

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Allocation of Capacity on New Merchant)
Transmission Projects and New Cost-Based,)
Participant-Funded Transmission Projects)

Docket No. AD12-9-000

COMMENT OF THE STAFF OF THE FEDERAL TRADE COMMISSION

June 14, 2012

I. Introduction

The Federal Trade Commission (FTC) staff appreciates this opportunity to comment in response to the Federal Energy Regulatory Commission (FERC) workshop on *Allocation of Capacity on New Merchant Transmission Projects*.¹ Independent “merchant” firms propose transmission projects that exist alongside transmission projects that formal regional transmission planning efforts identify and that incumbent utilities and others develop. The workshop sought to identify procedures to ensure non-discriminatory allocation of capacity on new transmission lines proposed by merchant firms. FERC staff asked workshop participants whether public notice followed by private, wide-ranging bilateral negotiations would suffice or whether it was necessary to use a formal, auction-like “open season” to allocate at least some of a line’s capacity on preannounced terms. Workshop participants also discussed competition policy for lines proposed by merchants affiliated with incumbents or joint ventures between merchants and incumbents.

We suggest that FERC keep its merchant capacity allocation policies consistent with FERC’s overarching policy goal of supporting competitive wholesale electricity markets. Market power in privately owned interstate transportation infrastructure is a well-recognized problem that FERC has addressed for nearly 20 years through a policy of non-discriminatory, open-access transmission. The FTC has consistently supported FERC’s open-access initiatives. We encourage FERC to extend its non-discriminatory, open-access transmission policies to new merchant projects in ways that support competition in generation and transmission markets.

More, however, may be justified. We are concerned that although some merchant projects may expand the transmission grid in ways that benefit consumers by enlarging robust trade in electricity, other projects may be profitable only because they withhold capacity or allow

¹ This comment expresses the view of the FTC’s Bureau of Economics and Office of the General Counsel. The comment does not necessarily represent the views of the FTC or of any individual Commissioner. The Commission, however, has voted to authorize the filing of this comment.

We recognize that we are submitting this comment beyond the deadline for post-workshop comments. We hope that FERC and its staff will nonetheless find this comment useful.

some users to exercise market power. Providing public notice and ensuring that everyone can negotiate or bid are not sufficient competition policies, because neither bilateral negotiations nor an open season removes firms' incentives or ability to exercise market power.² For example, firms may seek to undersize lines in order to withhold capacity or route lines in ways that limit competition. Because entry is more difficult in transmission than in many other markets, entry may not suffice to counteract such withholding. Regulatory and environmental hurdles may also delay or prevent competitors' entry. In addition, there are substantial economies of scale in transmission, so adding capacity by building a second line is often significantly more expensive than adding the same amount of capacity to the first line at the planning stage. A small change in transmission capacity may have large effects on consumer benefits.³ When reviewing merchant transmission proposals, FERC should be attuned to proposals that would preempt the construction of a line that offers consumers more benefits. FERC should consider intervening when a proposal appears to preempt the development of a more beneficial project. It then could use tools, such as its conditioning authority, to address such aspects of merchant transmission proposals when the benefits of the modification outweigh the costs.

II. Interest of the FTC

The FTC is an independent agency of the United States Government responsible for maintaining competition and safeguarding the interests of consumers, both through enforcement of the antitrust laws and consumer protection laws and through competition policy research and advocacy. The FTC often analyzes regulatory or legislative proposals that may affect competition or allocative efficiency in the electric power industry. The FTC also reviews proposed mergers that involve electric and natural gas utility companies, as well as other parts of the energy industry. 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 as well as recent developments in economic theory and empirical analysis.

The energy sector, including electric power, has been an important focus of the FTC's antitrust enforcement and competition advocacy.⁴ The FTC's competition advocacy program has produced two staff reports on electric power industry restructuring issues at the wholesale and retail levels.⁵ The FTC staff also contributed (as did FERC staff) to the work of the Electric

² The example in the appendix shows how simple it might be to withhold capacity either in an open season or in the kind of bilateral process that the industry recommends.

³ Severin Borenstein, James Bushnell, and Steven Stoft, *The Competitive Effects of Transmission Capacity in a Deregulated Electricity Industry*, 31:2 RAND J. ECON. 294, at 294 (2000).

