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Lois D. Cashell,

Secretary.

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[Docket No. RM95-6-000]

Alternatives to Traditional Cost-of-Service Ratemaking for Natural Gas Pipelines; Request for Comments on Alternative Pricing Methods

February 8, 1995.

The Federal Energy Regulatory Commission (Commission) requests comments on criteria to evaluate rates established through methods other than the traditional cost-of-service ratemaking method. The Commission's traditional approach to rate regulation sets an annual revenue requirement based on operating and capital costs occurring during a historical test period, adjusted for known and measurable changes expected to occur by the time suspended rates take effect. Rates are generally designed to recover the annual revenue requirement based on contract capacity entitlements and projected annual or seasonal volumes.

Recently, the Commission has received a number of requests from natural gas pipeline companies to approve rates based on various other pricing methods, some of which are cost-based, and some of which are not. For example, the Commission has approved a number of proposals for market-based rates for storage services.¹

¹ Avoca Natural Gas Storage, 68 FERC ¶ 61,045 (1994); Koch Gateway Pipeline Co., 66 FERC ¶ 61,385 (1994); Bay Gas Storage Company, LTD, 66 FERC ¶ 61,354 (1994); Petal Gas Storage Co., 64 FERC ¶ 61,190 (1993); Transok, Inc., 64 FERC

In *Stingray Pipeline Company*,² the Commission approved a one-year experimental interruptible transportation rate based on costs allocated to Stingray's interruptible service, subject to a price cap. In *KN Interstate Gas Transmission Company (KN)*,³ the Commission addressed KN's proposal to offer market-based rates and negotiated terms and conditions of service on its Buffalo Wallow System. Most recently, Florida Gas Transmission Company's section 4 filing in Docket No. RP95-103-000 included a "Market Matching Program," under which shippers would have the option of negotiating rates and terms of service different from the tariff rates and terms of service. Florida Gas also proposed an experimental inflation indexing mechanism for rate changes, using cost-of-service rates as the starting point.

The Commission is interested in developing a framework for analyzing proposals involving alternative pricing methods for natural gas pipelines. There are a number of different ratemaking methods that could be used instead of the traditional individual company embedded cost-of-service method. In addition to market-based pricing, there are a number of cost-based methods that vary from the individual company cost-of-service method traditionally used by the Commission. The Commission recognizes that it may be necessary to develop different criteria for evaluating alternative pricing proposals, depending upon the method proposed. To this end, the Commission's staff has prepared a paper, which is attached, proposing criteria for the evaluation of proposals for market-based rates. The staff paper draws from basic antitrust market power analysis, that has been used in the past by the Commission and in other contexts, to develop a proposed analytical framework to use in evaluating gas pipeline market-based rate proposals. The Commission is interested in receiving comments on all aspects of the staff paper, including the following:

1. a. Under what circumstances are market-based rates appropriate for natural gas pipelines and services regulated by the Commission?
- b. Please identify and discuss any legal issues, beyond those discussed in the staff paper, that should be considered.
2. a. Are the Department of Justice/Federal Trade Commission Horizontal Merger Guidelines, from which the staff proposal is drawn, the best framework to evaluate market

¶ 61,095 (1993); Richfield Gas Storage System, 59 FERC ¶ 61,316 (1992).

² 66 FERC ¶ 61,202 (1994).

³ 68 FERC ¶ 61,401 (1994).

power in the interstate natural gas pipeline context?

b. Are there other approaches to evaluating market power that would be less burdensome?

3. a. Are the criteria proposed in the staff paper reasonable, too strenuous, or not strenuous enough?

b. Should the Commission use a different standard for different types of service, such as mainline transmission, storage, or market hub services?

4. a. Should the Commission consider treating companies with a small market share differently from larger or dominant sellers, and if so, under what circumstances?

b. How should the Commission view cases in which large sellers face large buyers (that is, where a single buyer represents a large share of a transporter's market)?

c. Can a buyer's monopsony power mitigate a seller's market power, and if so, how should the Commission analyze such cases?

5. Do commenters agree or disagree with staff's analysis that capacity release does not constitute a good alternative to firm transportation?

6. What procedures should the Commission employ to evaluate market-based rate proposals; should the Commission change its current policy of using declaratory orders or ruling on *pro forma* tariff sheets?

7. Are there particular requirements the Commission could impose that would increase the availability of shippers' service alternatives and mitigate the market power of a natural gas company that would not otherwise qualify for market-based pricing?

8. Are there regulatory policies or ratemaking methods that would better serve the Commission's regulatory goals of flexible, efficient pricing in today's environment? For example, should the Commission focus on "backstop" proposals, where pipelines would be free to negotiate rates and terms of service, so long as customers could always choose service under traditional cost-of-service rates and terms of service?

In addition, the Commission also invites comments on the criteria for evaluating incentive rate proposals. While the Commission currently has a policy for evaluating cost-based incentive rate proposals, to date no natural gas company has submitted a proposal in response to the Commission's invitation to submit incentive rate proposals for an experimental period. The Commission's October 30, 1992 policy statement on incentive regulation defined the essential elements of an incentive ratemaking policy and set guidelines for incentive rate proposals.⁴ The policy statement adopted two general principles: That incentive regulation should encourage efficiency, and that starting rates under incentive regulation must conform to the Commission's

⁴ Policy Statement on Incentive Regulation, 61 FERC ¶ 61,168 (1992).

traditional cost-of-service ratemaking standards. The policy statement also established five regulatory standards for the evaluation of specific proposals—that incentive proposals must: (1) Be prospective, (2) be voluntary, (3) be understandable, (4) result in quantified benefits to consumers, and (5) demonstrate how they maintain or enhance incentives to improve the quality of service. The standard pertaining to the quantification of benefits requires the inclusion of an absolute upper limit on the risk to consumers, with the overall cap on incentive rate increases based on projected traditional cost-of-service rates. In view of the lack of response to the October 30, 1992 policy statement and the changes in the natural gas market that have occurred since the issuance of the policy statement (principally the implementation of Order No. 636), the Commission believes it is appropriate at this time to revisit the issue of incentive rates for pipeline services and requests comments in response to the following questions:

9. Why have there not been any incentive proposals under the policy established in Docket No. PL92-1-000?

10. a. Should the Commission change its existing standards for incentive rate proposals?

b. If so, what specific criteria should the Commission employ when evaluating incentive rates?

11. Are there models for incentive regulation that the Commission should consider, such as the California performance-based program?

12. a. What are the benefits and drawbacks of incentive rates, and the policy objectives the Commission should pursue with an incentive rate method?

b. Is incentive ratemaking appropriate for the natural gas companies regulated by the Commission?

c. Please identify and discuss any legal issues that the Commission has not yet considered with this type of rate method.

There are other pricing methods which are neither market-based nor incentive-based, such as reference pricing (in which the rate is determined by reference, e.g., to the rates of another company or the price of another product). The Commission also requests comments on criteria for evaluating such proposals:

13. What other rate methods should the Commission consider beyond the market-based and incentive-based methods covered above?

14. a. What would be the benefits and drawbacks of any such methods?

b. Please identify and discuss any particular legal or procedural issues raised by a specific method.

15. What criteria would the Commission use to evaluate such proposals?

The Commission is requesting written comments on these questions and the attached staff paper on market-based rates. The Commission requests parties to identify the numbered questions in their comments to the maximum extent possible. An original and 15 copies of written comments should be filed with the Secretary of the Commission within 60 days of the issuance of this notice, and should refer to Docket No. RM95-6-000.

By direction of the Commission.

Lois D. Cashell,

Secretary.

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Market-Based Rates for Natural Gas Companies

A Staff Paper

The Commission has been requested by various companies to approve market-based pricing for both firm and interruptible transportation, for capacity released in the secondary market, for storage and for market hub services such as the "switching" and "parking" of natural gas. Approval of any of these proposals is contingent on the Commission finding that the company in question lacks significant market power. The purpose of this paper is to propose criteria that could be used to evaluate these proposals.

In developing these criteria staff has reviewed the Commission's prior experience with market-based ratemaking for natural gas companies, oil pipelines, and public utilities. In those cases the Commission consistently used the same general framework to evaluate requests for market-based rates. In addition, the experiences in three other industries (railroads, telecommunications, and airlines) also have been reviewed to determine whether there are lessons that can be drawn. For illustrative purposes the paper applies the proposed criteria to a hypothetical case. Finally, the paper discusses the other services that may

qualify for market-based rates as well as factors the Commission may want to consider in monitoring market-based rates.

I. The Applicable Legal Standards

Operating under the "just and reasonable" standard of the Natural Gas Act (NGA), the Federal Power Act (FPA), and the Interstate Commerce Act (ICA), the Commission generally authorizes rates based on the cost of service. However, as the Supreme Court has ruled on numerous occasions,¹ the just and reasonable standard does not limit the Commission to any particular ratemaking methodology; rather, the Commission has flexibility in selecting ratemaking methods.

Courts have held that non-cost factors can legitimate a departure from cost-based rates. Departures from cost-based rates have been found to be justified when: (1) The changing characteristics of the industry make advisable or necessary a new approach;² (2) the deviations from costs are not unreasonable or inconsistent with statutory responsibilities;³ and (3) the regulatory scheme acts as a monitor to determine whether competition will keep prices within a zone of reasonableness or to check rates if it does not.⁴ However, in ruling that rates need not be linked to costs in order to be just and reasonable, the court in *Farmers Union II* held that the Commission cannot merely assume that competition will ensure just and reasonable prices: "[m]oving from heavy to lighthanded regulation within the boundaries set by an unchanged statute," can only "be justified by a showing that under the current circumstances the goals and purposes of the statute will be accomplished through substantially less regulatory oversight."⁵

The Commission's authority to approve market-based rates under the

¹ See *Mobil Exploration & Producing Southeast Inc. v. United Distribution Companies*, 498 U.S. 211 (1991) (affirming the Commission's Authority to consolidate existing "vintage" price categories and set a single ceiling price for "old" gas); *Duquesne Light Co. v. Barash*, 488 U.S. 299, 310 (1989); *Permian Basin Area Rate Cases*, 390 U.S. 508, 517 (1979); *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 602 (1944).

² *Farmers Union Central Exchange, Inc. v. FERC*, 734 F.2d 1486, 1503 (D.C. Cir. 1984) (*Farmers Union II*), cert. denied sub nom., *Williams Pipe Line Co. v. Farmers Union Central Exchange, Inc.*, 469 U.S. 1034 (1984) (citing *Permian Basin Area Rate Cases*, 390 U.S. 747 (1968)).

³ *Farmers Union II* at 1502 (citing *Mobil Oil Corp. v. FPC*, 417 U.S. 283 (1974)).

⁴ *Id.* at 1509 (citing *Texaco, Inc. v. FPC*, 474 F.2d 416, 422 (D.C. Cir. 1972), vacated, 417 U.S. 380 (1974) (the court of appeal's decision was vacated on other grounds)).

⁵ *Id.*

appropriate circumstances was recently and clearly affirmed in *Elizabethtown Gas Co. v. FERC*.⁶ There, the court upheld the Commission's approval of a natural gas pipeline's proposal, as part of a pre-Order No. 636 restructuring settlement entered into with its customers, to sell gas for resale at market-based prices. Noting that the Supreme Court has held on numerous occasions that the just and reasonable standard does not dictate any single pricing methodology,⁷ the court held that where there is a competitive market, the Commission "may rely upon market-based prices in lieu of cost-of-service regulation to assure a 'just and reasonable' result."⁸ In sustaining the Commission's approval of market pricing in this case, the court alluded to the Commission's specific finding that the pipeline's markets were "sufficiently competitive to preclude [the pipeline] from exercising significant market power in its merchant function* * *."⁹ Specifically, the Commission had determined—and no record evidence to the contrary was cited on appeal—that adequate divertible supplies of gas existed to give customers options to buy from sellers other than the pipeline, thus assuring that the pipeline would have to sell its own gas at competitive prices. This finding, the court reasoned, justified the Commission's conclusion that the pipeline would be able to charge only a price that was just and reasonable within the meaning of section 4 of the NGA.

In reaching this result, the court of appeals in *Elizabethtown* distinguished the Supreme Court's decision in *FPC v. Texaco, Inc. (Texaco)*,¹⁰ in which the Supreme Court had remanded an FPC order exempting small gas producers from direct regulation of their prices. The Commission order under challenge in *Texaco* provided that small producers' prices would be subject to scrutiny only as a part of the rates of pipelines and large producers to whom they sold their gas, and then only through review of the pipeline and large producer rates. This indirect review procedure was found by the Court to be permissible under the NGA.¹¹ However,

the order was remanded because the Commission had not clearly shown how, or even whether, the just and reasonable standard would be applied to the small producers' prices in this process.¹² The Court admonished that on remand the Commission must adhere to the principle that "the prevailing price in the market cannot be the final measure of 'just and reasonable' rates mandated by the Act."¹³

The court in *Elizabethtown* reasoned that the point of *Texaco* was only that if Congress has subjected an industry to regulation because of anticompetitive conditions in the industry, the market cannot be the "final" arbiter of the reasonableness of a price.¹⁴ Further, the court in *Elizabethtown* stated, in the *Texaco* proceeding the Commission had not even mentioned the "just and reasonable" standard, but rather appeared to apply only the marketplace standard in determining the reasonableness of small producers' rates. In contrast, in the order challenged in *Elizabethtown*, the Commission had made it clear that it would exercise its section 5 authority if necessary to assure that a market rate is just and reasonable.

