



**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE**

**DAF/COMP/WP2/WD(2006)10
For Official Use**

Working Party No. 2 on Competition and Regulation

ROUNDTABLE ON ENSURING ACCESS TO KEY CAPACITY FOR NEW ENTRANTS.

--United States--

6 February 2006

The attached document is submitted by the delegation of the United States to the Working Party No. 2 of the Competition Committee FOR DISCUSSION under Item III of the agenda at its forthcoming meeting on 6 February 2006.

Please contact Mr. Sean Ennis if you have any questions regarding this document [phone number: +33 1 45 24 96 55; Email address: sean.ennis@oecd.org].

JT00200481

1. This paper discusses issues relating to access to key capacity with respect to railroads, energy transportation facilities, and airport take-off and landing slots.

Rail

2. In general, the U.S. relies on both intermodal competition (from motor and water carriers) and intramodal competition (among independent, vertically integrated railway enterprises) to protect shippers of rail freight from the exercise of market power by a railroad. Rail freight rates are mostly deregulated (or, more correctly, are generally set by the market at rates far below regulated ceilings), and railroads are generally not required to provide access to their infrastructure to the trains of other companies. On the other hand, it is common for two vertically integrated railway companies to agree among themselves on terms and conditions for either unilateral or bilateral access to the infrastructure of one by the trains of another, with levels of compensation (if any) freely determined.

3. There are only two situations in which the Surface Transportation Board (STB) – the U.S. rail regulator that succeeded the Interstate Commerce Commission – sometimes requires one railway enterprise to allow infrastructure access to the trains of a second. The first is as a condition to protect intramodal competition in the event of a rail merger. Both the choice of a railway enterprise that will gain access and the terms under which it will do so may be negotiated voluntarily by the merger partners and presented to the STB for approval, or the STB may impose its own specific conditions as part of its approval decision. In the latter case, there are well established regulatory precedents for the calculation of the access charges (generally a single tariff based on marginal cost).

4. The second situation may occur in response to a request to the STB by a “captive shipper” for protection against the rates charged by the railway enterprise serving it. The STB does not often grant such requests, and the conditions for approval are accordingly strict: not only must the shipper demonstrate that it has no economic alternatives for shipping its product, but it must also demonstrate that the rate charged by the railway is above both the “stand-alone cost” of a hypothetical railway constructed to handle this traffic and 180 percent of the railway’s variable costs of carrying the traffic.

5. There are regular proposals by captive shippers and shipper groups for the STB to ease their burden of proof that they merit rate relief. Many recent proposals would require rates to be set by arbitration after certain (less stringent) conditions are met.

Energy

I. Overview

6. Energy transportation facilities are important to maintaining competition in the energy industry. They are often not easily reproducible, and control of these facilities may give the owner the opportunity to exercise market power. Access to such facilities may facilitate maintaining competition among either the originating producers or the receiving consumers. Attention to maintaining competition in markets upstream and downstream of the transportation facility is important since an accessible facility that serves an uncompetitive market is of little benefit.

7. The U.S. has used a two-pronged approach to maintaining access. One federal agency sets detailed rules and provides supervision to assure that access functions. Its efforts, particularly in the natural gas industry, have helped to create a competitive transportation market. The antitrust agencies work to maintain a competitive structure in the energy industry, including maintaining competitive transportation facilities where ever possible.

8. The U.S. experience suggests that provision of access to energy transportation facilities can successfully enhance competition, provided that markets up and down stream of the facilities are also conducive to competition. However, mandated access may not work well in emerging markets, and the U.S. has dropped access provisions in two such instances. Persons familiar with the industry need to be involved in structuring access to assure that crucial elements are not overlooked in designing programs. In addition, agencies involved in access promotion may need to be involved in ongoing monitoring and dispute resolution. Merger reviewers need to be cognizant that access rights are a valuable competitive asset, and that consolidation of access rights in a single facility or competing facilities needs to be evaluated as any other competitive overlap.

9. This submission first addresses the common elements of access regulation in the U.S. for energy transport facilities and discusses the characteristics of the facilities that make access important. Then, this submission examines how access problems have been approached in specific cases in each industry (natural gas, petroleum, and natural gas liquids) where access has been an key element to maintaining competition.

Regulation

10. Energy transportation facilities have been the subject of Federal regulation for nearly a century. Two principal agencies are involved: the U.S. Federal Energy Regulatory Commission (“FERC”) provides detailed economic regulation (rates, terms of service, and access) of interstate pipelines and necessary support facilities, and the U.S. Federal Trade Commission (“FTC”) has primary antitrust jurisdiction (mergers and anticompetitive practices), for almost all energy transportation facilities but does not exercise traditional regulatory oversight.¹

11. FERC functions by issuing detailed regulations concerning various matters affecting the specific industries within its jurisdiction and then by adjudicating issues concerning the application of the regulations as they arise. To ensure access, FERC’s principal activities, in the last 20 years, have been associated with the restructuring of the natural gas pipeline industry. The guiding policy principle has been to have natural gas pipelines provide “open access” transportation service on a non-discriminatory basis to all natural gas shippers.² Most observers consider the regulatory reform of the natural gas pipeline industry to be successful and to have contributed toward a competitive supply of natural gas.³ Access to petroleum and LPG pipelines has received relatively less recent regulatory attention, perhaps because these have a longer established regulatory structure.⁴ Required access seems not to have been as beneficial in areas of emerging technologies, such as offshore oil ports and LNG terminals, where the implicit sharing of benefits of an open access regime may discourage risky, pioneering investments.

