Demand Response Compensation in Organized Wholesale Energy Markets

PJM Interconnection, L.L.C.

Docket No. RM10-17-000

Docket No. EL09-68-000

(March 18, 2010)

AGENCY: Federal Energy Regulatory Commission

ACTION: Notice of Proposed Rulemaking.

SUMMARY: The Federal Energy Regulatory Commission is issuing a Notice of Proposed Rulemaking (NOPR) proposing an approach for compensating demand response resources in order to improve the competitiveness of organized wholesale energy markets and thus ensure just and reasonable wholesale rates. The Commission invites all interested persons to submit comments in response to the regulatory text proposed herein.

DATES: Comments are due 45 days after publication in the Federal Register.

ADDRESSES: You may submit comments, identified by docket number by any of the following methods:

- Agency Web Site: http://ferc.gov. Documents created electronically using word processing software should be filed in native applications or print-to-PDF format and not in a scanned format.
Mail/Hand Delivery: Commenters unable to file comments electronically must mail or hand deliver an original and 14 copies of their comments to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street, N.E., Washington, DC 20426.

Instructions: For detailed instructions on submitting comments and additional information on the rulemaking process, see the Comment Procedures Section of this document.

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SUPPLEMENTARY INFORMATION:
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NOTICE OF PROPOSED RULEMAKING  
(March 18, 2010)  

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1. The Federal Energy Regulatory Commission (Commission) is proposing to revise its regulations to establish the approach described below as compensation for demand response\(^1\) resources\(^2\) participating in organized energy markets. We propose that Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs)\(^3\) with tariff provisions permitting demand response providers to participate as resources in energy markets by reducing consumption of electricity from their expected consumption.

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\(^1\) Demand response means a reduction in the consumption of electric energy by customers from their expected consumption in response to an increase in the price of electric energy or to incentive payments designed to induce lower consumption of electric energy. 18 CFR § 35.28 (b)(4).

\(^2\) Demand response resource means a resource capable of providing demand response. 18 CFR § 35.28 (b)(5).

\(^3\) The following RTOs and ISOs have organized wholesale electricity markets: PJM Interconnection, L.L.C. (PJM); New York Independent System Operator, Inc. (NYISO); Midwest Independent Transmission System Operator, Inc. (Midwest ISO); ISO New England, Inc. (ISO-NE); California Independent System Operator Corp. (CAISO); and Southwest Power Pool, Inc. (SPP).
levels in response to price signals be required to pay to demand response providers, in all hours, the market price for energy for such reductions.\footnote{This provision applies only to demand response acting as a resource in organized wholesale energy markets. The provision will not apply to demand response under programs that ISOs and RTOs administer for reliability or emergency conditions, such as, for instance, Midwest ISO’s Emergency Demand Response; NYISO’s Emergency Demand Response Program; PJM’s Emergency Load Response; and ISO-NE’s Real-Time 30-Minute Demand Response Program, Real-Time and 2-Hour Demand Response Program, and Real-Time Profiled Response Program. This provision also will not apply to compensation in ancillary services markets, which the Commission has addressed elsewhere. See e.g., Wholesale Competition in Regions with Organized Electric Markets, Order No. 719, 73 Fed. Reg. 64,100 (Oct. 28, 2008), FERC Stats. & Regs. P 31,281 (2008) (Order No. 719 or Final Rule).}

I. **Background**

A. **Role of Demand Response in Organized Wholesale Energy Markets**

2. The Commission has acted over the last several decades to implement Congressional policy to expand the wholesale energy markets to facilitate entry of new resources and support competitive markets. Most recently, the Commission in Order No. 719 implemented a series of reforms aimed at improving the competitiveness of the organized energy markets, finding that effective wholesale competition protects consumers by, among other things, providing more supply options, encouraging new entry and innovation, and spurring deployment of new technologies.\footnote{See Order No. 719 at P 1; see also Regional Transmission Organizations, Order No. 2000, FERC Stats. & Regs. ¶ 31,089, at P 1 (1999), order on reh'g, Order No. 2000-A, FERC Stats. & Regs. ¶ 31,092 (2000), aff’d sub nom. Pub. Util. Dist. No. 1 of Snohomish County, Washington v. FERC, 272 F.3d 607, 348 U.S. App. D.C. 205 (continued…)}
competitiveness of organized wholesale markets, the Commission concluded, is therefore “integral to the Commission fulfilling its statutory mandate to ensure supplies of electric energy at just, reasonable, and not unduly discriminatory or preferential rates.”

3. As the Commission recognized in Order No. 719, active participation by customers in organized wholesale energy markets through demand reductions helps to increase competition in those markets. Demand reductions whereby customers reduce electricity consumption from normal usage levels in response to price signals can generally occur in two ways: (1) customers reduce demand by responding to dynamic rates that are based on wholesale prices (sometimes called “price-responsive demand”); and (2) customers can provide demand response that acts as a resource in wholesale markets to balance supply and demand. While a number of states and utilities are pursuing retail-level price-responsive demand initiatives based on dynamic and time-differentiated retail prices and utility investments, these are state initiatives, and, thus, are not the subject of this proceeding. Our focus here is on customers providing - through bids - demand response that acts as a resource in organized wholesale energy markets.

(D.C. Cir. 2001).

6 Order No. 719 at P 1.

7 See Order No. 719 at P 48.

8 Some ISOs and RTOs are engaged in stakeholder discussions concerning the coordination necessary between wholesale markets and retail rate design, and we expect (continued…)
4. Demand response acting as a resource in organized wholesale energy markets helps to improve the functioning and competitiveness of such markets in several ways. First, demand response can lower prices. When bid directly into the wholesale market, demand response – which results in lower demand – can result in lower clearing prices. For example, a study conducted by PJM, which simulated the effect of demand response on prices, demonstrated that a modest three percent load reduction in the 100 highest peak hours corresponds to a price decline of six to 12 percent. Demand response can also lower prices in the organized wholesale energy markets by reducing the need to dispatch higher-priced generation, or construct new generation, in an effort to satisfy load. Second, demand response can mitigate generator market power. This is to address any filings emerging from those discussions in future proceedings.


