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Jeff Davidson

Indiana University School of Law

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NATURAL GAS AND THE FEDERAL POWER COMMISSION

Any consideration of environmental protection encounters a threshold dilemma. Rationality requires that we abate, if not eliminate, pollution from the environment. A major contributor to that pollution is fossil fuel production of energy. Yet, despite the desire to reduce such pollution, continued technological progress requires an expanding energy supply. This conflict between increasingly stringent antipollution laws and rapidly expanding energy needs can only increase the demand for natural gas—cleanest and least polluting of the fossil fuels.¹

Concern over the continued availability of this fuel makes relevant an examination of the natural gas industry, its regulation and the environmental effects of that regulation. After a brief explanation of the basic legal and administrative structure controlling the industry, this discussion will focus on one particular aspect of that structure—government regulation of the price—and its effects on the supply of natural gas.

GOVERNMENT REGULATION OF THE NATURAL GAS INDUSTRY

The natural gas industry is characterized by a long-term, interlocking relationship of seemingly independent legislative and administrative actions. Various state and federal agencies have been charged, under numerous statutes,² with the task of regulating different aspects of that industry. Because of this unplanned diversification of authority, any particular legislative or administrative decision can have far reaching and largely unforeseeable environmental consequences. Examples are numerous.³ However, because of its extensive jurisdiction over natural

1. See *Hearings on S.R. 45 before the Senate Comm. on Interior & Insular Affairs*, 92d Cong., 1st Sess. 95, 96 (1971) [hereinafter cited as *1971 Hearings*] (statement of Walter E. Rogers, President of the Independent Natural Gas Association of America); *id.* at 64, 65 (statement of Sen. John G. Tower (R-Tex.)). An example of the role which natural gas can play in the nation's environment is the fact that a threefold increase in the present rate of natural gas usage in New York City would enable that city to meet minimum air quality standards. Roddis, *What Is Inferior Use of Gas?*, PUB. UTIL. FORT., Oct. 14, 1971, at 90 [hereinafter cited as Roddis].

2. Jurisdiction is exercised by a multiplicity of agencies, from state public utility commissions to the Internal Revenue Service. An example of authority granted by federal statutes is the Department of the Interior's control over natural gas leases on federally owned lands. This control originates from the Mineral Leasing Act of 1920, 30 U.S.C. § 22 (1970); the Right of Way Leasing Act of 1930, 30 U.S.C. § 301 *et seq.* (1970); the Acquired Land Leasing Act of 1947, 30 U.S.C. § 35 (1970) and the Federal Property and Administrative Services Act of 1949, 40 U.S.C. § 471 (1970).

3. Consider, for example, the matter of the Alaskan gas reserves. The Merchant Marine Act of 1920 provides:

No merchandise shall be transported by water, or by land and water, on

gas,⁴ the Federal Power Commission has the greatest potential for long-term environmental impact.

Congress has granted the FPC two comprehensive methods of regulating the natural gas industry, both of which have direct environmental implications. The first is the power to grant or deny the certificates of public convenience and necessity required for any interstate sale and transportation of natural gas.⁵ By means of this authority the FPC has the opportunity to effect long-range plans for natural gas usage. Although the FPC is increasingly aware that this opportunity can aid in solving environmental problems, its use of the certification authority for such purposes has been slow in developing.⁶

The FPC's second means of control is worthy of more detailed discussion. It regulates the field price of natural gas, that is, the price gas producers can charge interstate pipeline companies. The gas industry contends that the FPC has unwisely enforced low prices for natural gas

penalty of forfeiture thereof, between points in the United States . . . either directly or via a foreign port, or for any part of the transportation, in any other vessel than a vessel built in and documented under the laws of the United States and owned by persons who are citizens of the United States. . . .

46 U.S.C. § 883 (1970). Because American vessels are more expensive to construct and operate, this requirement serves to double shipping costs between Alaska and ports in other states. As a result, the huge quantities of natural gas available in Alaska probably cannot be economically transported to domestic markets. At the same time, other states must import more expensive foreign natural gas to satisfy domestic demand. Moreover, about seventeen per cent of the natural gas produced in connection with Alaskan oil drilling is currently burned at the producing well because the expense of processing and transporting the gas exceeds the realizable price. Hartig & Norman, *Production, Conservation, and Utilization of Natural Gas in Alaska*, 3 NATURAL RESOURCES LAW 694, 696-700 (1970).

4. This jurisdiction was granted by the Natural Gas Act of 1938, 15 U.S.C. § 717 *et seq.* (1970).

5. 15 U.S.C. § 717f(c) (1970).

6. A major reason for this slow development is the FPC's adherence to a policy position clearly stated in *Mississippi River Fuel Corp.*, 12 F.P.C. 109 (1953):

[T]he use of natural gas as boiler fuel [to operate public utility plants] is an inferior usage and . . . , while it is not to be denied in all situations, it should be permitted only on a positive showing that it is required by public convenience and necessity.

Id. at 112. Since fossil fuel production of energy in public utility plants, a major source of urban air pollution, could be nearly eliminated if public utilities were allowed to burn natural gas, the wisdom of this FPC policy position has been questioned:

The air in New York City . . . needs improvement. To do this, maximum use of clean fuels is necessary. . . . Therefore, to the extent that gas can be used for this purpose, it should be used.

Moreover, virtually all of the electricity in Con Edison's service area is used for residential and commercial purposes. Even as with natural gas, this is accepted as the highest end use. It is, therefore, hard to conceive that using natural gas to produce a life-supporting product in a way that harms least an already damaged environment is an inferior use of that gas.

