



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

**Before the Maine Department of the Attorney General  
and the Maine Public Utilities Commission  
Regarding "The Interim Report on Market Power in Electricity"**  
**Comment of the Staff of the Bureau of Economics of the Federal  
Trade Commission\***

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**May 29, 1998**

**I. Introduction and Summary**

The staff of the Bureau of Economics of the Federal Trade Commission (FTC)(1) appreciate this opportunity to respond to the invitation to comment on the "Interim Report on Market Power in Electricity" of the Department of the Attorney General (Department) and the Public Utilities Commission (Commission) of the State of Maine.

The FTC is an independent administrative agency responsible for maintaining competition and safeguarding the interests of consumers. The staff of the FTC often analyze regulatory or legislative proposals that may affect competition or the efficiency of the economy. In the course of this work, as well as in antitrust research, investigation, and litigation, the staff apply established principles and recent developments in economic theory and empirical analysis to competition issues.

The staff of the FTC have a longstanding interest in regulation and competition in energy markets, including proposals to reform regulation of the natural gas and electric power industries. Staff have submitted numerous comments concerning these issues at both the federal and state levels.(2) Moreover, the FTC regularly reviews proposed mergers involving electric and gas utility companies.

The Department and the Commission have issued an interim report entitled "Market Power in Electricity: A Study of Market Power Issues Raised by the Prospect of Retail Competition in the Electric Industry," pursuant to Maine P.L. 1997 ch. 447 Part B. The purpose of both the Interim Report and the Final Report (due on December 1, 1998) is to identify market power issues that may require legislative attention as Maine proceeds toward retail competition in electricity supply. The Department and the Commission have invited comment on the Interim Report in order to assist them in preparing the Final Report to the Maine Legislature.

The Department and the Commission have released a far-ranging and insightful interim report that provides a sound framework for analyzing market power in the electric industry. The primary theme of our comment is that the Department and the Commission may wish to discuss additional aspects of entry in electricity generation markets in the Interim Report. Entry that provides new generation or transmission capacity may remedy market power problems and thus obviate the need for regulation. In analyzing the competitive implications of mergers and regulatory changes, our experience has shown that timely, likely, and sufficient entry may alter the competitive implications of market structure.

Accordingly, the Department and the Commission may wish to consider discussion of the following two points. Recent technological changes and prospective changes in the availability of natural gas may result in future entry conditions more favorable than envisioned in the Interim Report. Moreover, the Department and the Commission may wish to suggest actions that the Legislature or the Commission (working with the New England ISO and FERC) could take to enhance ease of entry. In addition to examining entry issues, this comment identifies several modifications or

elaborations of portions of the Interim Report that the Department and the Commission may wish to include in the Final Report.

## II. Entry Considerations

The implications of high market concentration may be affected by entry conditions. For example, the Department of Justice/Federal Trade Commission Horizontal Merger Guidelines (DOJ/FTC Merger Guidelines) describe these effects in the context of mergers.<sup>(3)</sup> In circumstances where entry is timely, likely, and sufficient to deter or counteract efforts to exercise market power, market concentration may not have adverse implications for consumers.<sup>(4)</sup> In our merger and competition advocacy work, we have found that full treatment of entry conditions, both present and future, is an important aspect of competition analysis.

### A. Additional Consideration of the Evolution in Electric Industry Entry Conditions

Technological and regulatory changes over the past decade have tended to ease entry obstacles in the electric industry and may continue to do so. The Department and the Commission may wish to discuss in various sections of the Final Report two additional possible forms of entry in the electric industry.

The first form of entry is new or expanded generating capacity within the existing product and geographic market. The second form of entry is enhanced access to existing, but distant or isolated, generating capacity by virtue of new or expanded transmission capacity. Effective entry into an electricity generation market in some circumstances may be accomplished by increased transmission capacity even if new generation capacity is not installed. Entry through increased transmission capacity frequently broadens the relevant geographic market. Because a broader geographic market is likely to include more suppliers, increased transmission capacity may also reduce market concentration.

