



UNITED STATES OF AMERICA
FEDERAL TRADE COMMISSION
WASHINGTON, D.C. 20580

Before the

United States of America
Federal Energy Regulatory Commission

**Remedying Undue Discrimination through Open Access Transmission Service
and Standard Electricity Market Design: Wholesale Power Market Platform White
Paper**

Docket No. RM01-12-000

Comment of the Staff of the
Bureau of Economics and the Office of the General Counsel
Federal Trade Commission⁽¹⁾

I. Background and Summary

The Federal Energy Regulatory Commission's (FERC) Wholesale Power Market Platform White Paper states that FERC must harmonize its mission of achieving "wholesale electricity markets that produce just and reasonable prices and work for customers" with the new realities of regional electricity markets. Pursuit of procompetitive regulatory reforms in U.S. wholesale electricity markets began more than a decade ago.⁽²⁾ The FTC staff has supported efforts by FERC and the states to introduce increased competition in electric power markets where appropriate, because effective competition is likely to benefit customers through lower prices, improved reliability, increased customer choice of products and services, and greater innovation.⁽³⁾ FERC has revised its earlier standard wholesale market design proposals to give greater weight to differing regional preferences regarding market design. FERC also has revised its earlier proposals to allow for the phased-in implementation of the standard wholesale market platform on a regional basis.

A. FTC Experience in the Electric Power Industry

The FTC is an independent administrative agency responsible for maintaining competition and safeguarding the interests of consumers. In the energy industry, the staff of the FTC often analyzes regulatory or legislative proposals that may affect competition or the efficiency of the economy, in addition to its review of proposed mergers involving electric and gas companies. In the course of this work, as well as in antitrust research, investigation, and litigation, the staff applies established principles and recent developments in economic theory and empirical analysis of competition issues.

Our involvement in the evolution of the present white paper stretches back to our initial comment of August 7, 1995, in the proceeding leading to transmission open access in Order No. 888.⁽⁴⁾ It has continued with other comments, including our suggestions for effective structural reform in the Regional Transmission Organizations (RTO) proceeding (August 16, 1999) and, more recently, our July 23, 2002, and November 15, 2002, comments on FERC's standard market design proposals.⁽⁵⁾ In addition to filing comments with FERC and various state utility commissions, the Commission has issued two Staff Reports (July 2000 and September 2001) on electric power market restructuring issues at the wholesale and retail levels. The July 2000 FTC Staff Report established a policy framework for increased competition in wholesale and retail electric power markets.⁽⁶⁾ The September 2001 FTC Staff Report reviewed features of state retail competition plans that have provided benefits to consumers and those that have not. It also provided an assessment of whether states had sufficient authority to implement successful retail competition programs.⁽⁷⁾

B. Summary of Comment

Our comment concerns four aspects of the white paper and previous elements of FERC's RTO and standard market design proposals. First, deference to regional economic differences and to regional timing constraints is likely to be accompanied by an increased risk of impeding efficient wholesale electric power trades, although there may also be benefits from deferring to some regional market design preferences. Variations in the design of markets within an electric interconnect may impose costs or create risks that will reduce incentives to execute efficient interregional wholesale transactions on the existing or future electric power transmission network. An additional potential concern is that regional variations in market design will increase the operating and marketing costs of multi-region suppliers. Unwarranted discrepancies in market design between regions may diminish economies of scale and scope for multi-region suppliers, thus preventing more efficient firms from developing or expanding. Work with computer simulation models and experimental market research may help FERC to discern which variations in market design within an interconnect pose the greatest threats to effective interregional competition and customer welfare. FERC could then appropriately screen out proposed market design variations that are likely to harm customers.

Second, the revised FERC proposals present another opportunity for FERC to encourage states to focus on policies that are likely to facilitate wholesale competition and system reliability, both regionally and nationally. Accordingly, we encourage FERC to study and publicize how state programs that increase the price sensitivity of retail electricity demand can help protect customers from market power, reduce system costs, and improve system reliability.

Third, FERC's market monitoring proposals offer several potentially useful behavioral and reporting requirements in addition to those contained in Order 2000. FERC may wish to add a requirement that market monitoring units (MMUs) use comparable data, analytical techniques, and formats in reporting to FERC and a requirement that MMUs refer likely violations of the antitrust laws to the antitrust agencies.

Finally, we continue to believe that efficient, customer-service-oriented operation of the transmission network is an important and appropriate goal for regulatory reforms. Accordingly, we reiterate our call for FERC to include operating efficiency in its set of minimum characteristics for RTOs and Independent System Operators (ISOs).