A hybrid cost/market-based pricing scheme under the FPA was approved by the court in *Environmental Action v. FERC*.¹⁵ There the Commission had approved the application of certain regulated and non-regulated electric utilities to operate a power pool in which transactions would be priced according to the market, subject to a uniform ceiling price based upon a hypothetical average utility's costs. The court, in rejecting challenges to the pricing mechanism, emphasized the speed and administrative efficiency benefits of market-based pricing. In addition, the court also cited the Commission's expressed intention to monitor transactions and invoke its investigatory powers under section 206 (either sua sponte or upon complaint) to redress abuses. Thus, the court concluded that "[i]n sum, FERC sought to preserve the Pool's efficiencies even as it guarded against price gouging. On the facts in evidence, we find no basis

for concluding it acted unreasonably."¹⁶

The court's treatment of market-based pricing policies implemented by other agencies offers little guidance to the Commission since much of the focus on increasing competition and reducing federal regulations has been through statutory reform, rather than through agency interpretation of existing statutory authorities. The bounds of agency authority to interpret existing statutory procedural requirements in a manner to facilitate a move to market-based pricing was addressed by the Supreme Court in *MCI Telecommunications Corporation v. American Telephone and Telegraph Company (MCI II)*,¹⁷ and by the court of appeals in *Southwestern Bell Corporation v. FCC (Southwestern Bell)*.¹⁸ However, *MCI II* and *Southwestern Bell* do not speak to the substantive validity of market-based regulation under a just and reasonable statutory standard. Judicial precedents, as explained above, uphold the use of market-based ratemaking, or some variation thereon, if the agency finds that clearly delineated non-cost factors (including the Commission's oversight and remedial authorities) are sufficient to protect the interests of consumers.

II. The Commission's Prior Experience With Market-Based Rates

A. The Gas Inventory Charge Cases

1. The Analysis Used

In 1988, the Commission began its movement towards light-handed regulation of some aspects of natural gas markets. The light-handed regulation first appeared with the implementation of market-based gas inventory charges (GIC) for pipeline sales service. In determining whether a pipeline could implement a GIC mechanism, the Commission looked at three key factors: Market definition, the availability of divertible gas supplies and measures of market power. Additionally, the Commission considered whether the transportation of alternative supplies would be on a comparable basis to the terms and conditions of transportation service provided for gas purchased under the GIC. If the supply markets were found to be competitive and transportation terms and conditions

⁶ 10 F.3d 866, 870 (D.C. Cir. 1993) (*Elizabethtown*).

⁷ The court cited *Mobil Oil Exploration v. U.S.*, 111 S. Ct. 615, 624 (1991): "* * * the just and reasonable standard does not compel the Commission to use any single pricing formula * * *." 10 F.3d at 870.

⁸ *Id.* (quoting *Tejas Power Corp. v. FERC*, 908 F.2d 998, 1104 (D.C. Cir. 1990)).

⁹ 10 F.3d at 870-71 (quoting *Transcontinental Gas Pipe Line Corp.*, 55 FERC ¶ 61,446 at 62,234).

¹⁰ *FPC v. Texaco, Inc.*, 417 U.S. 380, 397 (1974).

¹¹ 417 U.S. at 387-91.

¹² The Commission stated that the just and reasonable standard would be applied, and enumerated various factors, in addition to prevailing market prices, that would be taken into account. The Court observed that these representations were relevant to the validity of the order, but ruled that because they were not made in the order itself—only on appeal—they were unavailing. 417 U.S. at 397.

¹³ 417 U.S. at 397.

¹⁴ *Elizabethtown*, 10 F.3d at 870.

¹⁵ 996 F.2d 401 (D.C. Cir. 1993).

¹⁶ *Id.* at 410. See also *National Rural Telecom Assoc. v. FCC*, 988 F.2d 174 (D.C. Cir. 1993) (approving flexible pricing for local exchange companies, subject to a ceiling rate).

¹⁷ 114 S. Ct. 2223 (1994).

¹⁸ Nos. 93-1562, 93-1568, 93-1590, and 93-1624 (D.C. Cir. Jan. 20, 1995).

comparable, pipelines were permitted to implement a GIC.¹⁹

In applying these standards in *El Paso*, for example, the Commission found that the relevant product market was delivered firm gas. El Paso maintained that the product market was not simply natural gas, but energy generally (*i.e.* fuel oil, coal, propane, hydroelectric power, and purchased power). However, El Paso did not provide sufficient evidence to make such a case. Thus, the Commission excluded alternative fuels from the product market.

The Commission established that "firm" gas was a dimension of the product market since El Paso was proposing to sell firm gas under its GIC. The Commission also found that "delivered" gas was a second dimension of the relevant product market because firm gas supplies that could not be transported to the city-gate were not substitutes for supplies under the GIC.

In defining El Paso's geographic market, the Commission acknowledged that it could consist of the entire United States or North America. The Commission stated, however, that the relevant geographic market was the geographic area containing those suppliers that can affect any attempt by El Paso to exercise market power. The Commission decided to take a cautious approach and considered three areas of gas supplies in order of the most narrowly defined: (1) The counties in the three basins where El Paso purchases gas that are already connected to El Paso's system, (2) all counties in the three basins, and (3) all counties from which El Paso purchased gas in 1987, including counties outside the three basins. The Commission reasoned that if El Paso lacked market power in the most narrowly defined market, then it would also lack market power in a more broadly defined market. Alternatively, even if El Paso could exercise market power in a narrowly defined market, it might be demonstrated that El Paso nonetheless lacked market power when the definition was expanded.

The Commission found that 1.07 Bcf/d was the minimum measure of the amount of divertible, or alternative, gas supplies needed to prevent El Paso from exercising market power. The 1.07 Bcf/day represented the gas dedicated to El Paso under long-term contracts, together with its affiliates' volumes. The Commission determined that sufficient

divertible supplies existed in each of the defined geographic markets, at competitive prices, such that El Paso would be precluded from exercising market power. The Commission defined divertible supplies as those that were uncommitted, or committed under contract to a buyer for no longer than some short period such as one year.

The Commission then measured each seller's share of the market. To compute El Paso's market share the Commission used its sales to each customer at the time of peak usage. These market shares were then used to compute the level of concentration in the market using the Hirschman-Herfindahl Index (HHI).²⁰ The Commission used an initial screen of .18 to determine if the market concentration was low enough to indicate that the competitors in the market could not exercise market power.²¹ The Commission found that the market concentration was low, *i.e.*, below .18.

The Commission also found that the transportation service to be provided by El Paso for the transportation of third party supplies was comparable, with certain modifications, to the transportation provided under the GIC.

Therefore, based on this analysis, the Commission found that El Paso lacked market power and permitted the implementation of a market-based GIC.

2. The Subsequent History of the GIC Cases

On May 11, 1988, the Commission found that Transwestern lacked market power with respect to the gas commodity. Southern California Gas Company (SoCal), the only company directly affected, had sufficient alternative gas supply sources that Transwestern's prices would be constrained. Therefore, the Commission approved, with some modifications, Transwestern's proposed market-based Gas Inventory Charge (GIC).²²

When Transwestern attempted to put its GIC charges into effect, SoCal nominated zero volumes of

²⁰ An HHI is calculated by summing the squares of each seller's market share. For example, if there are two sellers of a product having shares of total sales of 75 percent and 25 percent, respectively, then the HHI will equal $(.75)^2 + (.25)^2 = .5625 + .0625 = .625$. Rounding to two significant digits, the HHI is .63.

²¹ An HHI of .18 is equivalent to having 5-6 equal sized competitors in the market. In *El Paso*, the Commission indicated that it would use a case-by-case approach to determine the lack of market power. The HHI was used as an initial screening tool only. *El Paso*, 49 FERC at 61,920. See also *Petal Gas Storage Co.*, 64 FERC ¶ 61,190 at 62,573 (1993) (market power determined on a case-by-case basis).

²² Transwestern Pipeline Co., 43 FERC ¶ 61,240 (1988).

Transwestern's gas.²³ This is an extreme example of a lack of market power; an attempt to get a premium above the available spot price led to virtually a 100 percent reduction in Transwestern's sales.

In July, 1990, in *Tejas Power Corp. v. FERC*,²⁴ the court of appeals emphasized the importance of a market power determination in the approval of a GIC mechanism, even in the context of a settlement. In *Tejas*, the court found the Commission's reliance on the agreement of the LDCs, in approving a GIC settlement proposed by Texas Eastern Transmission Corp., was misplaced because there was no finding, supported by substantial evidence, that the pipeline lacked significant market power. All of the Commission's subsequent market-based GIC cases examined the market power of the pipeline applicant.

The series of pipeline-by-pipeline GIC cases allowing market-based pricing for the gas commodity was broadened to a generic finding in Order No. 636. The Commission allowed pipelines to have market-based pricing for unbundled gas sales upon full compliance with the final rule.²⁵

In conclusion, the Commission's experience with deregulation of the gas commodity has shown that competition can restrain prices. In fact, the statutory wellhead deregulation and the Commission's open access policies have led to a current price for the gas commodity that is well below the regulated prices that prevailed several years ago.

B. The Storage Cases

1. The Analysis Used

Starting with the the Commission's order in *Richfield Gas Storage System* (*Richfield*)²⁶ in June 1992, the Commission has permitted companies to institute market-based storage rates subject to light-handed regulation when the applicants have shown that they lack significant market power. In making these market determinations, the Commission primarily looked at the defined markets, the availability of good alternatives, and measures of market power. However, the Commission also considered other factors, such as the fact that the applicants were generally new entrants, the applications were generally unopposed, and the possibility of other

²³ Foster Natural Gas Report, No. 1741, for the week ended September 21, 1989, pp. 2-3.

²⁴ 908 F.2d 998 (D.C. Cir. 1990) (*Tejas*).

²⁵ FERC Regulations Preambles, ¶ 30,939 at 30,439.

²⁶ *Richfield Gas Storage System*, 59 FERC ¶ 61,316 (1992).

¹⁹ See Transwestern Pipeline Company, 43 FERC ¶ 61,240 (1988); *El Paso Natural Gas Company*, 49 FERC ¶ 61,262 (1989) and 54 FERC ¶ 61,316 (1991); and Transcontinental Gas Pipe Line Corporation, 55 FERC ¶ 61,446 (1991) *aff'd Elizabethtown, supra*.

new entrants. In applying these standards in *Koch*, for example, the Commission agreed with Koch's definition of product and geographic markets. Koch applied a narrow and broad definition to both markets. Koch argued that if it did not have market power in narrowly defined markets, it would not have market power when the definitions were broadened.

Koch defined the narrow product market as natural gas storage. The narrow geographic market was defined to contain those storage facilities in the states of Texas, Louisiana, and Mississippi that are connected to Koch.

The record showed that Koch owned only 11.9 percent of the contract storage capacity and 6.1 percent of the contract storage deliverability in the narrow market. The market concentration was computed using the Hirschman-Herfindahl Index (HHI) to be .13 for capacity and .12 for deliverability indicating a relatively low concentration in the narrow market.

The Commission also reviewed the fact that five new suppliers may enter the market by 1996 that would potentially have direct connects to Koch.

The broader product market was defined to include non-storage alternatives and storage alternatives not connected to Koch, such as, capacity release of storage in new or existing storage facilities, purchase of natural gas from producers or other marketers, selling gas to customers that have several suppliers, access to no-notice storage, to name a few. The broader geographic market was defined as alternatives outside of Texas, Louisiana and Mississippi.

The Commission gave much consideration to whether or not the alternatives identified by Koch were "good" alternatives. The Commission defined a good alternative as one that is available soon enough, has a price that is low enough, and has a quality high enough to permit customers to substitute the alternative for Koch's service. In addition, the alternative must be available in sufficient quantity to make Koch's price increase unprofitable.

The Commission found that good alternatives were available in sufficient quantities and at competitive prices. The Commission determined that unutilized storage capacity was available in large quantities in Texas, Louisiana and Mississippi during peak periods based on statistics found in EIA's Natural Gas Monthly. The Commission reasoned that if this unutilized capacity was not under contract it was available for purchase.

Unutilized capacity that was committed under contract, the Commission reasoned, would be available through capacity release. Therefore, given the small size of Koch in relation to other storage providers, the abundant storage alternatives available to Koch's customers, and that the alternatives are "good" alternatives, the Commission concluded that Koch could not exercise market power in providing storage service.

2. The Experience After Approving Market-Based Rates

The market-based storage cases approved by the Commission (Richfield, Petal, Transok, Bay State, Avoca, and Koch) are quite recent. The companies in question were not subjected to any special reporting requirements. Thus, there is little information currently to evaluate these decisions. In addition, the pipelines in several of these cases executed long term contracts at the same time they were seeking market based rates. The contracts set the prices for the term of the contract. No complaints have been filed so far regarding the market based storage rates. However, one would not expect to see the complaints so early in the process. Complaints would be more likely to occur when the parties seek to negotiate new pricing provisions at the end of the contract term, if new capacity becomes available, or if the circumstances which served as the basis of the Commission's decision changed.

Earlier, however, the Commission approved an experiment wherein Koch storage was allowed to charge any price it could negotiate up to a cap which exceeded the cost-based rate. The Commission did not make a finding that Koch lacked significant market power. The results of the "Market Responsive Storage and Delivery Service" (MRSDDS) experiment suggest that competition constrained Koch to prices actually below the cost-based rates. All market-based MRSDDS rates charged by Koch were below the cap. During the two full heating seasons of the experiment, customers fully subscribed all the capacity allocated to MRSDDS.²⁷

C. The Oil Pipeline Cases

In the oil pipeline area, two companies have the authority to charge market-based rates—Buckeye Pipe Line Company, L.P. (Buckeye) and Williams Pipe Line Company (Williams). In both cases the Commission determined that the pipeline lacked market power in

markets for which each was allowed to charge market-based rates.²⁸

1. The Analysis Used

In conducting its analysis of whether the applicant had market power, the Commission first defined the product and geographic markets. It then evaluated whether the applicant had significant market power in those markets by first doing an initial screen for market concentration in each market (using the Herfindahl-Hirschman Index) and then considering, weighing and balancing a number of other factors, such as, the potential entry of competitors into the market, available transportation alternatives, market share, availability of excess capacity, and the presence of large buyers able to exert downward monopsonistic pressure on transportation rates.

In *Buckeye*, for example, the relevant product market was defined as the transportation of refined petroleum products. The Commission agreed with the ALJ and rejected the position advanced by ATA that the product market should be markets in which Buckeye transports only jet fuel. The Commission concluded that the ease of product substitution among pipelines is an important reason why the relevant product market should be the transportation of refined petroleum products rather than the transportation of a specific petroleum product, such as gasoline, fuel oil or jet fuel.