⁴ See, e.g., Opening Remarks of the FTC Chairman at the FTC Conference on *Energy Markets in the 21st Century: Competition Policy in Perspective* (Apr. 10, 2007), available at <http://www.ftc.gov/speeches/majoras/070410energyconferencereemarks.pdf>. FTC merger cases involving electric power markets have included the *DTE Energy/MCN Energy* (2001) (consent order), available at <http://www.ftc.gov/os/2001/05/dtemcndo.pdf>; and *PacifiCorp/Peabody Holding* (1998) (consent agreement), available at <http://www.ftc.gov/os/1998/02/9710091.agr.htm>.

⁵ FTC Staff Report, *Competition and Consumer Protection Perspectives on Electric Power Regulatory Reform: Focus on Retail Competition* (Sept. 2001), available at

Energy Market Competition Task Force, which issued a *Report to Congress* in the spring of 2007 (available at <http://www.ferc.gov/legal/fed-sta/ene-pol-act/epact-fina-rpt.pdf>). In addition, the FTC has held public conferences on energy topics, the most recent of which was *Energy Markets in the 21st Century* on April 10-12, 2007.⁶

The FTC and its staff have filed numerous competition advocacy comments with FERC and participated in FERC technical conferences on market power issues. For example, in March 2007, the Deputy Director for Antitrust in the FTC's Bureau of Economics served as a panelist for a technical conference in Docket No. AD07-2-000 on FERC's merger and acquisition review standards under FPA Section 203. The FTC submitted comments in July 2004 and January 2006 in FERC's proceeding in Docket No. RM04-7-000 on its FPA Section 205 standards for market-based rates. FTC Staff commented on FERC's Analysis of Horizontal Market Power under the Federal Power Act (Docket No. RM11-14-000) in June 2011.⁷ The FTC also has commented on FERC's initiatives to promote wholesale electricity competition and on various state issues associated with restructuring the electric power industry.⁸

III. Merchant Transmission Policy Should Be Designed To Maximize Consumer Benefit

The goal of transmission policy should be to maximize consumer benefits by optimally sizing and siting lines, making them reliable, managing construction and maintenance costs, and using the lines efficiently. Accordingly, policymakers should give the industry incentives to build and run an electricity system that offers the greatest total consumer benefit, net of cost, through efforts that may include the construction or upgrade of transmission facilities. The protection of competition is one of several important strategies to give firms appropriate incentives. The review of a proposed line should focus on the line's impact on the value of the

<http://www.ftc.gov/reports/elec/electricityreport.pdf>; FTC Staff Report, *Competition and Consumer Protection Perspective on Electric Power Regulatory Reform* (July 2000), available at <http://www.ftc.gov/be/v000009.htm> (compiling previous comments that the FTC staff provided to various state and federal agencies).

⁶ Conference materials are available at <http://www.ftc.gov/bcp/workshops/energymarkets/index.shtml>. Other programs have included the FTC's public workshop on *Market Power and Consumer Protection Issues Involved with Encouraging Competition in the U.S. Electric Industry*, held on Sept. 13-14, 1999 (workshop materials available at <http://www.ftc.gov/bcp/elecworks/index.shtml>); and the Department of Justice and FTC workshop on *Electricity Policy*, held on April 23, 1996.

⁷ FTC Staff, Comment Before the Federal Energy Regulatory Commission on Analysis of Horizontal Market Power Under the Federal Power Act (June 1, 2011), available at <http://www.ftc.gov/os/2011/06/1106ferchorizmarket.pdf>.

⁸ See, e.g., Federal Trade Commission, Comment Before the Federal Energy Regulatory Commission on Wholesale Competition in Regions with Organized Electric Markets (Apr. 17, 2008), available at <http://www.ftc.gov/be/v070014b.pdf>. A listing, in reverse chronological order, of FTC and FTC staff competition advocacy comments to federal and state electricity regulatory agencies is available at http://www.ftc.gov/opp/advocacy_date.shtml.

transmission network.⁹ The line's impact on competition is an important part of the line's total impact. The costs of transmission lines may include not only expenditures to build, operate, and maintain the lines but also any harm to (among other things) the environment and landscape. The benefits of transmission facilities include not only delivering electricity but also increasing reliability, robustness, and competition.