11 Id. (“Demand response tends to flatten an area’s load profile, which in turn may reduce the need to construct and use more costly resources during periods of high demand; the overall effect is to lower the average cost of producing energy.”). Similarly, NYISO “has experienced a significant increase in the registration of the [demand response] programs that have effectively reduced the need for additional [generation] capacity resources to the system based on customer pledges to cut energy usage on demand.” See NYISO’s 2009 Comprehensive Reliability Plan at 3, found at http://www.nyiso.com/public/webdocs/newsroom/planning_reports/CRP_FINAL_5-19- (continued…)
because the more demand response is able to reduce demand, the more downward pressure it places on generator bidding strategies by increasing the risk to a supplier that it will not be dispatched if it bids a price that is too high. 13 Third, demand response has the potential to support system reliability and address resource adequacy 14 and resource management challenges surrounding the unexpected loss of generation. 15

12 See Comments of NYISO’s Market Monitor filed in Docket No. ER09-1142-000, May 15, 2009 (Demand response “contributes to reliability in the short-term, resource adequacy in the long-term, reduces price volatility and other market costs, and mitigates supplier market power.”).

13 Id.

14 See ISO-RTO Council Report, Harnessing the Power of Demand How ISOs and RTOs Are Integrating Demand Response into Wholesale Electricity Markets at 4, found at http://www.isorto.org/atf/cf/%7B5B4E85C6-7EAC-40A0-8DC3-003829518EBD%7D/IRC_DR_Report_101607.pdf (“Demand response contributes to maintaining system reliability. Lower electric load when supply is especially tight reduces the likelihood of load shedding. Improvements in reliability mean that many circumstances that otherwise result in forced outages and rolling blackouts are averted, resulting in substantial financial savings . . . .”); Smart Grid Policy, 126 FERC ¶ 61,253, at P 19 and n.23 (2009) (“The Smart Grid concept envisions a power system architecture that permits two-way communication between the grid and essentially all devices that connect to it, ultimately all the way down to large consumer appliances. . . . Once that is achieved, a significant proportion of electric load could become an important resource to the electric system, able to respond automatically to customer-selected price or dispatch signals delivered over the Smart Grid infrastructure without significant degradation of service quality.”).

15 For instance, in ERCOT, on February 26, 2008, through a combination of a sudden drop in power supplied by wind generators, a quicker-than-expected ramping up of demand, and the loss of thermal generation, ERCOT found itself short of reserves.

(continued…)
Given its ability to lower electricity prices and ensure reliability, demand response can play a critical role in helping the Commission fulfill its mandate under the Federal Power Act (FPA) to ensure that rates charged for energy are just and reasonable.\textsuperscript{16} Accordingly, and consistent with national policy requiring facilitation of demand response,\textsuperscript{17} the Commission has acted to remove barriers to participation of demand response resources in organized wholesale electricity markets. For example, in Order No. 890, the Commission modified the \textit{pro forma} Open Access Transmission Tariff to allow non-generation resources, including demand response resources, to be used in the provision of certain ancillary services where appropriate on a comparable basis to service provided by generation resources.\textsuperscript{18} Order No. 890-A further requires transmission


\textsuperscript{17} See \textit{EPAct 2005}, Pub. L. No. 109-58, § 1252(f), 119 Stat. 594, 965 (2005) (“It is the policy of the United States that . . . unnecessary barriers to demand response participation in energy, capacity, and ancillary service markets shall be eliminated.”).

providers to develop transmission planning processes that treat all resources, including demand response, on a comparable basis.\textsuperscript{19}

6. The Commission built on these reforms in Order No. 719, requiring ISOs and RTOs to, among other things, accept bids from demand response resources in their markets for certain ancillary services on a basis comparable to other resources.\textsuperscript{20} The Commission also required each ISO and RTO “to reform or demonstrate the adequacy of its existing market rules to ensure that the market price for energy reflects the value of energy during an operating reserve shortage,”\textsuperscript{21} for purposes of encouraging existing generation and demand resources to continue to be relied upon during an operating reserve shortage, and encouraging entry of new generation and demand resources.\textsuperscript{22}

B. \textbf{Current ISO and RTO Demand Response Programs}

7. In addition to the foregoing efforts, the Commission has issued orders in recent years approving various types of ISO and RTO demand response programs. As noted above, some of these programs are administered for reliability and emergency conditions. Apart from these programs, wholesale customers and qualifying large retail customers

\textsuperscript{19} Order No. 890-A at P 216.

\textsuperscript{20} Order No. 719 at P 47-49.

\textsuperscript{21} Id. P 194.

\textsuperscript{22} Id. P 247.
may bid demand response directly into the day-ahead and real-time energy markets, certain ancillary service markets and capacity markets. Demand response providers participating as resources in the day-ahead and real-time energy markets are the subject of this proceeding.

8. With particular regard to demand response compensation for this latter category of resources, the Commission previously has allowed a system-by-system approach, whereby each RTO and ISO has developed its own compensation methodologies for demand response resources in its energy market. As a result, the levels of compensation for demand response vary significantly among RTOs and ISOs. PJM pays the Locational Marginal Price (LMP)\(^{24}\) minus the generation and transmission portions of the retail


\(^{24}\) LMP refers to the price calculated by the ISO or RTO at particular locations or electrical nodes within the ISO or RTO footprint and is used as the market price to compensate generators. There are variations in the way ISOs and RTOs calculate LMP; however, each method establishes the marginal value of resources in that market. Nothing in this NOPR is intended to change ISO and RTO methods for calculating LMP.
rate. ISO-NE and NYISO currently pay LMP when prices are above a threshold level, with the levels differing between the RTOs. The Midwest ISO currently has a program that pays LMP for demand response in the real-time energy market when the demand response provider has purchased the amount reduced in the day-ahead market for energy and ancillary services. CAISO pays LMP in its participating load program that allows qualifying resources to provide day-ahead and real-time energy and non-spinning reserves. SPP currently has no demand response program at all.