The relevant geographic markets were defined as the areas that include all supplies of transportation from all origins to United States Department of Commerce, Bureau of Economic Analysis Economic Areas (BEAs).²⁹ The Commission concluded that the evidence of record supported the findings of the ALJ that BEAs are shown to be appropriate geographic markets since they are convenient, easily identified and have been used in past studies of the oil pipeline industry.

The Commission also concluded that an analysis of market concentration using HHIs should be the first step in evaluating the likelihood of market power being exercised in a given market. Knowing the degree of concentration in a market provides useful information about where on the competitive spectrum that market lies

²⁸ Buckeye Pipe Line Company, L.P., 53 FERC ¶ 61,473 (1990). Williams Pipe Line Company, 69 FERC ¶ 61,136 (1994). Both cases were litigated and the Commission made its findings that certain markets were competitive based on the records presented at the hearings.

²⁹ BEAs are geographic regions surrounding major cities that are intended to represent areas of actual economic activity.

²⁷ Koch Gateway Pipeline Co., 66 FERC ¶ 61,385 at 62,301-302 (1994).

and what other factors will have to be weighed to enable a finding as to the existence or absence of significant market power. For measuring market concentration, the Commission concluded that a proper screening device is an HHI.³⁰ The Commission also concluded that the use of delivery data, e.g., deliveries into each BEA, is the best method for calculating HHIs in Buckeye.

In *Buckeye* (Opinion No. 380), market power was defined as the ability to profitably raise the price above the competitive level for a significant time period. Significant market power was defined as the ability to control market price by sustaining at least a 15% real price increase, without losing sales, for a period of two years. The Commission further concluded that the relevant price for the purposes of making a determination of whether Buckeye can profitably increase its transportation prices above the competitive level is the delivered product price. Because shippers or customers in the destination market often have the option of switching away from purchasing transportation into the market, and, instead, purchasing the delivered product itself, suppliers of

transportation must compete with suppliers of the delivered product.

There were 22 markets examined in Opinion No. 380. The Commission found that in 15 Buckeye lacked significant market power; in two Buckeye had no tariffs on file thus no finding was warranted; in one the record was insufficient and so continued regulation was necessary; and, in four, Buckeye was found to have market power.

2. The Buckeye Experiment

In Opinions No. 380 and 380-A, the Commission also authorized a three year experimental program proposed by Buckeye.³¹ During this experiment, rates in each competitive market were subject to two limitations: (1) Individual rate increases could not exceed a "cap" of 15% real increase over any two-year period, and (2) individual rate increases would be allowed to become effective without suspension or investigation only if they did not exceed a "trigger" of the change in the Gross Domestic Product (GDP) deflator plus 2%. Rate decreases were presumably valid but could not result in rates below marginal costs.

In the markets the Commission did not find to be competitive, no rate could be increased by more than the volume-weighted average rate increase in the competitive markets. Conversely, every rate in the "non-competitive markets" had to reflect the volume-weighted average of rate decreases in the competitive markets.³²

No protests of rate changes or complaints against existing rates were filed during the three year experiment. In addition, no protests were filed in opposition to Buckeye's filing to extend the experiment indefinitely.³³ Buckeye noted that this lack of opposition to its market-based program was "in sharp contrast to the years of complex and expensive rate litigation that preceded adoption of * * *" this program.³⁴

No rates were changed by more than the GDP+2% trigger during the three year period. In the competitive markets, rate increases were generally well below the trigger, and in the non-competitive markets, rate increases were below the allowed volume-weighted average increase in the competitive markets. The allowable and average actual rate changes are shown in the table below.

BUCKEYE RATE CHANGES

Year (April 1 to March 31)	Cap (GDP+15%) (percent)	Trigger (GDP+2%) (percent)	Competitive markets average rate change (percent)	Non-competitive markets average rate change (percent)
90-91	19.16	6.16	3.86	3.58
91-92	22.32	5.16	3.14	2.74
92-93	20.69	4.53	1.45	0.97

Since all changes in rates are based on an index *not* reflecting the pipeline's costs, there is no danger of the raising of rates in non-competitive markets through shifting costs attributable to competitive markets.³⁵ This attribute is not exclusive to the Buckeye program; approaches which base rate changes on something other than the pipeline's costs would eliminate this concern about cost shifting.

Finally, under the market-based program Buckeye was able to engage in

some successful marketing in very competitive situations. For example, in Indianapolis, where Buckeye held less than three percent of the market in 1990, Buckeye raised its share to 17 percent in 1993. "These increased volumes resulted from Buckeye's deep price discounts (as deep as 40%) in 1991 and later a volume incentive tariff to attract new refinery business from a recently restarted independent refinery * * *"³⁶ As a result of Buckeye's actions, the total size of the Indianapolis

market increased and its concentration decreased.

D. The Electric Cases

Since 1986, the Commission has approved many applications from public utilities to sell electricity in wholesale transactions at negotiated market-based rates. In a recent order addressing a request for market-based rates from an electricity marketer affiliated with a traditional public

³⁰The Commission used an HHI of .18 as an initial screen in Transcontinental Gas Pipe Line Corp. (*Transco*), 55 FERC ¶ 61,446 at 62,393 (1991).

³¹53 FERC 61,473 and 54 FERC 61,117.

³²On March 24, 1994, the Commission accepted a tariff that extended this experiment for an indefinite period (66 FERC ¶ 61,348). However, the Order stated that Buckeye was subject to the requirements of Order No. 561, the simplified and generally applicable ratemaking methodology for oil pipelines, when they take effect on January 1, 1995. On December 6, 1994, the Commission permitted Buckeye to continue its experimental program as an exception to the Commission's oil pricing policies,

subject to future reevaluation. Buckeye Pipe Line Co., L.P., 69 FERC ¶ 61,302 (1994).

³³66 FERC 61,348.

³⁴October 26, 1994 Buckeye Pipeline filing in Docket No. OR94-6-000, *et al.*

³⁵While there was concern that Buckeye might be able to "manipulate" the program by raising prices in the competitive markets solely to raise prices in the non-competitive markets, the Commission found this to be a very unlikely event under the approved program. It nevertheless committed to monitoring for this occurrence during the experiment (53 FERC 61,473). Since the growth rate

of revenues was higher in the competitive markets than in the non-competitive markets (constant annual growth rates of 6.54% versus 2.78% (66 FERC 61,348)), this demonstrates that this potential problem did not occur during the experiment.

³⁶February 22, 1994 "Statement of James A. Spicer on behalf of Buckeye Pipe Line Company, L.P."

In contrast to oil pipelines, natural gas pipelines are permitted to selectively discount. Thus, gas pipelines would be able to structure such a deal under the Commission's traditional cost-based rate regulation.

utility, the Commission summarized its position. The Commission:

* * * allows market-based rates if the seller (and each of its affiliates) does not have, or has adequately mitigated, market power in generation and transmission and cannot erect barriers to entry. In addition, the Commission considers whether there is evidence of affiliate abuse or reciprocal dealing.³⁷

Applicants for whom the Commission approved market-based rates are required to file periodic reports or studies to demonstrate their continuing lack of market power and the absence of abusive affiliate practices.

The first step in evaluating market power in generation is to identify the relevant product and geographic markets.³⁸ In those markets, suppliers' market shares are calculated. Low market shares demonstrate that the seller is unlikely to be able to assert market power in that market.³⁹ An applicant with a high market share would be subject to further scrutiny.

For example, in *Enron Power Enterprises Corporation*,⁴⁰ the Commission looked at the market for generating services bid to New England Power Company (NEPCO). In that market, Enron's market share was 4 percent. Furthermore, there were 18 projects out of 22 finalists that were not selected. Thus, NEPCO had numerous additional alternatives to choose from other than Enron. In addition, NEPCO negotiated several favorable provisions in its agreement with Enron suggesting that Enron was not a dominant supplier at the time of the solicitation.

There have been two additional factors of concern to the Commission in electricity cases: Affiliate abuse and the ability to erect barriers to entry. With respect to affiliate abuse, in recent cases, the Commission has required the affiliated parties to file separately for any sales or purchases of electric power between the marketer and its affiliated utility. In addition, the Commission requires the affiliated marketer to purchase any transmission services it may receive from its affiliated utility under a generally applicable, open-access, comparable tariff.

With respect to an applicant's ability to erect barriers to entry, only a few electric cases have raised this issue. Some affiliates of natural gas pipelines

have sought market rate approval for sales of electricity.⁴¹ However, the Commission has looked to Order No. 636 procedures mandating open access transportation on jurisdictional pipelines to preclude pipelines from erecting barriers to entry.

As a result of *Enron* and other cases, the Commission has developed considerable experience in analyzing generation markets. Recently, in *Kansas City Power and Light*,⁴² the Commission concluded that new generating facilities were being built by many different parties and that there was no evidence that any party could assert market power in markets being served by new facilities. Consequently, as did the Commission in its series of GIC decisions, market power analysis is no longer required when the applicant is proposing sales from new facilities.

The Commission's treatment of transmission market power does not parallel its treatment of market power in generation. The Commission has basically equated applicant ownership or control of transmission facilities with the applicant having market power in transmission in that region.⁴³ The Commission therefore requires transmission owners to file generally applicable open-access, comparable transmission tariffs before the Commission will permit them to charge market rates.⁴⁴

III. Proposed Criteria for Evaluating Market-Based Transportation Rate Proposals

A. General Framework and Criteria

To date, in all cases where the Commission has considered market-based rates, the applicant has been required to show that it lacks significant market power in the relevant markets. Market power is defined as the ability of a pipeline to profitably maintain prices above competitive levels for a significant period of time.

While the Commission has not adopted a mechanistic approach to assessing market power, it has consistently used the same general framework to evaluate requests for market-based rates.

Using this general framework, Commission staff proposes criteria to evaluate the competitiveness of transportation services. To show a lack of market power over firm transportation, for example, staff

anticipates that a pipeline would need, initially, to show that its customers have four to five good alternatives to the applicant's firm transportation service. This is the equivalent of an HHI of .18, which the Commission has used as an initial screen in previous cases.⁴⁵ Staff suggests that only capacity that the applicant shows will be available on other pipelines when the applicant institutes market-based rates could be considered as an alternative.

One necessary element of showing that customers have alternatives would be the pipeline's agreement to give existing firm transportation customers the right to renominate their contract demand levels if a pipeline is allowed to charge market-based rates under existing contracts. Otherwise, the applicant clearly has market power over its customers if existing contracts prevent its customers from freely choosing alternative service or renegotiating their contracts at the time market forces are permitted to control the rates for services. This situation did not exist in the storage cases where the Commission permitted market-based pricing. In those cases, the applicants were either new entrants or existing entities offering new services. There were no existing contracts in effect that the Commission needed to address. This condition is consistent with the Commission's practice in the GIC proceedings where it allowed customers to renominate their sales contract demand levels if a pipeline instituted a GIC.

The framework proposed would be the same for all types of services. It consists of three major steps:

1. *Define Relevant Markets*
 - a. Product market: identify good alternatives to the applicant's product; and
 - b. Geographic market: identify sellers of good alternatives.
2. *Measure Firm Size and Market Concentration*
 - a. Measure the size of the market, calculate each seller's market share, and evaluate applicant's market share;
 - b. Estimate market concentration using the Herfindahl-Hirschman Index (HHI); and
 - c. Evaluate market concentration by using an initial HHI screen of 0.18; a finding in that range is equivalent to finding that customers have at least four or five equal-sized alternatives to the applicant's service.
3. *Evaluate Other Factors*
 - a. If the applicant's market share is large or the market concentration is high (*i.e.*, HHI exceeds 0.18), examine other factors that might prevent or limit the exercise of market power;

³⁷ Heartland Energy Services, 69 FERC ¶ 61,223 (1994).

³⁸ See, *e.g.*, *Kansas City Power & Light*, 67 FERC ¶ 61,183 (1994).

³⁹ In *PSI*, 51 FERC ¶61,367 (1990), *order on reh'g* 52 FERC ¶61,963 (1990), the Commission determined that a seller with a market share of less than 20 percent did not dominate the market.

⁴⁰ 52 FERC ¶ 61,193 at 61,708-61,709 (1990).

⁴¹ See, *e.g.*, *Hartwell*, 60 FERC ¶ 61,143 (1992).

⁴² 67 FERC ¶ 61,183 (1994).

⁴³ See *Enron Power Marketing*, 65 FERC ¶ 61,305 (1993), *order on reh'g*, 66 FERC ¶ 61,244.

⁴⁴ The current policy was announced in *Hermiston Generating*, 69 FERC ¶ 61,035 (1994).

⁴⁵ *E.g.*, *Transco*, 55 FERC at 62,393.

b. These other factors might include ease of entry, excess capacity held by competing sellers, and buyer power.

Each of these steps is discussed further below. In section B of this part is an example showing the application of this analysis to a hypothetical interstate pipeline in a market supplied by a number of pipelines.

There are some services that are more likely to pass these criteria than others. These are discussed more fully in section IV.C. below.⁴⁶ For example, IT and hub services have different characteristics than firm transportation and might more easily satisfy these criteria. If the capacity release program is functioning well, IT service may compete with capacity release offered by all of the pipeline's customers in the relevant zones. Capacity release may be a good alternative for IT service. There are, by definition, several pipelines at each market hub.⁴⁷ Each of the pipelines at the hub may be able to offer the same hub services as good alternatives to each other.

As a practical matter, it may well be difficult for long-term firm transportation to qualify under this framework. The nature of the transportation grid ensures that pipelines typically face few direct competitors in delivering gas from one point to another. In addition, given the long-term contracting for firm transportation service that exists, staff believes it may be difficult for pipelines to show that customers have the ability to freely move to alternative long-term transportation. For example, if a pipeline that proposes market-based rates for firm transportation has existing long-term contracts for that service, the pipeline would need to allow its customers to terminate their contracts to freely move to alternative services.

1. Market Definition

Market definition identifies the specific products or services and the suppliers of those products or services that provide good alternatives to the applicant's product or service. In this market staff would test the applicant's ability to exercise market power. Naturally, the more narrowly the market is defined, the harder it is to show a lack of market power.

The Commission's order approving market-based storage rates for Koch

⁴⁶ This paper does not attempt to analyze the capacity release market or IT service in any detail but the same general framework would apply to these.

