

**Before the
United States of America
Federal Energy Regulatory Commission**

**Information Requirements for)
Available Transfer Capability)**

Docket No. RM05-17-000

**Comment of the
Federal Trade Commission**

August 22, 2005

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I. Introduction and Summary

The Federal Trade Commission (FTC) appreciates this opportunity to urge the Federal Energy Regulatory Commission (FERC) to standardize the way in which transmission owners calculate the amount of capacity available for unaffiliated users of the regulated transmission grid.¹ Standardization may help prevent transmission discrimination in the electric power industry and ensure the reliability and security of the transmission grid. Over the past nine years, the FTC has urged FERC to address the problem of transmission discrimination because a firm with incentives and ability to engage in this type of behavior is likely to do so.²

The transmission grid is the only practicable means for independent generators to deliver electric power to their wholesale customers.³ Because most observers regard

¹ 70 Fed. Reg. 34,417 (2005) [hereinafter Notice]. The Federal Energy Regulatory Commission's (FERC) Notice of Inquiry (NOI) in this matter follows a related Notice of Public Rulemaking in Docket No. RM05-5-000 (70 Fed. Reg. 40696 (2005)), in which FERC proposed to amend its regulations to incorporate by reference standards promulgated by the North American Energy Standards Board's Wholesale Electric Quadrant dealing with Open Access Same-Time Information Systems (OASIS) business practice standards.

² *Comment of the Staff of the Bureau of Economics of the Federal Trade Commission(1)*, FERC Nos. RM95-8-000 and RM94-7-001 (Aug. 7, 1995), available at <http://www.ftc.gov/be/v950008.htm>; Letter from the FTC to Thomas E. Bliley, Chairman, Committee on Commerce, U.S. House of Representatives (Jan 14, 2000), available at <http://www.ftc.gov/be/v000002.htm> [hereinafter *Bliley Letter*].

³ Substantial economies of scale and transmission siting difficulties generally preclude the organization of competing transmission networks, and there are no practicable alternatives to the grid for delivering electric power over long distances. *FTC Staff Report: Competition and Consumer Protection Perspectives on Electric Power Regulatory Reform* ch. 3 (July 2000), available at <http://www.ftc.gov/be/v000009.htm>. A small generator located on a retail customer's site – often termed “distributed generation” or “DG” – can

distribution and transmission as natural monopolies, “the feasibility of competition among generators depends . . . on the ability of generators to compete independently without all being part of the same company that owns the transmission grid.”⁴ A transmission operator with control over the electric power grid in an area may have the incentive and the ability (through transmission discrimination) to insulate its own generators in the area from the competition presented by independent generators offering lower wholesale or retail prices for electric power.

Although it is generally understood that vertical integration is often efficiency-enhancing and consistent with competitive outcomes, the implications of vertical integration in the electric power industry are mixed. One purpose of regulating the rate of return that a transmission operator can earn for its transmission services is to constrain the operator’s ability to extract its monopoly rent through rates charged to generators that it does not own. Vertical integration in this industry, however, may facilitate evasion of this rate regulation because the transmission operator has an incentive to disadvantage independent generators in ways that permit the operator to earn supracompetitive profits on its unregulated generation business. Indeed, FERC has concluded that, even when vertically integrated utilities have functionally unbundled their generation assets from their transmission assets, they have continued to engage in undue discrimination in

provide a limited alternative for some customers. Improvements in DG technology may eventually make it an important substitute for grid transmission services; however, this potential substitute for transmission service is limited and is often dependent on the availability of natural gas. *Comment of the Staff of the Bureau of Economics and the Office of the General Counsel of the Federal Trade Commission*, Public Utilities Commission of the State of California Rulemaking 02-01-011 § III (Mar. 25, 2003), available at <http://www.ftc.gov/be/v030006.pdf>.

⁴ Timothy J. Brennan, et al., *Alternating Currents: Electricity Markets and Public Policy* 65 (2002).

access to their transmission facilities and thus to impede competitive markets.⁵ Because it is difficult to detect and take effective enforcement action against transmission discrimination, it may be profitable for the regulated transmission operator to engage in this type of behavior.