25 PJM FERC Electric Tariff, Sixth Revised Sheet No. 388D.01.

26 For example, under ISO-NE’s Real Time Price Response Program, the minimum bid is $100/MWh and a demand response resource is paid the higher of LMP or $100/MWh. See Section III.1.3 of the ISO New England Transmission, Markets and Services Tariff, Section 1 of the Second Restated New England Power Pool Agreement. NYISO implements a day-ahead demand response program by which resources bid into the market at a minimum of $75/MWh and can get paid the LMP. See NYISO Incentivized Day-Ahead Economic Load Curtailment Program, Fifth Revised Tariff Sheet No. 34-34A, 89.


28 See section 11.2.1.1 IFM Payments for Supply of Energy, CAISO FERC Electric Tariff.

29 However, the Commission has directed SPP to report on ways it can incorporate demand response into its imbalance market. Southwest Power Pool, Inc., 114 FERC ¶ 61,289, at P 229 (2006). In its orders addressing SPP’s compliance with Order No. 719, the Commission also directed SPP to make a subsequent compliance filing addressing demand response participation in its organized markets.

(continued…)
have continued to examine the effectiveness of demand response compensation in their respective regions, and, as a result, the issue of proper compensation continues to be the subject of several proceedings.\textsuperscript{30}

C. **The Need for Reform**

9. Despite the benefits of demand response and various efforts by the Commission, ISOs and RTOs to address barriers to and compensation for demand response participation, demand response providers collectively play a small role in wholesale markets. After several years of observing demand response participation in ISO and RTO markets with different, and often evolving, demand response compensation structures, the Commission is concerned that some existing, inadequate compensation structures have hindered the development and use of demand response. The impediment has been addressed at Commission-sponsored technical conferences concerning demand response, where participants have confirmed that customers “must have confidence that appropriate price signals will be sustained by stable competitive pricing structures, before

they will make an investment in demand response.”

Some participants have advised that demand response quite simply will not occur without adequate compensation.

10. Indeed, there are indications that demand response resources react correspondingly to increases or decreases in payment. PJM provides a case study on this point. It first implemented its Economic Load Response Program (Economic Program) providing for demand response compensation in June 2002. Several years later, starting in January 2008, when PJM reduced its compensation for demand response, settled demand reductions began decreasing from previous years. Specifically, PJM’s Market Monitor noted that, from 2007 to 2008, following the decrease in compensation, settled demand


32 See Statements of Larry Stalica, Vice President, Linde Energy Services, Inc. FERC Technical Conference- Demand Response in Organized Electric Markets, May 21, 2008, found at http://www.ferc.gov/EventCalendar/Files/20080521081612-Stalica,%20Linde%20Energy%20Services.pdf. (“The mere avoidance of electricity prices often provides insufficient value to offset these real costs. Demand response will not occur if customers do not have an economic incentive to reduce consumption.”).

33 See PJM Interconnection, L.L.C., 99 FERC ¶ 61,227 (2002). PJM’s Economic Program provided for payment of LMP for all demand response reductions when LMP equaled or exceeded $75/MWh and paid LMP minus the generation and transmission components of the retail rate when LMP was less than $75/MWh.

34 The tariff provision providing for payment of LMP when LMP equaled or exceeded $75/MWh terminated by its terms on December 31, 2007, and, since then, PJM has paid only LMP minus the generation and transmission components of the retail rate.
reductions decreased by 36.8 percent, from 714,200 MWh to 458,300 MWh, and the decline has continued at least through March 2009.\(^{35}\) Although the Commission had rejected a request to prevent the compensation decrease from occurring as per the terms of PJM’s then-existing tariff, the Commission encouraged PJM and its stakeholders to continue analyzing the effectiveness of PJM’s demand response program with the decreased payments for demand response.\(^{36}\) Based upon our own review, the Commission is now concerned that evidence of demand reductions in PJM, and inadequate demand response participation, now and in the future, may be the result of compensation that is no longer just and reasonable, because, as detailed below, the existing and varying levels of compensation generally fail to reflect the marginal value of demand response resources to ISO and RTO energy markets.

II. **Discussion**

11. Given the importance of demand response resources to the competitiveness of organized wholesale electricity markets, and based upon our experience to date with demand response in the ISO- and RTO-administered markets, the Commission proposes to address compensation for demand response resources participating in organized wholesale energy markets generically in this proceeding. The Commission proposes to

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\(^{35}\) Monitoring Analytics, Barriers to Demand Side Response in PJM at 22 (July 1, 2009).

\(^{36}\) PJM Interconnection, L.L.C., 121 FERC ¶ 61,315, at P 29 (2007).
add section 35.18(g)(1)(v) to our regulations to establish a specific compensation approach for demand response resources participating in organized wholesale energy markets (such as the day-ahead and real-time markets administered by the ISOs and RTOs). Under the proposed section, each Commission-approved ISO and RTO that has a tariff provision providing for participation of demand response resources in its energy market must pay demand response resources, in all hours, the market price for energy, i.e., full LMP, for demand reductions made in response to price signals.  

12. The Commission proposes to take this action generically to address issues that are common to the RTO and ISO markets in a coordinated manner in a single proceeding. As discussed further below, we believe paying demand response resources the LMP in all hours will compensate those resources in a manner that reflects the marginal value of the resource to each RTO and ISO, comparable to treatment of generation resources. This will improve the competitiveness of the organized wholesale energy markets and, in turn, help to ensure that energy prices in those markets are just and reasonable.  