⁴⁷ See "Importance of Market Centers," Office of Economic Policy, FERC (Washington, D.C.), August 21, 1992. Some pipelines have defined market hubs differently.

Gateway, defined good alternatives as follows:

A good alternative is an alternative that is available soon enough, has a price that is low enough, and has a quality high enough to permit customers to substitute the alternative for Koch Gateway's service.⁴⁸

a. The Product Market

The applicant's service together with other services that are good alternatives constitute the relevant product market. The applicant must fully, and specifically, define the product market. For example, the applicant must be specific in defining whether the product market consists of firm transportation only, or if the product market consists of off-peak interruptible transportation service only, etc. The applicant must also be responsible for developing and justifying any substitutes for the relevant product that can be considered competitive alternatives, e.g., storage delivery services, gathering services, etc. For example, pipelines might suggest numerous alternatives to FT in their applications: IT, storage services, residual fuel oil, etc.

It is likely that applicants will argue that the market should be defined broadly. Given the natural monopoly features of many transportation services, staff suggests that the Commission take a more conservative approach and define the product market narrowly as only firm transportation. For purposes of defining relevant gas transportation markets, staff focuses here on the pipeline customers' peak.⁴⁹

i. Timeliness

Generally, antitrust authorities have used one year as the time period in which to test whether a product can become a substitute. This is probably not appropriate for long-term firm transportation because capacity on competitors would typically need to be available simultaneously to offer a viable alternative to customers. If the pipeline applicant relies on the existence of capacity that will not be available immediately, it would also need to show that its customers would not be committed to long term contracts on its system under the operation of the right of first refusal rules, so that the alternative would not be available.

ii. Price

Along with showing that alternative capacity will be available in a reasonable time frame, the applicant

⁴⁸ *Koch Gateway*, 66 FERC at 62,299.

⁴⁹ During the winter peak period we would expect that excess capacity would be at a minimum and that customers' alternatives would be fewer than in off-peak periods.

must demonstrate that the price for the available capacity is low enough to effectively restrain the applicant from increasing prices. In prior cases, the Commission has defined such a threshold price level as being at or below the applicant's *approved* maximum cost-based rate plus 15%.⁵⁰

The regulated price has been used as the prevailing price—a proxy for the competitive price. This is necessary because almost all prices for transportation are regulated and a competitive price level would be at best a guess. However, the use of prevailing prices presents analytic problems. For example, three pipelines that follow parallel courses may have radically different rates because of different historical costs, despite the fact that in a competitive market they would offer almost identical services at almost identical prices. Which of the alternative pipelines' prices should be used as the "prevailing" price? This question would have to be addressed in deciding whether the prices of alternatives are appropriate references.

iii. Quality

A good alternative must provide service in which the quality is at least as high as that of the service provided by the applicant. In order to make this showing the applicant must first be required to describe its own services. Then, the applicant must demonstrate that any available third party capacity must be comparable in service to the transportation service provided by the applicant.

Staff believes that with Order Nos. 436 and 636, all interstate pipelines currently provide operationally comparable firm transportation (FT) service.

However, even if a customer can find available capacity on an alternative pipeline, the overall package of services available may not be comparable to that it currently receives from the applicant. For instance, no-notice service may not be available from other pipelines (though a similar service might be available from third parties). Under Order No. 636 interstate pipelines

⁵⁰ In *Buckeye Pipe Line Company, L.P.*, Opinion No. 360, the Commission held that a 15 percent increase was an appropriate level to measure market power. 53 FERC 61,473 at 62,681 (1990), *order on reh'g*, Opinion No. 360-A, 55 FERC ¶ 61,084 (1991). However, in *Williams Pipe Line Co.*, Opinion No. 391, the Commission declined to adopt a specific rate increase as a litmus test for market power. 68 FERC ¶ 61,136 at 61,657. In *Koch Gateway Pipeline Company*, the Commission suggested that potential alternatives would include services that though presently not used, would be economic if prevailing prices were to rise by a modest amount, e.g., five to 15 percent. 66 FERC ¶ 61,385.

which offered no-notice sales service prior to restructuring were required to offer no-notice transportation service to their existing sales customers at the time of unbundling. Pipelines had the option of making no-notice service available to non-sales customers. Thus, while many interstate pipelines currently provide no-notice transportation service, they do not and are not required to offer such service to new customers. Thus, comparable no-notice service probably is not available on other pipelines.

Also, applicants may wish to demonstrate that intrastate pipelines offer comparable firm transportation service. Transportation services offered by intrastate pipelines under section 311 of the NGPA are also subject to the same open-access and non-discriminatory access standards as interstate pipelines are under Order No. 436. Therefore, to the extent that intrastate pipelines offer firm transportation service, Staff believes that such service would be offered under terms and conditions that are substantially comparable to the firm transportation services offered by open-access interstate pipelines. However, intrastate pipelines are not required to offer firm transportation services and currently only a few intrastate pipelines offer firm transportation. Thus, firm transportation services may not be available on intrastate pipelines.

Applicants wishing to make a showing that interruptible transportation services make good alternatives to the applicant's firm services would have to demonstrate that an adequate amount of capacity is unsubscribed during peak periods so that the quality of the IT service would be comparable to that of the applicant's FT service.

b. The Geographic Market

In addition, in defining the market, one must identify all the sellers of the product or service. The collection of alternative sellers and the applicant constitutes the relevant geographic market. Specifying the relevant product and geographic market tells us what alternatives the customer has if it attempts to avoid a price increase imposed by a seller.

Geographic market definition is particularly important in transportation markets. Gas pipelines can transport gas out of a producing or origin region. They also deliver gas into a consuming or destination region.

The applicant must specify both the origin and destination markets for its FT service. Only in that way can the applicant identify good alternatives to the pipeline's service.

Staff proposes a two-step process of defining the geographic market. First, the applicant would identify those alternative sellers who offer service between the same origin and destination markets. Second, the applicant would identify those competitors that provide service either out of the origin market or into the destination market. This two-step process generally follows the analytic approach developed in the *Report of Commissioner Branko Terzic on Competition in Natural Gas Transportation* (May 24, 1993).

i. Transportation Between Markets

The first stage of the analysis identifies sellers offering transportation service over the same route. Examining different sellers serving the same transportation link simplifies the analysis. For instance, there is no need to consider whether different producing areas offer "good" alternatives to each other.

To show that another pipeline provides a good direct alternative, the applicant must show that customers could purchase the relevant service from the alternative supplier. Such a demonstration will probably include showing that capacity would be available on the alternative, that the customer can obtain any services needed to use the competitor's facilities in both origin and destination markets over the term of the service receiving market-based rates.

If a customer has a continuing obligation to take gas at a particular receipt point, or to deliver gas to a specific delivery point, beyond the term of its FT contract, competition from parallel pipelines is particularly important in evaluating market power on a pipeline seeking market-based FT rates. Then the applicant may have market power over the shipper even if both the origin and destination markets are otherwise competitive. While the shipper will have good alternatives to the applicant for getting gas to the city-gate, it may not have good alternatives for getting gas from that particular point to its city-gate. It could, of course, sell its contract gas from that particular point on the spot market in the production area and buy an equal amount of spot gas in an area where it had good transportation alternatives. But the spot price at which it sells might be lower than the spot at which it buys, causing extra expense and providing some opportunity for the applicant pipeline to raise its price. Additionally, the shipper may value the reliability of the contract gas and be concerned that it might not be able to buy spot gas when it needs it.

In practice, parallel route competition is most likely to occur in two situations. One is the secondary market (including pipeline IT) where parties offer service on the same facility. The other is for transportation between well-functioning market centers, as illustrated in the example in part B.

ii. Transportation at Origin and Destination Markets

Parallel route competition is not the only source of market discipline on gas transporters. A shipper in the production area will typically have alternative destination markets to which it could send gas. Similarly, a downstream shipper will typically have a choice of several producing areas from which to buy gas. Pipelines that provide such alternative service may offer an additional check on the market power of a shipper.

Natural gas transportation typically originates in the production area. In the production area (or the mainline receipt point), the applicant must identify the transportation alternatives available to customers. Customers could include producers with gas supplies attached at a receipt point, LDCs, and endusers with firm long-term supply contracts. To define a particular region as an origin market, the pipeline must identify all pipelines which compete with it to move gas out of that area. To demonstrate that these other pipelines are good alternatives (that is, are in the market), the applicant must show that its producer/shippers are physically connected to these other pipeline transportation alternatives.⁵¹ The applicant must also show that these transportation alternatives provide a netback⁵² to producer/shippers roughly the same as they would receive if they used the applicant's transportation.⁵³ An alternative is not a good alternative to a producer seeking to move gas out of the origin market if the alternative is

⁵¹ Alternatively, the applicant could include a seller in the market if the seller can connect to the customer sufficiently cheaply that the customer receives a netback as least as large as it would receive if it used the applicant's transportation service.

⁵² The netback is the delivered price of gas less the transportation costs paid by the producer. That is, the netback is the net price received by the producer.

⁵³ The geographic market is a region in which a hypothetical monopolist that is the only present or future provider of the relevant product at locations in that region would profitably impose at least a "small but significant and nontransitory" increase in price. In the case of an origin market, the hypothetical monopolist will impose a small but significant and nontransitory decrease in netbacks. Thus, a service is a good alternative if the netback using the alternative is at least as big as the netback using the applicant's facilities after the netback decrease.

associated with a much higher cost than the applicant's cost-based rates, i.e., it must give roughly the same netback.

In contrast, the ultimate destination market for gas is typically a city-gate. There, the applicant must identify the transportation alternatives available to endusers and LDCs who want to receive gas in this area. To define a destination market, the applicant must demonstrate that its customers are physically connected to alternative gas transportation facilities that move gas into the area.⁵⁴ The applicant must also demonstrate that those alternatives will deliver gas at a price no higher than would be paid with the use of the applicant's transportation service to deliver gas into the area.⁵⁵

Applicants for market-based rates might allege that LPG and LNG can be good alternatives to the use of applicant's transportation service. If so, the applicant must show that there are sufficient quantities of these available, and the transport of LPG and LNG into the destination market (e.g., by truck) provides gas at an overall delivered price no higher than the overall delivered price from pipeline transport with a fifteen percent transportation rate increase on the pipeline's transportation rate.

c. Summary and Conclusion

Thus, in order to specify a gas transportation market, the applicant must first identify all products and services available as good alternatives to the applicant's customers. Next, the applicant must identify the origin and destination of that transportation. The relevant geographic market will be defined in two steps: First, those alternative sellers that offer service between the same origin and destination markets and second, all economically substitutable transportation sold by pipelines (or other good alternative products and services) serving either the origin market or the destination market.

2. Firm Size and Market Concentration

Pipelines might be able to exercise market power if customers have few good alternatives to the pipeline's

⁵⁴ The applicant could include a seller in the destination market if the seller can connect to the customer sufficiently cheaply that the customer pays a delivered gas price no higher than that paid when using the applicant's FT service.

⁵⁵ The geographic market is a region in which a hypothetical monopolist that is the only present or future provider of the relevant product at locations in that region would profitably impose a least a "small but significant and nontransitory" increase in price. In the case of a destination market, a service is a good alternative if the delivered gas price using the alternative is less than or equal to the delivered gas price using the applicant's facilities after the price increase.

service either, in the first instance, over a given route or, in a second analysis, separately in origin and destination markets. The applicant might have market power in the origin market if producer/shippers have few good alternatives to transport their product out of the origin area. In the destination market, pipelines might be able to exercise market power if downstream customers have few good transportation alternatives that reach their city-gates. If customers have long term supply contracts, it will be particularly important for the pipeline to demonstrate that it has no market power over customers on a given route.

There are two ways in which a seller can exercise market power. It can attempt to raise its price *acting alone* or it can attempt to raise its price by *acting together with other sellers*.

i. Acting Alone

One of the indicators which has been examined to determine whether a seller could exercise market power acting alone is the seller's market share. A large market share is generally a necessary condition for the exercise of market power. If the seller has a small market share it is unlikely that it can exercise market power. But, a company with a large market share may not be able to exert market power if entry into the market is easy⁵⁶ or there are other competitive forces at work.

The applicant must submit calculations (and supporting data) of its market share in all relevant origin and destination areas.

ii. Acting Together with Other Sellers

A second way in which a seller can exercise market power is to act together with other sellers to raise prices. To evaluate whether a seller can act together with others to exercise market power, the Commission has typically examined the market's concentration.

To measure market concentration, one generally considers the summary measure of market concentration known as the Herfindahl-Hirschman Index (HHI). If the HHI is small, less than .18, then one can generally conclude that sellers cannot exercise market power in this market. A small HHI indicates that customers have sufficiently diverse sources of supply in this market that no one firm or group of firms acting together could profitably raise market price. If the HHI is greater than .18 then

⁵⁶ Given the nature of the interstate pipeline industry, ease of entry would be difficult to show except in cases involving minor facilities. For major facilities, the cost of construction and the time needed for environmental analysis would suggest that entry may not be easy.

additional analysis is needed to determine if the seller can exercise market power.

The applicant should be required to submit calculations of the HHI for the relevant markets. The HHI must be computed for each origin market as well as each destination market. The Commission should require applicants to submit information for each mainline receipt point (origin market) and each delivery point (destination market). If the applicant wishes to argue for a broader market definition it should also include calculations for its market definitions. Only sales or capacity figures associated with good alternatives should be used in calculating the HHI. In calculating the HHIs, the applicant should be required to aggregate the capacity of affiliated companies into one estimate for those affiliates as a single seller.⁵⁷

In the GIC cases, the Commission established a threshold level for the HHI at .18.⁵⁸ In an oil pipeline case, the Commission used .25 as an initial screen.⁵⁹ The Commission may wish to establish a standard under which it will presume no potential for the exercise of joint market power exists. Since the Commission has a positive obligation under the Natural Gas Act to "protect consumers against exploitation at the hands of natural gas companies,"⁶⁰ staff believes it would be appropriate to use the relatively strict initial screen of .18. This would indicate that there are four to five good alternatives to the applicant's service in each market.

