

How Natural Is Monopoly?

The Case of Bypass in Natural Gas Distribution Markets

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Public utility markets in the United States are commonly subject to both price and entry regulation. However, as dissatisfaction with much of the nation's regulatory system has mounted within the last decade, the wisdom of protecting utilities from competitors has come increasingly under attack.¹ Numerous court cases and administrative rulings by regulatory agencies,² as well as developments in the economics literature,³ have pointed to the benefits of allowing existing buyers of a utility's services to "bypass" the utility and transact for the services with either incumbent firms or new entrants.⁴ The issue of entry deregulation has been at the heart of debates over regulatory reform in such industries as telecommunications,⁵ cable and satellite television transmission,⁶ the postal service,⁷ and electricity generation.⁸

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1. For an excellent review of relevant literature, see Bailey & Baumol, *Deregulation and the Theory of Contestable Markets*, 1 *YALE J. ON REG.* 111 (1984).

2. See *infra* Parts I, II.

3. See *infra* Part III.

4. For a more general and formal definition of bypass, see *infra* Part III.

5. See, e.g., Copeland & Severn, *Price Theory and Telecommunications Regulation: A Dissenting View*, 3 *YALE J. ON REG.* 53, 74 (1985).

6. See, e.g., Owen, *The Rise and Fall of Cable Television Regulation*, in *CASE STUDIES IN REGULATION* 86, 91-92 (L. Weiss & M. Klass eds. 1981).

7. See, e.g., Sherman, *Pricing Policies of the U.S. Postal Service*, in *REGULATED INDUSTRIES AND PUBLIC ENTERPRISE: EUROPEAN AND UNITED STATES PERSPECTIVES* 95 (B. Mitchell & P. Kleindorfer eds. 1980).

8. See, e.g., P. JOSKOW & R. SCHMALENSEE, *MARKETS FOR POWER: AN ANALYSIS OF ELECTRIC UTILITY DEREGULATION* 22 (1983).

The bypass issue recently has come to the fore in the natural gas industry. Legislative changes mandated by the Natural Gas Policy Act of 1978 (the NGPA)⁹ and administrative reforms taken by the Federal Energy Regulatory Commission (FERC)¹⁰ have fundamentally transformed the way in which the wellhead and pipeline segments of the industry are regulated.¹¹ These actions have created pressure to change the industry downstream at the level of the local distribution company (LDC). Large industrial customers served by LDCs are increasingly seeking ways, previously forbidden or drastically constrained, to buy cheaper gas either directly from trunk system supplies of nearby interstate pipelines or directly from producers. In the latter case, the gas is transported to the end-user via pipeline "contract carriage."¹²

9. Pub. L. No. 95-621, 92 Stat. 3352 (codified at 15 U.S.C. §§ 3301-3342 (1982)).

10. See, e.g., Regulation of Natural Gas Pipelines after Partial Wellhead Decontrol, FERC Order No. 436, 50 Fed. Reg. 42,408 (1985) (to be codified at 18 C.F.R. §§ 2, 157, 250, 284, 375, 381) [hereinafter FERC Order No. 436]; Regulation of Natural Gas Pipelines after Partial Wellhead Decontrol, FERC Order No. 500, 52 Fed. Reg. 30,334 (1987) (to be codified at 18 C.F.R. §§ 2, 284) [hereinafter FERC Order No. 500].

11. The natural gas industry comprises three major segments: (1) the wellhead or production segment, in which natural gas is extracted from the ground (often as a joint-product with petroleum) and then sold by producers to pipeline companies; (2) the pipeline segment, dominated by interstate pipeline companies that transport the gas over long distance "trunk" pipelines to the "city gate" and then re-sell it to local distribution companies and large industrial direct end-users; and (3) the local distribution segment, in which utility companies distribute the gas locally and resell it to industrial, smaller commercial, and residential customers. The rates charged by both interstate pipeline companies and LDCs for the gas supplies and transportation services that they sell are regulated. In general, both types of firm are also subject to entry and exit regulation. Firms seeking entry must obtain a "certificate of convenience and necessity." Those seeking exit must be granted permission for "abandonment." Finally, both are typically awarded exclusive territorial franchises that carry with them various types of "service obligations" that must be fulfilled. For an overview of these issues and the recent policy changes that have taken place in the gas industry, see Broadman, *Natural Gas Deregulation: The Need for Further Reform*, 5 J. POL'Y ANALYSIS & MGMT. 496, 496-99 (1986).

12. Historically, interstate pipeline companies have mainly operated as "private carriers," taking title to and reselling the gas that they transport. Recently, pipeline companies have increasingly operated as "contract carriers," serving not as merchants of gas supplies, but rather selling transport services to parties who have arranged to purchase gas directly from producers. Under the Natural Gas Act of 1938, ch. 556, § 7, 52 Stat. 821, 824-25 (codified as amended at 15 U.S.C. § 717 (1982)) (the NGA), pipelines that operate as private carriers generally have the discretion to decide to whom they will provide service. Also, the NGA authorizes the pipelines to decide the relative extent to which they will engage in private carriage or contract carriage. Thus, unlike most other transportation industries, natural gas pipeline companies are not statutorily subject to the rules of "common carriage" that would obligate them to serve all customers who request service. LDCs also have operated mainly in the private carriage mode, and they, too, are increasingly offering contract carriage service. For more discussion, see Broadman, *Montgomery & Russell, Field Price Deregulation and the Carrier Status of Natural Gas*

Interstate pipeline companies burdened by excess "deliverability" of gas supplies are seeking new downstream customers, especially large industrial end-users.¹³ These pressures challenge the traditional control of downstream gas markets by LDCs.

The argument over bypass of LDCs has been spirited, pitting bypassing industrial end-users against "captive" residential customers.¹⁴ The debate has also raised the difficult issue of the appropriate boundary between federal and state regulatory authority. Perhaps most important, it has prompted a fundamental reassessment of the role of LDC service obligations and other elements of the traditional arrangement between LDCs and public utilities commissions (PUCs). Natural gas bypass policy is now being determined through high-stakes court cases,¹⁵ state legislation,¹⁶ politicized PUC decisions,¹⁷ and heated arguments before FERC commissioners and administrative law judges.¹⁸

This Article provides an analysis of the issues surrounding bypass in local natural gas distribution markets. Its ultimate objective is to develop a conceptual framework for analyzing both the extent of natural monopoly in these markets and the desirability of institutionally protecting LDCs from competitive entry. Part I describes relevant institutional developments in the gas industry. These include regulatory and legislative changes that have increased the incidence of proposals for and, in some cases, the consummation of bypass. Part II reviews the involvement of state legislatures, state and federal regulatory bodies, and the courts in the development of natural gas bypass policy. Part III develops a conceptual framework for analyzing whether natural monopolies exist in these markets and whether protecting LDCs from competitive entry is worthwhile. Part IV provides a taxonomy of the costs and benefits of permitting bypass. This Article concludes with a discussion of the principal lessons for policy-making. Our conclusions mirror the recent developments in the

Pipelines, 6 *ENERGY J.* 127 (1985).

13. See Kalt & Schuller, Introduction: Natural Gas Policy in Turmoil, in *DRAWING THE LINE ON NATURAL GAS REGULATION: THE HARVARD STUDY ON THE FUTURE OF NATURAL GAS I* (J. Kalt & F. Schuller eds. 1987) [hereinafter *DRAWING THE LINE*].

14. For a sample of the controversy, see Blaydon, *State Policies Under Pressure*, in *DRAWING THE LINE*, supra note 13, at 157; Johnston & Sullins, *Comments on Blaydon*, in *DRAWING THE LINE*, supra note 13, at 170; Stewart, *Natural Gas on a Frontier of New Challenges*, *PUB. UTIL. FOR.*, May 14, 1987, at 9, 13.

15. See infra notes 35-39, 58-60 and accompanying text.

16. See infra notes 50-57 and accompanying text.

17. See infra notes 45-49 and accompanying text.

18. See infra notes 61-86 and accompanying text.

economics literature concerning the wisdom of regulation.¹⁹ While there are theoretical circumstances under which bypass in certain types of naturally monopolistic industries can be inefficient, there is less need for the current scope of entry restrictions in local natural gas distribution markets than is commonly practiced.