Both forms of entry have been affected by technological advances in the past few years. First, new combined-cycle, gas-turbine technology, in conjunction with deregulation of natural gas prices, has significantly reduced scale economies in electric generation and made such facilities far more competitive with coal-based generating plants.<sup>(5)</sup> Because the new natural gas generating facilities can be economical at a smaller scale, combined-cycle, natural-gas generating facilities take less time to design and build, have less lumpy effects on supply conditions, and involve fewer sunk costs. In short, the advances in generation fueled by natural gas may make entry more timely and likely. Given the relatively modest demand for electricity in Maine, which may be a separate load pocket<sup>(6)</sup> during periods when transmission is congested, such smaller-scale entry may be sufficient as well. The potential importance of entry of generation fueled by natural gas may be further enhanced by additional natural-gas pipeline capacity in the region.<sup>(7)</sup>

Second, improved electric transmission technology makes expanded transmission capacity a more viable and better understood substitute for new generating capacity.<sup>(8)</sup> Improved understanding of the origins of and remedies for transmission congestion may aid in making transmission a more effective constraint on market power in electricity markets.<sup>(9)</sup> Further, eased health concerns about high voltage transmission lines may help make expansions of the transmission grid more acceptable to those living and working near these facilities.<sup>(10)</sup>

Specific sections of the Interim Report, where expanded consideration of entry through new generation or transmission capacity may be useful, include the following:

- Consideration of entry conditions as described above may alter the implications of high market share concentration in New England either in the short or in the long run. The Department and the Commission may wish to elaborate on entry conditions in discussing the likelihood of market power in electricity markets in the New England region. See Interim Report, Section II.C. (second paragraph).
- High concentration in electricity generation fueled by renewable energy sources and in electricity generation serving Aroostook County may be affected by entry conditions as described above. The

Department and the Commission may wish to include discussion of entry conditions with respect to these two specific categories of electricity demand and supply. See *id.* at Section II.C., Section IV.I., and Section V.

- Recent declines in the minimum efficient scale of generation (combined-cycle, gas-turbine technology) may make the relatively small demand for electricity in Maine, which is a largely rural state, less likely to inhibit new entry, through either new or expanded generation capacity to serve Maine during those periods when it may be a separate load pocket.<sup>(11)</sup> The Department and the Commission may wish to provide some additional perspective on load and minimum efficient scale entry. See *id.* at Section III.A., Section IV.I., and Section V.

## **B. Directly Influencing Entry Conditions**

Taking into account both present facilities and likely future generation and transmission entry, the Department and the Commission may wish to compile parallel lists of 1) the most significant market power concerns, and 2) the transmission and generation projects that would be likely to mitigate each of the market power concerns. Sophisticated computer simulation models of the transmission grid and generating facilities can help identify the likely effects on pricing and output of specific additions to transmission or generating capacity.<sup>(12)</sup> Using such techniques, the Department and the Commission may be able to identify for the Legislature a small, focused list of transmission or generation projects that could alleviate the most significant market power concerns.

In essence, the Department and the Commission may be able to identify market power concerns that the Commission, working with the New England ISO and FERC, or the Legislature could resolve most efficiently by enhancing the prospects of entry with specific new facilities. For example, if a particular transmission expansion would substantially alleviate market power concerns,<sup>(13)</sup> the Legislature might elect to enhance the likelihood of such entry through legislative or other mechanisms to reduce administrative delays, costs, and uncertainty in obtaining siting permission from the state.<sup>(14)</sup>

We note that Wisconsin's officials have confronted similar questions about the adequacy of transmission capacity serving the state. They have decided recently that market power issues in retail competition and reliability concerns can best be addressed initially by facilitating construction of certain additional transmission lines and generation facilities.<sup>(15)</sup>

## **III. Additional Specific Suggested Modifications to the Interim Report**

From our review of the Interim Report, we have identified ten specific modifications that the Department and the Commission may wish to make in addition to revising the treatment of entry.

Suggestion 1. Our experience and research suggest that there is an underlying positive relationship between high market concentration and market power in many markets, which is also suggested in the Interim Report. Nonetheless, there are intervening factors that may undermine this general hypothesis in particular circumstances. Entry conditions, as described above, are a good example of such a factor. Accordingly, the Department and the Commission may wish to state the concentration/market power relationship as a matter of increased likelihood rather than of certainty. See Interim Report, Section I.B. (first paragraph) and Section IV.B.