Roddis, *supra* note 1, at 90.

and that these low prices have caused a substantial increase in demand for natural gas. At the same time low prices have removed the financial incentive for private exploration and recovery operations, and thus discouraged the development of new gas supplies. Consequently, this policy has resulted in a critical natural gas shortage.⁷ To examine this contention adequately, the history of the FPC's regulation of the field price for natural gas must be understood.

FPC jurisdiction over the field price for natural gas originated with the Supreme Court's decision in *Phillips Petroleum Co. v. Wisconsin*.⁸ The Court held that a company which produced and purchased natural gas for sale to interstate pipelines was a "natural gas company" within the meaning of the Natural Gas Act, even if unaffiliated with an interstate operation. This unexpected decision⁹ meant that all rates charged interstate pipelines had to meet a "just and reasonable" standard, which was to be determined by the FPC.¹⁰ Following the direction of *Phillips*, lower federal courts soon upheld FPC assertions of jurisdiction over all well-head sales of gas to be transported in interstate pipelines for later resale.¹¹ Although the sheer number of these sales created an administrative nightmare, the FPC's greatest difficulty was in choosing appropriate criteria for determining the "just and reasonable" rates required by the Natural Gas Act.¹²

7. 1971 Hearings, *supra* note 1, at 71, 75 (statement of Carl E. Bagge, former member of the FPC and current President of the National Coal Association); *id.* at 67 (statement of Frank N. Ikard, President of the American Petroleum Institute); *id.* at 96 (statement of Walter E. Rogers, President of the Independent Natural Gas Association of America). See also Bagge, *Broadening the Supply Base—A Proposal to Eliminate Producer Price Regulation*, 3 NATURAL RESOURCES LAW. 430 (1970) [hereinafter cited as Bagge].

8. 347 U.S. 672 (1954), *aff'g* 205 F.2d 706 (D.C. Cir. 1953), *rev'g* 10 F.P.C. 246 (1951).

9. The Supreme Court decision in *Phillips* reversed the FPC's own determination that its authority did not extend so far. *Phillips Petroleum Co.*, 10 F.P.C. 246 (1951).

10. All rates and charges made, demanded, or received by any natural-gas company for or in connection with the transportation or sale of natural gas subject to the jurisdiction of the Commission, and all rules and regulations affecting or pertaining to such rates or charges, shall be just and reasonable, and any such rate or charge that is not just and reasonable is declared to be unlawful.

15 U.S.C. § 717c(a) (1970).

11. *Deep South Oil Co. v. FPC*, 247 F.2d 882 (5th Cir. 1957); *Saturn Oil & Gas Co. v. FPC*, 250 F.2d 61 (10th Cir. 1957), *cert. denied*, 355 U.S. 956 (1958).

12. This difficulty generated a considerable amount of litigation and an even greater amount of confusion about what should be considered when selecting a "just and reasonable" rate. To take the Fifth Circuit as an example, see the series of cases decided on Apr. 23, 1958: *Bel Oil Corp. v. FPC*, 255 F.2d 548, *cert. denied*, 358 U.S. 804 (1958); *Associated Oil & Gas Co. v. FPC*, 255 F.2d 555; *Gulf Oil Corp. v. FPC*, 255 F.2d 556; *Sun Oil Co. v. FPC*, 255 F.2d 557. See also the two cases decided by the

In 1959, the Supreme Court decided *Atlantic Refining Co. v. Public Service Commission*¹³ (the *CATCO* case), which affected the FPC's efforts to develop a workable system of rate determination. Initially, the Court ruled that the proposed price for natural gas was a valid subject for consideration in certification proceedings.¹⁴ In other words, one of the elements determining "public convenience and necessity" was the price at which the natural gas was to be sold. Secondly, the Court held that any proposed price that exceeded the going market price in the area where the gas was produced was highly suspect and, therefore, not consistent with the public convenience and necessity, absent some showing of special circumstances.¹⁵

The FPC interpreted *CATCO* as an order to hold the line on natural gas prices until a method of setting "just and reasonable" rates could be devised. Consistent with this interpretation, the FPC developed the "in-line" pricing guidelines which, in effect, froze the prices of natural gas by requiring, in certification proceedings, that new gas sales be made at rates "in-line" with those at which previous sales had been made.¹⁶

Freezing natural gas prices was considered a temporary method of

Fifth Circuit on Feb. 20, 1959: *Forest Oil Corp. v. FPC*, 263 F.2d 622; *H. F. Sears v. FPC*, 263 F.2d 626.

13. 360 U.S. 378 (1959).

14. What we do say is that the inordinate delay presently existing in the processing of section 5 [rate-fixing] proceedings requires a most careful scrutiny and responsible reaction to initial price proposals of producers under section 7 [certification proceedings].

Id. at 391.

15. *Id.* at 392-93. The Court premised its preference for low gas prices upon the consumer protection role of the FPC. The Court also said: "The [Natural Gas] Act was so framed as to afford consumers a complete, permanent and effective bond of protection from excessive rates and charges." *Id.* at 388. While *CATCO* did not explicitly enumerate the "special circumstances" which would remove the taint from suspect higher price proposals, it did offer factors which might justify higher prices in particular circumstances, including unusually high production costs, special construction costs consistent with the prevailing practice or custom of the area where the gas is produced and special urgent need for some quantity of gas at any price. *Id.* at 392-93.