Although the FTC supports standardization of the rules for calculating available transfer capability (ATC) in the short term, the FTC recommends that FERC continue to examine the costs and benefits of structural reforms to promote competitive wholesale electric power markets.⁶ Behavioral rules, such as the rules governing calculation of ATC, are unlikely to fully address transmission discrimination concerns.

Structural solutions include the establishment of Regional Transmission Organizations (RTOs) or independent transmission operators (Transcos) to operate the grid; incentives for economically appropriate transmission upgrades that expand the scope of the geographic market; the elimination of impediments that make entry less likely; divestitures of generation assets to reduce the ability and incentive of the transmission operator to discriminate or cross-subsidize; and steps to encourage price-responsive demand (such as allowing retail customers to offer consumption reductions as a form of reserve generation).⁷ Structural reforms remove the incentives and ability of a utility with transmission and generation assets in the same geographic market to engage

⁵ FERC has described in detail how transmission discrimination disrupts the operation of wholesale electricity markets. See *Regional Transmission Organizations*, Order No. 2000 2 (Dec. 20, 1999), available at <http://www.ferc.gov/industries/electric/indus-act/rto/iss-2000/2000.pdf>.

⁶ The FTC staff has advocated use of a cost/benefit analysis for selecting approaches to discourage discrimination and cross-subsidization. *Comment of the Staff of the Bureau of Economics of the Federal Trade Commission*, Public Utilities Commission of Nevada No. 97-5034 (Sept. 22, 1998), available at <http://www.ftc.gov/be/v980027.htm>.

⁷ Many of these structural remedies could be most effectively implemented through cooperation between FERC and the states. *Comment of the Federal Trade Commission*, FERC Nos. PL04-6-000 and PL04-9-000 (July 14, 2004), available at <http://www.ftc.gov/os/comments/ferc/v040022.pdf>.

in transmission service discrimination – conduct that insulates the discriminating utility’s generation assets from having to compete with other generating firms that must use the utility’s transmission services to reach wholesale and retail customers in the market.

The Notice focuses on how to improve the calculation of the amount of ATC. ATC is the portion of total transfer capability (TTC) that can be used to serve wholesale customers after the satisfaction of existing transmission obligations, which consist principally of the transfer capability needed to serve the retail customers of the transmission operator.⁸

As discussed in Section III of this comment, improved ATC calculations are likely to reduce transmission discrimination because ATC is the best available constraint on transmission discrimination outside of areas with an RTO and may assist efforts by the North American Electricity Reliability Council (NERC) to enhance the reliability and security of the transmission grid. Section IV discusses NERC’s Long-Term AFC/ATC Task Force Final Report, which found that ATC calculations differ widely between geographic areas and that these differences may not be transparent to transmission customers (*i.e.*, to independent generators and their wholesale customers).⁹ These conditions are likely to undermine the effectiveness of FERC’s system for posting

⁸ Subtractions from TTC also generally include a transmission reserve margin (TRM) and often include a capacity benefit margin (CBM). Notice, 70 Fed. Reg. at 34418. “Transmission providers use TRM and CBM to account for uncertainties or contingencies that are not explicitly modeled in the calculations of existing transmission obligations.” *Id.*

⁹ North American Electric Reliability Council, *Long-Term AFC/ATC Task Force Final Report* (revised Apr. 14, 2005), available at ftp://www.nerc.com/pub/sys/all_updl/mc/ltatf/LTATF_Final_Report_Revised.pdf [hereinafter *NERC Report*]. The “AFC” in the title of the North American Electric Reliability Council’s (NERC) report stands for “available flowgate capability,” which is “a measure of the capability remaining on a flowgate.” *NERC Report* at 2, app. A. AFC is a measure of capability remaining on a flowgate for future uses after considering the effect of prior sales. AFC is measured as a flow limit on a flowgate, whereas ATC is measured as a transaction limit from a source (*i.e.*, from a transmission’s point of origin) to a sink (*i.e.*, to a transmission’s point of termination). Notice, 70 Fed. Reg. at 34418.

available transfer capability and to mask forms of transmission discrimination by transmission operators. As discussed in Section V, FERC also should consider the benefits and costs of developing and implementing standards for measurement of TTC, which is a key component in the calculation of ATC. TTC may be subject to significant measurement bias that will in turn result in biased ATC calculations.

