

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Demand Response Compensation in Organized) Docket No. RM10-17-000
Wholesale Energy Markets)

REPLY COMMENTS OF THE DEMAND RESPONSE SUPPORTERS

On March 18, 2010, the Federal Energy Regulatory Commission ("Commission") issued a Notice of Proposed Rulemaking ("NOPR") to adopt an approach for compensating demand response resources¹ in order to improve the competitiveness of organized wholesale energy markets and ensure just and reasonable wholesale rates.² On and about May 13, 2010, numerous parties, including the Coalition of Midwest Transmission Customers; the PJM Industrial Customer Coalition; Comverge, Inc.; EnergyConnect, Inc.; EnerNOC, Inc.; Viridity Energy, Inc.; and Wal-Mart Stores, Inc. (collectively, "Demand Response Supporters") filed Comments addressing the Commission's initiative to determine the critical issue of demand response compensation on a generic basis across organized markets, in the context of a rulemaking. Demand Response Supporters file these Reply Comments³ to respond to some parties' assertions that payment of full Locational Marginal Price ("LMP") for demand response resources is inappropriate and also to provide additional evidence demonstrating why full LMP

¹ These Reply Comments will sometimes refer to "Demand Response" or "Demand Response Resources" as "DR."

² *Demand Response Compensation in Organized Wholesale Energy Markets*, 130 FERC ¶ 61,213 (2010).

³ Demand Response Supporters acknowledge that the Commission did not expressly allow or disallow Reply Comments in this proceeding. To the extent necessary, Demand Response Supporters seek leave to reply and have these Reply Comments considered by the Commission.

payment for demand response resources is appropriate and necessary for regulated wholesale electricity markets.⁴

Demand Response Supporters look forward to the Technical Conference on the issues of "net benefits" determinations and appropriate settlement of demand response payments. Demand Response Supporters will address these issues in written Comments following the Technical Conference.

I. INTRODUCTION AND EXECUTIVE SUMMARY

Even a cursory review of the voluminous comments filed in this proceeding leads to the conclusion that most commenters agree that demand response provides benefits to organized wholesale energy markets.⁵ Given this general agreement, the only policy question faced by the Commission is this:

What approach will most effectively incorporate demand response into the wholesale markets, over which the Commission has jurisdiction, to deliver benefits from those markets to customers?

The Commission's proposed Rule gets it right.⁶

The ultimate policy decision should not be driven solely by various economic theories, nor should it be hijacked by arguments made by parties not interested in lowering or flattening overall demand,⁷ but rather should look to relative customer costs

⁴ Demand Response Supporters' non-response to any Comments should not necessarily be interpreted as agreement with those Comments.

⁵ See, e.g., Comments of National Energy Marketers Association (May 13, 2010); Comments of Integrys Energy Services, Inc. at 3 (May 13, 2010); Comments of the Detroit Edison Company at 2 (May 13, 2010); Comments of the Independent Market Monitor for PJM (May 14, 2010).

⁶ The Commission issued a Supplemental Notice of Proposed Rulemaking and Notice of Technical Conference, 132 FERC ¶ 61,094, on August 2, 2010 ("Supplemental NOPR"). Demand Response Supporters do not herein discuss the topics covered by the Supplemental NOPR.

⁷ See Reply Affidavit of Dr. Alfred E. Kahn, Attachment A to these Reply Comments ("Kahn Reply Affidavit"), which states, in part: "That electricity generators have opposed this plan should not be surprising: their primary business is to sell power not to encourage its conservation, and I have myself publicly cited evidence that they reap the preponderance of their profits on those occasions when demand is at its peak." Kahn Reply Affidavit at 12, citing "The Adequacy of Prospective Returns on Generation Investments under Price Control Mechanisms," *The Electricity Journal*, 15:2, March 2002, pp. 7-46.

and benefits of implementing full LMP as the correct compensation for demand response participation in energy markets. The comparison of relative customer costs and benefits squares fully with the Commission's charge under the Federal Power Act, which, as both the Supreme Court and the U.S. Court of Appeals for the District of Columbia Circuit have recognized, requires the Commission to stand as the watchdog providing "a complete, permanent and effective bond of protection from excessive rates and charges"⁸ and to "guard" the consumer from exploitation, consistent with Congress' objectives in implementing the Federal Power Act.⁹

Some parties oppose the NOPR's proposed approach, offering various theoretical arguments and suppositions, while downplaying or even purposefully ignoring the real-world benefits that would result from full LMP compensation for DR.¹⁰ Many of these comments come from suppliers. The irony, of course, is that suddenly suppliers are pretending to know better than customers what will benefit customers. These Reply Comments, and the attached Reply Affidavit of Dr. Alfred E. Kahn, provide the customer perspective and rebut the theoretical offerings that try to move the Commission away from its NOPR proposals.¹¹

Other commenters attempt to degrade the value of demand response by insisting that this Commission should reduce demand response compensation by the amount of a

⁸ *Jersey Central Power & Light v. FERC*, 810 F.2d 1168, 1207 (D.C. Cir. 1987)(citing *Atlantic Refining Co. v. Public Service Commission*, 360 U.S. 378, 388, 79 S.Ct. 1246, 1253, 3 L.Ed.2d 1312 (1959)).

⁹ *See Nat'l Ass'n for the Advancement of Colored People v. Fed. Power Comm'n*, 520 F.2d 432, 438 (D.C. Cir. 1975).

¹⁰ *See, e.g.*, Comments of the Electric Power Supply Association at 4 ("The NOPR as issued will not achieve its stated objectives due to a number of significant legal, economic, policy and operational flaws with the DR compensation proposal."); Comments of the PJM Power Providers Group at 11, 50 (stating that full LMP compensation is "inappropriate" without a retail offset); Comments of the Midwest TDUs at 5 (arguing that full LMP "overcompensates" demand response, which is not a comparable resource to generation); Comments of Monitoring Analytics, LLC, Independent Market Monitor for PJM at 5-6 (asserting that the true "fix" for the market is fully transparent prices to consumers).

¹¹ *See generally* Kahn Reply Affidavit.

retail generation rate. These assertions must fail either due to flawed economic theory or due to a misapplied attempt to render retail rates "efficient."¹² In this proceeding, the Commission should focus exclusively on the correct approach to wholesale market compensation for demand response resources and not entertain any efforts to alter that course.

These Reply Comments address the following points:

- The Federal Power Act gives the Commission, and the Commission has rightfully claimed, the broad authority to correct market flaws, including compensation for demand response;
- Full LMP compensation for demand response is in the public interest and facilitates an optimized wholesale energy market;
- The Final Rule correctly applies to "market pricing," and allows for differences among RTO and non-RTO regions;
- Wholesale rate issues, including compensation for demand response, are "practices affecting wholesale rates" and thus fall squarely within the Commission's jurisdiction;
- The NOPR appropriately recognizes that demand response faces many barriers and discrimination to participation in wholesale energy markets, which can only be remedied with comparability among compensation mechanisms;
- The Final Rule should apply to all RTO regions for all hours; and
- This Rulemaking does not implicate reliability issues; claims to the contrary should be rejected as irrelevant and unfounded.

¹² As Dr. Kahn states in his Reply Affidavit, at 23-25, the Commission should not and need not concern itself with the efficiency of retail markets.

II. REPLY COMMENTS

A. **The Commission Does Not Need To Determine That Existing Rates Are Just And Reasonable In Order to Correct The Current Compensation Disparity Between Generation and Demand Resources.**

EPSA and others assert that the NOPR fails to provide any detailed substantive analysis supporting what EPSA referred to as the NOPR's "summary" legal conclusions that (a) the current FERC-approved wholesale prices are no longer just and reasonable, (b) the new pricing proposal is just and reasonable, and (c) the concept that a just and reasonable price means a "lower" price.¹³ The PJM Power Providers ("P3") voiced similar concerns, asserting that, under Section 206 of the Federal Power Act,¹⁴ the Commission can only initiate a change in a public utility's rates or other service terms if it first demonstrates that existing service terms or rates are unjust, unreasonable, unduly discriminatory or preferential.¹⁵ Furthermore, P3 also contends that, once the Commission meets that burden, it also must demonstrate that the terms and conditions it proposes to substitute for those in effect are just and reasonable.¹⁶ Several other parties voiced similar concerns.¹⁷ These broad arguments are rooted in a mistaken belief that the Commission's authority to set proper compensation for demand response derives exclusively from FPA Section 206.

These comments are simply incorrect. The Commission does not need to find that existing rates are not just and reasonable in order to implement a market enhancement.¹⁸

¹³ *Id.* Comments of PJM Power Providers ("P3 Comments") at 16.

¹⁴ 16 U.S.C. § 824e.

¹⁵ P3 Comments at 16.

¹⁶ *Id.*

¹⁷ *See, e.g.*, Monitoring Analytics Comments at 8 n. 6 (quoting Commissioner Moeller's partial concurrence and dissent in the NOPR).