Transmission lines have significant implications for competition and consumers, because these facilities can allow more resources¹⁰ – including distant, lower-cost generation – to compete to serve consumer demand. Transmission line investments that allow many resources to compete will reduce wholesale and retail (consumer) power prices if the reduction in power purchase costs offsets the cost of the transmission capacity, all else being equal.¹¹ Conversely, transmission congestion can prevent resources from competing and give significant market power to resources within the transmission-constrained area. Firms, however, may seek to structure transmission investments in ways that allow them to profit from the exercise of market power in the generation or transmission market at the expense of consumers.

Competition policy should protect competition (as opposed to competitors).¹² Facilitating merchant investment is good public policy only to the extent that it reduces prices or improves service relative to a realistic alternative. Competition policy also should consider the transmission owner's incentive and ability to favor its other divisions, affiliates, or joint venture partners.

⁹ An alternating current transmission line changes power flows throughout an electrical interconnection in ways that reflect the laws of physics rather than property rights. Thus, a line may relieve or increase congestion on other lines. Such changes in congestion can affect the extent to which the lowest-cost resources can meet demand and thus consumer prices.

¹⁰ The resources that can use transmission to equate the quantity of power consumed with the quantity of power supplied during each time period include generation, storage, and potentially even customer facilities that reduce or reschedule consumption (*i.e.*, provide “demand response”). This comment does not express an opinion about the relative roles of these resources in the future.

¹¹ Borenstein *et al.*, *supra* n. 3, at 295, show that increasing transmission capacity can offer benefits through increased competition that may not require power to flow over the line. Their model shows that “[t]he mere threat of competitive entry that is provided by additional transmission capacity acts as a restraining influence on the dominant supplier in each market . . .”

¹² FERC has recently moved to allow incumbent and merchant transmission providers to compete on more even footing. Its press release on Order 1000 states that the new rule “promotes competition in regional transmission planning processes by removing . . . a federal right of first refusal for transmission facilities selected in a regional transmission plan for purposes of cost allocation, subject to certain limitations.” Press release of July 21, 2011, *available at* <http://www.ferc.gov/media/news-releases/2011/2011-3/07-21-11-E-6.asp>. Order 1000 allows merchant transmission firms or other utilities to initiate projects that may use different technology, routes, or marketing approaches.

FERC asked how to structure open seasons and other fair processes to allocate capacity on proposed merchant transmission projects. It is important to structure such processes to allow the identification and construction of merchant transmission lines that provide consumers with net benefits. Those processes should allocate space on merchant transmission lines in ways that minimize the cost of equating supply and demand while meeting reliability¹³ and environmental goals.¹⁴

Competition policy should encourage merchants to identify opportunities to improve on the regional plan while seeking to limit the extent to which merchants can profit by exercising market power, preempting more valuable projects, or imposing external costs¹⁵ at the expense of consumers. Merchants may sometimes improve upon the regional plan's assessment of the size, pace, nature, and location of future generation or load growth. Transmission planning, however, is a fundamentally difficult problem because transmission lines are costly, long-lived assets that must be built despite considerable uncertainty about future technology, policies, demand, and supply. Uncertainty about environmental and renewable energy policies compounds the challenges of planning, as does rapid technological change in areas like energy storage. Merchants may sometimes have an advantage in employing new technologies. Indeed, several merchants have proposed to use emerging technologies, such as undersea cables, superconductors, or direct current transmission. Further, merchants may seize opportunities on which the planning process was unable to act. They may be able to take risks that incumbent utilities cannot. Merchants may more effectively identify and address needs that cross regional boundaries.¹⁶

The potential value of merchant developers suggests that FERC should identify barriers that may impede efforts to build beneficial transmission and regulatory approaches that treat merchants and utilities inequitably. FERC should continue to seek to structure the market so that merchants have a profit motive to identify and build valuable facilities.¹⁷

¹³ Grid operators use lines in ways that depend not only on their capacity but also on the amount of power that the grid could obtain from other sources in time to prevent a blackout should a line fail.

¹⁴ For example, many of the transmission lines currently under consideration are designed to help meet state renewable energy goals by connecting wind farms or solar thermal power stations to population centers.

¹⁵ A line that allows one power plant to sell more power but creates congestion that blocks another power plant from offering power at the same price imposes a significant external cost on the second plant. Such a line could be profitable for the merchant that constructed it and the power plant that sells over it, but might yield no significant benefits to consumers.

¹⁶ Some merchant proposals cross regional boundaries. For example, the Cross Sound Cable crosses the boundary between the New York ISO and ISO New England regions.