3. Entry and Other Competitive Factors

Even if the applicant's market share were large in a concentrated (and properly identified) market, one might not conclude that the applicant would be able to exercise market power. For

⁵⁷ The capacity on pipeline systems owned or controlled by the applicant's affiliates should not be considered among the customer's alternatives. Rather, the capacity of its affiliates offering the same product should be included in the market share calculated for the applicant. Similarly, alternative pipelines must be aggregated with their respective affiliates in order to identify meaningful alternatives to customers. It is not reasonable to expect a profit-maximizing firm to allow its affiliates to compete with one another.

⁵⁸ El Paso Natural Gas Company, 49 FERC ¶ 61,262 (1989). See also *Buckeye*, 53 FERC at 62,667.

⁵⁹ See *Williams Pipe Line Co.*, Opinion No. 391, 68 FERC ¶ 61,136 (1994).

⁶⁰ *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 610 (1944). See also *Elizabethtown*, *supra* n. 6 (sustaining the Commission's approval of market pricing based on the Commission's conclusion that the pipeline's markets were sufficiently competitive to preclude it from exercising significant market power); *Farmers Union II*, *supra* n.2 (holding that the Commission cannot merely assume that competition will ensure just and reasonable prices).

example, if the applicant were to increase its price, entry into the market might be so easy that sellers attracted by the profit opportunity created by the higher price would quickly take customers away from the applicant by offering a lower price. This would make the applicant's price increase unprofitable. Thus, the applicant would not be able to exercise market power, despite its large market share and despite the high market concentration.⁶¹

Ease of entry is one of several competitive factors that might lead to the conclusion that an applicant lacks market power. It is most likely to apply to circumstances that do not require the large sunk costs of major construction—for instance, perhaps in offering short-haul market center services. Another competitive factor that might be alleged by an applicant would be the presence of buyer power. An applicant might argue that if a single buyer is a large customer of the pipeline, is knowledgeable and sophisticated in its

⁶¹ As stated before, entry would probably only be relevant for gas pipelines in the case of minor facilities such as facilities that could be constructed under a blanket certificate.

buying, and has been in business for a lengthy period of time, the buyer may have the knowledge and large-scale purchasing power to negotiate reasonable rates even in a concentrated market. However, just because buyers develop sophisticated purchasing systems and market knowledge as the result of dealing with various suppliers in numerous markets, there still is reason to have some skepticism that a buyer in a single destination area served by one or a few pipelines will have such capabilities.

The applicant must demonstrate that sufficient quantities of good alternatives are available to its customers to make a price increase unprofitable. In other words, the applicant must show that customers would replace a significant proportion of its throughput with other transportation alternatives if the applicant raised its price.

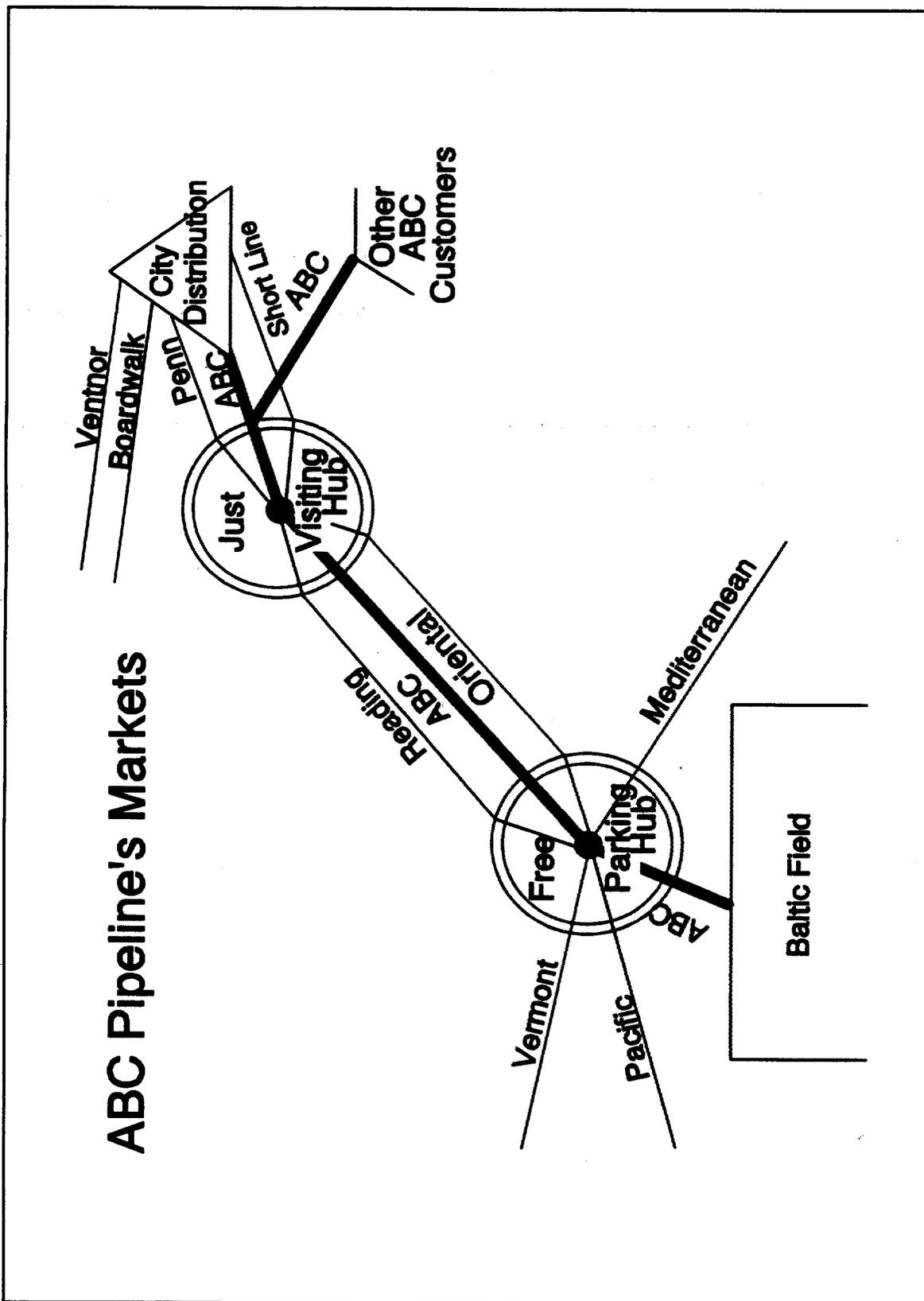
B. An Example of the Analysis Applied to Firm Transportation

1. Introduction

To illustrate the application of the market power analysis discussed above to a request for market-based

transportation rates, staff shows an analysis of a hypothetical filing by an interstate pipeline. In that hypothetical filing, the ABC Pipeline Company seeks Commission approval to offer firm transportation (FT) at market-based rates. ABC's primary proposal is for market-based FT rates for its entire system (see map). As an alternative, ABC requests market-based rates for firm transportation between two market centers, the Free Parking Hub, located in the production area, and the Just Visiting Hub, located in its market area. In its alternative proposal ABC Pipeline offers cost-based rates for service upstream of the Free Parking Hub and downstream of the Just Visiting Hub. Finally, as part of its alternate proposal ABC Pipeline is proposing to add facilities so that it will interconnect with all the pipelines at the Free Parking Hub. The interconnections will allow ABC to provide switching service at the hub. ABC proposes market-based rates for the switching service.

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The facts in this hypothetical are patterned after the facts of a large pipeline company and one of its major customers. Facts have been added or changed to better illustrate points in the analysis.

In order to analyze ABC's proposal, staff identifies the relevant product and geographic markets, measures the size of the market, and calculates market shares and the market's concentration using the Herfindahl-Hirschman Index (HHI). Where market shares and the HHI are high, staff examines other competitive factors that might constrain the exercise of market power.

A two step analysis is used to examine both of ABC's proposals. First, one examines whether there is sufficient competition along parallel routes for the proposed market-based services. Second, if there is not, one examines if there is sufficient competition in the origin and destination markets to constrain the exercise of market power. The Commission would deny ABC Pipeline's request if it finds that ABC has market power over customers on the relevant routes and in either origin areas or destination areas of the geographic market. To identify relevant geographic markets, one first identifies pairs of origin and destination markets. The pipeline might identify one such pair as the hypothetical Baltic field and City Distribution Company (City).⁶²

2. The Applicant's Primary Proposal

a. The Relevant Facts

City Distribution is a large natural gas public utility that serves millions of customers. Its service area covers a large metropolitan area. City's service area is located 100 miles downstream of the Just Visiting Hub.

City has its own storage facilities with a maximum daily storage withdrawal capability of 1.0 Bcf/day and a total working gas capacity of approximately 30 Bcf. Its peak day system demand is approximately 3.0 Bcf/day. Thus, at full utilization of its storage, City needs at least 2.0 Bcf/day (3.0 Bcf/day—1.0 Bcf/day) of transportation capacity on its peak day to meet customer demand.

City has over 30 interconnections with five interstate pipelines: ABC Pipeline Company, the Short Line Pipeline Company, the Boardwalk Pipeline Company, the Ventnor Pipeline Company, and the Pennsylvania Pipeline Company. Table 1 shows City's contract rights to, and use of, transportation capacity on all pipeline connections to its city gate for 1994.

Table 1 shows the total capacity of the pipelines in City's metropolitan area. The totals include capacity used to serve another LDC within that metropolitan area.

TABLE 1

Pipeline	MDQ Rights (Bcf)	USE (Bcf)	Capacity (Bcf)
ABC Pipeline (FT) . The Short Line Pipeline	1.3	1.5	1.5
Boardwalk Pipeline (FT)	0.3	0.2	0.3
All Sources of IT	0.2	0.2	0.7
The Ventnor Pipe- line .....	.....	0.3	.....
The Pennsylvania Pipeline	0.2	0.2	0.7
.....	0.1	0.1	0.1
Total	2.1	2.5	3.3

City currently purchases a portion of its peak day from gas produced in the Baltic field. ABC Pipeline is currently the only pipeline that connects to the gathering system in the Baltic field. Table 2 displays the nearest pipelines and the estimated cost to connect these pipelines to the Baltic field gathering system :

TABLE 2

Pipeline*	Connection costs
The Atlantic Pipeline	\$1,000,000
The Ventnor Pipeline	2,400,000
The Boardwalk Pipeline	17,000,000
The St. James Pipeline	15,000,000
The Park Place Pipeline	12,000,000

*The Atlantic and Ventnor Pipelines are affiliated, as are the Boardwalk and Park Place Pipelines.

b. Product Market

In its filing to the Commission, ABC might allege that there are numerous good alternatives to its FT service for City. It might start by alleging that two other pipelines directly connect areas that are very close to the Baltic field and City's city gate, and offer good alternatives to customers on both ends of the pipeline. It might further argue that customers on each end can use FT and interruptible transportation (IT) service on other pipelines leading to different market areas (in the case of Baltic field shippers) or other supply areas (in City's case).

FT on other pipelines may be a good alternative to ABC Pipeline's FT. However, ABC must demonstrate that its customers can actually get firm capacity on these other pipelines and that the quality of such FT is comparable to its own. Also, ABC must

demonstrate that other pipelines can provide FT that is price competitive with ABC's.

IT service on other pipelines might be a good alternative for FT. Indeed, Table 1 shows that City used 0.3 Bcf of IT to meet its transportation needs on its 1994 peak day. ABC might argue that similar levels of IT have been available at peak for many years and can be expected to be available in the future. If so, this suggests that, at a minimum, IT was of a sufficiently high quality (i.e., had a sufficiently low probability of interruption) that it could substitute for FT in the past and could probably do so in the future. However, ABC Pipeline would need to present evidence that IT was provided at a price that rendered the price of delivered gas using IT at or below the price of delivered gas using FT. That might not be the case if City's receipt of IT required payment of IT rates on several upstream pipelines, thereby making IT not price competitive. City might have been forced to purchase IT even if its price were much higher than that of FT. Also, the IT shown in Table 1 was received by City over several pipelines, including ABC Pipeline. Thus, because ABC would be able to affect the delivered price of gas using IT service, it cannot be counted as a good product alternative to ABC Pipeline's own FT.

Therefore, for both the primary and alternate proposals, staff is defining the product market to include ABC Pipeline's FT and FT on other pipelines. However, interruptible transportation is included in the product market for switching service at the Free Parking Hub.

c. Geographic Market: Parallel Route

In its application, ABC might argue that three pipelines provide service from the same production area as the Baltic field to the same metropolitan area as City and thus are parallel routes: ABC Pipeline (with 1.5 Bcf of capacity), the Boardwalk Pipeline (with .7 Bcf of capacity) and the Ventnor Pipeline (with .7 Bcf of capacity). ABC computes an HHI of .39 for these three routes—equivalent to about three equally large firms. ABC might argue that this provides some degree of competition, which combined with other factors, would justify a market-based rate. One of the factors ABC mentions is that City has buyer power because of its size. However, ABC Pipeline does not provide sufficient factual basis to evaluate the level of City's buyer power, so staff is unable to consider this factor.

A closer examination of the example would show that there are no parallel route pipelines. Neither of the other

⁶² Of course, the pipeline would need to provide the same information for all other origin and destination markets.

pipelines directly connect with the producers in the Baltic field. Each would need to build significant facilities to reach the same origin market. Finally, the applicant has not shown that capacity would be available on either of the two other pipelines in the same time frame for which it seeks market-based pricing.

d. Geographic Market: Destination Area

The relevant geographic destination market includes all alternative sellers that can provide FT to City's city-gate priced at or below transportation services over ABC's system, assuming a 15 percent FT price increase by ABC. If ABC Pipeline wished to include all the pipelines listed in Table 1, it would have to demonstrate that their transportation services met this criteria. It would also have to demonstrate that the transportation services over those pipelines at least matched the quality of transportation service over ABC Pipeline.

Consider a simple measure of market size and concentration first. Table 3 displays market shares and market concentration for the FT suppliers to City in 1994. Market shares are calculated based on capacity at City's city-gate. There is additional pipeline capacity within the metropolitan area. ABC Pipeline, however, has not provided evidence to show that the capacity could be easily connected to City's city-gate. Absent such a showing staff has used the lower capacity rights figures in our calculations.