16. *Panhandle E. Pipeline Co.*, 27 F.P.C. 35 (1962); *Continental Oil Co.*, 27 F.P.C. 96 (1962); *Michigan Wisconsin Pipe Line Co.*, 27 F.P.C. 449 (1962); *Ohio Oil Co.*, 27 F.P.C. 551 (1962); *American La. Pipe Line Co.*, 27 F.P.C. 792 (1962); *El Paso Natural Gas Co.*, 27 F.P.C. 1134 (1962); *Standard Oil Co.*, 27 F.P.C. 1153 (1962); *Skelly Oil Co.*, 28 F.P.C. 401 (1962); *Texas Seaboard Co.*, 29 F.P.C. 593 (1963); *Jake L. Hamon*, 29 F.P.C. 784 (1963); *El Paso Natural Gas Co.*, 29 F.P.C. 1175 (1963); *Placid Oil Co.*, 30 F.P.C. 283 (1963); *United Gas Pipe Line Co.*, 30 F.P.C. 329 (1963); *Hassie Hunt Trust*, 30 F.P.C. 1438 (1963); *Amerada Petroleum Corp.*, 31 F.P.C. 623 (1964); *Union Tex. Petroleum Co.*, 32 F.P.C. 254 (1964); *Edwin L. Cox*, 32 F.P.C. 1301 (1964); *Hawkins & Hawkins*, 34 F.P.C. 897 (1965); *Sinclair Oil & Gas Co.*, 34 F.P.C. 930 (1965); *Turnbull & Zoch Drilling Co.*, 34 F.P.C. 1001 (1965). The Commission's method of determining the "in-line" price of natural gas was eventually upheld by the Supreme Court in *FPC v. Sunray D-X Oil Co.*, 391 U.S. 9 (1968).

price ascertainment pending a precise determination of "just and reasonable" rates. This fact, coupled with the practically impossible task of setting prices on an individual producer basis, led the FPC to announce a new method for rate regulation.¹⁷ Under this new method the country was divided into large natural gas producing areas, and for each area a ceiling price was set within which individual producers were to sell their natural gas. The originally set "in-line" ceilings were to be gradually superseded by new prices determined in area rate proceedings. The new ceilings would be based on evidence relating to relevant economic and geological factors of an area as a unit. Of special significance in this rate determination process were data concerning cost of production.

The FPC chose the Permian Basin area of the Southwest¹⁸ as the subject of its first area rate proceeding.¹⁹ In 1965, after five years of hearings, the FPC issued its determination of "just and reasonable" rates in the Permian Basin.²⁰ A dual-price system was created. One price, the lower, was the ceiling rate for natural gas produced in conjunction with oil recovery, and for gas coming from already discovered reservoirs. The higher price was the ceiling rate for newly discovered natural gas reserves.

Reaction to the FPC's Permian Basin order included disagreement with the rate-of-return method of determining ceiling rates and an accusation that the dual-price system was a form of price discrimination.²¹ The most serious objections were leveled at the price freeze aspects of the order. According to opponents of the rate-of-return method, setting prices on the basis of previous production costs tended to act as a long-term price depressant.²²

Relying heavily on the FPC's discretion and expertise, the Supreme

17. General Policy Statement No. 61-1, 24 F.P.C. 818 (1960).

18. The Permian Basin lies in Texas and New Mexico.

19. Area Rate Proceeding, Docket No. AR61-1, 24 F.P.C. 1121 (1960).

20. Area Rate Proceeding, Docket No. AR61-1, 34 F.P.C. 159, *rehearing denied*, 34 F.P.C. 1068 (1965). For a summary of the FPC's orders, see Fuchs, *The New Administrative State: Judicial Sanction for Agency Self-Determination in the Regulation of Industry*, 69 COLUM. L. REV. 216, 220 (1969).

21. Kitch, *The Permian Basin Area Rate Cases and the Regulatory Determination of Price*, 116 U. PA. L. REV. 191 (1967) [hereinafter cited as Kitch, *Permian Basin*]. Initial judicial reaction was also unfavorable, though more narrowly based. Of particular concern to the court in *Skelly Oil Co. v. FPC*, 375 F.2d 6 (10th Cir. 1967), was the question whether some details of the area pricing system, like discounts from the area ceilings for natural gas of varying quality, adequately insured that gas producers could recoup their costs with a sufficient rate of return on their investments.

22. Given a maximum price, gas will not voluntarily be produced at greater cost than the price allowed. Since the ceiling price is based on what the costs for production have been, the FPC is unlikely to discover the need for higher prices without the expensive and time-consuming process of a new area rate proceeding. Kitch, *Permian Basin*, *supra* note 21, at 211.

Court swept aside the criticism and upheld the FPC's order.²³ The Court gave the FPC an unqualified vindication.²⁴ The net effect of the decision was to affirm the FPC's area rate method in toto, including the price freeze aspects. After this case, the FPC proceeded to establish rates for other natural gas producing areas of the country.²⁵

EFFECTS ON THE SUPPLY OF NATURAL GAS

The contention that the present price of natural gas has created a gas shortage by stimulating demand while discouraging the exploration for and recovery of new gas reserves is environmentally significant since the abundant supply of natural gas, properly used, could reduce a major source of air pollution. Critical examination of the merit of this contention can be facilitated by separately considering four questions: (1) Is there a shortage of natural gas in this country? (2) Is the current price of natural gas insufficient to stimulate exploration for and recovery of new gas reserves? (3) If the current price is too low, is the FPC responsible? (4) If the FPC is to blame for inadequate price levels, what are the reasons for its policy?

Is there a natural gas shortage?