¹⁷ Merchants, however, are likely to make too many contrarian bets if they can structure investments so that they profit from a correct bet but get ratepayers to cover the losses from an incorrect bet. By contrast, if a merchant's investors (and, potentially, the investors in its partner companies) both bear the losses and capture the gains, the merchant will have far more appropriate incentives.

FERC should bear in mind, however, that merchants and their customers also may seek to exercise market power. Market power or market power mitigation may prompt merchants to undersize or oversize lines or to change their routing. Economists Paul Joskow and Jean Tirole describe several reasons why conventional markets can create flawed incentives for merchant transmission investment.¹⁸ They conclude: “[P]olicymakers cannot proceed under the assumption that they can avoid dealing with the difficult issues associated with stimulating efficient investment in electric transmission networks simply by adopting the merchant investment model. . . . An important research challenge is to develop good regulatory mechanisms . . . that also provide opportunities for merchant investors to develop projects when [merchant projects] are the most efficient options.”¹⁹

For example, firms may seek to undersize new lines to enhance their ability to exercise market power,²⁰ even though the average cost per unit of capacity of a transmission investment typically declines as the line’s capacity increases.²¹ Thus, building an inefficient, undersized line may raise rivals’ costs by forcing them either to build their own line or to pay the significant fixed costs of an expansion. Further, there may be more regulatory and political hurdles to building a supplementary transmission line to counteract an undersized or misrouted line than there are to entry or expansion in many other industries. If geographic, environmental, or political constraints create a bottleneck that can accommodate only one transmission line, then it is important to build an appropriately sized line rather than simply authorizing the first applicant to construct a line.²² Design review at the planning stage is valuable because, as noted above,

¹⁸ Paul Joskow and Jean Tirole, *Merchant Transmission Investment*, 53:2 J. INDUS. ECON. 233 (2005). (Joskow and Tirole also list several potentially important competition and economic issues raised by merchant transmission investment that are beyond the scope of our comment.)

Market power in generation may also distort merchant investments. For example, if efforts to mitigate the exercise of generation market power make wholesale prices artificially low despite real scarcity, such excessive efforts can lead to underinvestment in transmission lines. Conversely, a successful exercise of market power that drives electricity prices up may prompt overinvestment in transmission to import lower-cost power. Although this comment focuses on competition issues, this focus should not be read to imply that we view market power as the only – or even the most important – source of troubling incentives for transmission investments, nor should the proposal review process discussed below address only competition policy concerns.

¹⁹ *Id.* at 262.

²⁰ Joskow & Tirole, *id.* at 242-53, present simple, concrete examples of this incentive.

²¹ *Id.* at 246.

²² Route bottlenecks have long been a subject of concern in transportation law and economics. For a review of litigated cases and the associated arguments regarding transportation and other essential facilities, see John C. Hilke, “Background Note by the Secretariat,” OECD Working Party No. 2 on Competition and Regulation, Roundtable on Securing Access to Key Capacity for New Entrants (Nov. 9, 2006), available at <http://www.oecd.org/dataoecd/39/14/37981556.pdf>. In addition, Joskow & Tirole, *supra* n. 18, at 246-51, describe a “preemption” concern with lumpy network expansion investments. In a situation with scarce rights-of-way and growing

transmission lines are long-lived assets that are costly to resize, extend, or reroute once built, so expansions that are compelling at the design stage may be cost-prohibitive after construction.²³

Merchants may have other incentives to undersize lines.²⁴ Organized electric markets in the United States compute prices at thousands of locations and may compensate a congested line by paying it the difference between the price of power in the area where power is generated and the price in the area where power is consumed.²⁵ Because a lower-capacity line has a greater value to its owner than a line large enough to eliminate the price difference between the markets, the developer may have an incentive to undersize it. This kind of incentive to withhold transmission capacity can exist even if the generation markets at both ends of the line are perfectly competitive. This is a version of the classic analysis explaining why market power prompts companies to reduce output.²⁶ Thus, market power in either the generation or the transmission market can prompt transmission withholding. Further, market power in the generation and transmission markets can interact. These forces can prompt firms either to undersize or to oversize²⁷ lines relative to the competitive equilibrium.

demand, a merchant may seek to build as soon as a line becomes economically justified, even if that line is undersized compared to the needs associated with future demand growth. Once the merchant takes advantage of the opportunity to build, it may preempt future expansions in the same corridor due to the difficulties associated with siting and building transmission lines.