¹ The U.S. Department of Justice Antitrust Division has concurrent antitrust jurisdiction. Other Federal agencies regulate safety and environmental concerns. State governments regulate local distribution of natural gas and pipelines that operate entirely with a single state, although FTC merger jurisdiction usually extends to state-regulated entities.

² The key expression of these policies is contained in FERC Order 436 (1985) and Order 636 (April, 1992).

³ There is one notable exception. Alleged manipulation of gas deliveries by El Paso Natural Gas was widely believed to have contributed to the California energy crisis of 2000.

⁴ In October, 1993 in response to passage of the Energy Policy Act of 1992, FERC significantly reduced the regulatory burden on oil and LPG pipelines by permitting market-based rates in those areas where a pipeline faced significant competition and indexing by inflation most other established rates. This trimmed the frequency of FERC addressing oil pipeline issues. FERC Order 561, Docket RM93-11-000, 65 FERC 61,109 (Oct. 22, 1993); “President Bush Signs National Energy Policy Act ...,” *Fosters Natural Gas Report*, No. 1900, p. 1 (Oct. 29, 1992).

12. The FTC administers antitrust statutes of general application across a wide range of industries. Its principal activities affecting access to energy transportation facilities have arisen through its merger review process. It has acted in nearly 40 mergers affecting these facilities, primarily by requiring the divestiture to competitive buyers of facilities that would pose competitive problems if they were owned by a single enterprise. In several matters, the FTC required divestitures of partial interests in jointly owned pipelines so that their use might remain competitive. Since merger review has been the subject of other OECD conferences, this submission concentrates on those limited instances in which the FTC required access to a specific facility, often as an adjunct to a divestiture of another facility.

Facility Characteristics

Pipelines

13. Pipelines are the most important transportation mode for the U.S. energy industry. An extensive network of natural gas and oil pipelines covers almost the entire country, with almost 500,000 km of natural gas lines alone. In the United States, pipelines transport four principal commodities: (1) natural gas, (2) crude petroleum, (3) refined petroleum, and (4) natural gas liquids. Natural gas pipelines are the only effective means of transporting natural gas domestically, and oil pipelines account for 87 percent of interregional movements of petroleum.⁵

14. Pipelines share many of the characteristics of other transportation modes that foster natural monopoly or oligopoly structures, and experience corresponding access problems. These include substantial, although not unlimited economies of scale; substantial sunk costs; high fixed costs; large daily, short-run and seasonal demand variations; potential congestion; efficiencies of vertical integration in certain situations; and possibly network economies.

15. There may be important differences in organization and regulation of pipelines depending on whether a pipeline serves primarily as a producing area gathering line, a long distance shipment line, or a local distribution line. Moreover, the extent of access regulation activity has varied with the particular products that a pipeline carries. Natural gas pipelines have been subject to the most extensive rule making actions by FERC, while the FTC has been active in reviewing the many mergers affecting petroleum and natural gas liquids pipelines.

Terminals, Interconnections, and Storage Facilities

16. Transportation systems often require support facilities to perform necessary functions, *e.g.* terminals, interconnections, and storage facilities. Compared to pipelines, these auxiliary facilities are subject to relatively little regulation, although the FTC has investigated a number of terminal acquisitions as part of its merger reviews and has obtained the divestiture of petroleum terminals in many metropolitan areas to preserve competition. FERC has initiated an inquiry into possibly modifying and expanding the rules governing natural gas storage facilities, and brought the 1995 *Lakehead* proceeding, which required access to intermediate storage facilities.⁶

Natural Gas

Pipelines

⁵ Pipeline length: Energy Information Administration, *Natural Gas Annual*, 2004. Pipeline movements: Energy Information Administration, *Petroleum Supply Annual*, 2004, v. 2, Tables 33, 34.

⁶ See the discussion at p. 9 below.

17. FERC has created an open access transportation system for natural gas pipelines. This is achieved by two principal mechanisms; (1) to allocate newly available capacity, either from new construction or from significant expansions of existing lines, pipelines companies are ordinarily required to hold “open seasons” prior to receiving approval to commence construction; (2) to allocate existing capacity, FERC has created rules and an enforcement effort to ensure that shippers that hold long-term transportation rights can sell them in an active, competitive secondary market.

18. During open seasons prospective shippers “bid” for capacity by offering volumes, proposed rates, and contract terms. Successful bidders receive the right to transport a guaranteed volume of gas for the duration of the contract. If the pipeline is oversubscribed, capacity is allocated on the basis of the net present value of the per unit rate bid by the shippers, which tends to favor smaller shippers.⁷ Within the FERC guidelines, each pipeline may devise open season procedures, subject to review by FERC should prospective shippers or the FERC staff object to proposed procedures.⁸ Competing projects may proceed at their sponsor’s risk.