13. As explained above, we have previously accepted a variety of ISO and RTO proposals for compensation for demand response providers, with different levels of

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37 This provision will not apply to programs that ISOs and RTOs administer for reliability or emergency conditions. In those situations, the ISO and RTO tariffs may provide compensation that is not necessarily related solely to energy prices but is designed to prevent involuntary load curtailment.
payment. As we have gained experience with these programs, we are concerned that the current compensation levels appear to have become unjust and unreasonable. Providers may submit price and quantity bids into the organized wholesale energy markets and the market clears at the marginal resource yet they fail to compensate demand response at levels that reflect the marginal value of the resource being used by the RTO or ISO to balance supply and demand. The current wholesale compensation levels may therefore be leading to under-investment in demand response resources, resulting in higher, and unjust and unreasonable, prices in the organized electricity markets. To help ensure that wholesale prices in ISOs and RTOs remain just and reasonable, we are proposing to require each ISO and RTO to pay the LMP to demand response providers participating in the organized wholesale energy markets.

14. It is a well-established practice in the organized wholesale energy markets to rely on LMPs to encourage efficient behavior by market participants. The LMP represents the value of additional supply or reductions in consumption at each node within the RTO or ISO and, thus, reflects the marginal cost of the last unit necessary to efficiently balance supply and demand. The LMP is therefore the primary mechanism for compensating

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38 See ISO New England, Inc., 100 FERC ¶ 61,287, at P 71 (2002) (LMP “provide[s] appropriate price signals indicating the value of additional resources or conservation at each node in the transmission system”); Cleco Power LLC, et al., 103 FERC ¶ 61,272, at P 67 (2003) (“It is widely observed that markets work efficiently when prices reflect marginal costs, i.e., when the market price will be equal to the cost of

(continued…)
generation resources clearing in the organized electricity markets, which the Commission has found encourages “more efficient supply and demand decisions in both the short run and long run.”

15. Given that the LMP represents the marginal value of the resource being used by the RTO or ISO to balance supply and demand, it follows that the LMP should be paid to any resource clearing in the RTO’s or ISO’s energy market. In balancing supply and demand, a one megawatt reduction in demand is equivalent to a one megawatt increase in energy for purposes of meeting load requirements and maintaining a reliable electric system. The ISO or RTO is able to avoid dispatching suppliers with higher bids, be they generation or demand response, by accepting a lower bid to either reduce consumption or increase generation. As Dr. Alfred E. Kahn noted in a recent PJM proceeding in Docket No. EL09-68-000, consumers offering to reduce consumption should be induced “to behave as they would if the market mechanisms alone were capable of rewarding them directly for efficient economizing.” This is because “the (incremental) costs saved by curtailments in demand clearly will be LMP - including the marginal costs of generation.

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40 Kahn Affidavit at 4.
So, in the end the LMP inducement is the economically correct one.\textsuperscript{41} This appears to be true across all ISOs and RTOs and, therefore, it appears appropriate to compensate both generation and demand response resources participating in the organized wholesale electricity markets at the LMP.

16. Ultimately, the markets themselves will determine the level of generation and demand response resources needed to balance energy and demand. The level of compensation provided to each resource, however, affects its willingness and ability to participate in the market.\textsuperscript{42} For example, demand response resources need to make investments in technologies to enable participation in the organized wholesale energy markets, as well as incur costs in changing their operations in order to provide demand response. In those markets paying less than the LMP to demand response resources, such resources have less revenues to support investment in demand response-enabling technology (such as metering equipment, energy usage monitors and process controls) necessary to enable more wholesale market participation by demand response resources. Where compensation for demand response is inadequate, demand response resources will be hesitant to invest in demand response devices. Compared to existing compensation

\textsuperscript{41} Id. at 3.

\textsuperscript{42} Generation and demand response resources have the potential to earn other revenues through bilateral arrangements, capacity markets where they exist, and ancillary services.
levels, paying the LMP in all hours should allow more demand response resources to cover their investment costs and increase their ability to participate in the organized wholesale electric markets.

17. Increased levels of demand response participation, in turn, should lead to lower clearing prices in the organized wholesale energy markets. As the Commission explained in accepting PJM’s Economic Load Response Program:

Without a demand response mechanism, [an independent system operator] is forced to work under the assumption that all customers have an inelastic demand for energy and will pay any price for power. There is ample evidence that this is not true. Many customers, given the right tools, can and will manage their demand. . . . A working demand response program puts downward pressure on price, because suppliers have additional incentives to keep bids close to their marginal production costs and high supply bids are more likely to reduce the bidder's energy sales. Appropriate price signals to customers thus helps to mitigate market power as high supply bids are more likely to reduce the bidders' energy sales. Suppliers thus have additional incentive to keep bids close to their marginal production costs.[43]

18. Additionally, increasing the aggregate amount of demand response resources in the organized wholesale energy markets will help to move prices closer to the levels that would result if all demand could respond to the marginal cost of energy. Paying the LMP to those potential demand response resources who are capable of responding – but who

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have not been participating as a resource due to inadequate compensation – should bring those additional demand response resources into the organized wholesale energy markets. But again, the markets themselves will determine the appropriate level of demand response, and generation, resources needed by the ISO and RTO to balance energy and demand based on their relative bids into the markets.

19. We recognize that the appropriate level of compensation for demand response resources participating in organized wholesale energy markets has been the subject of debate. In various proceedings, some parties have advocated payment of LMP minus components of the retail rate, on the theory that such an approach permits all consumers to react as if they were paying LMP.\textsuperscript{44} Some parties have argued that payment of LMP is appropriate only during the most expensive hours,\textsuperscript{45} on the theory that demand response will have the greatest impact during those hours in which the aggregate supply curve is steep (\textit{i.e.}, when supply is less elastic). Given the current barriers to demand response\textsuperscript{46}

\textsuperscript{44} Professor William W. Hogan has argued, for instance, that payment of LMP (without an offset for some portion of the retail rate) over-compensates individual demand response providers and might result in more demand response than is efficient. See Attachment to Answer of Electric Power Supply Association, Providing Incentives for Efficient Demand Response, William W. Hogan, October 29, 2009, submitted in Docket No. EL09-68-000.