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The FTC is an independent federal government agency responsible for maintaining competition and safeguarding the interests of consumers through enforcement of the antitrust and consumer protection laws and through competition policy research and advocacy. In the electric power industry, the FTC often analyzes regulatory or legislative proposals that may affect competition or the efficiency of resource allocation. The FTC also reviews proposed mergers involving electric power and natural gas utility companies. In the course of this work, as well as in antitrust and consumer protection research, investigation, and litigation, the FTC applies established legal and economic principles and recent developments in economic theory and empirical analysis to competition issues. As part of its competition advocacy program, the FTC has released two Staff Reports on electric power industry restructuring issues at the wholesale and retail levels.¹⁰ The FTC and its staff also have filed numerous competition advocacy comments on electricity restructuring efforts with FERC, the states, and international competition organizations.

¹⁰ *FTC Staff Report: Competition and Consumer Protection Perspectives on Electric Power Regulatory Reform*, *supra* note 3 (compiling previous comments that the FTC staff provided to various state and federal agencies); *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>.

II. Historical Perspective

A utility that controls the transmission system and owns generation in the same area may find it profitable to discriminate against competing generators in providing transmission service.¹¹ Transmission discrimination has two potential advantages for the transmission operator with generation assets in the same area. First, it may allow the transmission operator to increase its profits by evading rate regulation that otherwise would constrain its profits.¹² Second, transmission discrimination may reduce or eliminate competition from firms that help reduce existing or prospective market power. Absent such discrimination, entry would increase competition and lower the generation profits of the transmission operator.¹³

The potential economic harm from this type of discrimination may take three primary forms: higher prices, less efficient production, and reduced customer choice. Wholesale prices will increase if transmission discrimination leads customers to purchase supply from higher-cost generators affiliated with the transmission operators. Price

¹¹ Market power at the transmission level is likely to give a vertically integrated firm the incentive to exercise that market power. *Bliley Letter, supra* note 2.

¹² The transmission operator may seek to evade rate regulation by purchasing power for its retail customers from its unregulated generation affiliates at inflated prices. *Comment of the Federal Trade Commission, supra* note 6.

¹³ Prospective entrants faced with transmission discrimination are not likely to enter and bring associated innovations to the market. Competition from existing independent suppliers also could be discouraged by transmission risks or costs imposed by the transmission operator. One variation of this strategy would be to use transmission discrimination to force an independent generator into liquidation and then to purchase the bankrupt firm's generation assets at a price below that which would prevail in the absence of the discrimination. Because of the prospect of continued transmission discrimination, the assets would have little value to other independent suppliers but would have value to the transmission operator (which, of course, would not discriminate against itself). This strategy could impede entry by increasing the unrecoverable costs if an entrant subsequently were forced to exit. *See Ameren Energy Generating Company and Union Electric Company*, FERC Op. 473 ¶ 63 (2004); *see also Acquisition and Disposition of Merchant Generation Assets by Public Utilities*, FERC No. PL04-9-00 (June 10, 2004), available at <http://www.ferc.gov/industries/electric/gen-info/mergers/opinion-473.pdf> (statement of Stephen P. Daniel, Transmission Dependent Utility Systems).

increases experienced by wholesale customers generally are passed on to retail customers. Resources will be used inefficiently if the transmission discrimination prevents more efficient independent generators from displacing less efficient generators affiliated with the transmission operator. Customer preferences will go unrealized if the transmission discrimination precludes customers from turning to generators with preferred characteristics (*e.g.*, renewable fuel sources) or novel pricing policies (*e.g.*, discounts for reduced consumption during peak periods). Transmission discrimination in part of the nation may harm consumers in other areas to the extent that it reduces the expected returns from innovative activity and, thus, incentives to innovate, because the extent and rate of diffusion of the innovation will be reduced.