TABLE 3

Seller	MDQ rights (Bcf)	Market share	Contribution to HHI
ABC Pipeline (FT)	1.3	.62	.38
Short Line Pipeline	0.3	.14	.02
Boardwalk Pipeline	0.2	.10	.01
Ventnor Pipeline	0.2	.10	.01
Pennsylvania Pipeline	0.1	.05	—
Total	2.1	1.01	.42

In this instance, ABC has a very large market share, 62 percent. Also, the HHI is quite high (.42) indicating that the market is concentrated. The market's HHI is well above the threshold levels of .18-.25 commonly used by antitrust authorities to identify competitive markets. Were ABC to seek Commission approval for market-based transportation rates, it would have to document that there are other factors,

such as ease of entry, excess capacity, etc., that would eliminate the ability to exercise market power that is not ruled out by these high market shares and high HHI.

ABC Pipeline might also allege that released capacity on its own system and on other pipelines would provide good alternatives for City. However, in one very important respect released capacity, especially on ABC Pipeline itself, will have little, if any, impact on the assessment of ABC Pipeline's underlying market power in the primary long-run FT market. An analogy might help. Suppose there were only one manufacturer of automobiles, but robust used-car and leasing markets. Would the manufacturer have monopoly power? Yes. Even with a perfectly competitive secondary market for automobiles, the manufacturer could "contribute" a scarcity by making fewer new automobiles and charging a higher price than necessary to cover costs.⁶³

Similarly, if a pipeline has market power, it would exploit it by "contributing a scarcity." Although a pipeline with a well-functioning capacity release program might not withhold existing capacity, it could choose not to expand. Customers can only release capacity they don't need; they can't build. As demand grows, a pipeline with market power could simply enjoy higher prices and refuse to build even if its customers were willing to pay the incremental cost of expansion. It would build only when the market clearing price for FT went above the monopoly price.

Thus, this analysis suggests that the secondary market on ABC Pipeline may discipline market power the pipeline may have in selling IT and unsubscribed or "short-term" FT, but not in new primary FT. Released capacity on other pipelines might discipline any market power ABC Pipeline may have in the long-term FT market, but the secondary market on ABC Pipeline can do little to discipline its market power in supplying primary FT.

e. Other Competitive Factors

ABC Pipeline might argue that entry is sufficiently easy that ABC would be constrained from exercising market power by new firms quickly entering the market at relatively low cost. It seems

⁶³ See U.S. v. Aluminum Co. of America, 148 F.2d 416, 424 (2d Cir. 1945). The main issue in this case was whether secondary scrap aluminum was in the same market as primary aluminum. Judge Learned Hand held that since Alcoa had produced the metal reappearing as reprocessed scrap, it would have taken into account in its output decisions the effect of scrap reclamation on future prices, and therefore secondary scrap should not be in the same market as primary aluminum.

unlikely that building major new transportation facilities to serve City would be inexpensive or timely. Rather, in a densely-populated urban area, building a new pipeline would likely be a contentious political and environmental issue. ABC Pipeline might, however, argue that the Boardwalk Pipeline or other pipelines could expand their existing interconnections with City. To support this argument it would need to show that the connections could be made without great expense or delay.

It may be that the four other pipelines have significant amounts of excess capacity at or close to City's city-gate. In the event that ABC Pipeline were to attempt to exercise market power, arguably such excess capacity could be used by City to defeat such an attempt. However, evidence currently at hand suggests that only the Short Line Pipeline has excess capacity.

Finally, staff did not address ABC Pipeline's argument regarding buyer power since the destination market was so highly concentrated and the analysis was not fully developed.

f. The Destination Area: Caveats and Conclusion

The market share and HHI calculations in this example are based on simplifying assumptions which minimize market shares and market concentration. First, by assuming that any of City's customers could be supplied by any of the five pipelines connecting to City, staff has intentionally expanded the market and thereby lowered market shares and HHI.

Second, staff did not include no-notice service. For this higher quality service City may have very few alternatives indeed, since no-notice service would only be available to pre-restructuring customers on the alternative pipelines.

Rather than ABC Pipeline, the Ventnor Pipeline or the Short Line Pipeline might file for market-based transportation rates to serve City on the basis that the market shares shown in Table 1 document their lack of market power, despite the destination market's high HHI. If, however, City fully utilized all of its FT at peak, then the Ventnor Pipeline or the Short Line Pipeline would be able to exercise market power despite their small shares of the market. Therefore, the Ventnor Pipeline or the Short Line Pipeline would have to demonstrate that City had alternatives at peak, as well as demonstrating that they lacked market power in the origin markets.

g. Geographic Market: The Origin Area

ABC's pipeline is connected with the gathering system in the Baltic field in Louisiana. ABC Pipeline is the only inter or intrastate pipeline that is connected to this gathering system.

As for good alternative suppliers in the origin area, ABC Pipeline would have to demonstrate that the quality of FT on other pipelines is comparable to its own. Also, ABC would have to demonstrate that other pipelines can provide FT that is priced competitively with ABC's.

To show that other pipelines could become good FT alternatives, ABC Pipeline would have to show that other pipelines could easily connect with the gathering system in the Baltic field. Or, ABC Pipeline might argue that the producers could build gathering lines to connect to these other pipelines at a nominal cost. In either case, ABC would have to show that building these facilities would not reduce the netback to these producers.

In this example, all of the pipelines would have significant connection costs. At most, it appears that only on Atlantic would the cost of connecting the Baltic field result in a price increase of less than 15%. Thus, in the Baltic origin area, producers seem to have at most one good pipeline alternative to ABC Pipeline. The conclusion, therefore, is that staff cannot rule out the possibility, indeed likelihood, that ABC Pipeline has market power over shippers transporting gas out of the Baltic field origin area.

h. Primary Proposal: Conclusion

Our conclusion from analysis of this hypothetical is simple and straightforward. It is conceptually possible to demonstrate that pipelines lack significant market power over shippers buying transportation from supply fields to their city-gate customers. However, the City example suggests that such a showing would be difficult.

3. The Applicant's Alternate Proposal

a. The Relevant Facts

ABC Pipeline has also included a more limited market based proposal in its filing. ABC argues, at a minimum, it should be able to charge market-based rates for service between two market centers on its system, the Free Parking Hub and the Just Visiting Hub, and for its proposed new switching service at the Free Parking Hub. Table 5 shows the six pipelines at the Free Parking Hub and their capacity:

TABLE 5

	MDQ rights (Bcf)	Market share	HHI
ABC Pipeline	2.0	.21	.04
Oriental	*1.8	.29	.08
Vermont	*1.0	.....	.....
Reading	2.3	.24	.06
Pacific .....	.8	.08	.01
Mediterranean ...	1.7	.18	.03
Total	9.6	1.00	.22

*Since Vermont and Oriental are affiliated their capacity has been combined in computing market shares and HHIs.

Table 6 shows the five pipelines at the Just Visiting Hub:

TABLE 6

	MDQ rights (Bcf)	Market share	HHI
ABC Pipeline	2.0	.20	.04
Short Line Pipeline .....	.5	.05	.....
The Pennsylvania	*2.7	.54	.29
Reading	*2.5	.....	.....
Oriental	2.1	.21	.04
Total	9.8	1.00	.37

*Since the Pennsylvania and Reading are affiliated their capacity has been combined in computing market shares and HHIs.

Three pipelines provide firm transportation service between the two hubs. Their capacity on the route is shown in Table 7. In computing market shares and HHIs staff has used the lower of the pipeline's capacity at the Just Visiting and Free Parking Hubs as our estimate of the maximum amount of capacity that shippers can reserve between the two hubs.

TABLE 7

	MDQ rights (Bcf)	Market share	HHI
ABC Pipeline	2.0	.33	.11
Reading	2.3	.38	.14
Oriental	1.8	.30	.09
Total	6.1	*1.01	.34

*Total does not equal 1 due to rounding.

ABC Pipeline generally defines the product market as firm transportation. However, ABC argues that interruptible switching service at the Just Visiting Hub and the Free Parking Hub is the functional equivalent of firm service.

b. Geographic Market: Parallel Route

In the example, three pipelines provide firm transportation service between the Free Parking Hub (origin

market) and the Just Visiting Hub (destination market): ABC Pipeline (with a .33 market share), Reading Pipeline (with a .38 market share), and Oriental (with a .30 market share). This results in an HHI of .34 for this route—equivalent to three equal sized firms. ABC Pipeline might argue that the three parallel route pipelines provide some degree of competition. ABC might argue that when this is combined with additional competition at the origin and destination markets there is sufficient competition to justify market-based rates.

In its alternate proposal ABC has not proposed market-based rates for transportation upstream of the Free Parking Hub or downstream of the Just Visiting Hub. Instead, it proposes a regulated rate for such services that would recover only the (relatively small) costs of the facilities between the Baltic field and the Free Parking Hub or between the Just Visiting Hub and City's city-gate. This would ensure ABC could not use market-based rates to exercise market power over shippers at the extremities of its system. However, such a proposal would raise serious cost allocation issues between ABC's market-based and cost-based services.

In the alternate proposal there is the possibility of parallel route competition because there are three pipelines that serve both the origin and destination markets. However, this is only the beginning of the analysis. ABC Pipeline must also show that its customers can switch gas between ABC and the alternative pipelines at a low cost; its customers can actually get firm capacity on the Reading and the Oriental Pipelines; and the quality and price of firm service on these alternative pipelines is comparable to that provided on ABC Pipeline.

ABC argues that the Free Parking Hub is a header that offers firm switching service at minimal cost and that the Just Visiting Hub offers interruptible switching service among all the pipelines. The first may offer the customers good alternatives. The second probably does not. Potential market power problems here might be mitigated if firm switching service was offered at the Just Visiting Hub.

ABC argues that capacity release programs can make capacity available on the alternative pipelines. However, it has not shown that customers can obtain the same long-term FT service through the release program. Potential market power problems might be mitigated if ABC could show that its customers could buy the same long-term service through the release market (perhaps if the customers had many

years remaining on their contracts) or at some future time when the capacity on all the pipelines would be available simultaneously. It would also need to show that such alternatives would be competitively priced. It could do this either by analyzing regulated prices or by showing that all other pipelines would be able to match any likely market-based price on ABC. This would be a difficult showing for any pipeline if it was the only pipeline in the market seeking market-based rates.

In the alternate proposal there is possible parallel route competition between the origin and destination markets. However, even if all additional market power problems were mitigated, the HHI of the route is still well above the .18 screen staff is using. So, staff moves to the second step in the analysis to examine the origin and destination markets separately.

c. Geographic Markets: Destination Markets

ABC Pipeline might argue four other pipelines serve the Just Visiting Hub and each of these pipelines would serve as a good alternative to its service. ABC might also argue two other pipelines, the Ventnor and the Boardwalk have facilities near the Just Visiting Hub. As with the parallel route analysis, these pipelines cannot be considered good alternatives unless ABC Pipeline can demonstrate its customers can get firm transportation capacity at a price and quality comparable to its own service.

The data indicate that the Just Visiting Hub is highly concentrated. In computing the HHI for the destination market the two affiliates, the Reading and the Pennsylvania, are treated as one firm. Because these two pipelines control half the capacity at the hub, the HHI of .37 is actually higher than that for the parallel route.⁶⁴

If ABC Pipeline could show that the Ventnor and the Boardwalk Pipelines could easily connect to the Just Visiting Hub this would significantly reduce the HHI and make it easier to support market-based rates for ABC Pipeline. Alternatively, ABC Pipeline might argue that market power at the Just Visiting Hub is minimal if it could show that there are other market centers close to the Just Visiting Hub that could be accessed by pipelines serving the Free Parking Hub. If ABC Pipeline could not

show additional competitive factors that reduce market power, the data would not support market-based rates.

d. Hub Services

To justify market-based rates for service between two markets, ABC must show that both the origin and destination markets are competitive. ABC has not shown that the destination market, the Just Visiting Hub, is competitive. Therefore, it has not supported its proposal for market-based rates between the two hubs. However, ABC has also requested market-based rates for hub services at the Free Parking Hub.

To support its proposal for market-based rates for hub services, ABC Pipeline might argue that currently the Mediterranean Pipeline interconnects with the five other pipelines at the Free Parking Hub. When ABC builds its additional interconnections there will be two pipelines that connect with all the pipelines at the Free Parking Hub. In addition, these pipelines have several other alternative points of interconnection within a 100 mile radius of the hub and within the same rate zone. ABC argues that its customers can get the equivalent of ABC's switching service at these points of interconnection. ABC has provided a chart which shows that in addition to its proposed new facilities a shipper on any one of the five other pipelines has at least three alternative interconnections for each pipeline within the same rate zone. Some of these are direct interconnections and some require switching service at other nearby production area hubs. Further, interruptible capacity is consistently available within the production area and is of a very high quality, i.e., curtailments are rare. Thus, each shipper has at least three good alternatives to ABC's proposed switching service at the Free Parking Hub. This means that the highest HHI for ABC's switching service with any pipeline is .25.

The HHI of .25 for switching service is above staff's initial screen. However, there are other competitive factors that would reduce ABC's ability to exercise market power. One of these factors is the open access requirement that all open access pipelines must receive or deliver gas to other pipelines if capacity is available. By scheduling receipts and deliveries at the alternative points of interconnection a shipper can get the equivalent of switching service. And, when this is part of the basic point-to-point transportation service, there is no additional charge. Another competitive factor is ease of entry. In this area some

of the pipelines could build additional interconnections at minimal cost. It would be economic to build these interconnections if ABC attempted to exercise market power by charging excessive rates.

ABC has shown that its customers would have good alternatives to its switching service. Therefore, market-based rates are appropriate for its switching service at the Free Parking Hub.

e. Conclusion

Given the high level of concentration in the route and in the destination market, it is unlikely that ABC Pipeline could justify market-based rates for service between the two hubs. However, using the same criteria, market-based rates can be supported for hub services at the Free Parking Hub.