\textsuperscript{45} See PJM’s Transmittal Letter at 29 submitted in Docket No. EL09-68-000.

\textsuperscript{46} A recent Commission Staff report details several barriers to demand response, including regulatory barriers, such as lack of a direct connection between wholesale and
and the evolving nature of the technology enabling demand response, a perfect solution or payment scheme may not exist. We nonetheless believe that paying LMP in all hours to the demand response resources that can participate in the organized wholesale energy markets is the correct approach at this time, because that payment reflects the marginal effect of each demand response resource in the hour, just as the LMP reflects the marginal effect of generation resources in each hour. LMP is the marginal value of both demand response and generation in any hour, regardless of whether it is morning or evening, daytime or nighttime, weekday or weekend.

20. We, nevertheless, seek comment on the need to compensate demand response acting as a resource in organized wholesale energy markets. Commenters may address

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retail prices, lack of dynamic prices, measurement and verification challenges, lack of real-time information sharing, and ineffective demand response program design; technological barriers, such as lack of advanced metering infrastructure and the high cost of some enabling technologies; and other barriers, such as lack of customer awareness and education. Federal Energy Regulatory Commission Staff, A National Assessment of Demand Response Potential (June 2009), found at http://www.ferc.gov/legal/staff-reports/06-09-demand-response.pdf. In compliance filings submitted by RTOs and ISOs and their market monitors pursuant to Order No. 719, as well as in responsive pleadings, parties have mentioned additional barriers, such as the inability of demand response resources to set LMP, minimum size requirements, and others.

47 We note that in PJM, 17 percent of load reductions by demand response resources for that year occurred between the non-peak hours of 11 p.m. and 8 a.m. See 2008 State of the Market Report for PJM, Volume 2, Table 2-93 at 103, found at http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2008/2008-som-pjm-volume2.pdf.
whether current compensation for demand response providers acting as a resource in the organized wholesale energy markets is adequately procuring demand response. We further solicit comment on alternative approaches to compensating demand response resources participating in organized wholesale energy markets, and the merit of those approaches in comparison to the one proposed here. In particular, we ask for comment on whether a reduction in consumption is comparable to an increase in electricity production for purposes of balancing supply and demand, and whether, therefore, demand response providers and generators should receive comparable compensation. We further seek comment on whether paying LMP to demand response resources is comparable compensation or is more or less than comparable to compensation paid to generation in the ISO and RTO energy markets. We also request comment on whether payment of LMP should apply to all hours, and, if not, the criteria that should be used for establishing the hours when LMP should apply. Additionally, we seek comment on whether requiring payment of LMP is appropriate across all ISOs and RTOs, or whether variations among ISOs and RTOs justify varying levels of demand response resource compensation. To that end, we further seek comment on whether the Commission should allow regional variations for an ISO or RTO that does not seek to compensate demand response resources participating in the organized wholesale energy market.

21. Organized wholesale energy markets are evolving and, as such, the rules and regulations related to those markets will continue to evolve. This is no less so for
demand response, as the markets, and the types of demand response participating in them, continue to evolve. Therefore, it may be necessary in the future for industry and the Commission to reassess the appropriate method for compensating demand response resources in organized wholesale energy markets.\(^{48}\) Accordingly, we also seek comment on whether, and under what circumstances, the Commission should conduct periodic reviews of demand response compensation and the criteria that should be used in making such assessments.

22. With specific regard to the proposed regulatory text set forth below, we seek comments on whether terms such as “expected levels,” “price signals,” and “market prices” are sufficiently defined.

23. Because we are addressing generically in this rulemaking proceeding the same issues raised in the PJM proceeding in Docket No. EL09-68-000, that docket is hereby terminated.\(^{49}\) The Commission will take administrative notice of the record in the PJM proceeding.

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\(^{48}\) Indeed, the Commission’s proposed action in this proceeding is evidence of our continuing assessment of compensation for demand response resources. In \textit{PJM Interconnection, L.L.C. v. Federal Energy Regulatory Commission} (2007), the Commission rejected a complaint that PJM’s existing compensation for demand response (LMP minus the generation and transmission components of the retail rate) was unjust and unreasonable, finding that there was insufficient evidence at the time to make such a finding. As we have acquired more experience with the participation of demand response resources in the organized wholesale energy markets, we are concerned that compensation for demand response in PJM and other RTO and ISO markets may no longer be just and reasonable.

proceeding so that parties in that proceeding need not refile affidavits or other evidence introduced there.

III. **Information Collection Statement**

24. The Office of Management and Budget (OMB) requires that OMB approve certain information collection and data retention requirements imposed by agency rules.⁵⁰ Therefore, the Commission is submitting the proposed modifications to its information collections to OMB for review and approval in accordance with section 3507(d) of the Paperwork Reduction Act of 1995.⁵¹

25. The Office of Management and Budget’s (OMB) regulations require approval of certain information collection requirements imposed by agency rules. Upon approval of a collection(s) of information, OMB will assign an OMB control number and an expiration date. Respondents subject to the filing requirements of a rule will not be penalized for failing to respond to these collections of information unless the collections of information display a valid OMB control number.

26. The Commission is submitting these reporting requirements to OMB for its review and approval under section 3507(d) of the Paperwork Reduction Act. Comments are

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⁵⁰ 5 CFR § 1320.11(b) (2009).

solicited on the Commission’s need for this information, whether the information will have practical utility, the accuracy of provided burden estimates, ways to enhance the quality, utility, and clarity of the information to be collected, and any suggested methods for minimizing the respondent’s burden, including the use of automated information techniques.