To address these harms, FERC Order Nos. 888 and 889 set forth FERC's open access transmission policy aimed at preventing transmission discrimination by utilities with transmission and generation assets in the same market. In Order No. 889, FERC required transmission providers to offer unused transmission capacity to the market by posting ATC.¹⁴

In 1996, the FTC staff supported FERC's open access transmission policy but indicated that behavioral rules such as those contained in Order Nos. 888 and 889 were likely to be insufficient to prevent transmission discrimination.¹⁵ The FTC staff comment explained how behavioral rules do not eradicate the incentives to engage in transmission

¹⁴ FERC issued Order Nos. 888 and 889 on April 24, 1996. Subsequent revisions and refinements to Order No. 888 can be found at <http://www.ferc.gov/legal/ferc-regs/land-docs/order888.asp>, and subsequent revisions and refinements to Order No. 889 can be found at <http://www.ferc.gov/legal/ferc-regs/land-docs/order889.asp>.

¹⁵ *Comment of the Staff of the Bureau of Economics of the Federal Trade Commission(1)*, *supra* note 2.

discrimination. In addition, the FTC staff pointed out that it is likely to be difficult, costly, and time-consuming to detect and document transmission discrimination.

In Order No. 2000, FERC found that vertically integrated utilities have a continuing opportunity to unduly discriminate with respect to access to their transmission facilities – and thus to impede the operation of competitive markets – notwithstanding the functional unbundling of their generation assets from their transmission assets.¹⁶ To address this concern, FERC introduced the concept of the RTO, which involves operational separation of transmission from generation even though ownership does not necessarily change. RTOs are structural approaches to the prevention of transmission discrimination and are more likely to be effective because they remove the transmission operator’s profit incentive to engage in transmission discrimination.¹⁷ An independent, for-profit transmission company (a “Transco”), which separates ownership of transmission from ownership of generation in a wholesale electric power market, also would lack the incentive to engage in transmission discrimination favoring one generator over another, and its incentives to minimize costs could be superior to those of a non-profit RTO.¹⁸

¹⁶ *Regional Transmission Organizations*, Order No. 2000 (Dec. 20, 1999), available at <http://www.ferc.gov/legal/ferc-regs/land-docs/RM99-2A.pdf#search='FERC%20Order%202000'>.

¹⁷ A potential concern about any form of vertical separation (unbundling) is the loss of economies of vertical integration. Many developments within RTOs and ISOs are designed to preserve coordination between stages of production without creating opportunities and incentives for transmission discrimination. Because of this potential, the FTC has consistently urged FERC to use a cost/benefit approach to evaluate the regulatory approach it uses to eliminate transmission discrimination.

¹⁸ *Comment of the Staff of the Bureau of Economics of the Federal Trade Commission*, FERC No. RM99-2-000 (Aug. 16, 1999), available at <http://www.ftc.gov/be/v990011.pdf>. Although Transcos are referenced here as an alternative to RTOs, FERC Order 2000 provides for Transcos as a form of RTO. Although a Transco may qualify as a form of RTO for purposes of Order 2000, the distinction we are drawing here is between the existing RTOs (which have been formed as non-profit organizations) and a for-profit Transco.

Although the RTO formation process has gone forward in many areas of the country,¹⁹ RTOs have not been formed everywhere.²⁰ Thus, Open Access Same-Time Information Systems (OASIS) postings are still a significant component of open-access, nondiscriminatory service for transmission customers in some areas.

III. Improving ATC Calculations Can Increase the Competitiveness of Wholesale Electricity Markets

For four reasons, increases in the transparency and uniformity of ATC calculations may help wholesale markets become more competitive. First, behavioral rules, while not perfect, are likely to be the best available short-term deterrent to profitable transmission discrimination in those areas without an RTO. Under these circumstances, there likely will be incremental benefits from improved ATC calculations before these benefits are supplanted by the more substantial benefits flowing from an operating RTO, ISO, or independent Transco.

Second, ATC improvements may assist NERC's efforts to minimize transmission disruptions associated with Transmission Line Relief (TLR) orders or even blackouts.²¹ If ATC is understated, NERC may invoke a TLR order when it is not necessary to do so. Improving ATC calculations and coordination between areas may reduce this potential problem.

¹⁹ Over two-thirds of U.S. economic output is produced in areas in which transmission is operated by an RTO or an Independent System Operator (ISO). *Restructuring Today* 1 (May 13, 2005).