¹⁸ *See* Comments of The Coalition of Midwest Transmission Customers; Comverge, Inc.; EnergyConnect, Inc.; EnerNOC, Inc.; the PJM Industrial Customer Coalition; Viridity Energy, Inc; and Wal-Mart Stores, Inc. at 29.

The Federal Power Act—and relevant case law—offer the Commission broad rulemaking authority, specifically the "power to perform *any and all acts, and to prescribe, issue, make, amend, and rescind such orders, rules, and regulations* as it may find necessary or appropriate to carry out the provisions of this chapter [i.e., the FPA]."¹⁹

In addition, it must be noted that there is a difference between a proposed market enhancement that the Commission has the authority to direct based on the "public interest," on one hand, and a "change in a public utility's rates or terms of service," on the other. Market enhancements may fall within the Commission's rulemaking authority and, accordingly, the Commission may propose necessary modifications to its regulations *sua sponte*, provided the modifications are subject to notice and comment procedures and are consistent with the public interest.²⁰ Based on this broad rulemaking authority, the Commission may adopt regulations that address appropriate compensation for demand response without making a finding that existing rates are unjust and unreasonable.

Even though the Commission need not take the steps prescribed by Section 206 of the Federal Power Act, if the Commission determines that it must make a Section 206 finding, it could do so given the information and evidence in the record.

First, undue discrimination does exist between the compensation available generation and the compensation available to demand response resources in organized wholesale markets, and this situation does require a remedy.²¹ Simply, generation and

¹⁹ *Midwest Indep. Trans. Sys. Operator v. FERC*, 388 F.3d 903, 908 (D.C. Cir. 2004)(emphasis added)(citing 16 U.S.C. § 825h).

²⁰ *See, e.g., Texaco Inc. and Texaco Gas Marketing Inc. v. FERC*, 148 F.3d 1091, 1097 (D.C. Cir. 1998)(discussing the Commission's authority to promulgate rules, the Court stated that, "FERC's rulemaking authority requires only that it point to a generic public interest in favor of a proposed rule.").

²¹ *See, e.g., Orders 719 and 719-A.*

demand response resources benefit the grid comparably but do not receive comparable compensation.

Second, this discrimination has already resulted—and continues to result—in less-than optimal opportunities for demand response resource participation in the wholesale market and has prevented or minimized the many recognized benefits that demand response could provide to wholesale markets and to customers. The Commission appropriately recognized this market defect in issuing the NOPR, and remedying this undue discrimination between resources is well within the Commission's broad FPA authority.

Third, the Commission would be further justified to make a Section 206 finding and adopt the proposed rule because rates to customers are not just and reasonable if insufficient demand response currently exists in today's markets. Put another way, because customers are being denied the benefits that demand response provides in the form of lower and smoother LMPs,²² customers are paying unjust and unreasonable prices for electricity. The evidence cited in this proceeding, as well as in the *PJM Complaint*²³ proceeding regarding demand response compensation, gives the Commission ample, defensible grounds upon which to make a finding that the Commission must adopt the corrective measures proposed in the NOPR.

Based on the above, the Commission is well within its statutory rights to adopt the NOPR provisions; arguments to the contrary must be rejected.

²² Order 719-A at P 47; *Quantifying Demand Response Benefits in PJM*, the Brattle Group, prepared for PJM Interconnection, LLC and the Mid-Atlantic Distributed Resources Initiative ("MADRI") (Jan. 29, 2007); *see also* Kahn Reply Affidavit at 15-17, finding benefits for *all consumers*, including lowered overall demand, reductions in costs to residual customers, and a general support for "the most severe deficiency in most such markets in the US, the lack of an adequately, price-responsive demand side."

²³ *PJM Interconnection, Inc.*, Docket No. EL09-68.

B. Compensating Demand Resources At Full LMP Is In The Public Interest And Optimizes Wholesale Energy Markets.

Several parties continue to claim that there is no showing or evidence in the NOPR that additional steps, such as paying demand response full LMP in all hours in all organized markets, is necessary to ensure either the competitiveness of the markets or that wholesale rates continue to be just and reasonable.²⁴ For example, EPSA concludes that the NOPR ignores market monitors' reports and other evidence that ISO/RTO wholesale electric markets, including energy markets, are and have been competitive and any market power is already sufficiently mitigated without the NOPR's proposal.²⁵ P3 argues that the Commission did not present any studies showing the specific "optimal" level of demand response to justify the conclusion that current levels are inadequate.²⁶ The PPL parties suggest that, over the long-term, paying full LMP to demand resources will "harm competitive wholesale market and decrease reliability."²⁷

As a threshold matter, and while important in various ways, market monitors' reports and evaluations do not assess the overall public interest. Rather, these reports largely focus only on the competitiveness of RTO-coordinated market results. In addition, market monitors' analyses focus on whether "results" are competitive²⁸—a

²⁴ See, e.g., EPSA Comments at 3.

²⁵ *Id.* at 6, 53.

²⁶ P3 Comments at 18-19.

²⁷ Comments of the PPL Parties at 9.

²⁸ See, e.g., PJM State of the Market Report, Monitoring Analytics LLC at 6 (May 14, 2010)(concluding that "[th]e overall results support the conclusion that prices in PJM are set, on average, by marginal units operating at or close to their marginal costs. This is strong evidence of competitive behavior and competitive market performance."); Midwest ISO 2008 State of the Market Report (July 2009)("As the Independent Market Monitor ("IMM") for the Midwest Independent Transmission System Operator ("Midwest ISO"), Potomac Economics is responsible for evaluating the competitive performance, design, and operation of the wholesale electricity markets operated by the Midwest ISO. In this State of the Market Report, we provide our annual evaluation of the Midwest ISO's markets and our recommendations for future improvements."); New York ISO 2008 State of the Market Report (Sept. 2009), Potomac Economics, Ltd. (stating that "[t]his report assesses the efficiency and competitiveness of New York's wholesale electricity markets in 2008.").

finding that has been reached, and continues to be reached, even in the face of structurally non-competitive markets.²⁹ Market monitors' findings that certain market results are consistent with competitive outcomes does not compel particular results in this Rulemaking.

In contrast, the key issue—and the issue being addressed by this NOPR—is whether markets are optimized or, put another way, working at full strength for the benefit of customers and the public interest. In contrast to P3's assertions, the less-than optimal levels of demand response are in fact widely acknowledged in State of the Market reports to the point that no party to this proceeding can reasonably conclude that markets are optimized. For example, in the 2009 State of the Market Report for PJM,³⁰ PJM's Market Monitor notes that many significant barriers exist to optimal participation by demand response resources in PJM's markets. In addition, the PJM Market Monitor has reported that "the Economic Load Response Program, settlement MWh and credits decreased significantly in 2008 compared to 2007, and have further decreased through March of 2009. Other indications of participation, such as...total MWh reductions and credits to CSPs decreased in 2008 compared to 2007." In the Midwest ISO, its Market Monitor reported on the "substantial" potential for demand response and need for Midwest ISO to incorporate it into its market.³¹ In addition, in the 2009 Annual Report for the California ISO ("Cal-ISO"), the Market Monitor discussed how the lack of direct demand response participation existed in the Cal-ISO and expressed a need to address it

²⁹ The United States Energy Information Administration reports that in 2008, net electric power generation totaled 4,119 million megawatt-hours, while all demand side management programs, plus energy efficiency measures, totaled only 87.8 million megawatt-hours (roughly 2% of the total). *See* Electric Power Annual, "Electric Power Industry: Year In Review," http://www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html (Jan. 21, 2010).

³⁰ 2009 State of the Market Report for PJM; Monitoring Analytics, LLC, Internal Market Monitor for PJM (Mar. 11, 2010) at 10.

³¹ 2008 State of the Market Report for the Midwest ISO, Potomac Economics at 25, 50 (June 2009).

in the context of Order 719.³² The Commission has rightly concluded that this market failure needs to be corrected, and the NOPR will accomplish its goal.

Several also argue that the correct level of compensation is not full LMP but, rather, LMP minus the generation component of the retail rate ("LMP-G"), or even less.³³ Many of these flawed arguments are premised upon a mistaken belief that the demand response resource at first acquires the energy and then "resells" it to the market.³⁴ However, as Demand Response Supporters have pointed out previously in this proceeding, the "resale" of energy concept has already been rejected by the Commission in *EnergyConnect, Inc.*³⁵ In *EnergyConnect*, the Commission stated that it was establishing a policy of treating demand response as a "service," not as a purchase and resale of electric energy.³⁶ The "service" is reducing "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."³⁷

The LMP-G argument fails for other reasons. The objective of full LMP compensation is not necessarily to cause retail customers to "see" the wholesale price and, in theory, respond accordingly. Rather, the objective is to enhance opportunities for demand response given the higher cost and, in some instances, inefficiency of building or

³² Annual Report: Market Issues & Performance, California Independent System Operator, Department of Market Monitoring at 31(April 2010).