II. The Potential Costs of Deferring to Regional Market Design Preferences

A. Balancing the Potential Benefits and Costs of Variations in Regional Market Design Preferences

FERC has revised its standard wholesale market design proposals to allow regions to phase in implementation of various features of the standard market design and to permit differences in regional market design if the costs of implementing any feature of the proposed rule outweigh its benefits. There may be benefits from deferring to certain regional market design preferences. For example, customers in a region with a high proportion of hydroelectric generators may be harmed if market rules regarding withholding of capacity are not sensitive to temporal variations in the opportunity costs of hydrogeneration. Such insensitivity could lead to requiring that hydro resources be used now when they would be more valuable to customers later. The value could take the form of lower prices or reduced risk of blackouts.⁽⁸⁾

At the same time, deference to regional preferences is likely to be accompanied by an increased likelihood that variations in market designs will impose costs or risks that impede efficient interregional wholesale transactions on the existing or future electric power transmission network. An accessible and fully functioning transmission network affords efficient trading opportunities,⁽⁹⁾ as shown by the substantial increases in wholesale trading volume as operation of the transmission network has become less restricted.⁽¹⁰⁾ Open and efficient operation of the transmission network gives customers nearly instantaneous access to lower-priced electric power more of the time than would a fragmented and inefficiently operated transmission system.⁽¹¹⁾ Further, inefficient operation of the transmission network gives rise to excessive congestion, costly overbuilding of the transmission system in order to avoid such congestion, and distorted investment incentives for suppliers and customers alike. Customers are likely to experience more reliable service as well as lower prices when the transmission network is used efficiently.

B. Potential to Impede Interregional Competition

In striking a policy balance between regional preferences and national standards, FERC may wish to be particularly alert to proposed regional market designs that are likely to impede interregional competition within a transmission interconnect. Prospective examples include pancaked rates for interregional transmission, inconsistent available transmission capability (ATC) calculations, and transmission line relief policies that favor intra-regional transmission.

- *Pancaked rates* impose added fees whenever a transmission service includes two or more transmission areas, but these increased fees do not necessarily correspond to the actual incremental costs of transmitting power across regions within an interconnect.⁽¹²⁾
- *Inconsistent ATC calculations* create uncertainty about the feasibility of proposed wholesale market transactions. Such uncertainty discourages transmission agreements that may be efficient.⁽¹³⁾
- *Transmission line relief policies* administratively determine which transmission trades are curtailed when transmission congestion occurs. If curtailments are biased in favor of incumbent users, for example, entrants face disproportionate risks that their transmission arrangements will be disrupted.⁽¹⁴⁾ Bias in curtailment could dampen or eliminate the investment incentives of entrants that are more efficient than incumbent firms. This would harm customers by leaving more of the market supplied by higher-priced suppliers. Such impediments are likely to restrict the scope of geographic markets for electric power, with resulting increases in market concentration and associated incentives for suppliers to exercise market power unilaterally or collectively.⁽¹⁵⁾ Indeed, the net benefits of uniform market rules within an interconnect that FERC identified in Order 2000 are likely to be at least as compelling today.⁽¹⁶⁾

C. Potential Concern about Disproportionately Raising Costs of Multi-Region Suppliers

An additional potential concern is that regional variations in market design will increase the operating and marketing costs of multi-region suppliers. The widely publicized seams issues identified by market participants are examples of the type of costs and risks imposed by variations in market design rules across regions.⁽¹⁷⁾ In addition, variations in market designs may create additional administrative burdens on market participants because they have to reorganize and recast submissions of similar materials to meet the requirements of different regions. For example, if regions differ in how spot market bids must be formatted, a supplier with plants selling into multiple areas will have to prepare and submit multiple sets of bids. If one set of bid requirements prevailed, preparation of multiple sets of bids could be avoided.

Unwarranted discrepancies in market design between regions may diminish economies of scale and geographic scope for multi-region suppliers while providing little benefit to customers.⁽¹⁸⁾ These scale and scope economies likely would benefit customers in competitive markets absent the imposition of additional costs on multi-region suppliers that are caused by regional variations in market design. When regulatory costs disproportionately disadvantage more efficient firms, higher-cost firms continue to serve the market and customers are likely to face higher prices than would otherwise prevail. Local suppliers with market power may have particularly strong incentives to establish arbitrary variations in market rules for their respective regions that raise the costs of multi-region suppliers, potential entrants, and established rivals located in neighboring regions.⁽¹⁹⁾

D. Use of Computer Simulation Models to Screen Proposed Regional Variations in Market Design

Work with computer simulation models and experimental market research may help discern which variations in market design within an interconnect pose the greatest threats to effective interregional competition and customer welfare.⁽²⁰⁾ We continue to encourage FERC to study and publicize best practices in market design and transmission network operations as one technique to discourage arbitrary market design differences.⁽²¹⁾ Empirical research and identification of best practices may also help FERC to avoid inadvertent acceptance of a dysfunctional market design feature in one area simply on the basis that this design feature was proposed or adopted earlier in a neighboring area. As experience with California's wholesale market rules suggests, the chronological age of a market design feature does not guarantee that it is the best practice or that it provides net benefits to customers.