The commonly used benchmark for determining the adequacy of the nation's supplies of natural gas is the "r/p" (reserve/production) ratio. This ratio is computed by dividing the current remaining proven reserves of natural gas by the current net annual production. The resulting figure is a very rough estimate of the number of years that present proven reserves can satisfy production demands at present consumption levels. The FPC itself has warned that the r/p ratio has been declining continuously. Indeed, that decline has been accelerating.²⁶ Industry re-

23. *Permian Basin Area Rate Cases*, 390 U.S. 747 (1968).

24. [W]e have heretofore emphasized that Congress has entrusted the regulation of the natural gas industry to the informed judgment of the Commission, and not to the preferences of reviewing courts. A presumption of validity therefore attaches to each exercise of the Commission's expertise. . . . [The Commission] must be free, within the limitations imposed by pertinent constitutional and statutory commands, to devise methods of regulation capable of equitably reconciling diverse and conflicting interests.

Id. at 767.

25. Area Rate Proceeding, Docket No. AR61-2, 40 F.P.C. 530 (1968) (Southern Louisiana Area); Area Rate Proceeding, Docket No. AR64-1, ___F.P.C.__(Op. No. 586, 1970) (Hugoton-Anadarko Area); Area Rate Proceeding, Docket No. AR64-2, ___F.P.C.__(Op. No. 595, 1971) (Texas Gulf Coast Area). The FPC's orders for the Southern Louisiana Area were judicially sustained in *Southern La. Area Rate Cases*, 428 F.2d 407 (5th Cir.) cert. denied sub nom. *Municipal Distrib. Group v. FPC*, 400 U.S. 95 (1970).

26. In 1955 the r/p ratio was 22.1; in 1960, 20.1; in 1965, 17.6; in 1967, 13.3.

representatives have forecast that if the r/p ratio continues to drop at the present rate, only 86 per cent of the nation's natural gas requirements can be domestically satisfied in 1975;²⁷ by the year 2000 the country could be completely without domestic supplies of natural gas.²⁸

United States foreign trade data gives credence to the FPC's figures. During 1968 and 1969, U.S. exports of natural gas declined by nearly fifty per cent, to less than 0.2 per cent of total U.S. gas production.²⁹ Imports of natural gas, on the other hand, increased 11.5 per cent during the same period.³⁰ Declining exports and increasing imports are characteristic of a domestically scarce commodity.

Further support for the FPC's predictions is found in the restrictions announced by major buyer-distributor companies in the Midwest and East on sales to new customers.³¹ These restrictions are based on an alleged inability to purchase sufficient quantities of gas.³²

Acceptance of the FPC's data leads to the conclusion that the nation faces a serious and growing natural gas shortage. Not everyone, however, has accepted these figures. Criticism of the government statistics rests on two grounds. First, all of the FPC figures are compiled from the confidential records of the individual independent gas producing and pipeline companies and submitted by the industry's trade organization, the American Gas Association. Therefore, the actual validity of these figures cannot be scrutinized.³³

Aside from attacking the validity of the government figures, consumer organizations have also questioned the significance of these data. In the past, the r/p ratio in the oil industry similarly declined. In recent years, however, it has remained stable.³⁴ To the extent that natural gas

Present FPC estimates predict a decline in the r/p ratio to 10.2 by 1973. 1970 FPC ANN. REP. 51.

27. *The Natural Gas Executives Forum*, PUB. UTIL. FORT., OCT. 14, 1971, at 71.

28. 1971 *Hearings*, *supra* note 1, at 96 (statement of Walter E. Rogers, President of the Independent Natural Gas Association of America).

29. 1970 FPC ANN. REP. 52.

30. *Id.* Imports as a percentage of total U.S. gas production are still quite low: 3.5 per cent. However, this figure has nearly tripled since 1958. *Id.*

31. MacAvoy, *The Regulation-Induced Shortage of Natural Gas*, 14 J. LAW & ECON. 167, 169 (1971) [hereinafter cited as MacAvoy, *Shortage*].

32. *Id.*

33. Neither the confidential research data of these companies nor the exact method by which this data is summarized for the American Gas Association reports have ever been divulged to the Federal Power Commission. For purposes of this report we have accepted at face value all industry-furnished supply data. *Hearings on Supplies of Natural Gas Before the Subcomm. on Minerals, Materials & Fuels of the Senate Comm. on Interior & Insular Affairs*, 91st Cong., 1st Sess., 193-94 (1969) (statement of Edward Berlin, General Counsel for the Consumer Federation of America).

34. The r/p ratio for oil has stabilized at a level of ten. *Id.* at 194.

and oil are similar commodities, it is perhaps not unreasonable to suggest that increased usage of natural gas would likewise cause its r/p ratio to decline to some stable level.³⁵ Clearly, the heart of today's controversy over the FPC's regulation lies in a disagreement over the seriousness of the natural gas shortage.

Is the current price of natural gas too low to stimulate exploration for and recovery of new gas reserves?

If there is a natural gas shortage, it is not due to any present lack of natural gas supplies.³⁶ While vast potential supplies of gas exist, their exploitation is dependent upon private exploration and recovery. As noted previously, the gas industry has complained in recent years that present price levels are too low to encourage adequate exploration and recovery activities.

Statistical proof would appear to support this argument. The price of natural gas is thirty per cent lower per B.t.u. than the next cheapest energy source.³⁷ Since 1950, the average residential price of natural gas has only increased twenty per cent, while the overall consumer price index has risen more than 61 per cent.³⁸

The influence of low prices on exploration for new gas reserves can be illustrated by the recent history of "wildcat" drilling, which is done by small, independent gas producers.