**Burden Estimate:** The Public Reporting burden for the requirements contained in the NOPR is as follows:

<table>
<thead>
<tr>
<th>Data Collection</th>
<th>Number of Respondents</th>
<th>No. of Responses</th>
<th>Hours Per Response</th>
<th>Total Annual Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>FERC-516 Transmission Organizations with Organized Electricity Markets</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>36</td>
</tr>
</tbody>
</table>

**Information Collection Costs:** The Commission seeks comments on the costs to comply with these requirements. The Commission has projected the average annualized cost of all respondents to be the following: 36 hours @ $220 per hour = $7,920 for respondents. No capital costs are estimated to be incurred by respondents.

**Title:** FERC-516 “Electric Rate Schedule Tariff Filings”

**Action:** Proposed Collections.

**OMB Control No:** 1902-0096.

**Respondents:** Business or other for profit, and/or not for profit institutions.
Frequency of Responses: One time to initially comply with the rule, and then on occasion as needed to revise or modify.

27. **Necessity of the Information:** The information from FERC-516 enables the Commission to exercise its statutory obligation under Sections 205 and 206 of the FPA. FPA section 205 specifies that all rates and charges, and related contracts and service conditions for wholesale sales and transmission of energy in interstate commerce be filed with the Commission and must be “just and reasonable.” In addition, FPA section 206 requires the Commission upon complaint or its own motion, to modify existing rates or services that are found to unjust, unreasonable, unduly discriminatory or preferential. The Commission needs sufficient detail to make an informed and reasonable decision concerning the appropriate level of rates, and the appropriateness of non-rate terms and conditions, and to aid customers and other parties who may wish to challenge the rates, terms, and conditions proposed by the utility.

28. This proposed rule, if adopted, would amend the Commission’s regulations to obligate ISOs and RTOs to pay the market price for energy to demand response resources for demand reductions within each respective ISO and RTO region. Requiring ISOs and RTOs to pay the market price for energy to demand response resources for demand reductions in response to price signals will potentially reduce the market clearing price of electricity. The Commission has emphasized the importance of demand response as a vehicle for improving the competitiveness of organized wholesale electricity markets and
ensuring supplies of energy at just, reasonable and not unduly discriminatory or preferential rates.\textsuperscript{52}

29. \textbf{Internal review}: The Commission has reviewed the requirements pertaining to organized wholesale electric markets and determined the proposed requirements are necessary to its responsibilities under sections 205 and 206 of the FPA.

30. These requirements conform to the Commission’s plan for efficient information collection, communication and management within the energy industry. The Commission has assured itself, by means of internal review, that there is specific, objective support for the burden estimates associated with the information requirements.

31. Interested persons may obtain information on the reporting requirements by contacting: Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426 [Attention: Michael Miller, Office of the Executive Director, Phone: (202) 502-8415, fax: (202) 273-0873, e-mail: michael.miller@ferc.gov]. Comments on the requirements of the proposed rule may also be sent to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503 [Attention: Desk Officer for the Federal Energy Regulatory Commission], e-mail: oira_submission@omb.eop.gov.

\textsuperscript{52} Order No. 719 at P 16.
IV. **Environmental Analysis**

32. The Commission is required to prepare an Environmental Assessment or an Environmental Impact Statement for any action that may have a significant adverse effect on the human environment.\(^{53}\) The Commission concludes that neither an Environmental Assessment nor an Environmental Impact Statement is required for this NOPR under section 380.4(a)(15) of the Commission’s regulations, which provides a categorical exemption for approval of actions under sections 205 and 206 of the FPA relating to the filing of schedules containing all rates and charges for the transmission or sale of electric energy subject to the Commission’s jurisdiction, plus the classification, practices, contracts and regulations that affect rates, charges, classifications, and services.\(^{54}\)

V. **Regulatory Flexibility Act Certification**

33. The Regulatory Flexibility Act of 1980 (RFA)\(^{55}\) generally requires a description and analysis of final rules that will have significant economic impact on a substantial

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number of small entities.\textsuperscript{56} ISOs and RTOs, not small entities, are impacted directly by this rule.

34. California Independent System Operator Corp. (CAISO) is a non-profit organization comprised of more than 90 electric transmission-owning companies and generators operating in its markets and serving more than 30 million customers.

35. New York Independent System Operator, Inc. (NYISO) is a non-profit organization that oversees wholesale electricity markets serving 19.2 million customers. NYISO manages a 10,775-mile network of high-voltage lines.

36. PJM Interconnection, L.L.C. (PJM) is comprised of more than 450 members including power generators, transmission owners, electricity distributors, power marketers, and large industrial customers, serving 13 states and the District of Columbia.

37. Southwest Power Pool, Inc. (SPP) is comprised of 50 members serving 4.5 million customers in eight states and has 52,301 miles of transmission lines.

\textsuperscript{56} The RFA definition of “small entity” refers to the definition provided in the Small Business Act, which defines a “small business concern” as a business that is independently owned and operated and that is not dominant in its field of operation. See 15 U.S.C. § 601(3) (2000) (citing to section 3 of the Small Business Act, 15 U.S.C. § 632 (2000)). The Small Business Size Standards component of the North American Industry Classification system defines a small utility as one that, including its affiliates, is primarily engaged in the generation, transmission, or distribution of electric energy for sale, and whose total electric output for the preceding fiscal years did not exceed 4 MWh. 13 CFR § 121.202 (Sector 22, Utilities, North American Industry Classification System, NAICS) (2004).
38. Midwest Independent Transmission System Operator, Inc. (Midwest ISO) is a non-profit organization with over 131,000 megawatts of installed generation. Midwest ISO has 93,600 miles of transmission lines and serves 15 states and one Canadian province.