III. Encourage State Policies to Advance Efficiency and System Reliability

The revised standard market design proposals present another opportunity for FERC to encourage a focus by the states on policies that are likely to facilitate wholesale competition and system reliability, both regionally and nationally. Accordingly, we encourage FERC to study and publicize how state programs that increase the price sensitivity of retail electricity demand can help protect customers from market power, reduce system costs, and improve system reliability.⁽²²⁾ Theoretical and empirical research sponsored or promoted by FERC on real-time pricing, advanced metering, and distributed generation, for example, could assist states in this important policy development area.⁽²³⁾ Progress in this area also could help to alleviate the market power concerns that motivate FERC's market monitoring efforts and those of the market monitoring units, as discussed in both Order 2000 and the white paper.⁽²⁴⁾

IV. Promote Comparable Competition Analyses by MMUs

The revised market monitoring proposals offer several specific behavioral and reporting requirements in addition to those contained in Order 2000. These additional requirements should make monitoring efforts more effective, subject to our concerns about measuring marginal costs as part of determining whether a supplier is withholding generation capacity.⁽²⁵⁾ FERC may wish to consider two additional market monitoring elements. First, FERC's efforts to develop an accurate and timely overview of the progress of the nation's electric power sector reforms, and remaining market power problems, are likely to be more successful if the MMUs use the same or very similar methods and data to evaluate and report on market conditions. Consequently, FERC may wish to include language in the Final Rule to encourage MMUs to coordinate their market analysis and reporting activities.⁽²⁶⁾ Second, if MMUs identify participant behavior that may violate the antitrust laws, it would be appropriate for them to refer such matters to the antitrust agencies.⁽²⁷⁾ FERC may wish to include a referral provision in its Final Rule.

V. Promote Efficient, Customer-Oriented Transmission Service

We continue to believe that efficient, customer-friendly operation of the transmission network is an important and appropriate goal for regulatory reforms. Accordingly, we reiterate our call for FERC to include operating efficiency in its set of minimum characteristics for RTOs and ISOs.⁽²⁸⁾ Without performance incentives and a mechanism to displace an RTO's or an ISO's board of directors, non-profit RTOs and ISOs run the risk that "independence will devolve into indifference to the quality of services, the pace of innovation, and changes in customer preferences."⁽²⁹⁾

VI. Conclusion

FERC's present market design proposals entail greater deference to regional market design preferences. The potential benefits of variations in market design between regions within an interconnect should be weighed against the increased risk that such variations will impede efficient use of the present and future transmission network. FERC should be particularly watchful for regional proposals that would create or preserve rate pancaking or preferential treatment in relieving transmission congestion, or would disproportionately burden multi-region suppliers. FERC's wholesale market reforms are substantially more likely to be effective if FERC actively supports state efforts to implement real-time pricing and other measures to increase the price sensitivity of retail demand. FERC's ability to compare performance across regions and to develop policies that benefit customers would likely be enhanced by requirements that market monitors use economically appropriate methods of analysis and comparable reporting

formats. Finally, we continue to urge FERC to include incentives for efficient transmission network operations as a minimum characteristic for RTOs and ISOs.

Respectfully submitted,

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Endnotes:

1. This comment represents the views of the staff of the Bureau of Economics and the General Counsel's Office of Policy Studies of the Federal Trade Commission. They are not necessarily the views of the Federal Trade Commission or any individual Commissioner. The Commission has, however, voted to authorize the staff to submit these comments. Inquiries regarding this comment should be directed to John C. Hilke, Economist and Electricity Project Coordinator in the Bureau of Economics (801-524-4440 or jhilke@ftc.gov), or Michael Wroblewski, Assistant General Counsel for Policy Studies (202-326-2155 or mwroblewski@ftc.gov).

2. The Energy Policy Act of 1992 was the first U.S. legislation directly related to wholesale market regulatory reforms in the electric power industry, but the Public Utility Regulatory Policy Act of 1978 provided the foundation for later reforms by demonstrating that independent generators could successfully be connected to the transmission network.