I. The Incentives and Constraints That Shape Bypass

Modern regulatory reform of natural gas markets began in 1978 with gradual wellhead price deregulation under the NGPA. Since then, reform has been working its way steadily downstream. The phenomenon of LDC bypass stems most directly from major modifications in federal interstate pipeline regulation introduced in October 1985 under FERC Order 436.²⁰ FERC Order 500, which was issued in August 1987, also directly affects the prospects for LDC bypass.²¹

Order 436 gives pipeline customers potentially greater access to contract carriage service on the interstate trunk system.²² Customers served by a pipeline that receives blanket authorization to become a "nondiscriminatory contract carrier" or an "open access carrier" under Order 436 also receive a greater opportunity to purchase gas in the open, spot market or directly from gas producers.²³ To the extent that these direct transactions provide end-users with lower costs or delivery under more reliable terms, they create incentives for customers to bypass the merchant function of the LDC.

In general, three factors create the incentive for bypass of LDCs. First, an LDC may be saddled with relatively expensive contracts with its pipeline-suppliers, resulting in an overall level of rates that is not competitive with either other gas sources or

19. See Bailey & Baumol, *supra* note 1.

20. FERC Order No. 436, *supra* note 10. For a detailed description and critique, see Broadman, *Deregulating Entry and Access to Pipelines*, in *DRAWING THE LINE*, *supra* note 13, at 125.

21. FERC Order No. 500, *supra* note 10. See generally WASH. LETTER, Aug. 14, 1987 (newsletter of the Am. Gas Ass'n, Arlington, Va).

22. FERC Order No. 436, *supra* note 10, at 42,409-10, 42,424-26.

23. Rather than requiring a pipeline to obtain permission from FERC for contract carriage on a case-by-case basis—the traditional route followed to engage in such service—Order 436 allows a pipeline company to get blanket, or pre-approved, authorization to operate as a contract carrier. One stipulation of receiving this blanket authority is that if the pipeline company offers contract carriage service to one party, it must offer such service to all parties; that is, it must operate as a "nondiscriminatory contract carrier" or "open access carrier." *Id.* at 42,424-25.

alternative fuels.²⁴ Second, an LDC's rate design or structure may be economically inefficient. Relatively high rates may be charged to large industrial customers, which often have elastic, "interruptible" demand, while relatively low rates are charged to residential and small commercial customers, which typically have inelastic, "firm" demand.²⁵ Finally, an LDC may not offer the type of service that its end-users desire. For example, some large industrial customers require firm private carriage distribution service, but their LDC suppliers do not offer it to them.²⁶ More often, unmet demands for LDC contract carriage service provoke bypass.²⁷ If an LDC is unwilling to provide its own "unbundled" contract carriage service to match the service provided by the interstate pipeline, or if such service is not competitively priced, end-users will have incentives to bypass both the merchant and transport functions of the LDC. The distinction between complete and partial bypass is important. As this Article argues more fully below,²⁸ the situations in which the social interest lies in constraining entry arise primarily in connection with attempts to bypass the transport function in ways that lead to wastefully duplicative physical investments.

Order 436 eases restrictions on a pipeline company's ability to enter downstream end-use markets by building new facilities and selling either pipeline-owned gas or pipeline contract carriage transportation services directly to end-users.²⁹ It eliminates the need to gain approval for entry through the traditional and lengthy process of applying for a certificate of convenience and necessity under Section 7 of the Natural Gas Act of 1938 (the

24. See, e.g., Blyden, *supra* note 14, at 167.

25. See, e.g., J. KALT, *THE REDESIGN OF RATE STRUCTURES AND CAPACITY AUCTIONING IN THE NATURAL GAS PIPELINE INDUSTRY* 12-19 (Energy and Environmental Policy Center, Harvard University, Discussion Paper Series No. E-88-04, 1988).

26. See Mojave Pipeline Co., 35 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 61,199, at 61,459, 61,466 (May 19, 1986) (Docket Nos. CP85-437 et al.) (order consolidating proceedings for comparative hearing) [hereinafter *Mojave Pipeline*].

27. See INTERSTATE NATURAL GAS ASS'N OF AM., *THE INTERPLAY OF FEDERAL AND CONSUMING STATE REGULATIONS* (Research Report 86-3, 1986) [hereinafter *INGAA*]. Of course, the relevant decisions regarding rates and other terms of LDC service do not rest solely with the utilities. Such matters are also under the purview of the PUCs. These state agencies have their own agendas and objectives that may or may not accord with the LDC's. For a general discussion of the role of PUCs, see 2 A. KAHN, *THE ECONOMICS OF REGULATION* 10-11 (1971). See also Lambert, *Bypass in the Natural Gas Industry*, *PUB. UTIL. FORT.*, Apr. 3, 1986, at 11.

28. See *infra* Part III.

29. FERC Order No. 436, *supra* note 10, at 42,467-76.

NGA).³⁰ A company that agrees to operate as a nondiscriminatory contract carrier can now receive expedited and pre-approved authorization of entry. In return, it must bear all the risk of cost recovery from the new investments.³¹ This expedited entry permits pipeline companies to seize rapidly and aggressively market opportunities as they arise.

Notwithstanding the incentives toward bypass that Order 436 generates, some of its provisions act as disincentives to bypass. Under Order 436, an LDC may reduce its firm contract demand for pipelines' gas or firm transport demand for pipelines' capacity to zero over a period of five years.³² Alternatively, the LDC can convert its firm contract demand to firm transport demand, also over a five-year period.³³ In either case, these provisions give LDCs the ability to reduce their gas costs, thereby discouraging bypass investment.³⁴

In June of 1987, in *Associated Gas Distributors v. Federal Energy Regulatory Commission*,³⁵ the Court of Appeals for the District of Columbia remanded portions of Order 436 to FERC. However, the court approved the central goal of the Order: to open natural gas markets to greater competition by changing the nature of pipeline regulation. As a result, the court affirmed both the open access carriage and expedited entry provisions of Order 436.³⁶

Order 500 is FERC's response to the court's remand.³⁷ Although Order 500 leaves the basic thrust of Order 436 intact, it affects the terms under which LDCs can alter their contractual relationships with pipelines.³⁸ In *Associated Gas*, the court had ruled that there was no legal basis for allowing LDCs to reduce

30. Natural Gas Act of 1938, ch. 556, § 7, 52 Stat. 821, 824-25 (codified at 15 U.S.C. § 717 (1982)).

31. FERC Order No. 436, *supra* note 10, at 42,467.

32. *Id.* at 42,425-26, 42,438-47.

33. *Id.* Contract demand is the maximum amount of gas supplies (as opposed to transport capacity) that a pipeline is obligated to provide to a customer.

34. This ability is contingent upon the LDC's pipeline volunteering to be nondiscriminatory contract carriers. Because these reductions and conversions of contract demand and transport capacity amount to a form of pipeline bypass, pipeline companies have a disincentive to apply for nondiscriminatory contract carrier status. Indeed, they may prefer to attempt to bypass the LDC in concert with end-users.

35. 824 F.2d 981 (D.C. Cir. 1987), cert. denied, 108 S.Ct. 1468 (1988).

36. 824 F.2d at 1044. See also *Regulation of Natural Gas Pipelines after Partial Wellhead Decontrol*, FERC Order No. 436-A, 50 Fed. Reg. 52,217 (1985) (to be codified at 18 C.F.R. §§ 2, 157, 284, 375).

37. FERC Order No. 500, *supra* note 10.

38. *Id.* at 30,347-48.

their firm contract demand or firm transport demand unless pipelines were relieved of their corresponding city gate service obligations and their wellhead take-or-pay liabilities.³⁹ Thus, Order 500 retains the Order 436 conversion provision and eliminates the reduction provision.⁴⁰ Inasmuch as this modification limits LDCs' abilities to bargain with relatively costly pipeline-suppliers, the prospects for bypass are increased.⁴¹ Moreover, Order 500 authorizes pipelines to devise inventory charges for customers to provide for a type of cost-sharing scheme that mitigates pipelines' exposure to take-or-pay liabilities.⁴² Again, all other things equal, this creates greater pressure for end-users to bypass their LDCs.

