REGULATION OF THE FIELD MARKET FOR
NATURAL GAS BY THE FEDERAL
POWER COMMISSION

EDMUND W. KITCH
University of Chicago Law School

The field market for natural gas is now subject to formal price control
regulation administered by the Federal Power Commission.1 Over the past
eight years the Federal Power Commission, with the active encouragement of
the Supreme Court, has undertaken to convert a regulatory statute designed
to impose traditional rate of return utility regulation into a device for
freezing the field price of natural gas at the 1959-1960 level. That effort has
successfully culminated in the Supreme Court’s affirmance of the Commis-

Downloaded from https://www.jstor.org/stable/21794325 by Gäste user on 2023-11-07
sion’s Permian Basin decision this last term.2

The imposition of price control on the field market for natural gas rep-
resents an important departure for American economic regulation; price
control has never before been administered by a permanent, federal regula-

tory agency. Price control has been imposed in the United States chiefly in
wartime; the only significant peacetime examples have been in agricultural
markets as a response to the political power of the farm interests and in the
market for urban apartments as a response to the dislocating effects of war.
The origins of natural gas price control are atypical, the result neither of
pressures from a special interest group facing loss due to shifts in the level
of prices nor of special, disruptive conditions in the market. Rather, the
regulation was imposed by the Supreme Court in 19543 as an interpretation
of ambiguous language in the Natural Gas Act of 1938;4 and the nature of
the regulation was decided upon after the regulation was imposed.

Because the decision to impose price control in the field market for natural
gas has been reached by a process of statutory interpretation, there is no
place where an explicit statement of the policy reasons for imposing price

2 Permian Basin Area Rate Cases, 390 U.S. 747 (1968), reversing Shell Oil Co. v.
FPC, 375 F.2d 6 (10th Cir. 1967), and affirming Area Rate Proceeding 61-1 (Permian
Basin), 34 F.P.C. 159 (1965). I have commented in detail on the area rate proceedings
in Edmund W. Kitch, The Permian Basin Area Rate Cases and the Regulatory Deter-
control can be found. Indeed, the principal document justifying the regulation, the Commission's lengthy opinion in the Permian Basin case, is a legal sophistry, designed to protect the Commission's decision to impose price control from judicial review by justifying it as cost return regulation necessary to control the "monopoly power" of the producers.\(^5\) The Supreme Court, in affirming, recognized that more than costs were involved in the Commission's determination of the ceiling prices.\(^6\) Acknowledging that "the Commission has . . . labored with obvious difficulty to regulate a diverse and growing industry under the terms of an ill-suited statute"\(^7\) the Court, on the basis of a charitable construction of the Commission's decision, found that the Commission had sufficiently considered the relevant non-cost factors—particularly the adequacy of the gas supply—bearing upon its price determination.\(^8\) The Court explicitly disavowed the Commission's monopoly rationale, acknowledging that natural gas producers are "intensely competitive vendors of a wasting commodity they have acquired only by costly and often unrewarded search."\(^9\) And the Court repeatedly hinted that, the basic structure for producer regulation now having been established, the Commission should give further consideration to the problems created by its regulatory policies.\(^10\)

Although the arguments in support of the decision to impose price control on the field market for natural gas have not been clearly articulated by the Commission, they can be distilled from the long debate which has swirled about natural gas price regulation. The decision to impose price control on the field market for natural gas has been based on two central assumptions about the operation of the field market. These two assumptions are, first,

\(^5\) "[T]his is obvious that a key factual question in determining whether there is effective competition is the amount of uncommitted reserves controlled by the large producers. The pattern of sales and annual deliveries in the Permian Basin strongly suggests that a limited number of producers control a large percentage of the gas reserves, and it is significant that the producers in the exclusive possession of the facts have made no showing to rebut this conclusion." 34 F.P.C. 182.

\(^6\) 390 U.S. 815-16.

\(^7\) Id. at 756.

\(^8\) Id. at 816-18.