Wildcat drilling, one of the most sensitive measures of exploration activity, dropped an alarming 40 per cent between 1956 and 1970. During the last ten years, an estimated 200 drilling rigs have left the United States for more profitable business climates in other areas of the world.³⁹

35. *Id.* Of course, the oil and gas markets are not completely alike. For example, much more oil is imported than gas.

36. Current U.S. proven reserves of natural gas amount to 290.7 trillion cubic feet, although this figure includes 26 trillion cubic feet of new reserves in Alaska which are still economically unmarketable in other states. See note 3 *supra*. Tankersley, *A.G.A. Progress on the Supply Problem*, PUB. UTIL. FORT. Oct. 14, 1971, at 25 (hereinafter cited as Tankersley). The FPC estimates that the nation has 1,227 trillion cubic feet of potential natural gas reserves. 1970 FPC ANN. REP. 52. The United States, therefore, has enough natural gas to meet requirements, even allowing for increased consumption.

37. 1971 Hearings, *supra* note 1, at 119 (statement of Sen. Henry Bellmon (R.-Okla.)).

38. *The Prospects for Natural Gas*, PUB. UTIL. FORT., Oct. 14, 1971, at 104. One indication of the economic impact of these low prices on the supply of natural gas is the proposed importation of more costly natural gas in vapor form from Canada and in liquid form from Algeria. Bagge, *supra* note 7, at 435. Despite the low cost of domestic gas, higher priced imports are sought, apparently because they are required to supplement an inadequate domestic supply.

39. Tankersley, *supra* note 36, at 24.

Lowered exploration activity has resulted in lower amounts of new natural gas discovered in the United States. In 1969, discoveries of new gas amounted to 8.4 trillion cubic feet, down from 21.3 trillion cubic feet in 1965.⁴⁰

However, drawing too close a causal relationship between low prices and low levels of exploration and exploitation is misleading. If low gas prices cause declining reserves, one would have expected the nation's proven reserves to decline when the FPC imposed "in-line" pricing guidelines in the early 1960's. There was no such decline until 1968.⁴¹ Also, during 1968 and 1969, both the number of new wildcat drillings and the amount of gas discovered increased, reversing the previous trend.⁴² In short, while low prices undoubtedly have an adverse effect on the development of supplies, that is not the only operative factor.⁴³ The low level of exploration for and recovery of new gas reserves is partly an outcome of the existing intricate scheme of applicable laws and regulatory controls.⁴⁴ Low prices play a part, but not an exclusive part, in discouraging the development of new gas supplies.

Is the low price of natural gas the result of FPC regulation?

If the price of natural gas is, in fact, too low, the FPC's responsibility would seem to be obvious.

In the absence of area rates there would have been significant increases in prices in new gas contracts, and there might well have been significantly greater new reserve commitments, during the 1960's. General increases in demands for energy, during a period in which the supply responses in coal and oil markets were less than might have been expected, should have

40. AMERICAN GAS ASS'N, GAS FACTS 11 (1970).

41. *Id.*

42. *Id.*

43. For example, since natural gas is found associated with oil reservoirs, one such operative factor is the profitability of oil exploration. A profitable domestic oil industry encourages domestic oil exploration; in turn, extensive domestic oil exploration can lead to more natural gas discoveries. Of course, the nation's oil industry is very profitable at least partly because it is somewhat protected from foreign price competition by low oil import quotas. This fact has led the chairman of the FPC to stress the importance of low oil import quotas as a vehicle for encouraging new gas discoveries by maintaining the quota-induced profitability of the domestic oil industry. MacAvoy, *Shortage*, *supra* note 31, at 170. Another operative factor is the availability of gas leases for exploration on federal lands. The American Gas Association argues that adequate exploration and new reserve recovery is dependent in part upon price levels and in part upon the number of public land lease sales. 1971 *Hearings*, *supra* note 1, at 110 (letter from G.H. Lawrence, Director of Government Relations and Services, American Gas Association).

44. See notes 2-3 *supra* & text accompanying.

led to short term price increases for new gas reserves. The gas supply response might have been substantial. . . .⁴⁵

Most commentators who have decried the present price-induced gas shortage have assumed that the FPC is to blame.⁴⁶ However, an inquiry into the assumption raises some doubts.

It is at least questionable whether the FPC's rate setting effectively regulates the price of natural gas. Like the "in-line" approach which preceded them, area rate guidelines are concerned with the price terms of contracts between gas producers and interstate pipelines. This type of control is incomplete because many unregulated, nonprice terms, such as delivery points,⁴⁷ payment procedures⁴⁸ and guaranteed minimum payments,⁴⁹ can be manipulated to alter the price. Such manipulation can have a cumulative effect of transforming the FPC's ceiling rate into a "ceiling range."

If the price of gas to the ultimate consumer has remained low despite such loopholes in the FPC's regulation, market forces have been partly responsible.⁵⁰ Empirical evidence suggests that the rates established by the FPC are nearly equivalent to those that would have resulted on an

45. MacAvoy, *Shortage*, *supra* note 31, at 175.

46. For example, consider the following statement of Sen. John G. Tower:

The primary cause of the diminishing supplies of natural gas has been, in my opinion, the short-sighted price setting policies of the Federal Power Commission.

1971 *Hearings*, *supra* note 1, at 65.