²⁰ A map of existing and proposed RTOs appears at <http://www.ferc.gov/industries/electric/indus-act/rto/rto-map.asp>. The Southeast and Northwest areas of the United States are the primary regions that lack RTOs.

²¹ See *NERC Report*, *supra* note 8, at 1.

Third, OASIS improvements should help NERC (and the Departments of Energy and Homeland Security) address grid security issues.²² Transmission security is enhanced when ATC is transparent and accurate. Responses to security incidents can be more accurate and timely when improved ATC calculations are available. NERC's efforts to establish transmission security priorities also should be enhanced by improved ATC calculations.

Finally, improving ATC calculations and postings may indirectly facilitate the formation of RTOs. To the extent that improved ATC calculations will reduce opportunities for profitable transmission discrimination, these improvements may coincidentally reduce the advantages that incumbents (*i.e.*, vertically integrated utilities) may anticipate from delaying the formation of RTOs.

IV. NERC's Long-Term AFC/ATC Task Force Final Report Found Widely Diverse ATC Calculations

For wholesale electric power customers and independent suppliers to use ATC postings to arrange competitive trades, they must have confidence in the accuracy of the calculations and must be able to compare ATC calculations with different areas for transmission services that span these areas. For example, if a utility's postings understate ATC, some economical transmission services will not be provided that likely would have occurred if ATC had been stated more accurately. Similarly, if the ATC approach in one area cannot be converted with accuracy to the approach used in a neighboring area, then

²² The Department of Energy designated NERC as the electricity sector coordinator for critical infrastructure protection, and NERC organized a Critical Infrastructure Protection Committee. NERC works with the Department of Homeland Security and Canada's counterpart agency. See NERC's website, available at <http://www.nerc.com/~filez/cip.html> (last visited July 27, 2005); see also Brendan Kirby & Eric Hirst, Department of Energy, *National Transmission Grid Study: Reliability Management and Oversight* (May 2002), available at http://www.eh.doe.gov/ntgs/issuepapers/ISSUE_2.PDF.

it may be difficult to determine whether, for example, non-firm transmission services will suffice to accommodate a wholesale transaction across these areas.²³

Transmission operators in non-RTO areas reportedly are inconsistent in how they calculate ATC and in the criteria they use to activate TLR orders. As a result of this uncertainty about the calculations and this inconsistency in activating TLR orders, some wholesale transactions between areas may not occur, even though they would be efficient and likely would occur if ATC information were better. Prices are likely to be higher if customers are uncertain about being able to access lower-priced electric power from other areas.

The NERC task force report found between 50 and 60 different methods to calculate ATC throughout the industry, many of which are not comparable. Methods differ across and even within NERC regions.²⁴

In addition to finding inconsistencies among firms, the task force determined that sometimes a firm makes assumptions in performing its ATC calculations that are inconsistent with the assumptions that its own transmission planning and operations departments use.²⁵ For example, a transmission operator may use assumptions that result in reporting little ATC while it uses different assumptions to evaluate the feasibility of importing electric power generated in other areas to maintain reliability and resource adequacy.²⁶ The former assumptions would discourage low-cost generators in other areas from attempting to secure sales to customers in the transmission operator's franchised

²³ See *NERC Report*, *supra* note 8, at 2.

²⁴ *Id.* at 2-3.

²⁵ *Id.* at 3.

²⁶ *Id.* at app. E.

territory, while the latter would relieve commercial or regulatory pressure for new transmission investment in the franchised territory. The transmission utility should not be allowed to claim that there is little ATC for one regulatory purpose while also claiming that there is abundant ATC for another regulatory purpose.

Further, even when the ATC assumptions are consistent, this consistency may not be well documented or transparent to other market participants.²⁷ A lack of transparency can lead independent generators to perceive a greater risk of transmission interruptions than actually exist and also could insulate the transmission operator's own generators from competition from lower-priced generators located in other areas.