\(^9\) Id. at 757. But cf. id. at 793-95.

\(^10\) "We are . . . obliged at this juncture to give weight to the unusual difficulties of this first area proceeding; we must, however, emphasize that this weight must significantly lessen as the Commission's experience with area regulation lengthens." Id. at 792. "The records in subsequent area proceedings may more clearly establish that the market mechanism will adequately protect consumer interests." Id. at 795. "We assume that . . . the Commission now would, upon an adequate request, permit interested parties to offer evidence and argument on the propriety of the Permian Basin regulatory area." Id. at 789. "Although we would expect that the Commission will hereafter indicate more precisely the formulae by which it intends to proceed, we see no objection to its use of a variety of regulatory methods." Id. at 800.
that the supply of natural gas is unresponsive to price and, second, that price is an undesirable device to allocate the available gas between competing users. The most articulate single statement of these assumptions is to be found in Mr. Justice Jackson's 1944 Brandeis type dissent in FPC v. Hope Natural Gas Co., the germinal document for the subsequent development of the regulation.

The assumption that higher prices will not increase the available supply of natural gas is, in its least sophisticated form, based on the erroneous reasoning that since geology teaches that the ultimate supply of natural gas, like the supply of any resource, is finite, a higher price cannot lead to an increase in the presently available supply. Mr. Justice Jackson put it this way:

The heart of this problem is the elusive, exhaustible, and irreplaceable nature of natural gas itself. Given sufficient money, we can produce any desired amount of railroad, bus, or steamship transportation, or communications facilities, or capacity for generation of electric energy, or for the manufacture of gas of a kind. In the service of such utilities one customer has little concern with the amount taken by another, one's waste will not deprive another, a volume of service can be created equal to demand, and today's demands will not exhaust or lessen capacity to serve tomorrow. But the wealth of Midas and the wit of man cannot produce or reproduce a natural gas field.

In a more sophisticated form, this position is based on the assumption that the search for additional supplies of natural gas is, at best, a by-product of the search for oil, and at worst, a matter of pure chance unrelated to economic considerations.

The second assumption is that the unregulated market does not properly allocate available gas between competing users. Mr. Justice Jackson pointed out in Hope that the

utilization of natural gas of the highest social as well as economic return is domestic use for cooking and water heating, followed closely by use for space heating in homes. . . . Gas does the family cooking cheaper than any other fuel. . . . It is delivered without interruption at the meter as needed and is paid for after it is used. No money is tied up in a supply, and no space is used for storage. It requires no handling, creates no dust, and leaves no ash. It responds to thermostatic control. It ignites easily and immediately develops its maximum heating capacity. These

11 320 U.S. 591, 628 (1944).
12 Id. at 629.
13 In the Permian Basin proceeding the producers successfully proved that exploratory drilling can presently be directed towards a search for either oil or gas. This "directional" ability is based on accumulated geological information which makes it possible to predict whether any given formation, if productive, is likely to yield oil or gas. See Initial Decision, 34 F.P.C. 325-29.
incidental advantages make domestic life more liveable. Industrial use is induced less by these qualities than by low cost in competition with other fuels. Of the gas exported from West Virginia by the Hope Company a very substantial part is used by industries. This wholesale use speeds exhaustion of supply and displaces other fuels. . . . Gas rate structures generally have favored industrial users. . . . [The lower price for industrial gas] certainly is a very great factor in hastening decline of the natural gas supply. . . . The fact is that neither the gas companies nor the consumers nor local regulatory bodies can be depended upon to conserve gas.\textsuperscript{16}

Mr. Justice Jackson's position is based on the physical fact that a small gas flame has greater thermal efficiency (a higher percentage of the energy content of the fuel is realized) than do small heating applications of competing fuels,\textsuperscript{16} while the thermal efficiency of gas and other fuels burned in large units is about the same. This position has had an important impact on the Federal Power Commission which has until recently taken the position that use of natural gas for firing boilers is an inferior and disfavored use of natural gas.\textsuperscript{17} Increasing concern about air pollution has recently caused the Commission to moderate its position.\textsuperscript{18}

\textsuperscript{16}Id. at 635-37. Significant evidence to the contrary is set forth in M. A. Adelman, The Supply and Price of Natural Gas 55-65 (1962).