²³ For example, consider a project that can be built in two sizes: a smaller (\$1 billion) option would deliver \$1.5 billion in benefits, whereas a larger (\$1.3 billion) option would carry more power and deliver \$2 billion in benefits. The larger option is the better choice for society, because spending an extra \$300 million would yield \$500 million in benefits. If the smaller option were built, however, replacing towers and substations to expand the project to the larger size might cost more than \$500 million. Those costs would render an upgrade with only \$500 million in benefits cost-prohibitive. The smaller project's benefits might overwhelmingly flow to generators, which could share them with the transmission firm. The larger project's benefits might flow to ratepayers, and cost recovery regulations might make it hard for utilities to justify paying significantly more than the line cost in order to share the benefits with the transmission firm.

²⁴ Incentives to withhold may prompt firms to abstain from proposing valuable lines altogether. A discussion of that possibility is beyond the scope of the current proceeding. Existing regional planning processes may address that problem.

²⁵ A line that carries 1,000 megawatts from a hydroelectric dam where power is trading for \$20 per megawatt-hour to a city where the marginal megawatt-hour costs \$100 would earn \$80,000 per hour.

²⁶ This compensation mechanism allows the merchant to profit directly from undersizing a line. Many of the other withholding scenarios that we discuss make undersizing profitable for generators and give them reason to try to get the merchant to undersize its line.

²⁷ Joskow & Tirole, *supra* n. 18, at 242-44, show that market power that raises the price of electricity in a region increases other firms' incentive to ship electricity into that region, which can create an incentive to overinvest in transmission lines.

FERC's approach to mitigating market power could parallel its effort to prevent withholding in the wholesale generation market. For example, FERC has sought to detect and prevent physical withholding that involves refusals to run operable generators. U.S. electricity markets use a variety of "resource adequacy" strategies that may prevent generators from engaging in physical withholding by building too few plants.²⁸ These precedents suggest that it may make sense to seek to detect and prevent efforts to engage in physical withholding by undersizing a transmission line. In other words, transmission market regulations should be consistent with FERC's policy goals. In particular, there may be reason to avoid transmission market loopholes that allow firms to undersize lines to achieve the kind of withholding that FERC prevents in generation markets.

Market power can also create incentives to reshape transmission investment in ways that keep prices high. Generators have incentives to structure transmission investments not only to get their power to regions where it can command high prices but also to keep their competitors out. Policymakers should be vigilant for a variety of transmission withholding strategies, including a firm's effort to structure contracts to prevent other firms from either using the proposed line or paying to increase the line's capacity. These strategies may include strategic routing, sizing, configuration, interconnection, or contracting. Merchant firms may seek to route lines in ways that raise the cost of connecting competing resources. They may route lines to reach new markets without increasing their competitors' capacity to deliver power to areas in which the merchants or their partners exercise market power profitably. When market power causes a firm to reroute or undersize a line, the line typically can be reconfigured to increase benefit to society. Intervention seems particularly well advised when a proposal seems to preempt a superior alternative.²⁹ FERC, however, needs to be alert to the possibility that firms opposed to building transmission will attempt to preempt good, feasible proposals by floating bigger proposals that are infeasible or unlikely to be financed.

The FTC has long recognized the possibility that undersized or overpriced transmission resources could reduce competition and harm consumers, as can withholding in the wholesale power market. For example, the FTC staff commented on the possibility that Entergy was protecting its high-cost generation fleet by undersizing transmission lines connected to other generation sources.³⁰ FTC comments have discussed the potential anticompetitive effects of

²⁸ These regulations sometimes control the price and quantity that firms produce. They are more intrusive than is the norm in most markets in the United States and other industrialized democracies. Such interventions into the details of firm decision-making are likely to have unintended consequences. Several other FTC comments have expressed support for FERC's efforts to increase consumers' ability to adjust consumption in response to hour-to-hour changes in electricity prices. Such an increase in consumer responsiveness to power market conditions may reduce market power, allowing less intrusive regulation of both generation and transmission markets.

²⁹ Joskow & Tirole, *supra* n. 18, at 246-50, analyze preemption of transmission by other transmission projects and by generation projects.