Suggestion 2. The market power lessons from the United Kingdom's privatization of the electric industry have been an important element shaping electric industry reform in the United States. The Department and the Commission may wish to emphasize the lessons for Maine from the U.K.'s experience by providing a fuller description of the market structure in the U.K. immediately after the 1990 reforms. Although it is true that there were just two major private generating firms, the government retained all the nuclear capacity and there were various additional sources of supply, such as tie lines from Scotland and France.<sup>(16)</sup> Hence the U.K.'s initial market structure may not have been very dissimilar from the market structure serving New England. In addition, the Department and the Commission may

wish to note that efforts to address the U.K. generation market power problem took considerable time and required substantial divestiture of generating capacity.<sup>(17)</sup> See Interim Report at Section I.B. (second paragraph).

Suggestion 3. In addition to the antitrust enforcement options described by the Department and the Commission, the FTC also has authority to challenge unfair methods of competition used by any private, electric-industry competitor.<sup>(18)</sup> The Department and the Commission may wish to add a reference to this additional enforcement option. See *id.* at Section I.B. (fifth paragraph).

Suggestion 4. In discussing the effects of cross-subsidization from a monopolized stage of production to a potentially competitive one, the Department and the Commission may wish to emphasize that such cross-subsidization may result in a less efficient, higher cost supplier serving the potentially competitive market. This could harm consumers by increasing prices and making product costs higher than necessary. See *id.* at Section II.B. (first paragraph).

Suggestion 5. Although the Department and the Commission have described in some detail how market power, discrimination, and cross-subsidization problems may arise from vertical integration between a regulated transmission/distribution monopoly and an affiliated power marketer, additional consideration may also be given to the efficiencies and customers' preferences that may favor such vertical integration. If the Department and the Commission find that substantial vertical efficiencies result from linkages between transmission/distribution monopolies and affiliated units operating in competitive markets, the Final Report may note that efforts have been made in some deregulated industries to preserve efficiencies of vertical integration and one-stop shopping while avoiding vertical ownership of such affiliates. For example, most local telephone companies have developed contractual arrangements with entirely unaffiliated long-distance providers to offer a single bill to consumers for both local and long-distance telephone service.<sup>(19)</sup> Consumers may benefit from such arrangements in terms of both convenience and transaction costs. See *id.* at Section III.A.

Suggestion 6. If the Department and the Commission decide to recommend full divestiture of affiliated power marketing functions, the Final Report may wish to consider recommending a sunset rule for this provision. Under such a provision, once the purported historical advantages of consumer familiarity with the traditional vertically integrated utility fade, consumers may again be offered the option of one-stop shopping, with any associated vertical economies. See *id.* at Section III.F.

Suggestion 7. Although we have not included Maine in any geographic analyses of electricity markets, our experience in cases and competition advocacy suggests that there may be separate geographic markets at different periods of the day and at different times of the year.<sup>(20)</sup> If the Department and the Commission reach a similar conclusion, the Final Report may wish to make this observation. For example, the relevant geographic market during off-peak hours may be broader than NEPOOL, while local load pockets may develop during peak hours due to transmission congestion that narrows the geographic market. See Interim Report at Section IV.A.

Suggestion 8. Time-of-day metering for consumers, as well as for additional businesses, is likely to become available on a low-cost basis. Although no one is certain, it is possible that consumers will shift their use of electricity to take advantage of lower rates during off-peak periods and to minimize their use of electric power during peak periods.<sup>(21)</sup> Hence, as retail prices come to more closely reflect transmission congestion conditions, demand peaks and troughs within potential load pockets may be moderated. Reductions in peak power consumption should reduce transmission congestion and associated localized market power in generation. The Department and the Commission may wish to acknowledge this aspect of uncertainty about future localized market power. See *id.* at Section IV.A. and Section IV.H.

Suggestion 9. In evaluating competitive issues in the New England electricity markets, the Department and the Commission may wish to consider making use of generation/transmission computer simulation models that include Maine, in addition to the model identified in the Interim Report.<sup>(22)</sup> See *id.* at Section IV.E.

Suggestion 10. As the Department and the Commission indicate, Maine's requirement that 30% of each supplier's portfolio come from renewable energy sources may create a separate demand for electricity generation fueled by renewable sources. Under Maine's portfolio requirement, electricity from renewables can freely substitute for electricity from non-renewable sources. Electricity from non-renewable sources, however, can substitute for electricity from renewable sources only when the share of electricity from renewables exceeds 30%.