There is little doubt that FERC wants the market, rather than regulation, to govern gas sales and investments. As FERC promotes this objective in downstream markets, however, conflicts between federal and state regulators arise. When interstate pipelines can bypass LDCs and deal directly with gas customers, they challenge the scope of state PUC regulation. FERC has articulated its views on the impact of bypass on state-federal relations in Order 436 and Order 500. For example, Order 436 states that unless "pipelines engage in unfair competitive practices or other circumstances are present that would make it unfair for a pipeline to bypass the distributor," "[t]he Commission will not insulate the LDC markets from the competitive incentives that are the foundation of the final rule."⁴³ This implies that if there are effects at the local level from FERC actions that create pressures on state policies, it is the PUCs' responsibility to devise policies that minimize or eliminate them. In the case of bypass, this can mean adjustments such as improved LDC rate design or the unbundling of LDC transportation.

The direct competition between pipelines and LDCs that bypass causes raises complicated questions of state and federal rights. From the states' perspective, bypass threatens the presumed

39. 824 F.2d at 1021-30. A "take-or-pay" provision is a typical component of a wellhead contract between natural gas producers and a pipeline. Together with the contract's price provisions, it specifies the minimum payment that must be made to the producer by requiring that the pipeline pay for a certain quantity of gas, regardless of whether delivery is actually taken.

40. FERC Order No. 500, *supra* note 10, at 30,347-48.

41. An LDC could still combat bypass by making transportation services available and by securing cheaper gas supplies. Alternatively, an LDC can now also unbundle and offer contract carriage service and face a bypass threat only if pipelines not serving the LDC can build spurs to its customers and offer gas that is sufficiently less expensive to compensate for the new investment costs.

42. FERC Order No. 500, *supra* note 10, at 30,355.

43. FERC Order No. 436, *supra* note 10, at 42,468.

exclusivity of LDC service franchises. Even more fundamental, states may see bypass as a threat to their abilities to implement economic and social policy through gas utility rates and policies.⁴⁴ The argument supporting federal jurisdiction over bypass stresses that neither the shareholders of affected industrial gas users nor the ultimate buyers of such users' products reside entirely, or even predominantly, within the state where the gas is used. Accordingly, only federal authorities can take account of an appropriately broad range of interests when formulating policy.

II. Recent Actions Affecting Bypass Policy

The tensions over appropriate bypass policy have been highlighted recently by specific activities of various PUCs and state legislatures, as well as by suits filed in the federal courts and before FERC. Although systematic data on these activities are not available from one central source or collected in a uniform manner, enough information can be obtained to put together a rough profile of recent legislative, judicial, and administrative actions. This Part outlines that profile.

A. Bypass Policy-Making by PUCs

According to a recent survey by the Interstate Natural Gas Association of America (INGAA) of twenty-two PUCs that regulate firms comprising 84% of the national gas market, ten had addressed proposals for bypass between 1981 and 1985.⁴⁵ The INGAA survey indicated the degree to which PUCs believe that they have the legal authority to approve or to reject bypass proposals. Whereas two of the PUCs surveyed, regulating 11% of the market, asserted that they had such authority, eighteen, or 62% of the market, claimed their authority on bypass is legally untested and hence uncertain. Only two PUCs, or 11% of the market, stated that they do not possess the authority to rule on bypass.⁴⁶

Different PUCs have adopted different roles in court and FERC cases dealing with bypass. Some have taken an activist posture,

44. See, e.g., *Mojave Pipeline*, *supra* note 26, at 61,460 (discussing motion of California PUC to dismiss Mojave application).

45. INGAA, *supra* note 27, at 10.

46. *Id.* at 11.

usually in opposition to bypass;⁴⁷ others have been passive, letting the LDC and aligned parties sue the prospective bypassing customer and supplier on their own.⁴⁸ With respect to their own regulatory policies, certain PUCs have responded to prospective bypass by encouraging LDCs to offer contract carriage service as a method of preempting new competition.⁴⁹

B. The Role of State Legislatures

State legislatures also have begun to play significant roles in determining the environment in which bypass incentives operate. For example, Indiana recently passed legislation that grants its PUC the authority to approve or to deny bypass investment.⁵⁰ Other legislatures passed similar statutes many years ago.⁵¹

Another way in which legislatures have affected bypass policy is by enacting statutes that subject direct transactions between interstate pipelines and industrial customers to the certification process and rate regulation administered by the PUC. This legislation transforms federally-regulated direct connection interstate pipelines into state-regulated public utilities. By the beginning of 1986, only ten states had passed this type of legislation.⁵² Thus, in most states, bypass facilities are not consid-

47. See, e.g., *Mojave Pipeline*, supra note 26, at 61,460.

48. See *ANR Pipeline Co.*, 34 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 61,238 (Feb. 20, 1986) (Docket Nos. CP84-386 et al.) (order setting case for hearing) [hereinafter *ANR Pipeline I*]. See also infra notes 62-68 and accompanying text.

49. A survey of 44 PUCs by the Missouri Public Service Commission indicates that LDCs in nine states do not transport gas on a contract carriage basis. For the 35 PUCs indicating that contract carriage does take place in their states, the survey results suggest that the conditions under which such service is offered vary considerably from state to state. For example, only ten of the surveyed PUCs have instituted a program of mandatory LDC contract carriage, California's unfolding program being the most far-reaching. In the 25 other states, LDCs have discretion whether to offer access to LDC contract carriage. See PUB. SERV. COMM'N OF MISSOURI, *THE INSTIGATION OF DEVELOPMENTS IN THE TRANSPORTATION OF NATURAL GAS AND THEIR RELEVANCE TO THE REGULATION OF NATURAL GAS CORPORATIONS IN MISSOURI* Section VI (1986). Independent of whether or not access to LDC contract carriage is mandatory or voluntary, however, LDCs may or may not be required to post tariffs for contract carriage service with their PUCs. Of the 35 states in the Missouri Public Service Commission survey that have LDC contract carriage, only 24 mandate that associated tariffs be filed. *Id.*

50. IND. CODE ANN. § 8-1-2-87.5 (Burns 1988). Indiana's law was passed in 1985.

51. See, e.g., MICH. COMP. LAWS ANN. § 483.103 (West 1987). The Michigan statute dates back to 1929. See *INGAA*, supra note 27, at 10.

52. See *INGAA Poll Finds Widespread Implementation of State Carriage Program, INSIDE F.E.R.C.*, Dec. 23, 1985, at 9. New York, Pennsylvania, Iowa, and Florida have mandatory transportation. Illinois, Michigan, New Jersey, Colorado, Indiana, and Ohio have active voluntary transportation programs.

ered to be public utilities in statutory terms.⁵³ Moreover, as is true in Mississippi,⁵⁴ some states exempt utilities that serve very small numbers of customers from PUC regulation.⁵⁵

State legislatures have also been active in developing statutes to regulate LDC contract carriage. West Virginia, for example, recently has enacted enabling legislation that instructs its PUC to design rules for mandatory contract carriage by LDCs that operate within the state.⁵⁶ Under their legislative mandates, PUCs in states such as New York, Pennsylvania, and California have already moved to allow their respective LDCs to establish contract carriage service.⁵⁷

C. Actions by the Judicial System Affecting Bypass Policy

Because of the conflict over jurisdiction and resource allocation that bypass engenders, it is not surprising that litigation also is shaping bypass policy. Aside from *Associated Gas*,⁵⁸ the most significant case on the bypass issue is the May 1987 settlement of *District of Columbia Hospital Energy Cooperative Inc. v. Washington Gas Light Co.*⁵⁹ The plaintiffs were a group of seven Washington, D.C. hospitals that had arranged for direct discounted spot purchases of gas from Yankee Resources, an independent supplier based in Ohio. The hospitals sought to have the local transportation of that gas performed by their LDC, Washington Gas Light Co. (WGL). When WGL refused to provide the contract carriage service requested, the hospitals sued WGL. The essence of the hospitals' allegations was that it was anti-competitive for WGL to attempt to extend a franchise monopoly in the transmission and distribution of gas into an unsanctioned monopoly in the purchase and sale of gas to end-users. Whether the hospitals ultimately would have sought complete bypass of

53. PUCs can assert that their jurisdiction covers direct sales made locally by an interstate pipeline, but these assertions inevitably must meet with the approval of the legislature and the courts. For a sampling of PUC decisions in this regard, see Burkhardt, *Gas System Bypass: Can States Regulate Direct Sales by Interstate Pipelines?*, PUB. UTIL. FORT., July 9, 1987, at 45.