³⁰ Comment of the Staff of the Federal Trade Commission Bureau of Economics Before the Public Service Commission of the State of Mississippi, Docket to Consider Competition in the

allowing an undersized transmission control area to add its own transmission charge when power flows through its region.³¹

Another concern is that incumbent regulated utilities and their unregulated affiliates may have especially significant opportunities to exercise market power, discriminate in favor of their affiliates, or shift risks to ratepayers. For example, an incumbent might route or size its line to discriminate against generators that compete with its affiliate. FERC's well-developed affiliate rules could be adapted to address such discrimination.

IV. Although Both Open Seasons and Public Invitations To Engage in Bilateral Negotiations Allow All Interested Parties To Participate, Neither Suffices To Prevent the Exercise of Market Power

It is critical to recognize that merely ensuring that everyone can bid on the same terms or negotiate is not a sufficient competition policy. Indeed, typical microeconomic models of imperfect competition predict that companies will exercise market power despite assumptions that every interested firm can negotiate and bid.³² Neither bilateral negotiations nor an open season removes firms' incentives or ability to exercise market power. Generators can often use merely the flexibility to choose prices or quantities to prompt a merchant to undersize its line. The appendix to this comment presents a simple, stylized example of a situation in which a dominant firm maximizes profits by keeping a line small enough that consumer prices remain high. The dominant generator's optimal strategy yields the same prices in a bilateral negotiation or an open season. The example illustrates that withholding strategies may be quite simple, and that they exist under many capacity allocation mechanisms. Similar or subtler approaches may be able to achieve the same anticompetitive objectives in a wide variety of open seasons or other institutions for allocating and pricing capacity. Thus, additional steps are necessary to manage market power at the transmission line design stage.

Provision of Retail Electric Service, Docket No. 96-UA-389 (Aug. 28, 1998), *available at* <http://www.ftc.gov/be/v980024.shtm>; Comment of the Staff of the Federal Trade Commission Bureau of Economics Before the Federal Energy Regulatory Commission, In the Matter of Entergy Services, Inc., Docket No. EL99-57-000 (May 27, 1999), *available at* <http://www.ftc.gov/be/V990007.shtm>.

³¹ See, e.g., Comment of the Staff of the Federal Trade Commission Bureau of Economics and Office of the General Counsel Before the Federal Energy Regulatory Commission, In the Matter of Working Paper on Standardized Transmission Service and Wholesale Electric Market Design, Docket No. RM01-12-000, section II.C (July 23, 2002), *available at* <http://www.ftc.gov/be/v020018.pdf>. FERC relied on the arguments in that comment in rejecting the proposed Alliance RTO.

³² Consider, for example, the Cournot model in which all the firms in the industry choose output quantities after considering how it will affect their competitors' profit-maximizing output and the market price. See, e.g., Jean Tirole, *THE THEORY OF INDUSTRIAL ORGANIZATION* 218-21 (1988); James Bushnell, Erin Mansur, and Celeste Saravia, *Vertical Arrangements, Market Structure, and Competition: An Analysis of Restructured U.S. Electricity Markets*, 98:1 AM. ECON. REV. 237 (2008). Consider also models of a dominant firm interacting with a competitive fringe. See, e.g., Borenstein *et al.*, *supra* n. 3, at 306.

FERC might consider a proposal review process to address such concerns. Such a process might reject or require modifications to projects that make it physically or economically impossible for a superior competing proposal that is in the pipeline to move forward. The review process might also block plans that, for any reason, are not in the public interest. The review might seek to address flaws in plans, including those that stem from market power. The review process should carefully consider the likely, short-term implications of taking action, including the possibility that the reviewer's request to expand a line would prevent its construction entirely. The review process should also consider the long-term implications of interventions. For example, it should consider whether rejecting imperfect proposals that are nonetheless an improvement on the region's plan will deter firms from offering such valuable proposals in the future. There is somewhat less risk of unintended consequences when the reviewer simply selects the better of two realistic, mutually exclusive options that are in the pipeline.

Typically, the changes that reviews might require would increase a project's total benefit to society. Whenever a change increases the project's total benefit to society, there is, in theory, an opportunity to implement the change in a way that makes every involved party better off, although it could be difficult or impractical to identify or implement the changes in a way that makes everyone better off.³³ Although there are no perfect options for reviewing proposals or creating incentives for merchants to develop valuable proposals, some options are more beneficial than others. A probing analysis of the tradeoffs should underpin policymakers' selection of an appropriate review process and also should inform how the review process responds to specific proposals.