Hence, generation and transmission conditions relating to electricity from renewables represent a distinct policy concern. The technical and regulatory issues surrounding entry (discussed in Section II above) apply as well to entry into generation using renewable sources of energy. The extent to which the market for renewables presents market power concerns will depend partly on the period (e.g., hourly, weekly, yearly) over which the 30% benchmark is applied. (23) The longer the period utilized, the less likely that market power issues in renewables will arise. (24) The Department and the Commission may wish to consider recommending a longer period to measure compliance with Maine's renewables requirements. See id. at Section V.

#### IV. Conclusion

The Department's and the Commission's "Interim Report on Market Power in Electricity" addresses a wide variety of competition issues and remedies associated with Maine's move toward retail electric competition. The principal issue that may warrant additional attention in the Final Report is entry through new generation and transmission capacity. If horizontal market power problems are identified that are not otherwise likely to be remedied by the ISO or by FERC, the Department and the Commission may wish to recommend that the Legislature consider various steps to encourage new transmission or generation capacity that could remedy the market power problems without resorting to reregulation. The Department and the Commission may also wish to consider a variety of other modifications to the Interim Report, as suggested above.

Respectfully submitted,

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#### Endnotes

\* This comment represents the views of the staff of the Bureau of Economics of the Federal Trade Commi

(1) This comment represents the views of the staff of the Bureau of Economics of the Federal Trade Commission. They are not necessarily the views of the Federal Trade Commission or any indiv

(2) The staff of the FTC have commented on electric power regulation to the Federal Energy Regulatory Commission (FERC) in Docket No. PL98-5-000 (May 1, 1998)(ISO Policy Comment), Docket Nos. ER97-237-000 and ER97-1079-000 (February 6, 1998)(NEPOOL Comment), Docket No. RM96-6-000 (May 7, 1996), Docket Nos. RM95-8-000 and RM94-7-001 (August 7, 1995) (Open Access Comment), and Docket No. RM85-1-000 (1985); to the California Public Utilities Commission, Docket Nos. R.94-04-031 and I.94-04-032 (August 23, 1995); and to the South Carolina Legislative Audit Council (February 28, 1994). In addition, the staff of the FTC have commented to FERC about natural gas regulation. See comments about pipeline regulation after partial wellhead decontrol (Docket No. RM85-1-000 (1985)); alleged anticompetitive practices of pipeline marketing affiliates (Docket No. RM87-5-000 (1987)); and capacity bro

(3) U.S. Department of Justice and Federal Trade Commission

(4) In order to provide an effective constraint on the exercise of market power in the short-run, entry must meet all three criteria. Entry is considered timely if it can be achieved within two years (DOJ/FTC Merger Guidelines, Section 3.2). Entry is considered likely if it would be profitable at premerger prices, and if such price could be secured by the entrant (id., Section 3.3). Entry in a geographically differentiated market is considered sufficient if the character (location) and scope of the entrant's products are responsive to the localized sales opportunities that

(5) See Paul L. Joskow, Restructuring, Competition and Regulatory Reform in the U.S. Electricity Sector, 11 J. Econ. Pers. 119-38 (1997); Federal Trade Commission, "Analysis of Proposed Consent Order to Aid Public Comment in In the Matter of PacifiCorp et al.," FTC File No. 971-0091, February 18, 1998. Note that because electricity cannot be stored, suppliers may include in the rate base a wide spectr

(6) An area constitutes a load pocket when transmission constraints preclude access to additional generation located

(7) See Bruce W. Radford and Lori M. Rogers, *Energie sans Frontiers: Gas & Electricity*

(8) See, e.g., Scott M. Harvey, William W. Hogan, Susan L. Pope, Transmission Capacity Reservations Implemented through a Spot Market with Transmission Congestion Contracts, 9 *Elect. J.* 42-55 (1996), and Transmission Capacity Reservations and Transmission Congestion Contracts (1996) (unpublished manuscript); William W. Hogan, Contract Networks for Electric Power Transmission, 4 *J. Reg. Econ.* 211-42 (1992); Joskow, *supra* note 5; Hon. William L. Massey, *Transmissio*

(9) Computer capabilities now allow calculations of transmission congestion effects on a much more detailed level. Such improvements permit transmission pricing to move away from the historical contract path approach, which did not account for lo