54. MISS. CODE ANN. § 77-11-307 (1988 Supp.).

55. See INGAA, *supra* note 27, at 10.

56. W. VA. CODE § 24-1-2 (1986); see also *United Fuel Gas Co. v. Battle*, 153 W.Va. 222, 167 S.E. 2d 890 (W.Va. 1969), cert. denied, 396 U.S. 116 (1969).

57. Lambert, *supra* note 27, at 16.

58. *Associated Gas Distribs. v. Federal Energy Regulatory Comm'n*, 824 F.2d 981 (D.C. Cir. 1987), cert. denied, 108 S. Ct. 1468 (1988).

59. No. 85-3720 (D.D.C., filed Nov. 20, 1985).

WGL's system is not known. In any event, under the terms of the settlement, WGL agreed to seek regulatory approval from the District of Columbia Public Service Commission to carry out contract carriage service for gas customers within the District of Columbia. WGL filed its contract carriage tariff in June 1987.⁶⁰

The Role of FERC in Shaping Bypass Policy

Several bypass cases before FERC are having a profound effect on the nature of bypass policy. Two of the more important cases were settled before FERC reached a final decision. One such case involved a Columbia Nitrogen fertilizer plant in Georgia that sought to bypass its LDC, Atlanta Gas Light Company (Atlanta Gas).⁶¹ The proposed bypass would have entailed building a spur line of less than one mile in length to connect the Southern Natural Gas Pipeline Company (Southern Natural) to the fertilizer plant. Columbia Nitrogen estimated that at the rates that Atlanta Gas was charging, it would have been able to save approximately \$3 million annually through the bypass investment. Atlanta Gas argued that because it was Southern Natural's largest customer and Columbia Nitrogen was in turn Atlanta Gas' largest customer, the "loss of load" engendered by the bypass (approximately 70,000 million BTU per day of interruptible sales) would have increased its overall average gas costs and imposed a larger portion of its fixed costs upon residential and small commercial customers. Atlanta Gas was joined in opposing Southern Natural's application before FERC by other customers of Southern Natural, the Consumers' Utility Counsel of Georgia, and most important, the Georgia Public Service Commission (the GPSC). Before FERC was able to reach a decision, the GPSC instituted rules allowing Atlanta Gas to offer both contract carriage service and market sensitive rates to industrial end-users. Upon the appearance of the improved service offering and lower tariffs, Columbia Nitrogen withdrew its bypass proposal.

60. While the case focused on the hospitals' desire for contract carriage access to WGL's system, the hospitals recently appealed the rates that WGL filed for such service, alleging that they are set too high. See Chandler, *Bargain-Price Natural Gas Flowing to Area Hospitals*, Wash. Post, Aug. 29, 1987, at D9, col. 5.

61. Southern Natural Gas Co., FERC Docket No. CP85-529 (1985) (application withdrawn prior to official action) [hereinafter Southern Natural]. See *Fertilizer Plant Would Bypass Distributor Under Southern Natural Deal*, INSIDE F.E.R.C., May 27, 1985, at 1; *Southern Natural Customers, State Regulators Fight Bypass*, INSIDE F.E.R.C., July 15, 1985, at 6.

A similar FERC case involved Bethlehem Steel Corporation's (Bethlehem) plant in Burns Harbor, Indiana and the LDC serving that plant, the Northern Indiana Public Service Company (NIPSCO).⁶² Bethlehem had proposed to build a short pipeline to connect its Burns Harbor plant directly to the ANR Pipeline Company (ANR), one of the trunk lines from which NIPSCO purchases its gas.⁶³ Bethlehem alleged that access to alternative supplies for its interruptible demand would allow it to lower its costs.⁶⁴ While Bethlehem would have used the bypass spur with ANR to fulfill its interruptible requirements, Bethlehem still would have relied on NIPSCO for its firm demands.⁶⁵ Thus, Bethlehem was proposing only a partial bypass of NIPSCO's system. NIPSCO alleged that the Bethlehem-ANR bypass would shift significant costs to NIPSCO's residential and small commercial customers.⁶⁶ Bethlehem argued before FERC that NIPSCO's rates were inappropriately "inverted," with interruptible rates exceeding those for higher quality firm service.⁶⁷ Ultimately, Bethlehem and ANR withdrew their proposal in return for a significant adjustment of NIPSCO's rates for interruptible sales to Bethlehem.⁶⁸

The most important FERC adjudication on bypass to date is FERC's recent decision on a case involving Panhandle Eastern Pipeline Company (Panhandle), National Steel Corporation (National Steel), and Michigan Consolidated Gas Company (MichCon).⁶⁹ National Steel arranged for direct purchases of gas supplies in Oklahoma from Union Texas Corporation at facilities that are connected to Panhandle's system.⁷⁰ National Steel argued that at MichCon's current rates, it could realize significant cost savings if it bypassed MichCon.⁷¹ National Steel, however, stated that if MichCon lowered its rates it would regain the opportunity

62. ANR Pipeline I, *supra* note 48. Both authors served as consultants to Bethlehem Steel Corporation for this case.

63. *Id.* at 61,409-10.

64. *Id.* at 61,411.

65. *Id.* at 61,409, 61,411.

66. *Id.* at 61,410.

67. *Id.* at 61,411.

68. ANR Pipeline Co., 39 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 65,031 (Apr. 15, 1987) (Docket Nos. CP84-386 et al.) (initial decision dismissing proceeding without prejudice), *aff'd*, 39 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 61,205 (May 26, 1987).

69. Panhandle Eastern Pipeline Co., 38 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 63,009 (Jan. 22, 1987) (Docket Nos. CP86-232 et al.) (initial decision) [hereinafter Panhandle I].

70. *Id.* at 65,034.

71. *Id.* at 65,034.

to supply National Steel.⁷² Moreover, National Steel asserted that the plant would further diversify its supply options with other fuels even if the proposed bypass was approved.⁷³ MichCon argued that Panhandle was proposing to charge discriminatory rates for its transportation service that made competition with the bypass virtually impossible.⁷⁴ MichCon further contended that the loss of National Steel as its customer would lead to a reduction of about \$10 million in annual revenues.⁷⁵ The costs covered by these revenues necessarily would have to be spread among MichCon's remaining customers.⁷⁶

Despite MichCon's arguments, FERC decided against MichCon and affirmed the administrative law judge's decision to grant Panhandle and National Steel their application for the bypass.⁷⁷ The first decision had noted, in part, that "the potential detriments to MichCon and its customers will occur regardless of whether the application . . . is granted because National Steel has a viable other supply option,"⁷⁸ and that "any potential detriment to MichCon's other customers from granting the application . . . is speculative since MichCon would not file for a rate increase with the Michigan Public Service Commission solely because of the loss of National Steel's load."⁷⁹ Thus, it was FERC's judgement that because National Steel had alternate supply arrangements available, it already had effectively bypassed MichCon.⁸⁰ In addition, because MichCon did not intend to seek an increase in its rates if the National Steel bypass were approved, FERC concluded that any resulting losses would not have to be made up through higher rates for the remaining customers.⁸¹

The most hotly contested bypass case to date is currently before FERC.⁸² The Mojave case involves the applications of two

72. *Id.* at 65,036.

73. *Id.* at 65,035.