³³ See, e.g., P3 Comments at 3 (stating that demand resources should never be paid more than LMP-G); Comments of the Illinois Commerce Commission at 1; Comments of the Midwest TDUs at 8 (arguing for RTO-specific flexibility for determining the proper level of compensation for demand response).

³⁴ See, e.g., Comments of Edison Electric Institute at 4.

³⁵ 130 FERC ¶ 61,031 (2009).

³⁶ See *EnergyConnect, Inc.*, 130 FERC ¶ 61,031 at PP 30-31 (citing 18 C.F.R. § 35.28(b)(4)(2009)).

³⁷ See *id.*

procuring additional generation and the very cost of providing demand response.³⁸ For example, the PJM Market Monitor has repeatedly described the demand side of PJM's Wholesale Energy Markets as "underdeveloped,"³⁹ and has noted that it is "widely recognized that wholesale electricity markets will work better when a significant level of potential demand-side response is available in the market."⁴⁰ In addition, in its 2006 Report to Congress, the United States Department of Energy reported, based on its review of all the wholesale energy markets across the country, that the use of demand response is "not widespread"⁴¹ despite the many recognized benefits that demand response has proven to bring to the markets. The general lack of demand response knows no regional boundaries and should be remedied across all RTOs. Furthermore, and contrary to PPL's baseless assertions, there is no evidence to suggest that increased demand response participation will *harm* the market in any way. In fact, all of the available evidence to date suggests quite the opposite.⁴²

Finally, as Dr. Kahn explains, full LMP is the correct measure for adequate and comparable payment of demand response resources and does not represent a subsidy or "double compensation" or inefficiency, as some parties suggest. Dr. Kahn, in refuting such arguments, states:

³⁸ See Order No. 719 at P 13.

³⁹ See 2008 State of the Market Report for PJM, Monitoring Analytics, LLC, Internal Market Monitor for PJM (Mar. 11, 2009) at 93; 2007 State of the Market Report, Market Monitoring Unit (Mar. 11, 2008) at 10, 93; 2006 State of the Market Report, Market Monitoring Unit (Mar. 8, 2007) at 93

⁴⁰ 2009 State of the Market Report at 93.

⁴¹ Benefits of Demand Response in Electricity Markets and Recommendations for Achieving Them," A Report to the United States Congress Pursuant to Section 1252 of the Energy Policy Act of 2005, U.S. Department of Energy (Feb. 2006) at viii ("DOE Report").

⁴² See, e.g., DOE Report; National Action Plan on Demand Response, Federal Energy Regulatory Commission Staff (June 17, 2010); "Recognizing the Importance of Demand Response: the Second Half of the Wholesale Electric Market Equation," Energy Law Journal, Vol. 28, No. 2, Wellinghoff, Morenoff (2007).

Does this plan involve double compensation, as Professor Hogan asserts, at the expense of power generators—of successful bidders promising to induce efficient demand curtailment and of consumers induced to practice it? Certainly not: the decrease in the revenue of the generators is (and consequent savings by consumers are) matched by the savings in their (marginal) costs of generating that power; the successful bidders for the opportunity to induce that consumer response are compensated for the costs of those efforts by the pool, whose (marginal) costs they save by assisting consumers to reduce their purchases.⁴³

Full LMP payments to demand response resources "are no more subsidies than the remunerations of generators for the power they actually sell."⁴⁴

C. The Commission Has Properly Framed The Issue In This Rulemaking As Compensation For Demand Resources In Energy Markets.

EPSA also argues that the NOPR narrowly focuses on the ISO/RTO energy markets without any acknowledgement of the growth in, and adequate compensation of, demand response resources participating in other ISO/RTO markets (i.e., capacity, emergency, and ancillary service markets).⁴⁵ Additionally, EPSA asserts that the Commission should look at demand response resource participation across all markets in each ISO/RTO to measure its growth in the organized markets. According to EPSA, the capacity market should be the primary baseline for this evaluation given the nature of demand response products and their measurement.⁴⁶ In short, EPSA appears to be arguing that the growth in demand response and demand response compensation in capacity markets should reduce the compensation available to demand response in energy markets.

EPSA's argument, if carried to its logical conclusion and applied to generation resources, would require that the inframarginal energy revenue to each generator from

⁴³ Kahn Reply Affidavit at 10.

⁴⁴ *Id.*

⁴⁵ EPSA Comments at 6, 66.

⁴⁶ *Id.*

participation in the day-ahead and real-time energy markets should be reduced by the level of capacity revenue received by that generator, a point likely to engender little support from supply-side interests. As the Commission is aware, under current rules, generators are paid for multiple services, such as capacity, energy, and ancillary services. In each market, generators that clear the market receive the market-clearing price. The level of participation by generation resources in a particular market or the level of compensation received by an individual generator does not dictate participation or compensation opportunities in other markets. The Commission has not foreclosed revenue opportunities in one market based on revenue opportunities in another market, as EPSA suggests should be done for demand response resources. While customers would not necessarily be opposed to a broad application of EPSA's proposal to all resources, it is unduly discriminatory under current rules to single out demand response for limited revenue opportunities in the energy market as a consequence of their participation in other markets.

D. The Proposed Rule Correctly Applies To "Market Prices" And Allows For Differences Among RTOs and Non-RTO Regions.

EPSA further contends that the NOPR would inappropriately standardize only one discrete pricing element across the ISO and RTO regions, while allowing for regional differences on all other market pricing elements even though it is the totality of these interrelated pricing elements—such as how LMP is developed, whether and how periods of supply scarcity are defined, and how resource adequacy is maintained through capacity markets—that govern operational and investment decisions.⁴⁷ Contrary to EPSA's

⁴⁷ EPSA Comments at 6, 68.

assertion, however, the NOPR is worded to apply "market prices" to demand response.⁴⁸

Although each organized market has unique market rules and designs, all organized markets have "market prices" and all organized markets have "energy markets." The NOPR does not propose that the Final Rule define market prices in exactly the same fashion across all RTOs, which is an implicit recognition that differences in the definition of "market prices" exist among RTOs. Therefore, the NOPR appropriately balances the need for conceptual consistency with the recognition that market rule details vary from RTO to RTO. EPSA also criticizes the NOPR because it would require application of this standardized pricing element only in most organized markets – and does not address or require similar treatment in non-RTO regions.⁴⁹ EPSA believes that this is an inconsistent approach and that reliance on the organized markets in order to achieve a national policy goal of expanding demand response participation across the country is inappropriate.⁵⁰

⁴⁸ NOPR at 4,6.

⁴⁹ EPSA Answer at 6, 67.

⁵⁰ *Id.*

What EPSA's argument ignores is that numerous and significant differences already exist between RTO and non-RTO regions. These differences include: (1) incentives for returns-on-equity for transmission service;⁵¹ (2) market designs;⁵² (3) extent of reforms required by Order 719;⁵³ and (4) market monitoring by independent non-governmental entities,⁵⁴ just to name a few.

Given these significant recognized differences between RTO and non-RTO regions, the Commission is not compelled to ensure identical treatment in demand response compensation between RTOs and non-RTOs. The mere fact that the NOPR applies only to organized markets does not pose any legal or practical problems.

⁵¹ See, e.g., *Promoting Transmission Investment through Pricing Reform*, 113 FERC ¶ 61,182 ("Order 679"), *order on reh'g*, 117 FERC ¶ 61,345 (implementing EPCA Section 219, and providing for incentive-based rate treatments "for the transmission of electric energy in interstate commerce for the purpose of benefiting consumers by ensuring reliability and reducing the cost of delivered power by reducing transmission congestion.").

⁵² See "Notice Requesting Comments on Draft Report to Congress on Competition in the Wholesale and Retail Market for Electric Energy," FERC Staff, at 11, Docket No. AD05-17-000 (June 2006). In that Notice, Commission Staff summarizes the two basic approaches to competition in wholesale markets in the United States, which largely explains the difference between "organized markets" and other wholesale markets. In one, a market bases trades exclusively on bilateral sales directly negotiated between suppliers, rather than on a centralized trading and market clearing mechanism. This approach predominates in the Northwest and Southeast. This bilateral contract format allows for somewhat independent operation of transmission control areas and, in the view of some market participants, better accommodates traditional bilateral contracts. In the other approach, wholesale competition relies on entities that are independent of market participants to operate centralized regional transmission facilities and trading markets. The market designs in these regions provide participants with guaranteed physical access to the transmission system. Customers are responsible for the cost of that access and are exposed to congestion price risks. This more open access to transmission can increase competitive options for wholesale customers and suppliers as compared to most bilateral markets.