39. ISO New England, Inc. (ISO-NE) is a regional transmission organization serving six states in New England. The system is comprised of more than 8,000 miles of high-voltage transmission lines and several hundred generation facilities, of which more than 350 are under ISO-NE’s direct control.

40. The Commission believes this rule will not have a significant economic impact on a substantial number of small entities, and therefore no regulatory flexibility analysis is required.

VI. Comment Procedures

41. The Commission invites interested persons to submit comments on the proposed regulatory text that commenters may wish to discuss. Comments are due 45 days after publication in the Federal Register. Comments must refer to Docket No. RM10-17-000,\(^{57}\) and must include the commenter's name, the organization they represent, if applicable, and their address in their comments.

\(^{57}\) Because this NOPR terminates Docket No. EL09-68-000, comments should not refer to that proceeding.
42. The Commission encourages comments to be filed electronically via the eFiling link on the Commission's web site at http://www.ferc.gov. The Commission accepts most standard word processing formats. Documents created electronically using word processing software should be filed in native applications or print-to-PDF format and not in a scanned format. Commenters filing electronically do not need to make a paper filing.

43. Commenters that are not able to file comments electronically must send an original and 14 copies of their comments to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street, NE, Washington, DC 20426.

44. All comments will be placed in the Commission's public files and may be viewed, printed, or downloaded remotely as described in the Document Availability section below. Commenters on this proposal are not required to serve copies of their comments on other commenters.

VII. Document Availability

45. In addition to publishing the full text of this document in the Federal Register, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the Internet through FERC's Home Page (http://www.ferc.gov) and in FERC's Public Reference Room during normal business hours (8:30 a.m. to 5:00 p.m. Eastern time) at 888 First Street, NE, Room 2A, Washington, DC 20426.
46. From FERC's Home Page on the Internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number excluding the last three digits of this document in the docket number field.

47. User assistance is available for eLibrary and the FERC’s web site during normal business hours from FERC Online Support at (202) 502-6652 (toll free at 1-866-208-3676) or email at ferconlinesupport@ferc.gov, or the Public Reference Room at (202) 502-8371, TTY (202)502-8659. E-mail the Public Reference Room at public.referenceroom@ferc.gov.

List of subjects in 18 CFR Part 35

Electric power rates, Electric utilities, Reporting and recordkeeping requirements.

By direction of the Commission. Commissioner Moeller is concurring in part and dissenting in part with separate statement attached.

( S E A L )

Nathaniel J. Davis, Sr.,
Deputy Secretary.

In consideration of the foregoing, the Commission proposes to amend Chapter I, Title 18 of the Code of Federal Regulations as follows:
PART 35—FILING OF RATE SCHEDULES AND TARIFFS

1. The authority citation for Part 35 continues to read as follows:


2. Amend § 35.28 as follows:

Add a new paragraph (g)(1)(v).

   **§ 35.28 Non-discriminatory open access transmission tariff.**

   *(v) Demand response compensation in energy markets.* Each Commission-approved independent system operator or regional transmission organization that has a tariff provision permitting demand response resources to participate as a resource in the energy market by reducing consumption of electric energy from their expected levels in response to price signals must pay to those demand response providers, in all hours, the market price for energy for these reductions.
MOELLER, Commissioner, *concurring, in part and dissenting, in part*:

As our country’s demand for energy increases, the reduction of energy usage through demand response programs will play a critical role in meeting our needs and it is my hope that this nascent industry will thrive and succeed. In the Energy Policy Act of 2005, Congress established a policy to encourage the use of demand response by: (1) facilitating the deployment of technology to enable customers to participate in demand response programs; and (2) eliminating unnecessary barriers to demand response participation.1 Even before this law was passed, this Commission supported similar policies in the organized electric markets by encouraging the use of price responsive demand during high priced energy periods.2

Demand response is playing an increasingly critical role in our nation’s energy supply mix. Additional demand response has the potential to produce more efficient market outcomes, contribute to a cleaner environment,3 result in lower costs to customers, and help to check market power since it provides a countervailing willingness

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2 *PJM Interconnection, L.L.C.*, 99 FERC ¶ 61,227, at 61,943 (2002), *see also* Order No. 719 at P 16 (“Thus, enabling demand-side resources…improves the economic operation of electric power markets by aligning prices more closely with the value customers place on electric power.”)

3 A recent report by the National Research Council, *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use*, provides estimates of the cost associated with air pollution as the result of energy production.
to reduce demand in the face of high prices.\textsuperscript{4} With respect to prices, studies have shown that sometimes a small decrease in demand from demand response resources during peak periods can significantly reduce market prices. In sum, the benefits that demand response resources can bring to the energy markets are proven and significant.

The initial success of demand response has resulted in a steady maturation of the demand response industry. However, as the industry continues to mature, we must ensure that our policies are properly tailored to guide the development of demand response in a manner that will result in economically-efficient outcomes. Moving too quickly to reach a desired result can result in unintended consequences – and I believe that today’s decision to propose a standard payment could have unintentional effects on both demand response participation and the efficient operation of the organized markets over the longer term.

In today’s notice of proposed rulemaking (NOPR), the majority concludes that the Commission should require a standard payment to compensate demand response resources. Specifically, the majority’s proposed outcome would be that these resources are paid the market price (\textit{i.e.}, the locational marginal price or “LMP”) for energy reductions in all 8,760 hours of the year. This determination is followed by questions such as whether other compensation designs could also work; questions that I believe would have been more appropriately asked prior to establishing this NOPR.\textsuperscript{5} For that reason, I believe that a preliminary issuance (such as a Notice of Inquiry) should have been established to collect and analyze the evidence in advance of initiating a formal rulemaking proceeding.

While the majority claims that it is “concerned that compensation for demand response in PJM and other RTO and ISO markets may no longer be just and reasonable”, the NOPR lacks a thorough discussion of the evidence that they relied upon to substantiate their concerns.\textsuperscript{6} The NOPR also lacks a sufficient explanation of the


\textsuperscript{5} To the extent that this NOPR asks questions to determine whether the proposed rule is just and reasonable, I concur.