19. One of the principal goals of regulatory restructuring of the late 1980's and early 1990's was to create an active secondary market in transportation rights. This was achieved by assigning long-term firm transportation rights to the then-existing, largely diverse, customer base of the pipelines, which had previously only purchased gas from the pipeline at the delivery point. Customers are permitted to resell their space on either a short-term or longer term basis, or even to assign all of it to another party for the remaining term of the agreement. Such a secondary market has developed, and has led to the pipelines offering innovative services tailored to the market.

20. The greatest problem with existing capacity allocation procedures arose during the California energy crisis of 2000. When demand for natural gas in California grew rapidly in 2000, because of changes in the electricity market, a single pipeline controlled a high proportion of the incremental capacity into the state. Several parties alleged that El Paso Natural Gas deliberately withheld capacity in order to drive up the price of natural gas because the principal source of additional gas was El Paso’s gas sales affiliate. El Paso settled these complaints by paying \$1.69 billion in compensation and agreeing to several steps to increase capacity available for the California market.⁹

21. In sixteen natural gas pipeline mergers since 1980, the FTC required the divestiture of competitively overlapping natural gas pipeline assets. If access is defined more narrowly as a mandated shared use of a critical asset, then the FTC has used access to maintain competition in those circumstances in which an outright divestiture might not be necessary, such as where the competitive overlap was in a few localized markets served by a major part of an integrated system. Two examples are as follows.

22. In the 2001 DTE/MCN merger of a local electrical company with a local gas distribution company serving the same area, the FTC consent order required the merged company to allow another gas

⁷ 51 FERC 61,195 (1990) cited in 51 FERC 61421 at 62491 (Dec. 20, 1990).

⁸ On occasion, both pipelines and prospective major shippers have proposed eliminating or de-emphasizing the open season in favor of permitting much of the capacity to be pre-subscribed, at negotiated rates. They argue that advance contracting may significantly reduce risk and therefore encourage development. FERC has either rejected or significantly modified such proposals in favor of maintaining the open season procedure. 50 F.E.R.C. 61,070, 1990 FERC LEXIS 126 (Jan. 24, 1990); 53 F.E.R.C. 61,421, 1990 FERC LEXIS 3215(Dec 20, 1990); FERC Order 2005-A section xx (2005).

⁹ FERC Docket RP00-241-000, 105 FERC ¶ 61,201 (Nov. 14, 2003). In other cases, FERC also has acted to prevent pipelines from providing improper assistance to their marketing affiliates, which are selling gas or capacity in competition with pipeline customers reselling unused capacity, and the agency recently adopted a comprehensive set of regulations on such practices. FERC Order 2000

distribution company to use the gas distribution system of the merged firm for a period of at least 20 years, in order to allow competitive sales of gas to independent electrical generators that competed with the merged firm.¹⁰

23. In the Duke Energy merger, CMS, a local distribution company, bought a pipeline from Duke, which served CMS's service area. The competitive concern was that CMS would reduce the capacity of the interconnections with competitive pipelines, thus forcing its customers to use CMS's newly acquired pipeline at higher cost. The FTC consent order required that CMS maintain a minimum amount of capacity at specified receipt points.¹¹

Liquefied Natural Gas Terminals

24. Liquefied natural gas ("LNG") is a growing source of U.S. natural gas imports. Both the liquefaction plants in producing areas and the unloading, storage, and regasification plants (terminals) in consuming regions have significant economies of scale, long lead times to construct, and substantial sunk costs. The world LNG industry has developed using a partial integration model, from the well head to the outlet of the importing terminal. Producers, transporters, and consuming area marketers enter into long-term contracts (often with partial equity interests) tying a significant portion of the supply of a terminal to a specific liquefaction facility and providing for dedicated vessels to supply transportation.

25. Through the early 2000's there were only three LNG terminals in the U.S. From the mid-1970's to the mid-1990's, the industry was static, with one of the terminals being closed for much of the period. As natural gas supplies began to tighten in the late 1990's, interest in building new terminals revived, and the closed terminal was reopened.¹²

26. In the 1990's and early 2000's, FERC required LNG terminals to follow open access procedures, similar to those of pipelines. Others, however, argued that the procedures impeded new capacity. For example, potential terminal developers expressed concerns that the open access regulations would limit their ability to raise capital, in part because they could not commit space.¹³

27. Late in 2002, FERC amended its policy. LNG terminals no longer had to provide open access. Rather, FERC decided to treat them as unregulated gas production facilities. Given that the gas market was competitive, FERC believed it unnecessary to require terminals to provide access, since the terminal operators had to compete with the many other sources of gas. To explain this revision in policy, FERC also cited reasons similar to those raised by the project developers.¹⁴

Petroleum

Pipelines

¹⁰ FTC Docket C-4008, (Dec. 14, 2001).