⁵³ Order 719 required several reforms to wholesale electricity markets, but limited those reforms to markets coordinated by RTOs and ISOs. In Order 719, the Commission recognized that: "[S]ignificant differences exist between regions, including differences in industry structure, mix of ownership, sources of electric generation, population densities, and weather patterns. Some regions have organized spot markets administered by an RTO or ISO, and others rely solely on bilateral contracting between wholesale sellers and buyers. We recognize and respect these differences across various regions. At the same time, wholesale competition can serve customers well in all regions. The focus of this Final Rule is to further improve the operation of wholesale competitive markets in organized market regions." Order 719 at P 9.

⁵⁴ See Order 719 at P 314 (recognizing that the Commission requires RTOs and ISOs to have a market monitor, and removing market monitors from direct oversight of RTO/ISO management, and requiring enhanced information sharing by market monitors).

E. The Commission Has Authority Over Demand Response As a Practice Affecting Wholesale Rates.

1. While States Have Authority To Address Retail Rate Issues, Such Authority Should Not Undercut the Commission's Authority Over Demand Response.

The Commission has broad authority over practices affecting wholesale rates⁵⁵ and the Commission is uniquely positioned to address wholesale issues.⁵⁶ Some commenters argue, however, that the Commission's authority extends to retail rate issues, and contend that the Commission should adopt a compensation approach for demand response that would require the Commission to delve into retail rate issues.⁵⁷ The Commission should clarify in a Final Rule the respective jurisdictional authority of this Commission and State Commissions, over demand response.

The Commission's obligation is to ensure just and reasonable wholesale rates. Establishing the right rules and compensation for demand response is an integral part of FERC's mission. State and retail regulatory authorities are uniquely positioned, both jurisdictionally and technically, to address (and they do address) retail rate issues, and correct retail rate inefficiencies to the extent such are recognized and subject to fixes.⁵⁸ Nevertheless, as Dr. Kahn aptly concludes in his Reply Affidavit, "we must give deference to a State's conception of [its] retail markets but only up to a point. And that point is where the State's actions do harm to the efforts of this Commission to maximize

⁵⁵ See § 16 U.S.C. 824e(a); *Connecticut Dep't of Pub. Util. Control v. FERC*, 569 F.3d 477, 481 (D.C. Cir. 2009)

⁵⁶ The U.S. Court of Appeals for the District of Columbia Circuit ruled and re-emphasized the Commission's broad authority over practices affecting wholesale rates in *Connecticut Dep't of the Pub. Util. Control v. FERC*, 569 F.3d 477 (2009). There, the Court expanded the Commission's jurisdiction, finding that the Commission has the authority to review the Installed Capacity Requirement ("ICR") because the ICR affects wholesale rates.

⁵⁷ EPSA Comments at 52 ("EPSA asserts, and the attached Hogan Policy Paper supports, [citation omitted] that LMP minus avoided costs for generation or the retail rate ensures that demand response is economically efficient...").

⁵⁸ See Kahn Reply Affidavit at 23-25.

efficiency in the wholesale market."⁵⁹ Articulated another way, while state regulators have the ability to approve state-specific demand response programs and approve changes to retail rates, such authority is not so great that it can be exercised to impede or undercut this Commission's statutory authority to ensure that demand response participation and compensation opportunities exist, given how demand response affects wholesale electricity markets. As recently as Order 719-A, the Commission properly staked out its jurisdiction over demand response as a practice that affects wholesale rates and markets.⁶⁰ Notably, Order 719 is now a final and non-appealable order, as no party petitioned for review of the Order, including the Commission's jurisdictional claim. Given the Commission's claimed jurisdiction over demand response as a practice affecting wholesale rates, any state regulatory actions to frustrate or undermine FERC's jurisdiction should not be condoned.⁶¹

2. The Commission's Authority Over Practices Affecting Wholesale Rates Does Not Require It To Look "Behind-the-Meter."

Despite the express language in the Federal Power Act granting the Commission jurisdiction over *wholesale* rates, some parties in this proceeding also claim that the NOPR would lead to a "perverse economic incentive" for load to enter into agreements to take generation behind the meter when possible, thereby meeting load energy obligations outside of the RTO market while also being paid LMP by other consumers in the RTO

⁵⁹ *Id.* at 24.

⁶⁰ Order 719-A at P 47.

⁶¹ *See Arkansas Louisiana Gas Co. v. FERC*, 453 U.S. 571, 580 (1981)(finding that the Commission had authority over interstate sales and wholesale electricity rates and that states and state laws could not interfere); *see also Natchala Power and Light v. Thornburg*, 476 U.S. 953, 966 (1986)(stating that only where Congress has explicitly provided an exception to the power granted to the Commission, states may not interfere but, a "State must rather give effect to Congress' desire to give FERC plenary authority over interstate wholesale rates, and to ensure that the States do not interfere with this authority.).

for the load reduction on its system.⁶² It has also been argued that, while an industrial customer has every right to self-generate, paying LMP to such a customer provides a cross-subsidy.⁶³

The Commission's jurisdiction extends only to the rates for sales of electric energy for resale in interstate commerce, and to practices that reasonably affect those rates. The Commission has recognized that metered reductions in demand impact wholesale clearing prices. However, the Commission has not taken the next step, and would be overstepping its authority if it took the next step, of dictating or limiting the way in which retail customers are able to reduce their reliance on grid-based supply to the benefit of other customers. It is true that, in limited circumstances, the Commission has weighed in on discreet behind-the-meter-generation issues. These instances, however, often involve how RTOs can treat behind-the-meter-generation for load forecasting purposes – i.e., precisely how behind-the-meter generation impacts metered electrical demand.⁶⁴ The Commission also addressed behind-the-meter-generation in Order 2003,⁶⁵ where the Commission declined to apply rules regarding interconnection agreements and procedures to behind-the-meter-generators that are not engaged in the sale-for-resale of electricity in interstate commerce, in recognition of the Commission's jurisdictional limits.⁶⁶ The Commission's decision in that proceeding demonstrates the understanding that generation behind the retail meter and serving a customer's own load does not affect

⁶² *Id.* at 7, 59-60; ICC Comments at 12.

⁶³ *Id.* at 60.

⁶⁴ See *Midwest Indep. Transmission Sys. Operator*, 126 FERC ¶ 61,143 (2009)(finding that behind-the-meter-generation cannot be "netted" for load forecasting purposes; *Cal. Indep. Sys. Operator Corp.*, 104 FERC ¶ 61,062 (2003)(allowing "netting"); *PJM Interconnection, Inc.*, 107 FERC ¶ 61,113 (2004)(allowing netting).

⁶⁵ *Standardization of Generator Interconnection Agreements and Procedures*, 104 FERC ¶ 61,103 (2003).

⁶⁶ *Id.* at P 804.

interstate commerce, is beyond the Commission's jurisdiction, and should not be subject to Commission requirements.

Suggestions now to include as part of a Rulemaking a peek behind the curtain of metered electrical demand, and suggestions that compensation be adjusted if that peek reveals use of behind-the-meter generation, not only unlawfully stretch the Commission's jurisdiction, but also subvert the objective of ensuring efficient reductions in the demands placed on the system. The fact of the matter is that a demand response resource actively participating in the wholesale market will provide the same benefits to the market regardless of whether those benefits are made possible by turning off an industrial process, or increasing the output of on-site cogeneration equipment, or some combination of the two. Peeking beyond metered electrical demand would also be akin to FERC looking behind a wholesale generator's meter and adjusting compensation based on how the generator makes itself available for supply to the grid. Again, if the suggestion is carried to its logical conclusion, those making the suggestion end up in a place where they do not want to be. To avoid these problems, the Commission should continue to restrict the scope of this Rulemaking to the wholesale energy market and establish compensation mechanisms that pay out based only on changes in metered electrical demand. How or why that metered electrical demand changes are irrelevant.

F. Demand Response Must Have Opportunities To Participate In Wholesale Energy Markets Without Discrimination Or Barriers To Participation.

PJM's Market Monitor opines that the ultimate solution to removing barriers to demand response will require not just adequate compensation, which represents only a "small part" of the problem, but also the ability for customers to see and react to price

signals.⁶⁷ For its part, EPSA states that the NOPR incorrectly attempts to resolve retail market barriers to demand response participation (i.e., lack of dynamic pricing) through a wholesale pricing fix.⁶⁸

The Commission should recognize that PJM's Market Monitor and EPSA, among others, have the situation completely backwards. It is in fact the need to rectify *wholesale* pricing levels for demand response resources that should drive this Rulemaking. Retail rates would then need to conform so as not to subvert the Commission's objectives. Characterization of the NOPR as attempting to resolve retail market barriers to demand response resources misses the entire point of the Commission's initiative. Retail market barriers are not the focus and were appropriately not mentioned in the NOPR as a basis for the Commission's action. The real point is that both demand- and supply-side resources must be given an opportunity to participate as dynamic elements of the wholesale market. The objective is not necessarily to remove barriers, but rather to enable efficiency-improving participation. The NOPR appropriately recognizes this *wholesale* market issue, and correctly resolves to address the issue by equilibrating compensation between supply-side and demand-side resources.