\textsuperscript{16} Preferential Uses of Gas 10, U.N. Doc. ST/ ECE/Gas 7 (1963): "[E]fficiency gains are higher compared with other fuels when small size appliances are involved. For example, in small scale water heating the use of gaseous fuels with rapid water heaters is more efficient than water heating by solid or liquid fuels; and the same is true for cooking. In large size industrial appliances, overall thermal efficiencies for gaseous, solid and liquid fuels are more or less the same."

\textsuperscript{17} "We have repeatedly held that the use of natural gas as boiler fuel is an inferior usage and that, 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." Mississippi River Fuel Co., 12 F.P.C. 109, 112 (1953). In FPC v. Transcontinental Gas Pipe Line Corp., 365 U.S. 1 (1961), the Supreme Court upheld the Commission's refusal of a certificate of public convenience and necessity to permit Transcontinental to deliver additional gas to the Manhattan generating plants of Consolidated Edison on the ground, among others, that there was insufficient evidence that the gas would alleviate the air pollution problem. The Commission again took this position in Transwestern Pipeline Co., F.P.C. Opinion 500 at 16 (July 26, 1966): "To summarize, the record in this proceeding fails to demonstrate that introduction into the Los Angeles market of enough natural gas to eliminate completely the burning of fuel oil during the winter months would have an appreciable effect upon the area's smog problem. The additional gas would reduce the concentration of sulphur dioxide somewhat but there is no showing that using only gas in power plant boilers would have any beneficial effect on the health of people of Los Angeles."

\textsuperscript{18} The Commission approved the sale of additional gas to Consolidated Edison by Transcontinental in Transcontinental Gas Pipe Corp., F.P.C. Opinion 432 at 6-8 (Nov. 6, 1967): "Since Transcontinental Gas Pipe Line Corporation is otherwise supported by the record in its proposal to increase its firm sales to Consolidated Edison Company by 55,000 Mcf per day, the effect of this sale on the New York air pollution problem is not controlling. Nevertheless, the serious air pollution problem in New York may be alleviated slightly by the proposal, and to that extent furnishes an additional benefit. . . . No one.
FIELD MARKET FOR NATURAL GAS 247

But again it is misleading to reason from a physical fact to an economic consequence. The differential in price between domestic and industrial consumers is a more complicated phenomenon than this position suggests. The sale of natural gas to consumers really involves the sale of two things: a commodity (natural gas) and a service (transportation). Industrial sales are less costly than domestic sales for two reasons. First of all, much industrial gas is interruptible during peak demand periods. Interruptible sales utilize pipeline capacity during off peak periods without increasing the need for peak capacity. Put another way, the sales reduce the "waste" of unutilized pipeline capacity. Secondly, industrial users tend to be large volume users, and large volume deliveries are much cheaper to make in relation to the volume delivered than low volume deliveries. The difference in cost, however, might not explain the entire differential. The differential might also result from price discrimination by a distributor monopolist between a competitive market (industrial) and a monopoly one (domestic). But it is not at all clear that the appropriate response is to raise the industrial price or prohibit industrial use to conserve gas. Indeed the objectional aspect of the situation would seem to be that the higher domestic rate retards domestic use of gas; the appropriate response would be to reduce the domestic price to a competitive level and thereby stimulate greater domestic use.

The assumptions that higher prices for natural gas will not increase the supply nor improve the allocation of its use lead to the conclusion that higher prices can only serve to enrich the owners of natural gas production at the expense of consumers. Price control is offered as the device to avoid that result. If these two assumptions are an accurate approximation of reality, then price control of natural gas prevents a transfer of wealth from politically numerous consumers to the owners of natural gas production, with little detriment to the efficiency with which natural gas is produced and used. If they are not correct, then price control will lead to substantial waste because of gas left unproduced and the encouragement of inefficient end uses. It is necessary to examine these assumptions in the light of the history of natural gas price regulation.

argues that these reductions in SO₂ emissions [as a result of burning natural gas] would solve the air pollution problem in New York City, but, in our opinion, they represent a step in dealing with this problem."