3. For a discussion of the benefits of competition in the electricity industry, see Paul L. Joskow, "Regulatory Reform in the U.S. Electric Power Sector," in *Deregulation of Network Industries, What's Next?* 113, 119-24 (Sam Peltzman et al. eds., 2000).

4. This comment is available at <<http://www.ftc.gov/be/v950008.htm>>.

5. See FTC Staff Comment, FERC Docket No. RM99-2-000 (Aug. 16, 1999) (FTC Staff RTO Comment); FTC Staff Comment, FERC Docket No. RM01-12-000 (July 22, 2002) (FTC Staff SMD Working Paper Comment); FTC Staff Comment, FERC Docket No. RM01-12-000 (Nov. 15, 2002) (FTC Staff SMD Comment).

6. FTC Staff Report: Competition and Consumer Protection Perspectives on Electric Power Regulatory Reform (July 2000), available at <<http://www.ftc.gov/be/v000009.htm>>.

7. FTC Staff Report: Competition and Consumer Protection Perspectives on Electric Power Regulatory Reform, Focus on Retail Competition (Sept. 2001), available at <<http://www.ftc.gov/reports/elec/electricityreport.pdf>>.

8. This issue is discussed in the appendix to FTC Staff SMD Comment, regarding paragraphs 422 and 423 of the Standard Market Design (SMD) NOPR.

9. "From an electrical engineering perspective, each of the three interconnections in the United States operates as a single machine. . . Problems have arisen . . . in part, because we have multiple operators of each of these machines. . . But the physical reality is that, within the three interconnection grids, any action taken by one transmission provider can have major and instantaneous effects on the transmission facilities of all other transmission providers." FERC, Regional Transmission Organizations Notice of Proposed Rulemaking (RTO NOPR), FERC Docket No. RM99-2-000 at 39-40 (May 13, 1999).

10. With the entry of independent generators, divestiture of generation by vertically integrated utilities, and fewer impediments to open transmission access, the volume of wholesale purchases by load serving utilities has increased significantly in recent years. In 1995, before issue of FERC Order No. 888, U.S. wholesale power transactions totaled 1.26 billion MWh and were valued at \$44.2 billion. By 2001, wholesale power transactions (not including sales between power marketers) totaled 2.08 billion MWh and were valued at \$99.6 billion. This is a wholesale transaction volume increase of approximately 73%, compared to an increase in total U.S. electricity generation over the period of approximately 12%. If sales between power marketers are included, the volume of wholesale trades in 2001 increases to 6.47 billion MWh, an increase of over 400% compared to 1995 (when power marketers were just starting to operate). (These figures are based on data provided by the Department of Energy's Energy Information Administration from filings of Form EIA-861.) "Clearly, Order 888 has resulted in wholesale power markets becoming more competitive, more transmission services being made available to more potential users than ever before, and generally lower transmission costs." RTO NOPR at 61.

11. The Department of Energy's *Report to Congress: Impacts of the Federal Energy Regulatory Commission's Proposals for Standard Market Design* (Apr. 30, 2003) finds that there are likely to be cost savings available from providing additional access to the U.S. transmission network.

12. See Timothy Brennan, Karen Palmer, and Salvador Martinez, *Alternating Currents: Electricity Markets and Public Policy* 88-89 (2002); RTO NOPR at 56-58.

13. See RTO NOPR at 47-49, 66-77; Sally Hunt, *Making Competition Work in Electricity* 292-93 (2002).

14. See RTO NOPR at 80-82; Sally Hunt, *supra* n. 13, at 293-95.

15. See FTC Staff RTO Comment at Sec. III.C, available at <<http://www.ftc.gov/be/v990011.pdf>>; September 2001 FTC Staff Report, Ch. II, Sec. B. The potential anticompetitive effects of narrow geographic markets are most readily discernible when transmission congestion creates load pockets. Demand from customers within the load pocket that exceeds transmission capacity into the load pocket must be satisfied by generators within the load pocket. This may

result in dispatch of higher-cost generators within the load pocket and provide added ability and incentives for generators within the load pocket to exercise market power unilaterally or through coordinated interaction. The result of either is to raise prices in the load pocket above those in surrounding areas.

16. "We believe that many of the characteristics and functions for an RTO . . . suggest that the regional configuration of a proposed RTO should be large in scope. For example: Making accurate and reliable ATC determinations . . . resolving loop flow issues . . . managing transmission congestion . . . offering transmission service at non-pancaked rates . . . better allocate scarcity as regional transmission demand is assessed...promote simplicity and one-stop shopping . . . lower costs by reducing the number of OASIS sites . . . necessary transmission expansion would be more efficient when planned and coordinated over a larger region." RTO NOPR at 130-31.