¹¹ FTC Docket C-3877, (Mar. 19, 1999).

¹² Now there are six operating, and 34 are currently in some stage of permitting.

¹³ FERC Docket PL02-9, "Notice of Public Conference and Agenda," (Oct. 18, 2002); Robert Cupina, Presentation, "Review of Natural Gas Imports," FERC, (2002)

¹⁴ FERC Docket CP02-376, 101 FERC ¶ 61,294 (Dec 18, 2002)

– FERC Activities

28. In 1906, the U.S. Congress placed interstate oil pipelines under the regulation of the Interstate Commerce Commission, which principally regulated railroads. The primary reason for regulation was to ensure access for independent refiners to the crude oil pipelines operated by the Standard Oil Trust.¹⁵ Access was to be assured under the general duty of a “common carrier” to accept freight from all potential shippers on a non-discriminatory basis. The regulation encompassed both crude oil and refined product lines. In 1978, FERC assumed responsibility for regulating oil pipelines.

29. Beyond a general requirement that charges and tariff conditions not be unreasonable or unduly discriminatory, FERC’s regulation of pipeline access has focused on two areas: (1) the rules that the pipeline uses to determine how capacity will be allocated in event that demand exceeds physical capacity, and (2) the circumstances under which a pipeline can be required to provide connections to a new shipper.¹⁶

30. The “common carrier” obligation requires such pipelines to accept all shipments, except when demand exceeds capacity, and, in effect, creates a form of open access. Provided that the pipeline is not capacity constrained, this approach has generally proved effective. Difficulties arise if demand exceeds current capacity. FERC has two preferred methods of capacity allocation: (1) first-come, first-served; for a given period, usually a month, all prospective shippers must state (“nominate”) their desired shipping volumes; if the nominations exceed the total capacity then shippers are assigned space proportional to their requests; (2) historical prorationing, whereby shippers allocations are proportionally determined on the basis of past shipments, often over the last 12 months. These procedures evolved from a series of reviews of pipeline tariffs.

31. Both methods have shortfalls that FERC has addressed on a case-by-case basis. For example, first-come, first-served may create uncertainties about future pipeline availability, which may discourage investments in complementary facilities. In the shorter-term, first-come, first-served can encourage shippers to over nominate to assure that they will get a larger allocation. To limit over-nominations, FERC has permitted pipelines to impose penalties for over nomination.¹⁷ The alternative allocation method, historical prorationing, disadvantages new entrants that have little opportunity to build up volume if the pipeline is frequently or continually under proration. It may possibly also encouraging shippers to maintain uneconomic output or serve otherwise relatively less attractive markets in order to ensure space.¹⁸

32. In general, FERC has not allowed oil pipelines, in contrast to natural gas pipelines, to function as contract carriers whereby the pipeline is able to guarantee the shipper a set amount of capacity for a

¹⁵ Jordan Jay Hillman, "Oil Pipeline Rates: A Case for Yardstick, Regulation," in Michael A. Crew, ed., *Competition and the Regulation of Utilities* (Kluwer Academic Publishers: Boston, Dordrecht, London, 1991), 72-73.

¹⁶ In the Bonito Pipeline case FERC ruled that a pipeline with spare capacity had to connect with a new shipper notwithstanding concerns about the quality of that shipper’s oil. 61 F.E.R.C. P61,050; 1992 FERC LEXIS 2248 (Oct. 8, 1992).

¹⁷ For example, in once case it approved tariffs on a pipeline that require a shipper to pay for a significant amount of the nominated capacity, even if the shipper does not use it. In another case, it required that future allocations be reduced in the event that the shipper fails to use its nominations, FERC Platte Pipeline decision, Docket No. IS97-9-000, 80 F.E.R.C. P61,036; 1997 FERC LEXIS 1410 (July 16, 1997); FERC, SFPP decision, Docket Nos. OR92-8-000, OR93-5-000, OR94-3-000, OR94-4-000, OR95-5-000, OR95-34-000. 80 F.E.R.C. P63,014; 1997 FERC LEXIS 2140 (Sep 25, 1997), n 821.

¹⁸ For a concise discussion of several of these issues see the FERC Proteus Pipeline decision. 102 F.E.R.C. P61,333; 2003 FERC LEXIS 579, ¶¶22-26

specified period of time.¹⁹ However, in three pipeline construction projects, FERC has approved oil pipelines having long-term carriage contracts, awarded through an open season process. Latecomers would be accommodated only when additional capacity became available.²⁰

– FTC Activities

33. Consistent with its general preference for structural over behavioral remedies, particularly in the merger context, the FTC has generally not mandated access in oil pipeline matters. Instead, the FTC usually requires the divestiture of the pipeline interests of the merged firm to preserve the transportation options available to shippers.²¹ Only when the affected interest is small relative to the size of the facility or when vertical elements predominate has the FTC used an access remedy. Since 1980, the FTC has required only three access-related remedies for petroleum pipelines; the major interventions involved the same pipeline:²²