74. *Id.* at 65,038, 65,039.

75. *Id.* at 65,038.

76. *Id.* at 65,038.

77. Panhandle Eastern Pipeline Co., 40 Fed. Energy Reg. Comm'n Rep. (CCH) ¶ 61,220 (Sept. 10, 1987) (Opinion No. 275-A, Docket Nos. CP86-232 et al.) [hereinafter Panhandle II].

78. Panhandle I, *supra* note 69, at 65,076.

79. *Id.*

80. Panhandle II, *supra* note 77, at 61,752.

81. *Id.* at 61,752, affirming Panhandle I, *supra* note 69, at 65,076.

82. Mojave Pipeline, *supra* note 26. See also Mojave Application is 'Subterfuge' to Evade Jurisdiction, CPUC Charges, *INSIDE F.E.R.C.*, July 1, 1985, at 10; CPUC Can't Meet Hinshaw Test in Jurisdictional Dispute, Mojave Says, *INSIDE F.E.R.C.*, July 15, 1985, at 8. Dr. Kalt is serving as a consultant in the Mojave case.

interstate pipeline companies, Mojave and Kern River, to serve directly enhanced oil recovery (EOR)⁸³ gas customers in central California. The proposed systems would allow EOR customers to bypass the intrastate distribution facilities of Pacific Gas and Electric (PG&E) and Southern California Gas (SoCal).⁸⁴ The bypass applications are a response to EOR producers' complaints that they have been disfavored customers in California, receiving low-quality yet expensive service from PG&E and SoCal.⁸⁵ The California Public Utility Commission (the CPUC)—a party to the case in opposition to the bypass—has responded by implementing new rules designed to improve opportunities for service and to rationalize rates for the EOR gas market. The CPUC, PG&E, and SoCal argue that approval of the bypass will in turn impose a greater share of the utilities' fixed costs upon the remaining customers and result in duplication of facilities.⁸⁶ The EOR producers contend that if the threat of bypass were removed, they would again be subject to the market power of the LDC and the political objectives of the CPUC. The producers also argue that competition will block the actual construction of new facilities if they are wastefully duplicative.

The Mojave case will have a major effect on the future of bypass policy if for no other reason than the size of the market at issue and the number of parties involved. One of the case's more interesting characteristics is the fact that the EOR producers' position suggests that they find the political risks of conducting business with competing pipelines regulated by competing levels of government more palatable than the political risks of conducting business with LDCs regulated by the California state government alone. That may well be a harbinger of future bypass proposals.

E. Bypass Policy Lessons Learned from the Legal Battles

The recent litigation over bypass illustrates the major themes around which cogent assessments of relevant public policy should be structured. The public clearly has an interest in avoiding

83. "Enhanced oil recovery" refers to a process in which steam or other agents are applied to the drilling procedure to increase the amount of petroleum obtained from a given deposit. *Mojave Pipeline*, *supra* note 26, at 61,458.

84. *Id.* at 61,459, 61,460.

85. *Id.* at 61,466.

86. *Id.* at 61,459-61.

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wasteful use of scarce resources, and if bypass facilities merely duplicate services already available from state-regulated LDCs, they are wasteful. Yet, public policy with respect to bypass does not determine whether bypass facilities are built or not; it only determines whether market entrants are able to compete for the chance to provide their services. As the cases mentioned above show, the mere prospect of new entry can engender improvements in LDC rates and services that out-compete a proposed bypass and therefore eliminate the need for building bypass facilities.

The foregoing cases highlight the equity issues that bypass policy raises. Industrial gas users stand to benefit the most from allowing the possibility of bypass while LDCs and their non-bypassing customers find the competition introduced when bypass is permitted threatening. This split is mirrored in the federal-state tensions over bypass policy, with state regulators particularly sensitive to in-state, residential consumers' interests and the federal authorities seeing a broader, national set of gas users. Assertions in the political arena, or even in the courts, rarely provide guidance for policymakers to use in the face of such conflicts. Accordingly, a systematic framework for analyzing the costs, benefits, and probability of consummated bypass should be developed.

III. Bypass and the Theory of Entry Regulation

Up to this point it has been necessary to define only loosely what is meant by bypass. However, a more formal definition is needed to develop an analytical framework of the economic determinants and the costs and benefits of bypass. A customer bypasses a regulated utility when it discontinues the purchase of a service or product from the utility and instead: (1) buys the service or product from a utility in another service area (horizontal competition); (2) buys the service or product from a party upstream from the utility (vertical competition); (3) produces the service or product itself through, for example, internal production of synthetic natural gas or electrical cogeneration (vertical integration); or (4) buys a service or product that is a close substitute for that provided by the utility. An example of this final form of bypass is the use of dual-fired boilers or other means of fuel switching.

The central economic implications of bypass can be segregated along familiar efficiency and equity lines. Within the context of

regulatory practices that traditionally have protected exclusive territorial franchises from the threat of entry, a crucial question of regulatory efficiency is presented: when is an incumbent utility susceptible to inefficient entry? Inefficient bypass may be defined as entry that engenders social costs in excess of social benefits. Addressing the efficiency of bypass raises other questions as well. How can competition exist in a market presumed to be a natural monopoly? If a regulated utility and competitors can co-exist, is the granting of an exclusive franchise to the utility warranted? Should the utility continue to be subject to a legal obligation to serve all customers in its service area if it is open to the threat of entry by new competition? And, on what basis should entry be regulated?

From an equity standpoint, if PUCs follow a *de facto* policy of guaranteeing gas utilities' fixed cost recovery, bypass can engender redistributions of the burden of fixed costs. In these circumstances, it is unlikely that bypass will ever be unanimously welcomed. This most certainly does not mean that bypass is necessarily a zero-sum or negative-sum event, but it does underscore the political tensions that have been mentioned previously. The purpose of this and the following Part is to examine the susceptibility of gas distribution markets to entry and to analyze the types of costs and benefits that come with bypass.

A. The Economics of Entry Regulation

Against a backdrop of perceived sizeable reductions in economic welfare and growing administrative burdens resulting from the regulation of a variety of industries, economists have been turning their attention toward re-examining the conditions under which government involvement in the marketplace is socially beneficial. This process has reaffirmed the importance of the conditions of entry in affecting the ability of a market to perform efficiently. This principal has been formalized in the theory of contestability.⁸⁷

A monopolistic or oligopolistic market is contestable when the threat of entry is sufficient to maintain the price and output levels that would occur if the market were competitively struc-

87. See W. BAUMOL, J. PANZAR & R. WILLIG, *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* (1982); Shepherd, *Contestability Versus Competition*, 74 *AM. ECON. REV.* 572 (1984).

tured. In general, three conditions must prevail for a market to be contestable. First, entry into and exit from the market must require the expenditure of few or no sunk costs. Second, all potential entrants must have access to the technology employed by the incumbent firms. Finally, the incumbent firm must not be able to adjust prices instantaneously when faced with the threat of entry. When these conditions exist, hit and run entry and exit are possible. This threat will cause even a firm in a monopolistic market to set its price and output at the competitive equilibrium because the ability of entrants to attack targets of profitability quickly provides discipline on incumbents' pricing and service offerings.⁸⁸

The efficacy of contestability as a threat hinges centrally on the mobility of capital. Clearly, the natural gas distribution industry is not characterized by highly mobile, quickly deployed and redeployed capital. This characteristic of the industry belies the possibility of hit and run entry and renders reliance on contestability to control monopolistic pricing futile.⁸⁹ As a result, under conditions in which distribution markets are not (or cannot be made) structurally competitive, there is a rationale for public utility-style price regulation. The question then arises whether entry into such markets should also be regulated.