(10) Martha S. Linet, Elizabeth Hatch, Ruth Kleinerman, et al., Residential Exposure to Magnetic Fields and Acute Lymphoblastic Leukemia in Children, 337 *N. Eng. J. Med.* 3-14 (1997). This National Cancer Institute study does not "support the theory that residential magnetic fields cause childhood leukemia, particularly at the levels found in most homes." The NCI study was done with the aim of overcoming some of the problems of earlier studies and providing more definitive answers. (Some Questions and Answers about the National Cancer Institute/Children's Cancer Group Study of Magnetic Fields

(11) Future generation technology developments may include economical micro- generators that would further ease concerns about the minimum efficient scale of entry relative to demand in Maine. See, e.g., Stuart F. Brown, Here Come the Pint-Size Power Plants, *Fortune* 64C-64P (1996); Thomas R. Casten, Electricity Generation: Smaller Is Better, 8 *Elect. J.* 65-72 (1995); Clyde Wayne Crews, Jr., *Electric Utility Reform: The Free Market Alternative to Mandatory Open Access*

(12) See "Analysis of Proposed Consent Order to Aid

(13) For a discussion of how relatively small additions to transmission capacity may mitigate substantial differences in generation market power, see Severin Borenstein, James Bushnell, and Steven Stoff, *The Competitive Effects of Transmission Capacity in a*

(14) If transmission capacity in some parts of the grid serving Maine is currently suboptimal, Maine has a number of policy options. Maine may wish to make certain that there are no unnecessary regulatory barriers to adding transmission capacity. For example, expedited siting proceedings might encourage more timely additions to transmission capacity. Once regulatory barriers are removed, market forces typically provide appropriate investment incentives. It is possible, however, that the firms with the lowest costs of adding such transmission capacity may have incentives to delay or avoid expanding transmission capacity because they benefit from the higher prices and profits

available to themselves as generators within the load pockets that result from transmission congestion. If such is the case, the ISO serving Maine may be able to alleviate the problem by adopting policies for expanding the grid that bypass the beneficiaries of transmission congestion or alter their incentives appropriately. (We note that under the recent electric industry restructuring proposals released by the Department of Energy (DOE), FERC would receive additional authority to address generation market power concerns that a state could not remedy on its own. DOE, Comprehensive Ele

(15) See 4 EEI Retail Wheeling and Restructuring Report 185 (1997). This article notes: "Responding to concerns raised during the summer over system reliability and sufficient generating capacity, the governor [of Wisconsin] asked a working group to examine these issues and report by October 1. The reports from utilities and regulators called for new generation ... and transmission lines. The utility report also called for the streamlining of the regulatory process to allow generation and transmission projects to move forward more quickly... Because of reliability concerns ... the PSC says it intends to focus its early restructuring efforts on using competitive forces to develop the electricity services infrastructure. The PSC says it is of primary importance that electric industry restructuring be subordinate to and compatible with assuring a reliable electric supply ... As such, the emphasis ... is now on short-term stru

(16) Chessire, Why Nuclear Po

(17) The U.K. restructured its electrical system in March 1990. See Richard J. Green and David M. Newberry, Competition in the British Electricity Spot Market, 100 J. Pol. Econ. 929 (1992), for a discussion of the extensive data and detailed statistical analyses used to establish the nature and extent of market power in the U.K.'s system. In July 1993, the U.K.'s Director General of Electricity Supply indicated that the extent of competition was not sufficient to restrain the exercise of market power by the two dominant generators. See Statement of the Director General of Electricity Supply, "Proposed Ac

(18) Section 5(a) of the FTC Act, 15 USC § 45(a). Unfair methods of competition encompass any conduct that would violate the Sherman Act as we

(19) The institution of independent system operators may be perceived as a way to preserve economies of vertical integra

(20) See "Analysis of Proposed Consent Order to Aid Public Comment in In the Matter of PacifiCorp et al.," supra

(21) Most residential consumers currently have few incentives to curtail consumption during peak usage periods, when generation and transmission costs are highest, because retail rates do not reflect these cost conditions and there is no way to distinguish consumption in peak hours from consumption in off-peak hours. Time-of-day metering will provide more consumers with more accurate signals of the cost of providing service and will allow con

(22) In discussions with staff of the California Energy Commission and with FERC, we have becom

(23) The definition of "renewables" is also critical because a more restrictive version will

(24) In a short period, transmission congestion might make renewables capacity