34. The FTC acted to provide access to a pipeline designed to take heavy crude oil from the San Joaquin Valley oil fields to the San Francisco Bay area. In both the Texaco/Getty merger (1984) and the Shell/Texaco refining/marketing joint venture (1997), the FTC required the surviving firm to sell crude oil from the pipeline to certain small refineries in the San Francisco Bay area, which competed with the line's new owners in the refined products market.²³

Terminals and other ancillary facilities

35. The government has taken a very limited role in regulating access to petroleum terminals and other ancillary facilities such as storage, ports and docks. FERC generally does not regulate petroleum terminals and storage, unless they are considered essential to operating a pipeline.²⁴ FTC prefers to use divestiture as a remedy in merger matters; for example in the Exxon/Mobil merger the FTC required

¹⁹ 104 F.E.R.C. 61,163, at 61,165, 2003 FERC LEXIS 1574 (July 23, 2003)

²⁰ 76 F.E.R.C. 61,245, 1996 FERC LEXIS 1613 (Sep. 11, 1996); 102 F.E.R.C. 61,333, 2003 FERC LEXIS 579 (Mar 27, 2003); 102 F.E.R.C. 61,339, 2003 FERC LEXIS 583 (Mar. 28, 2003).

²¹ In at least eight major petroleum mergers since 1981, the FTC has required, as part of consent settlements, the divestiture of pipeline interests. "FTC Merger Enforcement Actions in the Petroleum Industry Since 1981," available online at http://www.ftc.gov/ftc/oilgas/charts/merger_enforce_actions.htm (Last viewed 22 Jan 2006); information updated for publicly announced actions in 2005.

²² In Texaco/Getty, the FTC ordered Texaco to continue service to existing customers on another short crude oil pipeline in California, with rate increases limited to inflation. Texaco and Getty Oil Co Proposed Consent, *op cit*.

²³ FTC, Texaco Inc. and Getty Oil Co.; Proposed Consent Agreement with Analysis to Aid Public Comment, File No. 841-0077, 104 F.T.C. 241; 1984 FTC LEXIS 49 (1984); SHELL OIL COMPANY, - and - TEXACO INC., 125 F.T.C. 769; 1998 FTC LEXIS 54 (April 21, 1998). The line was the only practical source of heavy crude oil to these refineries. The sale of oil was functionally equivalent to providing transportation; the approach was used because the pipeline was not a common carrier.

²⁴ In one instance Wolverine Pipeline agreed as part of a settlement to provide common carrier storage at one location in order to facilitate through movements that would be otherwise unavailable for shippers who did not own storage at that junction point. FERC Docket No. 0R99-15-000, 95 F.E.R.C. P63,023; 2001 FERC LEXIS 1429 (June 18, 2001).

divestitures of terminals in the entire Northeastern part of the U.S. as well as Northern California.²⁵ BP/Amoco was required to divest terminals in nine locations in the Southeast.

36. In the recently completed action on the Valero/Kaneb refiner/pipeline merger, the FTC issued an order that required divestiture of terminal and pipeline assets in several areas. The theory was that Kaneb as an unintegrated pipeline/terminal company had incentives to promote open access, but post merger Valero would have incentives to protect the profits of its integrated petroleum operations. However, the FTC allowed Valero to retain two smaller California terminals, where there was a potential competitive problem. The order required Valero to continue to serve third-party customers for a particular product stored at those two terminals on the same terms as before the merger and on terms no less favorable than granted to Valero's own operations.²⁶

37. Outside of the traditional regulatory framework, there has been one other well known attempt to create access to a major petroleum transportation facility, the Louisiana Offshore Oil Port ("LOOP"). In 1974, Congress passed the Deepwater Ports Act, authorizing construction of offshore platforms to receive oil imports from deep draft crude tankers. Such facilities were thought, at the time, likely to become the dominant means of crude oil importation. At the urging of the FTC and DOJ Antitrust Division, Congress included requirements for an antitrust review of the proposed operating regulations for the facilities. This led to a detailed set of regulations, prescribing that access to non-owners be on an open and non-discriminatory basis. By 1996, after LOOP had been the only such facility built in more than 20 years, Congress deregulated LOOP's operation. Proponents' principal argument for deregulation was that the cumbersome regulations, not the least of which was the access regulation, severely inhibited investments in such facilities.²⁷

Natural Gas Liquids Pipelines

– Overview

38. Natural gas liquids ("NGL") are produced as byproducts of natural gas production or of petroleum refining; they are also sometimes referred to as liquefied petroleum gas ("LPG"). NGL include propane, butane, ethane, and pentanes plus (or natural gasoline) and are used for petrochemical feedstocks, gasoline blending stocks, and domestic heating.

– FERC Activities

39. NGL pipelines are regulated by FERC under the same general regulations as oil pipelines, although FERC has given them little regulatory attention in recent years. FERC had only one major proceeding, the *Lakehead* case, in which access to NGL pipelines has been an issue.