Notwithstanding a general recognition of the benefits of easy entry, the answer to the foregoing question must be informed by the possibility that an industry that is most efficiently structured as a monopoly or oligopoly might not be able to sustain that structure if entry is unregulated. For example, if one large LDC or pipeline can serve a given market more cheaply than some multiple number of firms, entry by multiple firms would constitute a wasteful duplication of facilities. Whether a policy of unregulated entry would lead to such a result depends upon the rates that the incumbent can charge and the services that it can provide. In particular, if potential entrants anticipate that rates after entry will be insufficient to allow them to cover their costs, entry will be deterred and the incumbent's natural monopoly will be sustainable.⁹⁰

88. See Bailey & Baumol, *supra* note 1, at 120.

89. Similar conditions prevail in the pipeline segment of the industry. See Broadman & Toman, *Non-Price Provisions in Long-Term Natural Gas Contracts*, 62 *LAND ECON.* 111, 112 (1986).

90. The genesis of the "sustainability" literature is Panzar & Willig, *Free Entry and the Sustainability of Natural Monopoly*, 8 *BELL J. ECON.* 1 (1977).

A central determinant of the sustainability of a market that is naturally and efficiently structured as a monopoly is the market's contestability. In fact, while contestability provides a justification for laissez faire in markets that are not naturally monopolistic, the tables are turned in markets where efficiency requires a single firm.⁹¹ If an entrant's capital is highly mobile and not sunk upon entry, new competitors can engage in hit and run entry into the incumbent's market (or some of its submarkets) whenever the incumbent loads fixed costs into rates such that those rates exceed an entrant's costs. This could leave the incumbent with no set of rates that allows it to recover its costs and deter entry. When hit and run entry is possible, there can be an efficiency justification for restricting freedom of entry into otherwise naturally monopolistic or oligopolistic markets.

Notwithstanding their theoretical appeal, arguments for restrictions on entry into contestable natural monopoly markets have no obvious applicability to questions of bypass in natural gas distribution markets. Hit and run entry is wholly unrealistic in such markets because entrants must sink fixed costs to operate in the market. Because of the need to make distribution investments that cannot be pulled up freely and redeployed elsewhere, a new entrant can anticipate finding itself stuck in an industry already populated by an established competitor. As a result, the entrant's post-entry rates may yield losses. Losses are even more likely to occur if the established incumbent is a natural monopolist and therefore more efficient by definition. The sunk costs of distribution act as a barrier to entry and enhance the sustainability of incumbent companies' market positions.

A new entrant might be willing to get stuck in head-to-head competition with an incumbent utility if the utility has little or no ability to respond with better service offerings or rates of its own. In fact, natural gas utilities typically have the ability to respond to the prospect of entry with so-called "Mickey Mouse," multi-part rates.⁹² Rates charged by distribution companies and

91. "Where markets are perfectly contestable and monopoly is natural but unsustainable, limitations upon entry may be needed to ensure that the socially optimal set of products can be produced in the most efficient manner." W. BAUMOL, J. PANZAR & R. WILLIG, *supra* note 87, at 222-23. In short, while contestability is a necessary condition for the deregulation of entry to maximize economic efficiency, it is not sufficient. Sufficiency requires that the market in question be not only contestable, but also sustainable.

92. See Oi, *A Disneyland Dilemma: Two-Part Tariffs for a Mickey Mouse Monopoly*, 85 Q.J. ECON. 77 (1971).

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pipeline companies commonly can be stated in two parts: a commodity charge and a demand charge. The commodity charge varies with the volume of gas actually provided and generally covers at least variable costs. The demand charge bills customers for access to service without regard to the volume of gas purchased. Thus, this charge provides for recovery of some of the fixed costs. Such rate designs can enable even a natural monopolist facing contestability to sustain itself and deter entry.⁹³ This conclusion is most true in industrial gas markets, where small numbers of sophisticated parties can meet to negotiate and tailor rates to specific contexts. Higher transactions costs and less sophisticated buyers make this outcome less feasible in residential and small-scale commercial markets. However, these latter markets have not been the targets of bypass.

In sum, the sunk costs of incumbent LDCs deter, rather than encourage, bypass entry. Moreover, the ability of LDCs to respond to the threat of bypass by improving rates and services permits them to sustain themselves in the face of otherwise wasteful entry. Clearly, the long-standing tradition of granting LDCs an exclusive franchise, which obligates them to serve all customers in a market but also protects them from competitive entry, can be interpreted as being based on the notion that LDC markets are not sustainable. Nevertheless, it is reasonable to conclude that sustaining otherwise naturally monopolistic structures in local gas distribution markets does not require draconian prohibitions on entry.

B. Linkages Between Entry Regulation and Rate Regulation

The feasibility of bypass and the sustainability of LDCs' monopolies are tied directly to the rate structures in the gas industry.⁹⁴ The current demand charge-commodity charge rate structure should be taken to its logical limits to permit an improved rate design.⁹⁵ A rate design that allows for more efficient signalling of costs and demands will eliminate the consideration of fixed costs from LDCs' charges for marginal gas and transportation service. Moreover, the allocation of the various

93. See, e.g., Perry, *Sustainable Positive Profit, Multiple Price Strategies in Contestable Markets*, 32 *J. ECON. THEORY* 246 (1984).

94. See, e.g., *OFFICE OF PIPELINE AND PRODUCER REGULATION AND OFFICE OF ECONOMIC POLICY, FEDERAL ENERGY REGULATORY COMM'N, GAS TRANSPORTATION RATE DESIGN AND THE USE OF AUCTIONS TO ALLOCATE CAPACITY* 30-31 (1987) (on file with authors) [hereinafter *RATE DESIGN*].

95. See J. KALT, *supra* note 25, at 30.

classes and priorities of service, such as firm and interruptible demand, on the basis of price rather than politically-determined criteria of preference would permit improved distributions of these services.⁹⁶ Movement in this direction will require new approaches and contractual institutions. These include inventory fees, which charge for customers' use of LDC storage facilities and gas inventories; exit fees, which charge for leaving LDC systems; and reservation fees, which charge for the right to call on LDC services. Other needed reforms include the increased availability of fully unbundled transportation and sales services and the introduction of more market-based allocations of access to LDC facilities of the kind contemplated at the federal level in FERC's recent auction proposal for reservation rights on interstate pipelines.⁹⁷

The observation that a naturally monopolistic LDC can effectively deter entry with appropriate rate designs provides, by reverse implication, insight into the origins of customers' interests in bypass. Specifically, inappropriate LDC rate designs or the inability to provide customers with the services that they demand are the underlying roots of bypass. As commonly phrased by LDCs and their respective PUCs, the difficulty of rate design lies in allocating fixed costs from jointly used facilities across customer classes and types of service.⁹⁸ Local gas distribution markets are not made up of a single, homogeneous class of customers. They include residential, commercial, and industrial gas users, each of whom commonly has different demand characteristics and desires different types or qualities of service. In addition, customers commonly differ in their needs for such attributes of LDC operations as gas brokerage services, storage services, and price and contract term reliability.⁹⁹ LDCs with economies of scope can attempt to serve these various needs from a single physical plant, allowing customers to share the use of at least some LDC facilities.¹⁰⁰

96. *Id.* at 31.

97. *RATE DESIGN*, *supra* note 94.

98. See *supra* notes 45-49 and accompanying text (discussion of LDC and PUC responses to bypass).

99. These demands underlie the bypass cases reviewed *supra* notes 58-86 and accompanying text.

100. Economies of scope arise when the total cost of producing (or delivering) two or more products (or services) jointly is less than the sum of producing (or delivering) each separately. For more discussion, see Bailey & Baumol, *supra* note 1, at 118.

The allocation of the costs of jointly used facilities across LDCs' rates presents both economic and political problems. To be sure, it is relatively easy for economists to describe and advocate first-best multi-part rate structures¹⁰¹ or second-best "Ramsey" prices,¹⁰² which load fixed costs into prices in inverse proportion to the elasticity of customer demand. Nevertheless, it must be stressed that LDCs and PUCs do not make rates in an environment where economic efficiency is the sole objective of the parties involved. Most often, the parties to the ratemaking process—including LDC management, PUC commissioners and staff, involved politicians, and the various classes of customers—have conflicting private and social concerns over the burden of cost recovery.