17. Seams issues are a widespread concern that several regions of the continent are trying to address by coordinating market rules and approaches. See, e.g., "IMO of Ontario, ISO-NE and NYISO Complete Planning and Market Development Agreement" (news release dated July 17, 2002); "The Market Interface Committee of the Western Electricity Coordinating Council Organizational Guidelines" (approved by the Board of Trustees in December 2001); Christopher Eaton, "Infrastructure Issues in the Midwest: A 'Seams' Analysis," paper presented at the conference on Illinois Energy Policy for the 21st Century, Springfield, Ill. (May 23, 2002). For a general treatment of seams issues, see William W. Hogan, "Interregional Coordination of Electricity Markets," presented at the FERC Technical Conference on Interregional Coordination, Washington, D.C. (June 19, 2001).

18. This is one of the areas for improvement identified in the proposals for a combined day-ahead market in the Northeast. William W. Hogan, *supra* n. 17, at 10.

19. An extensive literature on both the theory of economic regulation and raising rivals' costs prompts our policy concern about the effects of disparities in market rules on entrants and firms that serve customers in more than one jurisdiction. The aspect of the theory of economic regulation most relevant here focuses on the incentives and ability of special interest groups to seek to bias regulations in their own favor. See George J. Stigler, "The Theory of Economic Regulation," 2 *Bell J. Econ.* 3 (1971); Sam Peltzman, "Toward a More General Theory of Regulation," 19 *J. L. & Econ.* 211 (1976). For a discussion of raising rivals' costs and its relationship to market definition, see Salop, Scheffman, and Schwartz, "A Bidding Analysis of Special Interest Regulation: Raising Rivals' Costs in a Rent Seeking Society," in B. Yandle and R. Rogowsky (eds.), *The Political Economy of Regulation: Private Interests in the Regulatory Process* (FTC 1984). The September 2001 FTC Staff Report (Ch. V) found a similar concern regarding variations among states in market rules for retail open access.

20. For a general treatment of the economics of electric power markets and the design of these markets, see Steven Stoft, *Power System Economics: Designing Markets for Electricity* at 95-106 (2002) (Chapter 1-9, "Designing and Testing Market Rules"). Use of simulation models for testing market design alternatives is discussed in William W. Hogan, *supra* n. 17, at 13-17. Examples of the extensive literature on market design in experimental markets include: Mark A. Olson, Stephen J. Rassenti, Vernon L. Smith, and Mary Rigdon, "Market Design and Motivated Human Trading Behavior in Electricity Markets," and Vernon Smith, Stephen Rassenti, and Bart Wilson, "California: Energy Crisis or Market Design Crisis?," papers presented at the University of New South Wales conference on Insights from Experimental Economics for the Design of Australian Electricity, Gas, and Environmental Markets (Mar. 2003). The Power Systems Engineering Research Center, in whose research program 11 universities participate, is conducting a wide array of experimental market research on electric power market design.

21. The FTC Staff RTO Comment and the FTC Staff SMD Comment both recognize that "economic theory and experience support using locational marginal pricing (LMP) as the basis of transmission congestion pricing."

22. Examples of the extensive literature on price-responsive demand include, for example, the September 2001 FTC Staff Report, Chapter III; Ahmad Faruqui and Stephen S. George, "Economic Analysis of Time-of-Use Pricing for Residential Customers," Charles River Associates (Dec. 21, 2001); Severin Borenstein, Michael Jaske, and Arthur Rosenfeld, "Dynamic Pricing, Advanced Metering and Demand Response in Electricity Markets," University of California Energy Institute Working Paper 105 (Oct. 2002).

23. This effort may be particularly important if national legislation is enacted to require each state to study and make decisions about real-time pricing and related policy options in the electric power industry.

24. "We encourage FERC and the states to emphasize direct approaches to creating structurally competitive markets, including policies that reduce concentration where it is a source of market power, ease entry impediments, and facilitate price-responsive demand." FTC Staff SMD Comment, Sec. II.D.

25. These caveats are discussed with respect to paragraphs 418 to 423 of the SMD NOPR in the appendix to the FTC Staff SMD Comment.

26. This issue was discussed with respect to paragraphs 406 to 412 of the SMD NOPR in the appendix to the FTC Staff SMD Comment.

27. Appendix A of the white paper proposes that MMUs be required to report to "the Commission [FERC], the regional state committee, and other appropriate state regulatory authorities." The reporting requirement could, for example, be modified by adding "and national and state antitrust authorities where competition issues arise that are under their jurisdiction."

28. FTC Staff RTO Comment, Sec. IV; FTC Staff SMD Working Paper Comment, Sec. III.

29. FTC Staff RTO Comment, Sec. IV.