²⁵ In the Exxon/Mobil merger, the merged company had to continue to grant a competitor joint use of a petroleum dock in Norfolk, Virginia. FTC, Exxon/Mobil Consent Agreement, File No. 991-0077, Nov. 30, 1999, ¶ XIII, p. 50.

²⁶ FTC Docket C-4141, Consent Paragraph VI, 2005 FTC LEXIS 112 (July 22, 2005). Valero had previously been a customer of the terminals for that product, and the concern was that it would have an incentive to raise the costs of its competitors that also used the terminal. The consent also compelled Valero to create a "firewall" so that competitively sensitive information about customers was not provided to Valero's refining division.

²⁷ Testimony of Thomas P. James, Secretary and General Counsel, Louisiana Offshore Oil Port (Loop), Inc., U.S. Congress House of Representatives, Committee on Transportation and Infrastructure, Hearings: "H.R. 2940, the Deepwater Port Modernization Act" "OGJ Newsletter," March 28, 1996; *Oil and Gas Journal*, July, 8, 1996, 4.

40. The Lakehead pipeline transports raw NGLs from the Canadian border in North Dakota around the southern side of the Great Lakes and back into Canada. In the early 1990's, Lakehead (and its connecting Canadian parent the Interprovincial Pipeline ("IPPL")) had only one shipper, Amoco Oil, the largest NGL firm in Canada. Lakehead was configured so that product arriving from Canada at an intermediate point in Superior, Wisconsin had to be placed in "breakout" storage facilities before continuing further East. Lakehead, however, did not own the breakout storage facilities; Amoco, which did, was unwilling to allow others to use its facilities.

41. A NGL competitor of Amoco began a two pronged campaign to secure space on Lakehead for NGL shipped from Western Canada. One prong was to have the Canadian authorities require IPPL to accept shipments. The other was to have FERC require Lakehead to make breakout storage available at Superior. FERC concluded that breakout facilities were necessary, and ordered that Lakehead provide the facilities, if the Canadian authorities also ordered IPPL to accept shipments other than Amoco's. This decision has served as a basis for FERC's ordering use of other storage facilities.²⁸

– FTC Activities

42. Since 1990, the FTC has reviewed several transactions involving NGL-related assets. In only three instances did the FTC require the provision of access as an ancillary condition to a divestiture.

43. In the 2002 Phillips/Conoco merger, Phillips was ordered, among many other requirements to divest its interests in two propane terminals. As part of the divestiture, Phillips also had to provide the buyer with access to two pipelines serving the terminals on terms as favorable as granted any affiliate of the merged firm.²⁹

44. In the 2001 Chevron/Texaco merger, Texaco was ordered, among many other requirements, to provide the purchaser of an NGL fractionation plant a contract on competitively favorable terms to ensure access to Texaco's pipeline serving the plant.³⁰

45. In the 1998 Williams/Mapco merger, which involved both propane and raw NGL pipelines, the FTC devised two access remedies: (1) Williams was required to continue a multi-year lease granting pipeline access to the operator of propane terminals that competed with terminals Williams acquired; and, (2) Williams was required to allow Williams' newly acquired lines to connect to Williams' gas processing facilities, in a major producing region.³¹

Conclusions

46. Open access to oil and gas transportation facilities has generally worked well; the regulatory reform of the natural gas pipeline industry has been considered by most observers to be successful and to have contributed to a competitive supply of natural gas. Access to crude oil, LPG, and petroleum products pipelines has received relatively less recent regulatory attention, perhaps because many access issues were addressed earlier in the 20th century. Required access appears to have been less beneficial in emerging technologies, such as offshore oil ports and LNG terminals, where the implicit sharing of benefits of an open access regime may serve to discourage risky, pioneering investments. As the history of FERC

²⁸ 71 F.E.R.C. P61,338, at 62320-28; 1995 FERC LEXIS 1193; George Koch, "A Slumbering Beast; Liquefied Natural Gas Industry", *Oilweek*, v 46, no. 42, 20 (Oct. 16, 1995)

²⁹ Conoco/Phillips Consent Agreement, FTC Docket C-4058, FTC LEXIS 49, (Aug. 20, 2002).

³⁰ FTC "Chevron Corp., et al.; Analysis to Aid Public Comment" 66 FR 48136 at 48144.

³¹ FTC File 981-0076, Mar. 27, 1998.

proceedings suggests, a degree of continuing expert supervision of access may be necessary, as technical disputes arise or as a facility owner, which is also a competitor of the users, reduces its willingness to provide good service.³²

47. The FTC has concentrated its enforcement efforts on the maintenance of a competitive industry structure, primarily by requiring structural remedies such as divestitures. Less often has it mandated access through a form of shared use as a remedy to potential competitive problems; the most common applications have been as part of a merger remedy in which access to a pipeline or other facility has been ancillary to the divestiture of some other asset, such as a local distribution network, as a remedy for a vertical problem. If the pipeline or other transportation facility has been the major source of horizontal competitive concern, the preferred approach has been to order its divestiture rather than try to affect a behavioral remedy in the assets' use.