47. Interstate pipelines contract to purchase from natural gas producers certain quantities of gas. The producers receive a set price per volume of gas when it is delivered at a set delivery point. The further this delivery point is from the producers' wells, the more transportation expense is incurred by the producers in delivering their gas to the pipelines. If the pipelines want to increase the profits of the producers without paying more for the gas, they can simply move the delivery point for purchased gas closer to the producers' wells, thereby relieving the producers of a part of their transportation costs. Kitch, *Regulation of the Field Market for Natural Gas by the Federal Power Commission*, 11 J. LAW & ECON. 243, 274 (1968) [hereinafter cited as Kitch, *Regulation*].

48. Most gas contracts are long-term agreements that generally require the purchasing pipeline to make periodic payments for gas obtained during the life of the contract. By agreeing to make these periodic payments in advance, a pipeline can in effect increase the price of gas because of the time value of money. *Id.* at 275.

49. The purchasing contracts generally allow a pipeline to purchase up to some stated amount of natural gas during some stated time period. In return, the pipeline must pay the producer for the gas actually taken during a particular payment period. If an interstate pipeline wants to increase the dollar value of a contract with a producer, it can simply guarantee the regularity of minimum payments to the producer irrespective of the actual amount of gas taken during a particular payment period. *Id.*

50. One market factor responsible for low natural gas prices is the increased competitiveness of other fuels. Coal, for instance, became more competitive with the development of unit train hauling and mine-mouth power plants. *Id.* at 267. Indeed, about two-thirds of all the natural gas sold in this country since 1945 has been sold for industrial purposes at prices specifically designed to undercut the prices of competing

open market. After a steady increase between 1953 and 1961, the average price of natural gas leveled off at the very time the FPC began its "in-line" price freeze.

[P]rice stability was achieved too quickly to be attributable to the regulation. The in-line doctrine and the guidelines froze the price at the 1959-1960 levels. The price statistics are averages. Because of the long term upward price trend, gas flowing under older contracts is lower priced. Each year the percentage of gas flowing under contracts entered into since 1959-1960 increased. Therefore the average price of gas should have continued to increase after the price freeze. The fact that the average has been stable suggests that the price for new gas has declined.⁵¹

Additionally, the nation's proven reserves of natural gas did not begin to decline until 1968, long after the price freeze imposition. When considering anything as complex as the natural gas industry, any one factor cannot be selected as the sole cause of any phenomenon because of the many interacting variables. FPC regulation has, of course, influenced the price of natural gas in an important way, but not to the exclusion of other factors such as the operation of market forces.

To the extent that the FPC is responsible for inadequate price levels, what are the reasons for its policy?

Most actions of the FPC have been based upon two long-established public policies. First, the FPC views itself as a consumer protection agency whose most important task is protecting the general public from the exploitation of unreasonable and discriminatory prices.⁵² The Supreme Court has cast the FPC in this role. Speaking about FPC's enforcement of the Natural Gas Act, the Court has said :

The primary aim of this legislation was to protect consumers against exploitation at the hands of natural gas companies.⁵³

fuels like coal and residual fuel oil. O'Conner, *Reflections on Ten Years of Natural Gas Producer Price Regulation*, PUB. UTIL. FORT., Oct. 14, 1971, at 27 [hereinafter cited as O'Conner].

51. Kitch, *Regulation*, *supra* note 47, at 265.

52. MacAvoy, *The Effectiveness of the Federal Power Commission*, 1 BELL J. ECON. & MANAGEMENT SCIENCE 271, 273-74 (1970) [hereinafter cited as MacAvoy, *Effectiveness*].

53. FPC v. Hope Natural Gas Co., 320 U.S. 591, 610 (1944). See also FPC v. Sunray D-X Oil Co., 391 U.S. 9 (1968); Atlantic Refining Co v. Public Serv. Comm'n, 360 U.S. 378 (1959); Phillips Petroleum Co. v. Wisconsin, 374 U.S. 672 (1954).

Historically the intention to prevent exploitative price increases was not counterbalanced by concern over the effect low prices had on gas supplies. This lack of concern was the result of the FPC's second guiding policy—the supply of natural gas is relatively unresponsive to price.⁵⁴ This rationale was based on the theory that since the total reserves actually in the ground are finite, a higher price cannot increase the supply.⁵⁵ Availability of gas, however, depends on discovery as well as on existence. Since exploration and exploitation are price sensitive, higher prices might increase the amount of gas presently available for consumption. Yet, in light of its two guiding policies, the FPC's desire to set gas rates at low levels is not surprising.

It is interesting to note that the natural gas industry offered no immediate opposition to these policy assumptions. Not until 1968 did the American Gas Association, the chief representative of the gas industry, actively support higher prices for gas producers.⁵⁶ In addition, the industry has been unwilling or unable to supply the FPC with persuasive evidence of the need for higher gas prices.⁵⁷ If regulation of field prices has in fact created a gas shortage, the FPC must accept partial responsibility because of its adherence to unrealistic policy guidelines. Because of their failure to provide the FPC with adequate information, however, the producers themselves must also share the blame.

PROPOSALS

Instead of assigning blame for the natural gas problem, an attempt should be made to explore possible remedial action. Initially, the FPC could increase all area rate ceilings. Revisionary proceedings have already

54. Kitch, *Regulation*, *supra* note 47, at 245.

55. *Id.*

56. O'Conner, *supra* note 50, at 27.

57. With the gas supply shortage now so evident, we cannot overlook the fact that in the past decade producers have not made candid disclosure of proved reserves. . . .

Along the same lines, until just recently, producers would not make available to the FPC the information requested with respect to intrastate sales. . . . [I]t should be obvious how important such information could have been in the past. . . .