Proposed lines may simultaneously offer beneficial transmission services and impose social costs by allowing the exercise of market power or imposing other externalities. Analysis should subtract the line's costs from its benefits. Evidence that market power distorted a line's configuration is likely to make a coordinated, integrated review of all the line's costs and benefits particularly important. A coordinated review process that allows appropriate communication and coordination among entities with jurisdiction over different aspects of the line might allow better outcomes for society. For example, firms with market power may find a line quite profitable even if it confers modest benefits on the electric system, even if its other costs to society negate those modest benefits. If there is persuasive evidence that the line's costs exceed its benefits, the proposal should not proceed, unless the line's developers improve their proposal. For example, FERC might condition rate approval on the developer's commitment to enlarge or modify the project in response to any serious problem that the review finds. If a merchant transmission developer identifies an apparent opportunity for transmission expansion not currently in the regional transmission plan, then FERC might require the developer to work with the relevant planning processes to ensure that the new line is integrated with the grid in a way that promotes reliability. If a merchant firm proposes a project that favors its own affiliate

³³ For instance, it is easy to expand the line proposed in the example in the appendix to increase overall benefits. This expansion would shift benefits from generators to consumers; and making every party better off would require that consumers offer the generators considerable compensation.

(whether that affiliation occurs via ownership or through a contractual relationship), then FERC's well-developed affiliate rules might be adapted to eliminate such discrimination.

There may be tension between approaches that make the best use of existing resources and approaches that create the most appropriate incentives for new construction.³⁴ The challenge of encouraging appropriate new, merchant-owned transmission projects thus can be quite different from appropriately regulating existing, utility-owned transmission facilities. These tensions and differences are particularly important as FERC considers how to prevent undue discrimination to maximize benefits to consumers in the market for new transmission.

The contracts that merchant transmission developers seek often will involve longer-term commitments – and thus a greater financial commitment – than do contracts with the owners of existing transmission that FERC's non-discrimination rules traditionally cover. Non-discrimination rules that force very different kinds of companies to take or leave a one-size-fits-all, long-term contract might harm consumers by reducing rather than increasing competition. An open season that imposed rigid credit-worthiness requirements might prevent less credit-worthy entrants from striking a mutually agreeable deal with a merchant to, *e.g.*, pay a risk premium, and thus could reduce competition.

Policy questions about whether non-discrimination principles require that all firms sign contracts with identical terms are questions about price discrimination (*i.e.*, charging different consumers different prices for the same product). FERC has correctly recognized that price discrimination can be used to favor affiliates and exclude competitors. On the other hand, microeconomic theory shows that price discrimination can either increase or decrease total benefit to society.³⁵ The challenge is to determine when price discrimination will be just and reasonable and not lead to undue discrimination.

We are confident that FERC will find ways to address the challenges and opportunities presented by merchant transmission. These efforts are likely to succeed if FERC appropriately extends its non-discriminatory, open-access transmission policies to support robust, competitive wholesale markets and uses appropriate review procedures to identify and remedy situations in which a proposal would harm consumers or preempt a feasible, superior alternative.

³⁴ A merchant has ideal incentives to build a line if it knows that it will capture all of the line's benefits and pay all of the costs it creates. The simplest way to give users the ideal incentives to use a completed facility is to price capacity on the line at its marginal cost. This will often allow users (rather than the facility owner) to capture most of its benefits.

³⁵ Tirole, *supra* n. 32, at 138; E. Kip Viscusi, Joseph E. Harrington, Jr., and John M. Vernon, *ECONOMICS OF REGULATION AND ANTITRUST* 274-75 (4TH ed. 2005).

Appendix: A Numerical Example of the Impact of Market Power on Outcomes

This appendix presents a simple, numerical illustration of why and how firms could exercise market power by adjusting their decisions about transmission investment. (Adding considerable realistic detail would complicate the exposition but would not change the logic or conclusions.) The example considers the incentives facing a large, low-cost generator that must decide how to participate in a proposed transmission line that would allow a high-cost region to import more power. We assume that this generator provides enough of the overall imported power supply that it could be pivotal in determining whether the high-cost market would clear at the low cost of the imported power or at the higher cost of the local power. The example shows that the generator has a strong profit incentive to undersize the line and that it has simple strategies to achieve that goal in both bilateral negotiations and open-season mechanisms.