Airport Take-Off and Landing Slots

48. "Access" to congested airports can be regulated by government authorities through the allocation of "slots," or rights to take-off or land at a particular time. Slots were first used in the U.S. in 1969 and until recently were imposed to allocate capacity at four major airports: New York's LaGuardia and Kennedy, Chicago's O'Hare, and Washington's Reagan National. Slots have always been apportioned administratively by the Federal Aviation Administration (FAA), largely to incumbent carriers based on existing service. In 1985, the FAA created a buy/sell market for slots, which was expected to lead to a more efficient allocation of these scarce resources. Instead, the FAA found that it was rare for more than a few slots to be available in the secondary market at any given time. Only when an existing carrier exited the airport, as when Eastern and TWA went out of business, were large groups of slots available for sale. Due to the sporadic availability of slots, entrants (or incumbents seeking to expand service) often found it difficult to acquire sufficient slots to establish a viable service pattern in a city pair.

49. On two occasions, the FAA and Congress responded to this difficulty by relaxing the slot constraints at various airports. Airlines responded by promptly scheduling more flights at these desirable destinations, thereby inducing congestion. The airlines' response to the temporary lifting of slot controls is not surprising because the current system of airport pricing does not factor in the potential costs of congestion. Absent any price signal that indicates that congestion of the airport is costly, airlines will choose to add too many flights because congestion imposes costs on all users of the airport. The costs of delay, though very real, are a classic type of externality imposed on all users of the airport, not just on the airline that seeks to add a flight. Thus, lifting slot controls alone, without imposing an alternative method of rationing scarce capacity, cannot resolve congestion problems.

50. In theory, the existence of a buy/sell market for slots should create a market price that results in an efficient allocation among users. No matter how slots are distributed (including a government giveaway to market incumbents), as long as a secondary market exists and transaction costs are low, slots should be bought and sold until each finds its highest valued use.³³ In practice, however, the slot market did not result in an efficient allocation among incumbents, nor did it facilitate competitive entry in the constrained

³² Some FTC orders have also required the appointment of independent monitors with industry expertise of oversee the administration of an access remedy.

³³ See, e.g., Ronald Coase, *The Problem of Social Cost*, 3 J. Law & Econ. 1 (1960). "Highest valued use" for the carriers, however, might translate into market power on particular routes. Any distribution of slots must be subject to vigilant antitrust oversight.

airports.³⁴ The secondary market never became sufficiently liquid to achieve these results, for several reasons.

Transparency.

51. Transparency in the market for slots is one reason the secondary market never became sufficiently liquid. Transparency means that the identity of buyers and sellers is widely known. Transparency in the secondary slot market permits strategic purchases by incumbents to prevent new entry. An incumbent carrier probably would never knowingly sell to an entrant that was likely to compete against it, given that such a sale would likely decrease the slot holder's profitability. More importantly, a potential entrant would have equal difficulty buying from other slot holders. Such slot holders, if approached by the potential entrant, would have every incentive at that point to seek out the threatened incumbent and solicit a better offer. Because the rents from limiting competition almost always exceed the more competitive rents an entrant would earn, the threatened incumbent should be willing to outbid the entrant, even if it would use the slots in an economically less efficient manner. Strategically purchasing available slots can be an effective entry deterrent, especially since multiple slot holdings required for significant entry rarely come up for sale.

Market Power.

52. Another reason the secondary slot market never became sufficiently liquid is that the FAA's initial allocation of slots gave the bulk of all slots to incumbent carriers. This allocation gave those carriers much larger market shares in slots than any other carrier could obtain, and effectively limited the amount of competition other carriers could offer on at least some routes. For those incumbents with extensive operations at an airport, any slot they sold would have almost certainly been used to compete with them on some route. Therefore, the incumbents were unwilling to sell slots to potential competitors, making the bulk of slots unavailable to others.

Uncertainty of Duration and Value.

53. Another obstacle to creating a liquid market in slots is the repeated use of temporary administrative allocation mechanisms that do not create long-term property rights. Under each of the FAA's administrative allocation systems, the award of a slot has been a temporary right, exercisable only until the system changes again. That right has become quasi-permanent in practice, but anyone interested in buying a slot takes the risk that the system may change in a way that reduces the expected value of the property conveyed. The uncertainty about the time period over which the right can be exercised, therefore, makes it difficult for buyers and sellers with different views about the likely duration of that time period to agree on price. In addition, by periodically giving away slots, Congress and the FAA have contributed to the uncertainty about slot value. The result is that fewer slot transactions occur, and the market is less liquid than it would be absent the uncertainty.

54. To a great extent, the problems described above are inherent in any administrative allocation of slots, and can be fixed only by a more comprehensive market-based approach. Any design for a market-based system should keep two objectives in mind. First, the system must establish a price-setting mechanism that reflects both supply of and demand for scarce airport resources. This price should replace existing regulatory fee structures which encourage carriers to use scarce airport capacity inefficiently. Second, the system should promote competition by enabling scarce capacity to be more easily transferred among carriers, and by preventing capacity from being locked up in ways that allow the exercise of market

³⁴ Airline Deregulation: Barriers to Entry Continue to Limit Competition in Several Key Domestic Markets, Government Accounting Office, October 1996, GAO/RCED-97-4.

power. There must be a sufficiently liquid market in slots to permit new carriers to enter an airport rapidly and on a large enough scale to efficiently serve routes in competition with large incumbents.