V. FERC Also May Wish to Consider Standards for TTC Measurement

If FERC seeks to discourage transmission discrimination by improving ATC calculations, it may wish to assure that TTC, the starting point for many ATC calculations, is measured accurately and consistently. Many ATC calculations involve the subtraction of transmission obligations from TTC. Reportedly, however, some transmission operators determine TTC on the basis of assumptions about ambient conditions that are likely to understate actual TTC (and thus understate ATC). The TTC of a transmission line depends in part on the temperature of the line, which, in turn, is determined by weather conditions and by power flows over the line.²⁸ When the actual

²⁷ *Id.* at 3.

²⁸ Thermal limitations are the most common constraints that limit the capability of a transmission line, cable, or transformer to carry power. The transmission line resists the flow of electrons through it, causing the production of heat. The actual temperatures occurring in the transmission line equipment depend on the current (*i.e.*, the rate of flow of the electrons) as well as on ambient weather conditions such as temperature, wind speed, and wind direction because the weather affects the dissipation of the heat into the air. For ease of measurement, however, the thermal ratings for transmission lines are usually expressed in terms of current flows rather than actual temperatures.

Thermal limits are imposed because overheating leads to two possible problems: (1) the transmission line loses strength because of overheating, which can reduce the expected life of the line; and (2) the transmission line expands and sags in the center of each span between the supporting towers. If the temperature is repeatedly too high, an overhead line will permanently stretch and may end up with less clearance from the ground than is required for safety reasons. Because this overheating is a gradual

temperature is below the assumed temperature, for example, TTC calculated on the basis of the (incorrectly) assumed temperature generally understates the actual TTC.²⁹

ERCOT's recent experience supports the conclusion that assumed conditions result in understating TTC and ATC. ERCOT reports that its transmission congestion costs (largely consisting of a dispatch of higher priced generators to compensate for transmission congestion) decreased to less than half of the previous level, in large part because of hourly updates in ATC calculations that are based on the actual conditions on the transmission lines rather than on assumed conditions. This has allowed ERCOT to use the transfer capability of its transmission lines more fully and to resort to dispatching higher priced generators less frequently.³⁰

VI. Conclusion

Updating behavioral rules against undue transmission discrimination, such as improving regulations governing calculation of ATC, are likely to be helpful in the short-term while FERC continues to implement structural remedies that remove the ability and

process, higher current flows can be allowed for limited time periods. A "normal" thermal rating for a line is the current flow level that it can support indefinitely. "Emergency ratings are levels the line can support for specific periods, for example, several hours." Department of Energy, *Upgrading Transmission Capacity for Wholesale Electric Power Trade* (2002), available at http://www.eia.doe.gov/cneaf/pubs_html/feat_trans_capacity/w_sale.html. See also Steven Stoft, *Power System Economics: Designing Markets for Electricity* ch. 5-2 (2002).

²⁹ At the technical conference that FERC held on December 7, 2004, concerning the transmission prong of the market power screens for market-based rate applicants, John Stout, an experienced transmission planner and operator, testified about the potential underestimation of ATC as a result of transmission operators' use of antiquated transmission technology that assumes unfavorable ambient conditions (rather than actually measuring such conditions). See *Market-Based Rates for Public Utilities: Hearing on No. RM-04-7-000 Before the Federal Energy Regulatory Commission*, 108-111 (Dec. 7, 2004) (testimony of John Stout, Independent Power Operator, Electric Power Supply Association), available at <http://www.ferc.gov/EventCalendar/Files/20041215074611-RM04-7-12-07-04.pdf>. He drew an analogy between the use of such assumptions in measuring TTC (and consequently ATC) and withholding by a generator that fails to produce more power when the ambient air temperature is cold (which is typically possible for most combustion turbines) and the transmission system faces peak demand and inadequate reserves.

³⁰ ERCOT, *ERCOT at a Glance* (June 23, 2005), available at <http://www.ercot.com/NewsRoom/PressReleases/pr20050627.pdf>.

incentive of transmission owners to engage in discrimination. Transmission reliability and security concerns also may warrant updates to these regulations. The FTC urges FERC not to relax its efforts to implement RTOs and Transcos while it is improving ATC calculations. If FERC determines that there is merit to improving ATC calculations, it also should consider improvements to TTC calculations, on which ATC calculations are based.