\textsuperscript{6} NOPR at n. 48. In support of the conclusion that compensation may no longer be just and reasonable, the preamble provides an example involving PJM’s Economic Load Response Program and the drop of settled demand reductions experienced after the subsidy payments expired per the terms of PJM’s tariff. NOPR at P 10. While the cited level of reduction is a fact, the PJM market monitor stated that “\textit{w}hile the removal of

(continued…)
“experience” that FERC has recently gained that would otherwise support the conclusion that the organized electric markets “fail to compensate demand response at levels that reflect the marginal value of the resource being used by the RTO or ISO to balance supply and demand.”

To the contrary, the record in Docket No. EL09-68-000 shows wide disagreement in the industry regarding the issue of demand response compensation. In that proceeding, state utility commissions, the grid operator, industry economists, and the market participants all reached various conclusions regarding the question of how to compensate demand response resources in PJM. In light of such rigorous debate, I am not sure if the incentive program, effective November 2007, may have reduced participation, the exact role of the elimination of the incentive program is not known because there were changes to other key factors which directly impact participation.”

Citing Monitoring Analytics, Barriers to Demand Side Response in PJM, at 22 (July 1, 2009). More recently, the PJM market monitor recognized that between 2008 and 2009, “[t]here were many factors contributing to the lower levels of participation and lower revenues in the Economic Program, including lower price levels in 2009, lower load levels, and improved measurement and verification.” Notably, while payments from the Economic Program have fallen substantially since 2007, capacity revenue for demand response has increased significantly (rising 114% to $303 million from 2008 to 2009.) Citing Monitoring Analytics, State of the Market Report for PJM, at 111 (March 11, 2010).

7 NOPR at P 13.

8 Compare the position of the Indiana Utility Regulatory Commission (i.e., LMP less the generation portion of retail rates (LMP-G) is an accepted indication of cost-effectiveness) with the position taken by the New Jersey Board of Public Utilities and the District of Columbia Public Service Commission (i.e., compensation for demand response should be based solely on LMP). Comments filed in Docket No. EL09-68-000.

9 While there appears to be no disagreement that the correct price signal for all customers is the LMP, the debate centers on whether demand response resources should be paid the LMP or should realize the value of LMP if they choose to reduce demand. Additionally, at certain times, the LMP can become negative, meaning that generators must pay into the market to the extent they generate power. Should demand response resources likewise be required to pay into the market during negative LMP events, or should they be exempt?
Commission has a sustainable rationale to support a finding that the proposed rule is just and reasonable and that the existing compensation methods (that have been approved by this Commission) are no longer just and reasonable.

In fact, only recently did the Commission issue an order that not only sustained the manner by which PJM compensates demand response resources but also encouraged PJM and its stakeholders to identify and analyze issues to improve their demand response program.\textsuperscript{10} Subsequently, PJM filed a detailed report explaining that while the stakeholder process did not yield a consensus position, the PJM Board moved forward and developed a compromise solution that was designed to strengthen its demand response markets.\textsuperscript{11} In lieu of evaluating the merits of the proposal approved by PJM’s Board, the NOPR terminates the PJM docket and directs PJM and its stakeholders to focus on whether demand response resources should be paid the market price – a question that has undoubtedly been analyzed, addressed and debated at numerous stakeholder meetings.

Since today’s NOPR does not sufficiently explain the need for a uniform compensation approach, I am troubled by the decision to terminate PJM’s individual proceeding. If approved, PJM’s efforts toward developing a compromise solution for its market would have likely resulted in additional demand response participation and its associated benefits. However, with this NOPR’s issuance, PJM and the other RTOs must now refrain from making changes to its demand response compensation rules pending the outcome of the rulemaking proceeding. The NOPR may also discourage some emerging organized markets from continuing to evolve toward the LMP model, as well as discourage some non-organized regions from seriously considering moving toward a market structure.

Ultimately, I want demand response to thrive and succeed in \textit{all} the energy markets.\textsuperscript{12} However, there are only so many policy decisions and rulemakings that this

\textsuperscript{10} \textit{PJM Industrial Customer Coalition v. PJM Interconnection, L.L.C.,} 121 FERC \textsuperscript{¶} 61,315, at P 29 (2007) (Wellinghoff and Kelly, Comm’rs, dissenting).

\textsuperscript{11} PJM did note that the concept of paying LMP-G received considerable support and “conservatively could be said to have garnered at least a three-quarters majority approval.” \textit{See} PJM Supplemental Report in Docket No. EL09-68-000 at 24-25.

\textsuperscript{12} My concern here goes to highlight the differences between regions with competitive wholesale markets and those that consist of largely bilateral market structures. By imposing a uniform compensation requirement, this proposed rulemaking (continued…)}
Commission can make to encourage its development. As mentioned in the preamble, the primary barrier to increased demand response is the disconnect between retail and wholesale prices and the remedy resides at the retail level where there is a lack of dynamic pricing. The approach embraced in the NOPR may also lead to a situation where residential ratepayers could be subsidizing other classes of service while unable to participate themselves in demand response programs. Absent attention to these issues, it will be difficult for any proposal to place generation and demand response on a precisely level playing field.

Until then, this Commission must review what options it has available without resorting to policies that would adversely enable the short-term development of demand response at the expense of its longer-term success. In closing, I believe that demand response programs have great potential to enhance the organized energy markets and I look forward to their continued development. I am concerned, however, that a one-size-fits-all approach could result in uneconomic outcomes that ultimately set back the future development of demand response.

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Philip D. Moeller
Commissioner

could further exacerbate bifurcated approach toward national policy: entities in a competitive wholesale market must comply with increasingly burdensome requirements while entities operating in bilateral markets are often free from requirements that otherwise advance national policy goals.