Some have advanced the principle, with which I agree, that income tax data would probably have supported an increase in the area rates as prescribed in the Permian and Southern Louisiana cases. Again, however, this information was withheld by most of the major producer groups.

It is not necessary to recall how important costing concepts have been in gas price determinations. Why, then, have producers not taken the necessary steps to improve their accounting practices? In my estimation these practices have been so inferior that regulators and producers themselves have often been at a loss as to what it really costs to find and produce gas.

Id. at 27-28.

been instituted.⁵⁸ The fact that these proceedings are taking place is an encouraging demonstration of the FPC's willingness to respond to criticism. More significant, however, is the fact that the FPC has cited the supply shortage to justify these proceedings.⁵⁹ Hopefully, this indicates a rapidly growing disenchantment with the inelastic supply assumption and at least an indirect recognition of the environmental consequences of its decisions.

Additionally, the FPC has effected regulatory changes that will encourage exploration for new gas supplies. A 1969 ruling that new gas discoveries in already known gas fields will be subject to the higher rate ceilings for "new gas,"⁶⁰ will hopefully serve to promote greater utilization of known gas fields. Another order is specifically designed to encourage greater exploration by the interstate pipelines.⁶¹ Most importantly, the FPC has recently announced its intention to allow the price for "new gas" to increase until it is substantially the same as higher-priced alternate gas sources, such as foreign natural gas and synthetic gas.⁶²

Such innovations, however, are subject to two principal criticisms. First, although the FPC has moved away from the inelastic model of gas supply, no comprehensive theory has yet replaced the old model. Legislation, agency regulations and even the market position of related commodities all affect the price and the supply of natural gas. In the face of such complexity, scattered FPC rulings which increase prices for only selected members of the industry are unlikely to solve the gas shortage problem. A detailed and empirically verified econometric analysis⁶³ of the price-supply relationship for natural gas is needed in order to under-

58. Area Rate Proceeding, Docket No. AR69-1, 41 F.P.C. 378 (1969) (Offshore Southern Louisiana, Federal Domain and Disputed Areas); Area Rate Proceeding, Docket No. AR70-1, 43 F.P.C. 899 (1970) (Permian Basin Area).

59. The Permian Basin area was the subject of the first area rate proceeding begun in 1960. In ordering a re-examination of the Permian Basin rates, the Commission referred to the inability of interstate pipeline companies to procure contracts for new gas supplies at the presently existing low rates and implied that higher rates will be necessary to induce gas producers to commit their supplies to the interstate market. 43 F.P.C. at 900.

60. Op. No. 567, 42 F.P.C. 726 (1969).

61. The order provides that new gas found by interstate pipeline companies will be priced according to the producer area rate method (yielding a higher price) rather than the cost-of-service rate making method (lower price). Op. No. 568, 42 F.P.C. 738 (1969).

62. Wall Street Journal, Apr. 7, 1972, at 3, col. 1.

63. An effective econometric analysis would involve the creation of a statistical model simulating the supply response of the natural gas market. The model could be used to predict the results caused by fluctuations of economic variables, such as demand, price, exports and imports, regulatory controls and the market position of related commodities.

stand the problem fully.⁶⁴ Such an analysis also should include environmental considerations.

The second criticism of the FPC's response to the supply crisis is that the entire regulatory process consumes too much time. Six years passed from the time the FPC was given jurisdiction over natural gas prices in *Phillips* to the time it announced its intention to establish area rates. Another five years went by before the FPC determined what was "just and reasonable" in the first area rate proceeding (Permian Basin). These rates were not finally confirmed until the Supreme Court's decision three years later. Rapidly changing market conditions require faster regulatory appraisal and action.

The ultimate irony is that the effect of this regulatory intervention is to significantly increase the market's unresponsiveness to changing conditions of supply. An increase [in price] is slowed by the period needed for regulatory consideration.⁶⁵

If a price increase is necessary in order to increase gas supplies, time is of the essence. One suggestion for decreasing this "regulatory lag" is to modify the entire focus of the FPC's regulatory control. Unregulated pricing, accompanied by surveillance of profits, would be simpler and more quickly implemented than the presently used rate-of-return approach.⁶⁶ Merely speeding up the FPC's method of determining rates might forestall some of the undesirable economic consequences. But the possible economic benefits would have to be balanced against the potential losses involved in less pervasive and, therefore, less accurate agency scrutiny of consumer pricing.

A more radical alternative is the complete abolition of FPC supervision over field prices. This alternative is based on the premise that the cost of regulation is disproportionate to the benefits obtained. One study has estimated that this country has incurred regulatory costs amounting

64. Some preliminary econometric models have been devised. See Khazzoom, *The F.P.C. Staff's Econometric Model of Natural Gas Supply in the United States*, 2 BELL J. ECON. & MANAGEMENT SCIENCE 51 (1971); Erickson & Spann, *Supply Response in a Regulated Industry: the Case of Natural Gas*, 2 BELL J. ECON. & MANAGEMENT SCIENCE 94 (1971). At least one developed econometric model has been tested against actual price data and has yielded the conclusion that there is a regulation-caused shortage of natural gas. MacAvoy, *Effectiveness*, *supra* note 52.