Consider a load center with a load of 2,250 megawatts (MW)¹ that currently is entirely served by local generators selling power at their marginal cost of \$50 per megawatt-hour (MWh). A merchant transmission line could connect that load center to a region in which other firms have 3,000 MW of available capacity with a long-run average cost of \$40/MWh. One firm has 2,000 MW of that 3,000 MW capacity. That dominant generator and a merchant transmission firm agree that the dominant generator will pay \$6/MWh for a new transmission line but the merchant will offer late arrivals a rate of \$11/MWh. The \$11/MWh rate could be offered in an open season or through bilateral negotiations. Suppose that some combination of costs, politics, and geographic constraints precludes adding a separate 250-MW line for the remaining generators. Then, under this deal, the \$11/MWh rate makes using the line cost-prohibitive for the other potential entrants, who would be able to deliver power for \$51/MWh to a market where power trades for \$50. Thus, the merchant transmission company would build 2,000 MW of line capacity, and the dominant generator would use it to deliver power at a cost of \$46 per MWh and sell it at the market-clearing price of \$50. The dominant generator would earn \$8,000 in economic profits per hour.² Consumer prices would remain unchanged.

This outcome does not benefit consumers. To see this, compare the withholding scenario above to a competitive scenario, in which the merchant sells 2,250 MW of line capacity to all interested generators at \$5/MWh. In that scenario, prices in the load center drop \$5 to \$45/MWh, since the line now supplies all of the load center's needs; consumers at the load center save \$11,250 per hour; the generators using the line recover their fixed and variable costs but earn zero economic profit; and the merchant has been paid less to build a bigger line.

¹ This load center – which demands as much power as roughly 562,000 homes on a hot summer day – has roughly one-sixth the demand of New York State. This example assumes away demand elasticity to simplify the exposition. Allowing demand to increase a realistic amount if the price drops would not change the broad conclusion that the dominant generator has an incentive to withhold. This is clear in the diagrams below.

² If the line were needed 40 hours a week, 52 weeks a year, \$8,000 per hour would become \$16.6 million per year.

It is not clear that allocating 100 percent of capacity through an open season would yield more competitive, pro-consumer outcomes. If the dominant generator knew that other firms had only 1,000 MW of capacity, it could prompt the construction of a line with less than 2,250 MW in total capacity simply by buying less than 1,250 MW of capacity.³

This example features a pivotal energy supplier that has the ability and incentive to exercise market power through a wide variety of mechanisms. Two mechanisms, however, might perform better than either of the options explored here. First, if the distribution utility buying power for the high-cost load center had incentives to reduce its power procurement costs, it could commission an appropriately sized line. Second, a planning process or regulatory review might notice the opportunity to replace the output of 2,250 MW of high-cost generators with 2,250 MW of low-cost generators and authorize the utility to build a line large enough to do so. This intentionally stylized example vastly simplifies the planner's job.

Figure 1, below, diagrams this example and shows the intuition for the underlying model, which is not particularly sensitive to the numbers we present here. In order to get a result akin to those presented here:

- The amount of low-cost power available to ship over the line needs to be sufficient to reduce the market-clearing price in the destination market. The analysis is particularly clean if these generators all have a single, constant production cost. In an era when many new generating plants have standardized designs and are run in standardized ways, this is a reasonable assumption.
- One of these potential low-cost entrants needs to have enough capacity so that, if it withheld its power, the market-clearing price in the destination market would remain above the entrants' cost.
- The menu of reliable and economically feasible line configurations must include at least one option that leaves electric market prices high and at least one option that significantly reduces such prices.
- Undersizing a line needs to be an economically rational withholding strategy, perhaps because rules meant to prevent physical and economic withholding by generators are fairly effective.

³ There are almost certainly situations where the use of an open season that eliminated the ability to price discriminate would reduce or eliminate the ability to exercise market power. But an open season that imposes rigid credit-worthiness requirements might offset these benefits by preventing potential users from participating. Further, bilateral negotiations can accommodate requests that, for example, the line connect to more resources or be configured to facilitate future interconnections. That opportunity may be beneficial.

Figure 1:

Case 1: if the line is slightly **undersized**, market clearing prices **stay high** and **producers** capture the benefit of the line

Case 2: if the line is **correctly sized** or slightly **oversized**, market clearing prices **drop** and **consumers** capture the benefit of the line, which will be greater than in case 1