The belief that "dynamic pricing" is the ultimate solution also fails because it ignores the impact of real-world circumstances on the economic theory. While the concept of dynamic pricing can, to some degree, be intellectually appealing and should be explored on a voluntary basis for customers that choose to participate, actually

⁶⁷ Monitoring Analytics Comments at 5-6.

⁶⁸ EPSA Answer at 24.

requiring dynamic pricing would have far different results.⁶⁹ As Dr. Kahn observes, the model envisioned by the NOPR would allow demand response aggregators to offer the functional equivalent of dynamic retail pricing, but to do so only for those customers who want it and only when they want it. In this sense the practical result being pursued in the NOPR is far superior to the theoretical panacea offered by Dr. Hogan and others.⁷⁰

It is no surprise or secret that business customers need certainty in order to make forward-looking and sound purchasing decisions. Mandatory dynamic pricing would add significant uncertainty in that, under an approach that would expose all customers to "dynamic" rates, customers could not adequately plan and make business decisions. In all likelihood, mandatory "dynamic" pricing would cause customers to enter into various arrangements to hedge against higher and more variable costs, completely undermining both the reason for the dynamic rates and the intended results. The Commission should reject proposals that would mandate dynamic pricing for customers and, instead, continue down the path of implementing the more practical solution of compensating demand response participation.

G. Adequate Measurement And Verification Protocols Are Currently In Place In Most Markets—This Issue Should Not Be Erected As A Further Barrier To Progress On Demand Response Compensation.

EPSA contends that the NOPR proposes enhanced compensation for vaguely defined "demand response," while North American Energy Standards Board ("NAESB") and North American Electric Reliability Council ("NERC")⁷¹ processes are underway to

⁶⁹ As Dr. Kahn demonstrates in his Reply Affidavit, dynamic pricing is problematic for both economic and political reasons, both owing to the high costs associated with and occasioned by such a pricing model. *See* Kahn Reply Affidavit at 5.

⁷⁰ *Id.* at 21

⁷¹ Some Demand Response Supporters' members serve on NERC committees and are unaware of any processes that are underway to establish NERC measurement and verification standards.

establish standards defining demand response products and accurately measure demand response.⁷² According to EPSA, therefore, any consideration of any standardized pricing mechanism must await the successful implementation of measurability and verification ("M&V") tools that ensure that demand-side resources can and will perform when required.⁷³

Contrary to EPSA's concerns, there is no need for the Commission to delay its implementation of the proposed Rule until completion of any processes that may be underway at NERC or NAESB. First, the current proceeding is meant to determine the proper *compensation* for demand response in FERC-jurisdictional markets. Uniform M&V standards, while perhaps ultimately desirable, are simply beyond the scope of this proceeding and not necessary to effectuate correct compensation for demand response resources. Second, most RTOs already have in place some M&V rules to ensure that claimed load reductions occur as reported. Consider:

- PJM Operating Agreement at section 3.3A.2;
- CAISO Demand Response Resource Guide, Guide to Participation in MRTU Release 1 (Nov. 29, 2007), Version 3.0;
- ISO-NE Manual for Measurement and Verification of Demand Resource Value for Demand Response, M-MVDR, Revision 2 (June 1, 2010);
- Midwest ISO Business Practice Manual MO-BPM-4.8 (considered by Demand Response Working Group June 7, 2010);
- NYISO Day-Ahead Demand Response Program Manuals (June 2003), NYISO Emergency Demand Response Manuals (July 2008);

⁷² EPSA Comments at 6, 28-31.

⁷³ *Id.*

- SPP is, reportedly, currently considering M&V protocols in response to Order 719.

At some point, the Commission may consider standardizing M&V rules and protocols across all organized wholesale markets. However, such a step is simply not necessary to promulgation of a Final Rule in this proceeding.

H. Demand Response Provides A Comparable Service To Generation In Organized Wholesale Electric Markets.

Several parties voice concerns that the NOPR incorrectly assumes that one MW of demand always equals one MW of supply under all conditions.⁷⁴ According to EPSA, for example, demand response resources simply are not "full" substitutes based on the nature of their participation and the rules applicable to each resource in the energy markets.⁷⁵ PPL Parties assert that, while generation that is dispatchable by an RTO can be relied upon for planning, operational security, and reliability purposes, an RTO cannot count on the voluntary product that is provided by demand response in the same way.⁷⁶ EEI states that demand response cannot be comparable to generation because demand response does not deliver energy.⁷⁷

A demand reduction of one MW and a supply addition of one MW are not necessarily *identical* in all respects. However, they are directly comparable in the way each can affect the equilibrium of supply and demand on the wholesale grid. As Demand Response Supporters pointed out in Initial Comments, reducing consumption is comparable to increasing generation because demand response provides a service that is equivalent to the service provided by generation – i.e., providing the service of demand

⁷⁴ See, e.g. EPSA Comments at 70-77; P3 Comments at 25-27; Comments of the PPL Parties at 9.

⁷⁵ EPSA Comments at 70-77.

⁷⁶ Comments of the PPL Parties at 9.

⁷⁷ Comments of Edison Electric Institute at 15.

response enables grid operators to maintain the necessary system balance between supply and demand.

Furthermore, in his Reply Affidavit, Dr. Kahn succinctly adds that "demand response (DR) is in all essential respects economically equivalent to supply response."⁷⁸ Dr. Kahn writes that demand response is equivalent to supply response because for all resources, "energy saved [is] equivalent[] to energy supplied," and should be regarded equivalently as a resource proffered in competitive power markets.⁷⁹

In addition, the comparability between generation and demand resources with respect to supply and demand balancing has been noted by several independent agencies, including the Commission's Staff.⁸⁰ Indeed, several parties, in their respective Comments in this proceeding, acknowledge that demand response provides a functionality that is "comparable" to the functionality provided by generation.⁸¹ The Commission should reject arguments to the contrary, and find that demand response provides a service that is comparable to the service provided by generation.

I. Setting The Correct Compensation For Economic Demand Response Does Not Implicate Reliability Issues.

At issue in this Rulemaking is the determination of the correct level of compensation for demand response provided in organized energy markets. In an effort to

⁷⁸ Kahn Reply Affidavit at 2.

⁷⁹ *Id.*

⁸⁰ *See, e.g.,* Federal Energy Regulatory Commission, *Assessment of Demand Response and Advanced Metering: Staff Report*, Docket No. AD-06-2-000 (Aug. 2006); Federal Energy Regulatory Commission, *Assessment of Demand Response and Advanced Metering: Staff Report*, Docket No. AD (Dec. 2008) ("2008 Staff Report").

⁸¹ *See, e.g.,* Comments of Consolidated Edison Solutions, Inc. and Consolidated Edison Energy, Inc. at 1 ("The simple answer is yes, that a reduction in consumption is comparable to an increase in generation, but the question is academic."); Comment of the New York State Public Service Commission at 10 ("The two market changes are comparable, but demand response may be preferable to supply stimulation due to externalities that are not included in the price of generation."); Comments of the Edison Electric Institute at 14 ("From the perspective of balancing supply and demand, a reduction in consumption is comparable to an increase in production.").

change the focus of this rulemaking and, ultimately, to dissuade the Commission from taking steps to facilitate more demand response, some commenters resort to "playing the R card." They claim that full LMP compensation for demand response could somehow adversely impact system reliability. For example, one such commenter argues that "[a]t some level of market share," demand response could "severely hamper[] the reliable delivery of electricity that is needed by consumers"⁸² and that demand response is an "imperfect substitute[] for produced MWhs from a reliability perspective."⁸³ The commenter further contends that there is a "point...of electricity demand below which consumers will not go economically if acting on accurate price signals."⁸⁴ The comments go so far to say that demand response is "inconsistent with reliability."⁸⁵

Demand Response Supporters object to efforts to introduce, as part of this proceeding, reliability issues that are simply irrelevant to the issues at hand. The Commission should reject these efforts, for several reasons.

First, the Commission did not raise reliability issues or seek comments on reliability issues as part of this NOPR. The NOPR concerns itself only with the correct level of compensation necessary to attract greater amounts of demand response in the day-ahead and real-time energy markets in ISO and RTO regions. Nothing more. In fact, the Commission made clear in the NOPR that demand response participation in capacity mechanisms and under rules that address resource adequacy are not in play in this proceeding.⁸⁶ There will be no shortage of available supply under an economic demand response mechanism, and many of the commenters' concerns are fundamentally rooted in

⁸² EPSA Comments at 71.

⁸³ P3 Comments at 34.

⁸⁴ EPSA Comments at 70.

⁸⁵ *Id.*

⁸⁶ NOPR at P 7.

resource adequacy, and capacity, market structures. They are simply irrelevant to this proceeding.