In the example, staff has assumed that a pipeline might have both cost and market-based FT rates on its system. Any such proposal would require a method for allocating costs between cost-based and market-based services.⁶⁵

4. Results of Analysis of Hypothetical

Staff must conclude that ABC would find it difficult to justify market-based rates for point-to-point FT on its system. Based on current data ABC may be able to justify market-based rates for some hub services. In the future, ABC may be able to justify market-based rates for more services. As the transportation market evolves, pipelines may find it economic to build connections to more hubs. This will increase the number of alternatives at each hub and thus will make it easier to satisfy the criteria for market-based rates for hub services or for transportation between hubs.

C. Application of Criteria to Other Services

Under the standards proposed above, as the example involving ABC Pipeline shows, it is unlikely that FT rates for any city-gate customer would be market-based. The same is true for any rates paid by producers directly attached at the other end of the pipe. What role, then, beyond the gas commodity and storage services, would market-based prices play?

The answer is that market prices may play an important role in capacity-release, IT, and market-center services.

As illustrated in the ABC Pipeline example, the many new sources of FT

⁶⁴This example demonstrates the effect that pipeline affiliation can have on market concentration. If Reading and Pennsylvania were not affiliated, the HHI for the Just Visiting Hub would be .22, significantly lower than the .37 HHI calculated with affiliate market share combined. An HHI of .22 is much closer to a level which might be deemed indicative of an unconcentrated market.

⁶⁵For example, it would be necessary to identify the cost of the facilities used for the market-based services as well as any related operation and maintenance costs. Also, there would need to be an allocation of common and joint costs, such as administrative costs, between the cost and market-based services.

potentially available through the capacity release market will have little or no effect on a pipeline's long-run market power. They may, however, have a strong effect on either the primary capacity holder's (i.e. LDC's) or the pipeline's ability to exercise market power in the capacity release market, the short-term firm market, or the IT market. For these services, there are very few existing long term contracts. Moreover, a major interstate pipeline may have 10 to 20 different holders of FT capacity within a zone. Flexible (secondary) firm receipt and delivery point rights, in concept, give any of these primary holders or their replacements the ability to move gas to any upstream city-gate on the system. Thus, the secondary market in FT may well be unconcentrated. If released FT can be shown to be a good substitute for IT or short-term FT from the pipeline, then the released FT, IT and short-term FT market will be unconcentrated.

Any such arguments would depend on the effectiveness of the capacity release program in making released capacity at least the equal of IT. While it is doubtful that any such showing could be made now, with further improvements in the capacity release program this could occur.

In addition, part of the showing must contain evidence that LDCs could not frustrate "secondary firm" firm deliveries made at their city-gates by controlling the flows behind their own city-gate delivery points. Flexible receipt and delivery points are the key to a competitive finding; if an LDC is, aside from the pipeline, the only source of FT to its city-gate then it has market power. If secondary firm is an effective alternative, however, then there is a good likelihood that these markets would pass the stringent tests laid out above.

Some market-center services, such as short-term switching and parking, may also pass the test. Market-centers, by their nature, are where many pipelines intersect and, often, where there are multiple suppliers of storage service. In such cases, it is likely that the providers could show that customers will have many good alternatives at the market-center itself or in nearby market-centers.

In conclusion, application of the standards laid out in part IV.A is likely to mean continued cost-based regulation of primary FT, but may permit market pricing for released FT, IT and short-term FT and for market-center services such as switching and parking.

All-in-all, the potential for further reliance on market pricing is rather modest. On the other hand, market pricing in the capacity release and

market-center services markets could be a key to their success. Hubs could play an important role in further perfecting the spot market for gas, but to do so is likely to require creative approaches to new services and new ways of adding value to the gas commodity. Creative, economical, new services are far more likely to develop under market pricing than under a cost-of-service approach.

D. Review of Market Power Findings

As discussed in part I, an important factor to the court of appeals in Elizabethtown, in which the Commission permitted gas sales at market prices, was the Commission's assurance that it would exercise its section 5 authority if necessary to assure that the market price was just and reasonable. This means that the Commission must consider how it will monitor market-based rates so that it can exercise its oversight responsibilities.

In past cases the Commission established, on a case-by-case basis some reporting requirements for companies authorized to charge market based rates.⁶⁶ The Commission may want to consider developing standard periodic reporting requirements on prices and quantities in market-based transactions. Periodic reports would make it possible for the Commission to monitor market-based rates to ensure that the rates are within a zone of reasonableness. The Commission may also want to establish a more formal procedure for reporting changes in circumstances that could affect the market power finding, i.e., circumstances that reduce the number of good alternatives in a market.⁶⁷ If circumstances change the Commission could either reconsider its prior market power findings or wait until a complaint is filed to take action.

Appendix: Analysis of Other Industries

⁶⁶ For example, Transwestern was required to file monthly reports of market based sales under Rate Schedule ISS. 43 FERC ¶ 61,240 (1988). Buckeye was required to file annual reports showing rates, volumes, and revenues for each destination market. See 66 FERC ¶ 61,348, for a review of these reports. For electric utilities, the Commission has required power marketers selling at market based rates to file quarterly reports showing prices and quantities for individual transactions [e.g., *Heartland*, 68 FERC ¶ 61,223 (1994)]. Among other things, the reports are intended "to provide for ongoing monitoring of the marketer's ability to exercise market power."

⁶⁷ For example, assume in the original market power analysis the Commission found there were four good alternatives in an origin market. A subsequent corporate merger of two of the pipelines and the abandonment of facilities by another would reduce the number of good alternatives to two. There have been no new entrants into the origin market. These changes probably would significantly affect the continuing validity of the original market power finding.

As discussed in the paper, the FERC has consistently used the same general framework to evaluate when the market, rather than cost-of-service rate regulation, could be relied upon to produce just and reasonable rates. This framework has been evolving for over one hundred years in antitrust litigation and analysis and has now been codified in the DOJ/FTC merger guidelines. FERC is neither the first agency to choose light-handed regulation where a lack of significant market power can be shown, nor the only one to use antitrust standards as a framework for the showing. The general framework, however, is far from a set of mechanical rules; the application of the framework to a particular industry calls for many specific decisions and to an individual case requires many judgement calls.¹

The Interstate Commerce Commission (ICC), the first national regulatory agency and pioneer in cost-of-service ratemaking, was also among the first to move toward deregulation or light-handed regulation for railroads and trucks. About twenty years ago the ICC began to lessen or eliminate regulation of railroads and trucks, the FCC allowed new entrants to compete for long distance telephone service and the CAB relaxed its price and entry controls over the airlines. The experience of these three agencies may provide some useful guidance for the Commission in deciding whether certain natural gas pipeline transportation services should be permitted market-based pricing and, if so, how those services should be identified.

Railroads, airlines, long distance telephones and natural gas pipelines all have much in common besides being regulated. They are all transportation/transmission networks characterized by a high ratio of fixed to variable costs, making "load factor" the key to unit operating costs, and, with the possible exception of airlines, all have significant economies of scale (an element of "natural monopoly"). However, there are also significant differences among all of these industries so analogies and policy conclusions based on their similar characteristics should be made cautiously.

A. Interstate Commerce Commission Regulation of Railroads

Railroads and natural gas pipelines have some important characteristics in common. Both transport using assets that are immobile once they are constructed, though railroads invest in "rolling stock" as well track and roadbed. Further, both exhibit the same "natural monopoly characteristic" that the construction costs necessary for one company to transport a given amount between two points are usually significantly

¹ Judge (now Justice) Stephen Breyer gives an example of how a merger "pessimist" might assess a proposed airline merger quite differently from a merger "optimist," though both use the same antitrust framework and agree on all the facts. See discussion of the interplay between antitrust and deregulation of the airline and telephone industries in his contribution to the "Symposium: Anticipating Antitrust's Centennial: Antitrust, Deregulation and the Newly Liberated Market Place," 75 California Law Review 1005-1047 (May 1987).

lower than the construction costs necessary for two companies to jointly transport the same amount between those points. Finally, both industries make extensive use of eminent domain granted from Federal and state governments to acquire land to build networks.

One significant difference between the two, however, is that pipelines carry a fungible product while railroads generally do not. That is, a pipeline customer who tenders gas in Louisiana and withdraws gas in Chicago, does not care if the gas withdrawn came from Appalachia while the tendered Louisiana gas went somewhere else. In contrast, a railroad customer in Chicago expecting a shipment of Louisiana shrimp will be very unhappy if Appalachian coal is delivered instead. Another important difference is that railroads face major intermodal transportation competition (air competition and trucks everywhere and barges in some areas), while there is no viable intermodal competition to pipelines in transporting natural gas.

Important characteristics are similar enough between railroads and pipelines that the Interstate Commerce Commission's (ICC's) handling of market-based pricing may inform FERC's handling of the issue. Of particular note are: (1) The ICC's initial rejection followed by the acceptance of the traditional economic paradigm used to evaluate competitiveness, (2) the guidelines now used by the ICC in evaluating competitiveness, and (3) evaluations of the effects of increased reliance on market forces.

1. Recent Changes in Railroad Regulation²

Before 1976, all rail rates were subject to regulation by the Interstate Commerce Commission (ICC) under the statutory "just and reasonable" standard.³ The Railroad Revitalization and Regulatory Reform Act of 1976 was enacted to restore financial stability to the industry.⁴ This restoration was to be accomplished partially through reducing regulatory restraints on railroad pricing decisions by limiting ICC jurisdiction over maximum rates to situations where railroads have "market dominance."⁵

Market dominance determinations thus became of the utmost importance when rates were challenged. The ICC initially adopted three "presumptions" of market dominance: the railroad handled 70% of traffic (the "market share" presumption), revenues exceeded 160% of the variable costs (the "cost" presumption), and the shipper had a substantial investment in rail-related plant or equipment (the "rail investment" presumption). Any one of these presumptions being established and un rebutted would establish market dominance and ICC jurisdiction.

²The information provided here on the Interstate Commerce Commission is drawn from the Interstate Commerce Commission Decision, "Product and Geographic Competition" Ex Parte No. 320 (Sub-No. 3), October 24, 1985.

³Former Section 1(5) of the Interstate Commerce Act.

⁴Pub. L. No. 94-210, 90 Stat 31, February 5, 1976.

⁵Market dominance was defined in the statutes as "an absence of effective competition from other carriers or modes of transportation for the traffic or movement to which a rate applies."

The ICC determined that the relevant market in the "market share" presumption would be confined to direct carrier competition for the specific product movement. The ICC explicitly rejected the traditional antitrust framework used to evaluate competition; the ICC determined that product competition (competition by other products), or geographic competition (availability of the same product from alternative sources or destinations) was not relevant.

Several years of experience combined with the need to implement the Staggers Rail Act of 1980,⁶ caused the ICC to abandon the initial presumptions and adopt new guidelines which incorporate the traditional economic paradigm for evaluating competition. The ICC "... concluded that the presumptions did not necessarily reflect the degree of railroad market power, and therefore, yielded inaccurate market dominance determinations. * * * The quantitative measures (i.e., the market share, cost, and rail investment presumptions) were found to be poor indicators of market dominance in the widely varying fact situations to which they were designed to apply."⁷

2. Current ICC Guidelines for Evaluating Market Dominance

Some of the ICC market dominance guidelines have no apparent relevance to FERC because they deal with intermodal transportation competition. However, other aspects of the ICC guidelines deal with issues nearly identical to those important to FERC in analyzing competition. These potentially informative portions of the guidelines are briefly summarized here.⁸

The ICC "market dominance" guidelines lay out what type of evidence is considered important.

Regarding competition from other railroads, the number of alternatives and the feasibility of alternatives are important. Feasibility is evidenced by (1) the physical characteristics of the alternative, (2) the direct access of both the shipper and receiver, (3) the cost of using the alternative, and (4) the evidence of relevant investment or long-term contracts.

Regarding geographic competition, considered important are: (1) The number of alternative destinations for shippers or alternative sources for receivers, (2) the

⁶Pub. L. No. 96-448, 94 Stat. 1895 (1980). One part of the Act directed the ICC to make a finding of no dominance if the carrier shows that a challenged rate would yield a revenue-to-variable cost percentage less than a given percentage. More generally, the Act made it federal policy to rely on competition, rather than regulation, to establish reasonable rail rates. Additionally the Act allowed railroads to enter into confidential agreements with shippers, cancel existing joint rates with other railroads that were not sufficiently profitable, and set time limits on the abandonment process.

⁷"Product and Geographic Competition," *supra*. The adopted guidelines were listed in Appendix C.

⁸It is interesting to also note, that while developing these guidelines, the ICC refused to adopt specific HHI levels for reasons that are similar to those stated by FERC when refusing to adopt specific HHI levels in Gas Inventory Charge and Oil Pipeline cases.

number of alternative destinations or sources served by alternative carriers, (3) the suitability of the product available at each relevant source or required at each relevant destination, (4) the operational and economic feasibility of transportation from alternative sources or to alternative destinations, (5) the accessibility of alternative transportation, (6) the capacity of alternative sources to supply the product or alternative destinations to absorb the product, and (7) the evidence of relevant investment or long-term contracts.

Regarding product competition, considered important are: (1) the substitutability and availability of the substitute products, and (2) all costs of using the substitute product relative to using the product in question.

3. The Effect of Reducing Railroad Regulation

The 1976 Railroad Revitalization and Regulatory Reform Act and the 1980 Staggers Act were intended to improve the financial health of the railroad industry. By most measures, the railroads' financial condition has improved since 1980. Return on investment averaged about 4.9% from 1980 to 1988; this is up from the 2.5% average in the 1970s. Debt has declined from about 36% of total capital in 1980 to about 24% in 1988.⁹

While the regulatory reforms were successful in improving the financial condition of railroads, these reforms have not achieved total financial health for the industry. "[T]he railroad industry as a whole has not achieved revenue adequacy—that is, its return on investment has not equaled or exceeded the current cost of capital."¹⁰

Regarding the effects on rates rather than on the railroad's financial condition, a recent journal article concludes " * * * the effect of deregulation on prices has generally been to lower them. With price decreases and cost savings from deregulation, welfare gains from deregulation are likely to be positive."¹¹

B. Market-Based Rates in Long Distance Telecommunications

To the extent there are similarities between long distance telecommunications and natural gas pipeline services, lessons can be learned from the FCC's experience with market based pricing. The FCC used a market power framework in its *Competitive Carrier Proceedings*, when determining the appropriate regulation for long distance service.