55. There are two possible market-based approaches for allocating scarce airport capacity: congestion pricing and auctions. Both have the potential to be far superior to an administrative system. Each approach has strengths and weaknesses, as outlined below; the optimal choice will depend on particular market conditions.

Congestion Pricing

56. Under a congestion pricing system, the existing slot allocation system would be abolished in favor of congestion fees set for particular times.

57. Airlines currently pay weight-based fees for landing. The consequence of the weight-based fee structure is that a small regional jet, which causes just as much airspace congestion as the largest 737, pays a much lower landing fee than the much larger plane. Airlines thus do not face a price that reflects the fact that airspace is a scarce input.

58. If airlines were charged a flat landing fee based upon demand at particular times of day, regardless of the size or type of plane, smaller aircraft such as regional jets would appropriately have to bear a higher per-passenger cost for using an airport's scarce landing capacity than they do now. Regional jets would continue to be part of the airport's mix of aircraft, but at the margin where airlines are choosing between larger jets and regional jets, larger jets operating slightly less frequently will become a more attractive option than scheduling multiple trips on regional jets. The result would be an increase in passenger throughput at capacity-constrained airports.

59. The advantage of congestion pricing is that it is relatively easy to implement. The regulator would set prices for slots at different times and airlines would set their quantities accordingly. If the prices are initially too low, then the congestion prices can be raised over time to ration demand. A uniform fee for landing at a particular time would reduce the congestion bias caused by the current system of weight-based landing fees.

60. Congestion pricing has been used for several years to improve the flow of traffic on two highways in Southern California. Highway SR-91 in Orange County, California has four free lanes next to two toll lanes in each direction. There is a pre-determined toll schedule for every hour of the day. The rates vary from \$1.05 for most overnight and pre-dawn hours to \$7.00 for some afternoon rush hour time periods. On Interstate 15 in San Diego, there is a toll schedule for two reversible lanes. The toll varies with the level of congestion on the road and can change as often as every six minutes.

61. Although congestion pricing is likely superior to administrative allocation, a drawback to congestion pricing is the regulator's lack of knowledge about what price to set. A regulator may not have good enough information to allow it to set the right price without frequent experimentation. Even that mechanism may have problems because the necessary feedback for quantity adjustment may be slow. In particular, airlines often advertise service well in advance so as to schedule and make ground facility arrangements efficiently. This, in turn, implies that adjustments based on the changing price of arrival authorizations may be slow. For highly congested airports, the cost of setting the wrong price and getting too much (or too little) airline traffic may be high.

Slot Auction

62. A slot auction would allocate scarce arrival authorizations through a periodic open-bidding mechanism. For example, the FAA has good information about an airport's capacity for arrivals and

departures, and can set a maximum quantity relatively precisely. An auction would determine the price for arrival authorizations at a particular time, regardless of the size or type of plane.

63. A well-designed slot auction would both assign prices to allocate efficiently scarce airport resources, and limit the maintenance or accumulation of market power by individual carriers. Such goals require careful attention to the details of auction design. For instance, the auction should limit informational feedback during the auction itself. Bidders might know the aggregate level of demand and supply of all arrival authorizations in each time period, but not be permitted to know the identity of the other bidders. This practice is fairly typical at auctions and is designed both to limit collusion among bidders and to prevent strategic bidding. Although more information allows more informed bidding on the part of bidders in ways that can be efficient, full knowledge of which airlines are bidding for which slots in an auction could encourage incumbent airlines to attempt to foreclose entry by particularly strong competitors. In this case, the government's interest in preserving competition among carriers should take priority over bidders' desires to have complete information about rival bids.

64. Any auction design must allow for sufficient liquidity so that potential entrants are not unnecessarily impeded. Annual auctions of a significant portion of airport arrival capacity (20%, for instance) would help allow for rapid entry when it is efficient. Such a five-year rotation would provide a concrete duration for the property right, and therefore assist airlines in valuing the slots.

65. A switch to a market-based mechanism for allocating arrival authorizations will not by itself achieve the twin goals of reducing congestion and encouraging more competitive outcomes. Entry and expansion of new carriers, a key mechanism for encouraging competitive outcomes, is constrained not only by scarce landing rights, but by the limited availability at some airports of ground-based assets such as gates, baggage-handling, and check-in positions. To make any auction for arrival authorizations effective in this environment, aviation authorities must help ensure that ground-based assets will not be a constraint for new slot owners. A common-use pool of gates, for example, might be one solution to overcome some of the hurdles associated with limited ground-based assets. Another issue that authorities must take into account is that the transfer of ground facilities to slot holders can be disruptive of current operations. Auctioning off only 20% of the airport's capacity at a time, as discussed above, would allow for efficient transfer of needed ground facilities.