Second, to the extent that generators' concerns stem from the availability of supply to meet demand, it should be noted that RTOs already have in place various detailed rules and mechanisms to meet instances of unexpected loss of supply in reserve and other markets. For example, if for some reason a participating demand response resource could not or did not respond adequately, the RTO or relevant authority would simply redispatch other resources to meet anticipated load. In a demonstration of the comparability of demand- and supply-side resources, the same response would be deployed if *generation* experienced a forced outage when it was otherwise economic for the resource to produce energy in the real-time market.

Interestingly, some of the same commenters that theorize about demand-side resources creating reliability problems are the same parties that fought for, and won approval from, the Commission to have the right to deactivate generation from organized markets with minimal notice.⁸⁷ Their efforts to inject reliability issues into this Rulemaking, which concerns itself only with appropriate levels of compensation for demand resources, should not be countenanced. To the contrary, the Commission has

⁸⁷ See, e.g., *PJM Interconnection, LLC*, 110 FERC ¶ 61,053 (2005), *order on reh'g* 112 FERC ¶61,031 (2005); see also *PJM Interconnection, LLC*, EL03-236-001, Request for Clarification or, in the Alternative, Rehearing of the Electric Power Supply Association at 3-4, in which EPSA reminds the Commission that PJM does not have "the authority to require generators to operate beyond a reasonable notice period," but instead must provide for a limited time period during which "a unit is required to operate under this deactivation structure."

recognized and can rest assured that demand response actually fosters greater reliability in wholesale markets.⁸⁸ Reliability is simply not an issue here.

⁸⁸ NOPR at 5 (citing "ISO-RTO Council Report, Harnessing the Power of Demand - How ISOs and RTOs Are Integrating Demand Response into Wholesale Electricity Markets" at 4, http://www.isorto.org/atf/cf/%7B5B4E85C6-7EAC-40A0-8DC3003829518EBD%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.") (emphasis added).

III. CONCLUSION

WHEREFORE, the Demand Response Supporters respectfully request that the Commission consider these Reply Comments and, in a Final Rule, adopt regulations requiring the payment of market-clearing prices in all hours and across all regions for demand response in organized wholesale energy markets.

Respectfully submitted,

McNEES WALLACE & NURICK LLC

/s/ Robert A. Weishaar, Jr.

By _____

Robert A. Weishaar, Jr.
Dennis P. Jamouneau
777 N. Capitol Street, N.E.
Suite 401
Washington, DC 20002-4292
Phone: (202) 898-5700
Fax: (717) 260-1765
E-mail: rweishaa@mwn.com
djamouneau@mwn.com

Counsel to the Coalition of Midwest
Transmission Customers and the PJM
Industrial Customer Coalition, and on behalf
of Comverge, Inc.; EnergyConnect, Inc.;
EnerNOC, Inc.; Viridity Energy, Inc.; and
Wal-Mart Stores, Inc.

Dated: August 30, 2010

CERTIFICATE OF SERVICE

I hereby certify that I have this day served, via first-class mail, electronic transmission, or hand-delivery the foregoing upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 30th day of August, 2010.

/s/ Robert A. Weishaar, Jr.

Robert A. Weishaar, Jr.
McNees Wallace & Nurick LLC
777 North Capitol Street, N.E.
Suite 401
Washington, DC 20002-4292
Phone: (202) 898-5700
Fax: (717) 260-1765
Email: rweishaa@mwn.com

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Demand Response Compensation in) Docket No. RM10-17-000
Organized Wholesale Markets)

I am Alfred E. Kahn, Robert Julius Thorne Professor of Political Economy, Emeritus, at Cornell University; and Special Consultant to National Economic Research Associates, Inc. (NERA).

The purpose of this testimony is to respond to criticisms of my previous testimony in the PJM proceeding which preceded this NOPR, dated September 15, 2009 but is now part of the record in this NOPR proceeding.

Although there are a number of these comments with which I disagree in one respect or another, I feel constrained—in the interest of minimizing the burden on the Commission and in recognition of the delay in submitting this paper caused by my own recent indisposition—to focus on two lines of argument: the failure of Professor William Hogan and Mr. Robert Borlick to recognize the especial significance—critical in my opinion—of one strand of the economic principles to which we all subscribe—namely, their applicability to an industry

critically subject to diminishing returns (or increasing costs, statically)—and their misapprehensions of one thread of the economic argument and a key regulatory issue which, as far as I can tell, they have overlooked in their comments.

Before discussing specific issues associated with its effectuation, I submit they have given insufficient weight to the proposition—in principle indisputable—that demand response (DR) is in all essential respects economically equivalent to supply response; and that economic efficiency requires, as the NOPR recognizes, that it should be rewarded with the same LMP that clears the market. Since DR is actually—and not merely metaphorically—equivalent to supply response, economic efficiency requires that it be regarded and rewarded, equivalently, as a resource proffered to system operators¹, and be treated equivalently to generation in competitive power markets. That is, all resources—energy saved equivalently to energy supplied—the two blades of a pair of scissors in the familiar metaphor—that bid lower than the LMP should receive the same market-clearing LMP in remuneration.

¹ Recognition that the practical task of ensuring that a proffered “negawatt” is actually delivered is beyond the scope of this proceeding, but not—I suggest—inseparable from a decision on the merits of the proposal.

The concerns expressed (and hypothetical exemplars cited) in comments opposing the Commission’s proposal are uniformly based—consciously or unconsciously—on the conception that the Commission should be guided in setting these wholesale rates by—actual or potential—inefficiencies in retail markets. Although there is a perfectly respectable economic “theory of the second-best”, pointing out that in a world in which prices—particularly of complements or substitutes—are not uniformly set at “first-best”—that is, marginal cost—levels, it may well be inefficient to set particular prices—especially of complements or substitutes—at “first-best” levels. The Commission’s mandate to set “just and reasonable” rates is generally understood to translate the adjectival qualification as “just and reasonable” into “efficient” or “cost-related”. For a putatively expert Commission, disproportionately influential among former Commissions, to interpret its mandate as equivalent to political correctness, to desert the additional conception of “just and reasonable” as economically efficient or cost-justified would be, I suggest, madness. They would ignore the proper scope of the Commission’s regulatory responsibilities, the fact that the great majority of retail rate designs are economically inefficient, and that it is

retail rates that should not be permitted to undermine efficient wholesale rates rather than the reverse.

THE RELEVANT ECONOMICS

I begin with the rebuttal testimony of Mr. Robert Borlick, because its generous appreciation and reproduction of my expositions of the case for marginal cost pricing four decades ago provides the logical basis for demonstrating here that my previous recommendations were not only in full accord with those principles but that he and Professor Hogan have both overlooked its strikingly direct implications for the issues here before us: They provide the basis for demonstrating the especial relevance of the phenomenon of diminishing returns or increasing unit costs (as output is higher)—which also, incidentally, demonstrates the irrelevance of Professor Hogan's example of the retail purchase of shoes, which so far as I know is subject to no such systemic tendency.

Few industries better illustrate the virtues of marginal cost pricing—as those costs per unit go up and down as output does the same, in the transitions from night to morning to evening and back to night, as well as seasonally and cyclically, and marginal costs change correspondingly—

most dramatically as demand approaches—and with it the possibility of system-wide failure—their annual peak (for example, after a succession of the hottest summer or coldest winter days.

The *greatest remaining obstacles* and the simple rationale for the FERC's proposal for achieving such first-best efficiency by directly confronting all purchasers of electric power with prices fluctuating corresponding to market conditions are a combination of economics and politics—the high costs—prohibitively high for most—of the complex metering necessary to charge prices that vary directly with those fluctuating marginal costs by time-of-day and season-of-the-year and—as Mr. Borlick also emphasizes—the reluctance of state regulatory commissions, reflecting a populist distaste, to charge customers for their usage—to which I have already referred.

Mr. Borlick and Professor Hogan both implicitly or explicitly accuse me of naïveté or ignorance in linking the absence of universal time-of-day metering to the threat of system-wide breakdown and—even more pertinent to the issue before us here—how best to facilitate efficient demand response to efficient electricity pricing. As Mr. Borlick asserts:

Most of the benefits of economic demand response are achievable through the participation of a small subset of the large commercial

and industrial customers who already have interval meters installed. *[footnote reference omitted]* Furthermore, *the cost of installing interval meters* for such large customers is *negligible compared to the potential savings* available to them through their participation in PJM's Economic Demand Response Program without subsidy payments. These are big boys who don't need to have their profits enhanced *at the expense of small customers*. (Page 3, stress supplied)

I have no basis for questioning the factual accuracy of that assertion, echoed also by Professor Hogan.

But I emphatically question their similarly-based minimizations of the likely beneficial consequences of what they consistently refer to as “subsidizations” at issue in these proceedings, or what Hogan characterizes as double compensation—once in the savings consequent on the reductions in purchases by participants in the FERC program and, second, compensation from the pool to successful demand-reduction bidders.