As the discussion of recent cases suggests,¹⁰³ the LDC rate-making process easily can result in rate designs and corresponding allocations of types of service that lead to proposals for LDC bypass. To the extent that an LDC's service offerings leave certain customers' demands unmet, affected customers will have incentives to pursue bypass. Similarly, to the extent that the politics of ratemaking impose burdens that exceed the costs of bypass on particular customer classes, those classes have an incentive to pursue bypass. Even second-best Ramsey pricing may not be sustainable in the face of entry.¹⁰⁴ However, Ramsey pricing generally is not practiced by PUCs, and its sustainability is largely irrelevant in debates over bypass. The ultimate lesson is that the prospect of bypass pressures PUCs to institute more rational first-best pricing policies.¹⁰⁵

The fact that some bypass proposals can arise because of untoward aspects of state regulatory processes does not mean that such proposals are somehow economically unjustified. Improved costs or quality of service for customers of a bypass constitute real economic benefits. However, the fact that a prospective or actual instance of bypass can impinge on state regulatory processes and lead PUCs to design different rate or service offerings does

101. See *supra* notes 92-93 and accompanying text.

102. Ramsey pricing refers to the scheme developed in Ramsey, *A Contribution to the Theory of Taxation*, 37 *ECON. J.* 47 (1927). The most comprehensive restatement is in Baumol & Bradford, *Optimal Departures from Marginal Cost Pricing*, 60 *AM. ECON. REV.* 265 (1970). Advocacy for defense of such second-best rate designs against bypass is contained in MacAvoy, Spulber & Stangle, *Is Competitive Entry Free? Bypass and Partial Deregulation in Natural Gas Markets*, 6 *YALE J. ON REG.* 209, 237-40 (1989).

103. See *supra* notes 58-86 and accompanying text.

104. See MacAvoy, Spulber & Stangle, *supra* note 102, at 239-40.

105. See, e.g., Bailey & Baumol, *supra* note 1, at 121-22; Perry, *supra* note 93.

suggest that there can be both winners and losers, benefits and costs from bypass competition.

IV. The Benefits and Costs of LDC Bypass

As a general rule, public policy choices involve some implicit or explicit comparisons of winners and losers, gains and losses. Economically efficient policies seek to promote activities in which the former exceed the latter. The possibility that bypass can produce both winners and losers means that it is useful to contrast socially economic bypass with socially uneconomic bypass.¹⁰⁶ In the common case in which the bypasser is an industrial end-user, the beneficiaries generally include stockholders, final consumers of the affected industrial products and, in some instances, labor.¹⁰⁷ The parties presumed to be harmed include LDC stockholders and customers remaining after bypass. A socially efficient bypass is one in which the gains to the bypassers exceed the losses to LDC stockholders and remaining customers. In such a case, regulation of entry is unwarranted and the prospect of bypass should be allowed. When losses to the remaining customers exceed the gains to the bypassers, economic standards of efficiency indicate that the bypass should not occur.

These policy conclusions risk being mischaracterized as policy choices. Policymakers encounter bypass as a request by a new competitor for the right to try to enter a market. The policymakers' decision does not cause bypass facilities to be built or force customers to switch suppliers. There is simply a choice whether to allow the competition to take place. The competition, in turn, will determine whether entry is successful. In fact, the policymaker can seldom be expected to have *ex ante* knowledge of the full costs and benefits of a particular bypass proposal. Thus, the policymaker must determine whether competition between incumbent utilities and potential entrants can be relied upon to weed out socially uneconomic bypass proposals if a proposed bypass is allowed to compete to enter the market. This is the implied policy problem of deregulating entry into gas distribution markets.

106. For the sake of simplicity let us refer to the presumed beneficiaries of bypass as the "bypassers".

107. A socially economic bypass can then be said to be one in which the gains to the bypassers exceed the losses to the remaining customers. The parties presumed to be harmed directly by bypass can be designated the "remaining customers."

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The question posed by this policy problem involves the sustainability of the LDC's traditional monopoly (or oligopoly) position. As was stressed above, the sunk costs of established utilities act as a barrier to entry; indeed, they act as a barrier to entry by even efficient bypass.¹⁰⁸ When coupled with the PUC-conferred ability to respond to the threat of competition by means of rate and service redesigns, efficient utility service can be expected to be sustainable against the threat of entry.

One implication of allowing the market to decide the fate of bypass proposals is that even if inefficient entry is weeded out, the competition leading to such a result may alter utilities' pre-existing rate structures and service offerings.¹⁰⁹ To the extent that this process rationalizes rate structures in accordance with marginal cost pricing principles, or the process results in improved service offerings to potential bypassers, it is not a zero-sum process. In this instance, competition yields improved efficiency. In fact, the competition that weeds out uneconomic bypass need be no worse than zero-sum as long as PUCs and their utilities do not worsen rate designs by shifting forgone fixed cost recovery from prospective bypassers into other customers' rates for incremental service. Stated differently, if the only benefit to prospective bypassers from bypass competition is a reduction in contributions to their utility's overhead, the implied burden on other ratepayers need not exceed an equivalent amount.

A. A Framework for Analyzing the Benefits and Costs of Bypass

From a welfare perspective, the benefits of bypass are the consumer surplus gains realized by bypassers, while the cost of bypass and the process of allowing competition over bypass are the burdens. In this framework, the efficiency test for bypass amounts to assessing whether the winners' gains from bypass outweigh the losers' losses.

The losses attributable to bypass can take the form of a cost-shift from bypassers to remaining ratepayers, but a dollar-for-dollar cost-shift is not a necessary result of bypass competition. Any contribution to LDC overhead that is lost from bypassers can be borne by other ratepayers, utility stockholders, and the utility itself. In other words, the costs of bypass may take the form of a cost-shift, a profit-squeeze, or a cost-squeeze. The textbook

108. See *supra* notes 87-93 and accompanying text.

109. See *supra* notes 58-86 and accompanying text.

result of a dollar-for-dollar cost-shift to other ratepayers represents a limiting, extreme case.¹¹⁰ The experience of public utility regulation suggests that LDCs seldom operate on the knife-edges of both technical efficiency and zero economic profits.¹¹¹ That is, there is "fat" that gets squeezed when a political equilibrium is upset by an event such as bypass. Of course, to the extent that the result is improved LDC cost efficiency, there are no losers from the process; there are only pure efficiency gains. When the burden of bypass falls on other ratepayers and on stockholders, however, an economic welfare analysis must compare these parties' losses to the benefits that bypassers realize.

B. The Benefits of Bypass

There are four generic classes of socially productive benefits that may be attributable to subjecting LDCs to competition from potential entrants: (1) rate effects,¹¹² (2) service effects,¹¹³ (3) risk effects,¹¹⁴ and (4) competitive effects.¹¹⁵ Beneficial rate effects result from the ability of actual or prospective bypass to lower the marginal expense of delivered gas to bypassing end-users. Any induced reduction in the expenses that affected end-users pay at the margin to acquire delivered gas could result in increased gas use. As long as expenses at the margin are not below the marginal resource costs of service, this increased use yields net social benefits. Of course, an LDC could choose to offset such benefits by responding perversely with higher incremental rates for remaining customers.

Dissatisfaction with the quality of LDC service can also be an important impetus to bypass.¹¹⁶ Two attributes of service are

110. See *supra* Part III.

111. See Joskow, *Inflation and Environmental Concern: Structural Change in the Process of Public Utility Price Regulation*, 17 *J.L. & ECON.* 291 (1974).

112. These are illustrated by ANR Pipeline I, *supra* note 48, discussed *supra* notes 62-68 and accompanying text; and Southern Natural, *supra* note 61.

113. These are illustrated by the moves toward LDC contract carriage in states such as California, New York, Pennsylvania, and West Virginia. See Lambert, *supra* note 27, at 16. See also *supra* notes 50-57 and accompanying text.

114. These are illustrated by Mojave Pipeline, *supra* note 26, discussed *supra* notes 82-86 and accompanying text.

115. These are illustrated by Panhandle I, *supra* note 69 and Panhandle II, *supra* note 77, discussed *supra* notes 69-81 and accompanying text; and *District of Columbia Hosp. Energy Coop. Inc. v. Washington Gas Light Co.*, No. 85-3720 (D.D.C., filed Nov. 20, 1985), discussed *supra* notes 59-60 and accompanying text.