65. Kitch, *Regulation*, *supra* note 47, at 277-78.

66. Two articles by Reuben E. Slesinger articulate a sample profit regulation method and discuss its potential advantages. *The Need to Modify Current Regulatory Processes*, PUB. UTIL. FORT., July 8, 1971, at 38; *Regulatory Response to Changing Conditions*, PUB. UTIL. FORT., Sept. 30, 1971, at 11.

to about 33 million dollars per year in an effort to realize benefits which may not actually have accrued at all and which, in any event, could not have exceeded 51 million dollars per year.⁶⁷

While economic data concerning FPC regulation appear discouraging, noneconomic considerations must also be examined before complete deregulation of field prices is effected. For example, the operation of the free market might not alone assure that environmental and conservational considerations will be furthered. Considering the still insufficient attention paid to environmental questions in FPC decisions, however, deregulation of field prices would not necessarily be more detrimental from an environmental standpoint.

Whatever actions are eventually taken, they must provide for resolution of potentially conflicting policy goals. Even the simple desire to protect consumers by enforcing low gas prices does not necessarily result in their ultimate economic benefit. This is especially true if low prices have created a gas shortage, thus forcing some consumers to turn to more expensive alternative forms of energy.⁶⁸ In order to determine what is in the best interests of the consumer, the FPC must carefully examine the long-term economic consequences of present price regulation. In relation to the intricate problems of adequate gas supplies, satisfactory distribution and economic efficiency, the FPC should select those policy goals which will best serve the consuming public in both the long and short run.

Environmental factors also must be part of the FPC's long-range planning. Due to its nonpolluting nature, the adequate supply and proper distribution of gas is crucially important from an environmental stand-

67. MacAvoy, *Effectiveness*, *supra* note 52, at 300.

Gas field price regulatory activities must be ten times more costly than those in the "orthodox" public utilities; that alone should raise questions as to whether the bureaucracy either in or engendered by field price regulation has not grown too fast and too large.

Id. at 301.

68. Aside from the quantity of natural gas currently available, its distribution can be adversely affected by low gas prices. Since the intrastate natural gas markets are beyond the FPC's jurisdiction, low prices in the interstate market to some extent divert natural gas to the unregulated intrastate markets where much of it is sold for industrial purposes. In other words, the FPC's field price regulation has served to subsidize industrial growth in the natural gas producing states at the expense of consumers in non-producing states. Address by Prof. Edmund W. Kitch, *J. Law & Econ.* Dinner, May 26, 1971, in *PUB. UTIL. FOR.*, July 22, 1971, at 47.

[R]egulation has had the effect of taking the short supplies and reallocating them from home consumers under the aegis of the F.P.C. to the industrial users buying in unregulated, more or less competitive energy markets. The home consumer might well look to the regulator operating in his name and ask whether some other rationale for field price regulation could be found.

MacAvoy, *Shortage*, *supra* note 31, at 197.

point. Therefore, the process of rate determination should be carried out with reference to what is environmentally wise as well as to what is economically beneficial.

The FPC's potential for significant environmental impact should bring the agency within the ambit of the National Environmental Policy Act⁶⁹ (NEPA). This Act commands federal agencies to consider the potential environmental impact of their decisions. Although the FPC is not commonly considered to be intimately associated with the future of the nation's environment, NEPA's broadly expressed congressional purpose⁷⁰ and its sweeping command to "all agencies of the Federal Government" would seem to require that any agency action affecting the environment be made pursuant to the requirements of the Act.⁷¹ Since the supply and usage of an environmentally important substance can have definite effects on the nation's environment, NEPA should require the FPC, and all other federal agencies regulating aspects of the natural gas industry, to weigh environmental considerations in their decision-making processes.

In addition to the questions involved in determining the relationship between the price and the adequate supply of an environmentally critical substance, the FPC should ask several other important questions: What is the environmentally optimal rate of natural gas consumption and consequent supply depletion? How effectively do alternate pricing methods secure consumption at that optimal rate? Which pricing methods best distribute natural gas to those consumers who use it in an environmentally desirable manner? These and other questions must be squarely confronted if the FPC is to regulate the natural gas industry in the way most

69. 42 U.S.C. § 4331 *et seq.* (1970).

70. [I]t is the continuing policy of the Federal Government . . . to use all practicable means and measures . . . in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

42 U.S.C. § 4331 (1970).

71. The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this chapter, and (2) all agencies of the Federal Government shall—

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment. . . .

42 U.S.C. § 4332 (1970). NEPA has been construed by the courts to mean essentially that every federal agency must consider environmental factors when dealing with activities which may have an impact on the environment. *See* Calvert Cliffs' Coordinating Comm., Inc. v. AEC, 449 F.2d 1109 (D.C. Cir. 1971); *Zabel v. Tabb*, 430 F.2d 199 (5th Cir. 1970).

advantageous to the nation. The Interstate Commerce Commission has recently ruled that NEPA requires environmental statements, answering similar questions, to accompany all initial papers filed in any ICC proceeding.⁷² The FPC would do well to follow this lead.⁷³

JEFF DAVIDSON

72. Ex Parte Order No. 55, U.S.L.W. 2526, 2527 (ICC Jan. 14, 1972).

73. Scenic Hudson Preservation Conference v. FPC, 453 F.2d 463 (2d Cir. 1971), *aff'd* 39 U.S.L.W. 2109 (FPC Aug. 19, 1970), *remand of* 354 F.2d 608 (2d Cir. 1965), *cert. denied sub nom.* Consolidated Edison Co. v. Scenic Hudson Preservation Conference, 384 U.S. 941 (1966), is a reminder that the courts may allow the FPC the same broad discretion in environmental matters that they allow it in other matters of agency regulation. Therefore, the task of effectively applying NEPA to the FPC's actions will be primarily the responsibility of the FPC itself.