Mr. Borlick's confident assertion, however, answers the wrong question. The question is not what portion of the economically efficient demand reduction is achieved today “by the small subset of the largest...customers...who already have interval meters installed.” The pertinent question is: What is the amount or fraction of potential consumption that practitioners of conservation could save but for the

obstacle of the expense of the requisite meters, *but remains economically achievable* in other ways, and *specifically by a program such as the one before us?*

The Subsidization Issue

Before addressing myself to that question, it is logically necessary to respond to Mr. Borlick, Professor Hogan and comments of the Electric Power Supply Association (EPSA), in particular, their characterization of the plan, consistently and repeatedly, as involving a “subsidization”, with the clear implication that it inefficiently distorts consumer and producer choices, producing an economically inefficient allocation of resources, at the ultimate cost to consumers at large.

I emphatically respond:

§ Mr. Borlick’s criticisms are internally inconsistent. If, as I have no basis for doubting, “the costs of installing interval meters for such large customers is negligible compared with the potential savings available”, how can that fact refute the possibly large additional benefits of the FERC proposal, which is directed at consumers whose usage *individually* is too small to be considered for such metering,

but who may nevertheless collectively present large opportunities for efficient conservation?

§ And how (and why) exactly would the FERC proposed plan alter the present situation to the benefit of the ‘big boys’ at the expense of the little ones? And even if it did, why is that a reason for an economist who begins his testimony with a tribute to marginal cost pricing to oppose it?

§ I have no way of assessing the total amount of efficient demand curtailment as yet unexploited. I can only surmise from, for example, Mr. Borlick’s attribution of huge possible savings exploitable by very large users, that, while of course the comparable savings by small users in the presence of time-of-day metering and tariffs would be individually only a small fraction of that, in the aggregate they would be enormous. In any event, ultimately the only way of ascertaining the presence or absence of such opportunities will be to adopt the FERC plan and let the market tell us. I observe, in this connection, that part of the rationale for a previous proceeding on this issue (Docket No. EL09-68-000) was PJM’s dissatisfaction with the amount of demand response it had achieved under the scheme that Mr. Borlick supports.

- § Whatever the size of the likely response, *it is simply incorrect to label the remuneration of successful bidders* contemplated in the present proposal *as “subsidies”*, rather than, for example, *investments*—without regard to whether the economic benefits of the consequent reduction in energy use exceed the costs in present value terms, or, indeed, than consumer expenditures for electric power itself, likewise supplied through competitive auctions.
- § The purpose and essence of the program proposed in the NOPR is to encourage the development and to finance only economically efficient demand response efforts—comparing achieved saving with its costs, both in present value terms—that is to say, limited to the (marginal) costs that would be saved by their efforts if successful.

The Protective Role of Competition

- § The program would achieve these results as efficiently as possible, pitting offers to supply KWh against one another and against offers to save them, in open competition.
- § Does the plan involve inefficient “subsidization” of demand response, as the opposition routinely assert? No—it does set up an arrangement that treats proffered reductions in demand on a

competitive par with positive supplies; but the one is no more a subsidy than the other: the one delivers electric power to users at marginal costs—the other—*reductions in cost*—both at competitively-determined levels. Obviously, it would be nice if the following were also true: both incremental supplies and reductions in energy use would be compensated only upon certified delivery of the promised benefits (but that legitimate consideration² is beyond the scope of this enquiry).

§ Does this plan involve double compensation, as Professor Hogan asserts, at the expense of power generators—of successful bidders promising to induce efficient demand curtailment and of consumers induced to practice it? Certainly not: the decrease in the revenue of the generators is (and consequent savings by consumers are) *matched by the savings in their (marginal) costs of generating that power*; the successful bidders for the opportunity to induce that consumer response are compensated for the costs of those efforts by the pool, *whose (marginal) costs they save* by assisting consumers to reduce their purchases. It sounds as though opponents to the

² I assume that the ISO will have correctly measured the MWh that would have been consumed but for the DR program. It is clearly possible to subsidize someone by paying him something for nothing. But I have assumed this problem has been solved.

NOPR proposal expect the plan to confer these savings on consumers at no charge. On the contrary: the competition for remuneration by the pool would be expected to put pressure on the bidders to extract as much as possible of the promised frequent savings for the beneficiaries.

- § As to the remuneration of the successful bidders, promising reductions in purchases of power from the generators, their compensation from the pool itself is offset by the savings in (marginal) costs induced by their—successful—efforts to promote efficient demand response: that remuneration is emphatically not a net burden on generators (and not a subsidy), because it matches the savings in marginal generating costs that their successful efforts induce.
- § Observe that under effective competition, those middlemen are paid only once, not twice. To the extent they incur costs in inducing the demand response they promise, they will expect to retrieve them, profitably, from a combination of charges to consumers whose bills they have reduced and from the pool—the latter reflecting the savings in marginal generation costs they have effected.

§ For those suppliers with infra-marginal generators, it is true that the rent that they would capture is greater without any demand response that acts to lower the market-clearing price. But that situation is identical to the introduction of a lower cost generation resource and is the efficient outcome in a competitive market—inuring to the benefit of all remaining customers.

Competition (and competitive bidding in the auction market) may be relied upon to prevent exploitative double charging—of power generators, on the one side, and consumers whose bills they helped reduce, on the other.

That electricity generators have opposed this plan should not be surprising: their primary business is to sell power not to encourage its conservation, and I have myself publicly cited evidence that they reap the preponderance of their profits on those occasions when demand is at its peak.³ The fact remains that—to the extent they are subject to effective competition—their revenue losses will be matched by the reductions in the high marginal costs of generating that power.

³ “The Adequacy of Prospective Returns on Generation Investments under Price Control Mechanisms,” *The Electricity Journal*, 15:2, March 2002, pp. 37-46.

The Danger of False Analogies and Usefulness of Valid Ones (however extreme)

Because it illustrates my argument so clearly, I cannot refrain from observing once again the uncharacteristic irrelevance of Professor Hogan's analogy to the purchase and sale of shoes. He might with far greater relevance have referred to the auctions of Rembrandt paintings: The former has none of the directly relevant characteristics of steeply increasing marginal supply or opportunity costs at times of peak demand—in consequence of which *all other purchasers benefit directly from restraint in the demand of any one of them.*

Overcoming the Obstacles to Efficient Choice

In sum, the arrangements at issue in these proceedings would tend to overcome the obstacles to efficient consumer choices posed by not only the high cost and political resistance to the adoption of the requisite complex metering but also a widespread lack of expertise among consumers in adopting consumption habits tailored to the individual circumstances of each, enlisting competition to achieve those goals with maximum efficiency and benefit to the public at large, following

the principles so lucidly (if I may be excused for so characterizing it!) expounded by Mr. Borlick.

In consequence:

§ The purchasing pool pays the minimum price necessary to satisfy the market demand—both directly in purchasing power from the competitive-bidding generators and competitive providers of efficient conservation. And, in particular, the increases in marginal cost and price at times of relative scarcity or rising marginal costs will be moderated by the response of intermediaries to the LMP reward for assisting consumers to respond efficiently. And, observe, no one is subsidized. As in all markets—perfectly-, imperfectly- or not-at-all competitive, infra-marginal sellers—willing to sell at prices lower than the one necessary to clear the market—and supra-marginal buyers—willing, if necessary, to buy at prices higher than the one that clears the market—are the beneficiaries of economic rents.

§ As I have already pointed out, Mr. Borlick correctly cites the reluctance of most state public utility commissions to “subject retail customers to real-time market prices” as reinforcing the barrier of costs and lack of consumer expertise. The design in the NOPR can tend only to offset or circumvent the barriers by offering the middlemen the incentive and wherewithal to secure the voluntary participation of customers by helping them to offset these

barriers to efficient choices with technical and financial assistance. As I have argued, so long as those “bribes” do not exceed the LMP saved by the voluntary participations of consumers and third-party facilitators, no additional “net benefit test”—such as has been set for comments by the Commission—is required.

As to the characterization of the remunerations of the participants in the program as “subsidies”—they are no more subsidies than the remunerations of generators for the power they actually sell: the direct payments here are no greater than the LMPs that participants in the program—and non-participants together—save by the efforts of the former: *In an industry subject to increasing costs*, any and all efforts to promote curtailment in customer’s demands on the system—by pre-arrangement or other—*confer benefits upon all consumers*—participants and non-participants alike—while retarding the growth in economic rents accruing to generators (which may explain the opposition of generators to the program) by retarding the recourse of all suppliers to higher marginal cost generation.

Response to Professor Hogan’s Criticisms

It is with considerable diffidence that I undertake to rebut the testimony of Professor Hogan. On the other hand, I strongly disagree with his negative assessments of the efforts at issue here to overcome

the very large imperfections in the price signals to purchasers of electric power and the consequent need—undeniable, in my opinion—for governmental intervention to see to it that demand is efficiently responsive to marginal supply costs by offsetting institutional obstacles to such rational behavior—by treating promises to reduce purchases equivalently with bids to supply power.