1. Comparison of the Industries

The long distance telecommunications market has some similarities to the natural gas pipeline market. First, with the original copper and, most recently, fiber optic cable methods of providing service, it has natural monopoly characteristics. Second, it has long been considered a public utility and until recently, was subject to standard cost-of-service regulation. Third, it provides long-

⁹General Accounting Office, "Railroad Regulation: Economic and Financial Impacts of the Staggers Rail Act of 1980," May 1990.

¹⁰*Id.* at p. 5.

¹¹Wesley W. Wilson, "Market-Specific Effects of Rail Deregulation," *Journal of Industrial Economics*, 62 (March, 1994), pp. 1-22. See this article's "References" for other articles evaluating the effect of deregulation on prices.

line service, and (since divestiture in 1984) inter-connects with independent local networks to deliver the service.

There are several differences as well. First, there is no production area nor market area for calls, although call concentration is higher in metropolitan areas. Second, the customer cannot determine the route that his calls take on a carrier, and may not switch carriers within the path. Third, calls are not fungible or interchangeable, as are gas molecules. For example, a customer wants to talk to his or her family, friends, or business associates, not someone else's.

2. History of Long Distance Service

The history of telecommunications regulation has been one of playing catch-up to technological change. Local and long-distance services were assumed to be natural monopolies, to be provided by AT&T. The fixed plant was expensive, and subject to a declining average cost of service, and all customers needed to be interconnected.

The natural monopoly disappeared with microwave technology because after a critical mass, more traffic requires a roughly proportionate increase in towers and more transmitters.¹² In 1977, the FCC allowed MCI into the market. It also allowed general OCC (Other Common Carrier) entry in 1977. In 1979, the FCC began the *Competitive Carrier* proceedings which ultimately effectively allowed market-based pricing for carriers other than AT&T. The two largest OCCs, MCI and Sprint, currently control 25% of the long-distance market.¹³ Local services remained a natural monopoly.¹⁴

3. Light-Handed Regulation of Non-Dominant Firms

In the *Competitive Carrier* proceedings,¹⁵ the FCC minimized the regulation of OCCs. It based its actions on two principles: First, in order to retain business with prices above total costs a firm must possess market power and some firms did not. Second, regulation imposes costs. There are the administrative costs of compiling, maintaining, and distributing information necessary to comply with reporting and licensing requirements. More significant costs on society come from the loss of dynamism which can result. The FCC cited to the Averch-Johnson effect in which rate of return regulation can distort the input choices of a regulated firm away from production at minimum cost. It also discussed effective competition being limited by firms being required to give advance notice of innovative marketing plans and having those initiatives subject to public comment and review. The FCC said that the posting of prices and legal obligation to refrain from "unjust and unreasonable discrimination" may well result in artificially

¹² Huber, Peter W., *The Geodesic Network II: 1993 Report on Competition in the Telephone Industry*, p. 3.4.

¹³ Wall Street Journal, July 22, 1994, p. A2.

¹⁴ Meanwhile, technology has begun to remove the local natural monopoly for telephone service. There are a large number of potential and credible providers of local service including cable television providers and radio-based and cellular carriers.

¹⁵ First Report and Order, 85 F.C.C. 2d 5 (1980).

stabilizing prices to the consumer's eventual disadvantage.

Competitive Carrier characterized carriers as dominant (eventually only AT&T) or non-dominant. Initially, it defined dominant firms as firms with market power.¹⁶ The FCC said that it focused on certain market features to determine if a firm can exercise market power: The number and size distribution of competing carriers, the nature of barriers to entry and the availability of reasonably substitutable services.¹⁷

As the FCC refined its determination of which carriers could be subject to lighter-handed regulation, it concluded that once a determination of market power was made, it would look at the degree of power before determining whether regulations conferred greater benefits on customers than costs.¹⁸

The agency reasoned that non-dominant carriers lacked (substantial) market power, and that the costs outweighed the benefits of regulating such firms. It held that non-dominant firms:

- Can't charge excessive rates;
- Can't discriminate without losing their customers; and
- Can't pass on the costs of inefficient investments to customers.

Applying its definitions, the FCC determined that AT&T was a dominant carrier because of its historical market power, immense financial and technological base, control over monopoly interconnection facilities, and substantial cross-subsidization potential. In addition, it is an effective price leader.¹⁹ Over time, the FCC found that all other carriers were non-dominant.

The FCC decreased the regulations for non-dominant carriers in two phases: streamlining and forbearance. Under both, non-dominant carriers were required to charge just and reasonable and non-discriminatory rates. With streamlining, the FCC presumed that tariff filings were legal, and required no cost justification of the tariffs.²⁰ Forbearance went further than streamlining, by not requiring tariff filings from non-dominant firms. The Supreme Court later overruled this, as discussed in part I above.

C. The Cab and Airlines

Airline transportation and its regulation has many similarities to gas pipeline transportation. On any given trip, the variable cost of flying the aircraft is essentially the cost of the fuel used, just as the variable cost of transporting gas is the fuel used by the compressors. Unit costs, therefore, are highly sensitive to utilization or load factors. Economies of scale attainable

¹⁶ Notice of Inquiry and Proposed Rulemaking, 77 F.C.C. 2d at 350 (1979); and First Report and Order, at p. 21.

¹⁷ First Report and Order at p. 21.

¹⁸ Further Notice of Proposed Rulemaking, 84 F.C.C. 2d at 499-500 (1981); and Second Report and Order, 91 F.C.C. 2d (1982).

¹⁹ Notice of Inquiry and Proposed Rulemaking, 77 F.C.C. 2d at 352-353; and First Report and Order, *supra*.

²⁰ Streamlining also gave (1) blanket approval for expansions, (2) reduced the filing period (substantially) to 14 days, and (3) required no financial information.

through the use of larger airplanes, however, have been thought to be less important than for gas pipelines.²¹ Airline companies, like pipeline companies, needed a public convenience & necessity certificate to serve or abandon any interstate route; rates and terms and conditions were strictly regulated. Discounts were allowed, if at all, after a hearing at which competitors could either challenge the proposed rates or match them.

Differences were and are important. Airlines generally have little substantial investment in immobile assets like roadbed, track or in laying pipe. Airports, landing slots and air-traffic control are generally government supplied. Economies of aircraft scale, while present, are less pronounced than for pipelines. Air traffic, in contrast to natural gas, is not fungible. When you go to pick up your grandparents at the airport, you expect unique rather than generic grandparents to deplane. Regulation was thought necessary, not because airlines were a natural monopoly, but because they were thought to be subject to "excessive competition." Under this theory, regulation was necessary to prevent airlines from bankrupting each other through overbuilding and excessive price competition.²² Another purpose was to provide direct subsidies to encourage the growth of general aviation. The history of airline deregulation also differs greatly from that for natural gas pipelines. While the CAB itself, under Alfred Kahn, initiated some important changes in 1977 under the Civil Aviation Act (1938), Congress decided, in 1978, to phase out all CAB regulation and the agency itself by 1985. The change from a highly regulated environment designed to minimize competition to a free entry environment emphasizing price competition occurred in a remarkably short time.

1. Problems That Led to Deregulation

The Senate held hearings on airline regulation in February 1975. The study released later that year was highly critical of the CAB.²³ Stephen Breyer,²⁴ summarized the study as revealing several "serious defects" relating to rates, routes, efficiency and agency procedures, two of which were:

Rates. Regulation led to high prices and overcapacity. Because the airline industry was highly competitive and because the CAB prevented price competition, the airlines channeled their competitive energies into providing more and costlier service—more flights, more planes, more frills * * * Yet the planes themselves flew more than half empty. (Breyer, 1982, 200)

²¹ Bailey et al., provide some of the evidence indicating that economies of scale are modest at pp. 50-54. Fred Kahn, however, suggests that, from hindsight, economies of scale were underestimated. The "thoroughgoing" movement to a hub and spoke system was not foreseen. See "Surprises of Airline Deregulation," *American Economic Review*, May, 1985, 316-322.

²² See Stephen Breyer, *Regulation and Its Reform*, Harvard, 1982, 197-221; and Elizabeth Bailey, David Graham and Daniel Kaplan, *Deregulating the Airlines*, MIT, 1985, 11-26.

²³ Senate Comm. on the Judiciary, Subcomm. on Admin. Practice and Procedure, 94th Cong., 1st Sess., *Civil Aeronautics Board Practices and Procedures*. (1975).

²⁴ Breyer was the Committee's chief investigator.

Routes. Regulation effectively closed the industry to newcomers and guaranteed relatively stable market shares to firms already in the industry. (Id., 205)

The Airline Deregulation Act was signed into law in 1978. The Act phased out the CAB's authority and the Board itself ceased operations entirely by 1985.

2. The Role of Market Power Analysis in Airline Deregulation and Merger Policy

Market power analysis was an important factor in the rapid deregulation of airlines and an even more important factor in the merger policy that controlled consolidation within and exit from the industry. An important element of the case against regulation was that but for regulation, the industry would be much less concentrated at the national level than it was under CAB regulation. The relevant market for the traveler was usually defined to be the "city-pair," the two cities between which the traveler wishes to fly.²⁵ Advocates of deregulation did not argue that each airline would find itself battling hosts of actual competitors. They claimed only that the threat of entry into a particular market by airlines not currently serving that market would hold prices down. An airline that serves city A and city B, but does not fly between them, can enter the A-B market at very low cost, and there are several such airlines serving most major routes.

The Board based its assessment of the likely effects of a merger on two related findings: that concentration measures based on city-pair markets alone are not an accurate gauge of competitive performance and that potential entry would have an important disciplining effect on performance. (Bailey et al, 1985, 173-202). Market definitions were often contested. The DOJ in the Northwest/Republic merger, for example, argued that the relevant product market was "non-stop" flights between city-pairs. In other cases witnesses have argued over whether the appropriate definition should be airport pairs, city pairs, or the complex of services representative of a hub and spoke network. But in all cases the same general relevant market definition framework has been used.

Breyer (1987) suggested that antitrust rules designed to deal with industry in general may not properly reflect the unique features of the airline industry. For example, he cautioned against applying the "optimistic" merger view that is more lenient on higher concentration thresholds and places great store on "potential competitors," fearing that such an antitrust view would not be stringent enough. On the other hand, he would be more lenient than the merger guidelines with respect to the "failing company" or efficiency defenses for merger, to reflect that fact that the airline industry is emerging from forty years of regulation.

3. The Effects of Airline Deregulation

Virtually all observers agree that airline fares have been much lower and traffic immensely larger than they would have been absent deregulation.²⁶ However, as Alfred Kahn put it, there were some "unpleasant surprises" as well.²⁷ Although in the early years there was much new entry, most failed and national concentration in the industry failed to decline as most proponents of deregulation had predicted. Quality of service declined. Another unpleasant surprise to Kahn was "the persistence-indeed, intensification-of price discrimination * * *" despite which the airline industry has experienced severe losses and only a few carriers have been profitable.

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Issuance of Decisions and Orders for the Week of December 5 Through December 9, 1994

During the week of December 5 through December 9, 1994 the decisions and orders summarized below were issued with respect to appeals and for other relief filed with the Office of Hearings and Appeals of the Department of Energy. The following summary also contains a list of submissions that were dismissed by the Office of Hearings and Appeals.

Appeal

Eric Engberg, 12/5/94, VFA-0010

CBS News Correspondent Eric Engberg (Engberg) filed an Appeal from a determination issued by the Albuquerque Operations Office (Albuquerque). The determination denied, in part, a Request for Information which Engberg submitted under the Freedom of Information Act (FOIA). Engberg requested various travel documents submitted by security personnel, known as couriers, who had travelled with Secretary of Energy Hazel R. O'Leary. Albuquerque released responsive documents, from which names, home addresses, Social Security numbers, home telephone numbers, credit card numbers, and expiration dates had been redacted pursuant to FOIA Exemption 6. Engberg appealed only the deletion of the names. In considering the Appeal, the DOE found that Albuquerque had failed to adequately justify the withholding of the couriers' names under Exemption 6. In the course of the Appeal, Albuquerque requested an opportunity to re-evaluate the applicability of Exemption 6 and other FOIA exemptions to the withheld names. Consequently, the DOE granted in part the Appeal and remanded the matter to Albuquerque for a new determination.

Refund Applications

The Office of Hearings and Appeals issued the following Decisions and Orders concerning refund applications, which are not summarized. Copies of the full texts of the Decisions and Orders are available in the Public Reference Room of the Office of Hearings and Appeals.

Atlantic Richfield Company/Costain Coal, Inc	RF304-15459	12/06/94
Empire Coal Company	RF304-15460	.....
Atlantic Richfield Company/Vaccaro & Son Arco et al	RF304-14638	12/06/94
Crystal Water Co. et al	RF272-85480	12/06/94
Cubby Oil Co., Inc	RF272-97229	12/06/94
Dalton Asphalt Corp et al	RF272-94139	12/06/94
Dart Container Corporation	RF272-66874	12/05/94
Dart Container Corporation	RD272-66874	.....
E & B Paving, Inc	RF272-67026	12/07/94
E & B Paving, Inc	RD272-67026	.....
Epes Transport System, Inc	RF272-93329	12/08/94
Farmers Cooperative Elevator et al	RF272-94704	12/06/94
Good Hope Refineries/Howard Oil Company	RF339-17	12/08/94
Gulf Oil Corporation/City of Rocky River et al	RF300-21325	12/07/94
Gulf Oil Corporation/Fallwood Service Center	RF300-18460	12/06/94
Gulf Oil Corporation/Kirk Brown's Gulf Service et al	RF300-18153	12/08/94

²⁵ The analog for pipeline transportation would be "origin-destination" pairs, but both the Commission and DOJ have generally analyzed pipeline origin and destination markets separately.

Why the difference? Oil and gas are fungible, airline passengers and freight are not.

²⁶ Elizabeth Bailey, David Graham, and Daniel Kaplan, *Deregulating the Airlines* (MIT, 1985), and Steven Morrison and Clifford Winston, *The*

Economic Effects of Airline Deregulation (Brookings, 1986).

²⁷ Alfred Kahn, "Supresses of Airline Deregulation," *American Economic Review* (May, 1988).