116. See *supra* Part II.

frequently at issue. The first is delivery reliability. Low priority service is a de jure or de facto reality for many industrial customers of LDCs. The political, if not economic, need to grant higher priority to other users is frequently manifested, for example, in the inability of industrial end-users to purchase firm service from LDCs. This does not mean that LDCs can or should ignore political necessities in establishing priorities of service. Rather, it suggests that, in the process of establishing de jure or de facto priorities, certain customers demands may go unmet. In such circumstances, bypass may be the only mechanism by which industrial end-users are able to buy service of the quality that they desire. The second aspect of service at issue is access to unbundled LDC transportation service. As federal policy has moved interstate pipelines into an era of increasingly unbundled, open-access transportation, many end-users that are sophisticated enough to take advantage of the implied opportunities have been blocked from doing so by lack of access to unbundled LDC transportation.¹¹⁷ The prospect of bypass can induce LDCs and their PUCs to respond to these customers' demands, and consummated bypass directly can link them to the nation's emerging open access transportation grid.

Closely related to the service effects of bypass are the risk effects. Industrial end-users can not only demand the reliability of physical deliveries that gives rise to service benefits of bypass; they can also require reliability in the contractual terms and conditions of gas delivery service. If de jure or de facto low priority before PUCs manifests itself in relatively high risks of changes in the terms and conditions under which LDC service is available, industrial end-users' costs can be raised (as they self-insure),¹¹⁸ long-term planning can be inhibited, and investment can be discouraged. State PUCs have a difficult time binding themselves to credible bargains of the type that some industrial gas users demand. This problem appears to have been magnified in recent years.¹¹⁹ Bypass or the threat of bypass can provide an answer. Prospective bypass may induce LDCs, and especially their respective PUCs, to improve the reliability of the terms and conditions under which local distribution services are provided. When bypass actually takes place, it commonly involves

117. See *supra* Part II.

118. For example, firms can self-insure through fuel switching installations.

119. See Kalt, Lee & Leonard, Reestablishing the Regulatory Bargain in the Electric Power Industry, in FINAL REPORT OF THE BOSTON EDITION REVIEW PANEL Appendix V (W. Hogan ed. 1987).

turning from state-regulated distribution entities to FERC-regulated pipeline facilities. Although there is no theoretical necessity that federal jurisdiction provide more reliable terms and conditions of service, permitting bypass to occur allows end-users to vote with their feet. At the very least, access to both state and federally-regulated facilities sets up inter-jurisdiction competition and establishes a method by which bypassing end-users can hedge the risks that they face. This form of competition is not inherently wasteful;¹²⁰ it allows users to reduce risks while encouraging investment and lowering the costs of self-insurance.

Apart from allowing improvements in rates, service, and reliability, bypass can produce generalized competitive benefits. For example, insofar as prospective bypass induces LDCs to offer unbundled transportation, or consummated bypass links large end-users directly to open access interstate systems, additional competitors are introduced into the market. This not only tends to dampen any latent upstream monopoly power, but also effectively offsets structural monopolies in local gas brokerage that LDCs enjoy. Finally, competition from bypass coupled with remaining customers' and LDC stockholders' resistance to the burden of a cost-shift may induce efficient cost reductions for all LDC operations.¹²¹

C. The Costs of Bypass

Bypass is not free. The most significant costs are those associated with building and operating the bypass facilities themselves. Whether or not new physical facilities are economically duplicative, their use of labor and capital represents a real resource cost. From a policy perspective, these costs reduce any benefits bypassers realize. New facilities can be considered economically duplicative only to the extent that their costs are not offset by benefits of the kinds that we have described. When the benefits of a bypass extend beyond simple delivery of gas to include improved service quality or risk reduction, the observation of an apparent physical duplication of facilities provides little insight into the outcome of a social cost-benefit test.

120. A classic discussion of inter-jurisdictional competition is provided by Tiebout, *A Pure Theory of Local Expenditure*, 64 *J. Pol. Econ.* 416 (1956).

121. See *supra* notes 110-11 and accompanying text.

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It is important to note that some degree of physical duplication of facilities may well be optimal. For example, many gas and electric utilities maintain capacity reserve margins to insure against the risk of short-run increases in demand or to provide needed capacity during maintenance periods. End-users' bypass investments can function in much the same way. Similarly, end-users may have dual-fired boilers or other types of fuel-switching capabilities; to the extent that these facilities are tantamount to bypass investments, they also can be viewed as constituting duplications of physical facilities. Nevertheless, such investments are usually considered socially beneficial insofar as they result in a more flexible energy-using capital stock.

If the construction of bypass facilities permits an affected LDC to avoid building, repairing, or maintaining facilities of its own, the resulting avoided costs appropriately can be thought of as a benefit of bypass. Equivalently, the net cost of bypass facilities can be thought of as being less than the gross cost when bypass displaces investments that an LDC would otherwise have to make. A consummated bypass displaces the variable costs that an affected LDC would otherwise incur. This also is a benefit of bypass. Of course, the savings in LDCs' variable costs are offset by the variable expenses of operating the bypass facilities. A priori, it is not possible to say which supply system, LDC or bypass, has the lowest operating costs. The comparison depends upon such factors as the relative distances over which the alternative systems travel and the extent of any technological improvements embodied in the bypass' newer facilities.

Conclusion

The most critical lesson of this analysis of bypass is that, given the complexities and uncertainties associated with assessing whether a particular bypass proposal produces positive net social benefits, public policy towards bypass should carry a presumption in favor of competition. Thus, if there is to be a bias in bypass policy, it should be towards rather than away from bypass. The question should not be "when is competition excessive?" but rather "when is regulation necessary?"

The core of the argument for bypass rests upon two themes. First, entry and the threat of entry have the capacity to discipline regulated gas distribution markets in socially productive ways. Bypass and its threat can increase the pressure on local utilities to hold down their costs, rationalize their rate structures, and

improve the range and quality of their service offerings. Second, entry by socially inefficient bypass proposals is unlikely to be successful. Because LDCs and PUCs can respond to the prospect of entry with improved rate designs and because LDCs' fixed costs are largely sunk, significant deterrents to inefficient entry exist. Particularly in the context where bypass commonly arises—industrial markets populated by relatively small numbers of sophisticated participants—efficient natural monopoly in local gas distribution can be expected to be sustainable. Accordingly, restrictions on entry can be relaxed.

Effective threats of bypass clearly impinge on the rate-making process for local gas distribution utilities. This has both economic and political implications. Reforming LDC rate structures so that they are more in line with basic principles of economic efficiency not only would be an important step in improving LDC market performance overall, but it also would reduce artificial incentives for bypass. Indeed, it is arguable that one of the reasons why bypass has become such a major policy issue is that PUCs have not encouraged LDCs to offer flexible and fuel-sensitive rates and services to industrial end-users. In fact, many PUCs have followed a regulatory policy of excessively tilting rates, not to mention service priorities and quality, in favor of residential and small commercial customers. In part, these policies have grown out of the politics of LDC regulation. These policies have generated a belief among PUCs and LDCs that competition in gas markets stops at the city gate. Yet, if there is one conclusion to be drawn from recent FERC actions, it is that wellhead competition in the gas industry reverberates directly downstream from the wellhead to the city gate and to the burner-tip. As a result, any attempt to devise an effective bypass policy in downstream markets necessarily must entail significant reform of LDC rate structures.

The analysis presented in this Article should make it clear that a blanket ban on bypass would be unsound public policy. On the one hand, with the introduction of more efficient pricing schemes, the incidence of bypass proposals and the amount of bypass actually consummated surely will diminish. On the other hand, opportunities for credible threats of bypass must be preserved, for the mere threat of bypass enhances the performance of both LDCs and PUCs. The argument in favor of allowing bypass is not that bypass itself is desirable. Rather, permitting bypass engenders positive effects by enhancing competition throughout the natural gas market.