.

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According to the study, the most significant barriers to demand response are regulatory and technological in nature. Some regulatory barriers stem from existing policies and practices that fail to facilitate the use of demand response as a resource and exist in both wholesale and retail markets. Such barriers include: (a) lack of a direct connection between wholesale and retail prices, (b) measurement and verification challenges, (c) lack of real-time information sharing, (d) ineffective demand response program design and (e) disagreement on cost effectiveness analysis of demand response. Technological Barriers include: (a) lack of advanced metering infrastructure, (b) high cost of some enabling technologies and (c) lack of interoperability and open standards. Additional barriers relate to a lack of customer awareness and education and concern over environmental impacts. Within one year of completing the assessment, FERC will be required to complete a National Action Plan on Demand Response.

Future of Demand Response

FERC Chairman Jon Wellinghoff is a strong supporter of demand response. He has characterized the recently issued staff assessment on demand response as the “first step in a years-long process” and stated that the potential benefits to consumers and the environment from wide-scale demand response deployment is enormous. We can expect that he will push the agency and market participants to develop the necessary action plan to realize that potential. Therefore, we can expect even further advances in this area in the near future.