There are several ways of responding:

§ Successful demand-side bidders—that is to say, enterprises that offer to and do reduce power consumption—should be rewarded in the same way as supply-side ones—receiving the market-clearing price insofar as they do what they promise to do—reducing a burden of demand on the system—and by so doing, holding down or reducing rates to all customers.

§ This is assured by the bidding process, in consequence of which the compensation for the promised—and realized—reduction in demand are credited with the costs that that consumption would have imposed on the system, thereby *reducing costs to all residual customers* (the price assured by the bidding process).

- § Successful demand-side bidders benefit all residual customers by holding down, or moving back along the steeply rising marginal cost function, the marginal cost of serving them by either reducing the increase in demand or absolutely reducing demand.
- § Finally, and I suspect most congenial with Professor Hogan's pioneering advocacy of competitive power markets, any increase in the efficient responsiveness of demand (to prices competitively determined, as in the ISO-conducted auctions) will move us in the direction of correcting the most severe deficiency in most such markets in the US, the lack of an adequately, price-responsive demand side.

In short, Professor Hogan's criticism is uncharacteristically grounded in a particularly static conception of the electricity supply industry, in which competition (or the selective entry of alternative ways of serving the market) is not permitted to affect the previous balance of mark-ups over direct costs. And in which the solicitation and facilitation of alternative ways of satisfying the need for electric power and/or satisfying demand—including providing customers with economically efficient ways of reducing their consumption in response

to price increases (especially on peak) by rewarding them with the system marginal costs that they save—are not permitted to disturb the previous fine balance of regulated rates and book (as distinguished from economic) costs.

Ironically, Professor Hogan’s language itself betrays a purely regulatory philosophy. For example, assertedly as a result of the Commission’s proposals,

“certain consumers would be paid subsidies that are inconsistent with economic efficiency.” (page 2)

I do not see how the pool’s paying customers of incumbent suppliers the marginal costs they save the system by turning to alternative suppliers or better economizing in their use of electric power—that is to say, reimbursing them with the costs that they save the system by so doing—can ever be inefficient, if only dynamically. His reference to the payments to customers withdrawing their patronage as “subsidies”—when what is at issue is rewarding them with the marginal costs that they save the system—makes no sense at all except in an anti-competitive, purely static system of franchised, regulated monopoly utilities—which I do not believe Professor Hogan intends to recommend.

To characterize as “subsidies” payments by power pools to winning bidders in open competition between their offerings and those of traditional suppliers of kilowatts in competition with one another quite simply excludes them from a healthy, efficient competitive process—subject, of course, to ensure in the case of both successful competitive bidders that they deliver on their promises. In both cases, the marginal costs that they either deliver or save shall bring down the costs of the winning bidders and in both cases are properly recovered from the common pool.

Professor Hogan’s assertion to the contrary (in his testimony, p. 2):

“The increase in costs resulting from the need to pay for these subsidies will encourage consumers to purchase their electricity outside of the RTO...”

is bad arithmetic: it ignores the fact that the payments that he refers to again as “subsidies” are merely marginal costs *paid* by the successfully bidding “negawatt” buyers.

How can “costs” be “increased” by remunerating conservers of energy with the incremental costs that they would otherwise impose on the system?

There is a certain irony in his emphasizing, at the very outset of his testimony, that FERC's proposed plan would not apply to two groups of customers who already have the opportunity to refrain from consuming power and be rewarded with the prevailing high and rising market price, when his testimony opposes extending that *same* opportunity to whatever group of consumers can be assembled to make that same choice—namely, surrendering their right to be served by franchised marketers, receiving in exchange the “first-best” market-equilibrating price.

Opponents of the proposal will presumably respond with the assertions that I have already disposed of—namely, that the new competitive arrangements will be “subsidized” by the incumbent generators of power—in contrast with Professor Hogan's approval of the voluntary transitions he initially cites.

Charging the pool—ultimately some power generators—the cost of marshalling demand response is, however, no less a reasonable cost of operation than the cost of the clerk and register in Professor Hogan's shoe store; and it is matched by the LMP of generating the power that it saves the pool. In order to fulfill their successful bids,

these intermediaries work directly with end users to develop peak-shaving programs, sharing with them the proceeds of their successful bids and subject to severe penalties if they fail to deliver on those promises. In some cases electric power companies themselves work directly with these intermediaries to produce the same results—a healthy competition. Their resulting rewards are in no sense a burden on either the generating company or the public, but are financed by the LMP savings of the generators.

Of course, there is an element of strangeness in a supplier being required to reimburse a customer for refraining from purchasing from it. But:

§ there is a legal obligation to serve the customer, and

§ in a situation in which an increment in consumption has the external effect of increasing the cost of service to other customers, and there is a social interest in encouraging energy conservation, it is perfectly reasonable for society to encourage enterprises themselves to induce conservation by enabling customers to curtail their consumption and reward such efforts by requiring the franchised suppliers to reimburse such efforts out of their own

dollar savings. By so doing, they benefit all purchasers of power by holding down their rates.

§ I should note that the first bullet point above reveals the error of those who are opposed to paying LMP for DR on the grounds that the customer who reduces consumption has not purchased anything. They go on to deduce that the customer has nothing to sell to the market and shouldn't be paid full LMP for selling "nothing". But the obligation to serve creates an option to consume electricity that comes bundled with kWhs in the package of services that customers *purchase* from retail suppliers. And it is this option, bought and paid for, that the customer sells to the ISO or system operator. (Mr. Borlick recognizes that the option exists but erroneously dismisses the value of the option because he assumes that the retail supplier purchases the option when it is clearly the ISO/system operator purchasing resources to meet system load.)

THE REGULATORY ISSUE

Let me turn now to the regulatory issue which, to a former regulator, seems to dispose of the arguments against the NOPR

proposal to pay LMP for DR -- independently of the misapplications of economic theory I have discussed above.

Quite simply, Professor Hogan, Mr. Borlick and others arguing that the proposal contained in the NOPR should be rejected since they will lead to inefficiencies in the consumption decisions of retail customers ignore that the proper responsibility of the Commission is the justness and reasonableness of wholesale rates. The Commission's ambit clearly includes the well-being of the integrated grid and its operations, for example, by providing efficient incentives for demand response. But the Commission surely would be overstepping its bounds to attempt to ensure that wholesale rates rendered retail rates efficient. Indeed, that is transparently administratively infeasible given the plethora of state determined rates and the undeniable economic inefficiency of most of those rates. If the Commission tends to its own knitting, the approach it has set out in the NOPR is clearly the correct one. And the arguments based on the effects on retail customers of ISOs paying the economic price for demand response, are simply diversionary and irrelevant not to mention they stand the concept of federal preemption of wholesale tariffs on its head.

In seeking to make an efficient wholesale market, we must give deference to a State's conception of their retail markets but only up to a point. And that point is where the State's actions do harm to the efforts of this Commission to maximize economic efficiency in the wholesale market. At the very best, a State substituting its vision of how DR should be remunerated for the economically efficient design put forth in the NOPR would do no harm to the effect of that design. If, as I fear most likely, the State's efforts to impose its view does diminish participation by DR suppliers -- reducing the efficiency of the wholesale market in the process, the Federal obligation to make the wholesale market price efficient and thus just and reasonable must prevail.

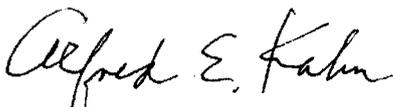
The argument for efficiency, at best, is an argument that it is the responsibility of FERC to correct inefficiencies in the retail market through compensating inefficiencies of its own in some sort of attempt to implement a theory of the second best. But, like all theories of the second best, changes cannot be introduced piecemeal. If the Commission is to take this responsibility seriously (and they shouldn't) then they should compensate for *every* inefficiency in the retail sector – class of service boundaries, subsidies for other demand-

side-management initiatives, renewable incentives, etc. For the lesson of the theory of the second best is that piecemeal adjustments to putatively improve efficiency may well worsen it unless all aspects of efficient consumption are taken into account. Professor Hogan's and the other similar pleadings to attempt to "correct" one aspect of retail inefficiency, *i.e.*, a failure to charge marginal cost rates should leave the Commission with no assurance that even if they sought to correct the inefficiencies of the retail market (which they shouldn't) that they had even taken a step in the right direction by divorcing compensation in the wholesale market from marginal cost for a particular selected group of suppliers.

AFFIDAVIT

Alfred E. Kahn, being duly sworn upon his oath, deposes and says:

1. I am a consultant to an intervenor in this proceeding, and I am duly authorized to make this Affidavit of Verification on its behalf.
2. I hereby verify that the statements of fact and other information contained in this Testimony are true and correct to the best of my knowledge, information, and belief.



Alfred E. Kahn

Sworn and subscribed before me this 26th day of August, 2010.



(Notary Public)

Cynthia Perno
Notary Public, District of Columbia
My Commission Expires 12/14/2014