19 "The truth is that we accept regulation—to set either a floor or a ceiling—where inelasticities and the resulting possibility of windfall income or loss to producers pass the limits of political tolerance. More important to the economist is the fact that such intervention hardly ever produces the objectionable distortion of resource use that, according to pure welfare economics, should result. Reduced to its simplest terms, the issue is whether Mr. Getty shall buy a yacht (or a Jackson Pollock) or whether thousands of New Jersey commuters shall enjoy an extra evening 'on the town' in Manhattan once a year." Joel B. Dirlam, Natural Gas: Cost, Conservation and Pricing, 48 Am. Econ. Rev. 491-94 (Conf. No. 1957).
I. The Background of the Natural Gas Act

Federal Power Commission jurisdiction over the field market for natural gas is exercised under the Natural Gas Act of 1938. At the time of that Act the natural gas industry operated in three separate areas of the United States. One of these, the California area, was wholly intrastate and of little concern to the National Legislature. The other two areas, the Appalachian and the midcontinent, faced quite different problems.

The Appalachian region was the oldest. The presence of flammable gas in the area had been known since before 1850. The first successful natural gas pipeline was built in 1872 to Titusville, Pennsylvania. After 1882, the industry grew rapidly. The gas producing area itself was small, with production largely in West Virginia, western Pennsylvania and southeastern Ohio. Pennsylvania was at first the most important producing state, but it was surpassed by West Virginia in 1909. The area serviced was not large and cities on the east coast were never served with Appalachian gas. At its peak the consuming area was roughly the shape of a triangle with its base a line running from Buffalo, New York south through Pittsburgh, Pennsylvania to the West Virginia-Virginia border and its peak at the city of Columbus, Ohio. The most important consuming centers were Pittsburgh and Cleveland. More than half of the distribution of natural gas in the area was dominated by two groups of companies, one controlled by Standard Oil Co. of New Jersey and the other by Columbia Gas and Electric Corporation.

Production in the Appalachian area passed its peak in 1917. It was a traumatic event that has shaped the way in which men have subsequently

---


21 Production in 1882 had a total value of $215,000. 1892: $14,870,714. 1900: $23,698,- 674. These and all subsequent statistics in this article not specifically ascribed to the Federal Power Commission are derived from the statistics contained in the annual issues of the United States Geological Survey, Mineral Resources of the United States (1883-1931) and its successor series Bureau of Mines, Minerals Yearbook (1932-present). This entire series is hereinafter identified as Bureau of Mines.

22 1909 Bureau of Mines 271.

23 See the map showing pipelines constructed prior to 1925 in Report of the F.T.C. on Natural Gas and Natural Gas Pipe Lines in U.S.A., T.N.E.C. Monograph 36 at 88-89 (1940).

24 J. W. Adams, supra note 20, at 2877-78.

25 See Table 1. All figures for the “Appalachian area” are based on a summation of the statistics for the states of New York, Ohio, Pennsylvania and West Virginia contained in Bureau of Mines. These four states were slight net exporters of gas throughout the period 1910-1926. The principal exportation was from West Virginia to Kentucky. The four states became net importers of gas in 1929.
viewed the industry and its institutions. In 1916 an observer could comment on the "marvelous growth in the natural-gas industry during the last decade." But production of 519,303 million cubic feet in 1917 declined to 458,695 million cubic feet in 1918. Although the discovery of large reserves in the early 1920's in Texas might have brought solace to an Olympian observer, the reserves were so far from the major consuming centers that their commercial significance seemed minor. In 1923, two informed observers wrote:

[Th]e data at hand in regard to the gas still available underground and its relation to municipal centers or industrial markets make it probable that the annual output will never be very much more than it was during the period 1916-1920. . . . The question naturally arises what is to be done to replace this valuable fuel as supplies decline in the future. In some localities it will be economically impracticable to replace by manufactured gas the natural gas now used for house heating and for industrial operations. In many localities, however, manufactured gas will undoubtedly replace natural gas, especially for domestic cooking, water heating, and similar uses. Already this replacement may be noted in certain parts of the country where the natural gas, which was once adequate to supply large areas, has to be less widely distributed or supplemented by mixing natural with manufactured gas.27

The market for natural gas reacted: prices for natural gas increased sharply. The consequences are revealed in Table 1. In the two major consuming states, Pennsylvania and Ohio, prices more than doubled between 1916 and 1922. The percentage of gas dedicated to industrial uses declined from 64 per cent in 1916 to 44 per cent in 1925. Production stabilized in 1925 at about 330,000 million cubic feet a year.28

This record might be taken as another example of the ability of the market to facilitate adjustments to changing circumstances. In a period of nine years the end use allocation of gas was substantially shifted. Even though no major new gas field had been found, the higher market price, by making marginal wells profitable to operate, stabilized production at 64 per cent of its peak. However, for those who foresaw inevitable exhaustion of natural gas reserves, nine years to reallocate the supply from an "inferior" to a "superior" end use could be considered as excessive—in spite of the substantial costs which would be involved in too abrupt a transition. And the higher prices did not lead to greater supply, they only enriched the natural gas companies—although they did stimulate a continuing search for additional gas in the Appalachian region which has continued to the

26 1915 Bureau of Mines 923.
<table>
<thead>
<tr>
<th>Date</th>
<th>New York</th>
<th>Ohio</th>
<th>Pennsylvania</th>
<th>West Virginia</th>
<th>Total Production Million cubic feet</th>
<th>Percentage of 1917 Peak Production</th>
<th>Percentage of Gas Used Industrially</th>
<th>Carbon Black Production West Virginia Million lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>29.7</td>
<td>25.3</td>
<td>25.3</td>
<td>7.3</td>
<td>371,815</td>
<td>72</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>1914</td>
<td>29.9</td>
<td>21.6</td>
<td>17.3</td>
<td>7.7</td>
<td>424,439</td>
<td>82</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>1915</td>
<td>30.2</td>
<td>21.7</td>
<td>17.1</td>
<td>7.9</td>
<td>445,183</td>
<td>86</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>1916</td>
<td>30.3</td>
<td>22.1</td>
<td>17.4</td>
<td>8.2</td>
<td>507,726</td>
<td>98</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>1917</td>
<td>30.8</td>
<td>27.0</td>
<td>20.2</td>
<td>9.1</td>
<td>519,902</td>
<td>100</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>1918</td>
<td>30.4</td>
<td>33.3</td>
<td>25.3</td>
<td>11.3</td>
<td>458,695</td>
<td>85</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>1919</td>
<td>35.5</td>
<td>32.4</td>
<td>28.2</td>
<td>14.8</td>
<td>418,861</td>
<td>81</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td>37.9</td>
<td>36.8</td>
<td>32.1</td>
<td>18.0</td>
<td>432,863</td>
<td>83</td>
<td>52</td>
<td>26.7</td>
</tr>
<tr>
<td>1921</td>
<td>40.8</td>
<td>39.0</td>
<td>38.0</td>
<td>18.7</td>
<td>315,060</td>
<td>61</td>
<td>43</td>
<td>25.1</td>
</tr>
<tr>
<td>1922</td>
<td>48.7</td>
<td>47.4</td>
<td>38.7</td>
<td>23.6</td>
<td>354,992</td>
<td>68</td>
<td>49</td>
<td>20.1</td>
</tr>
<tr>
<td>1923</td>
<td>57.6</td>
<td>48.4</td>
<td>39.5</td>
<td>20.9</td>
<td>376,738</td>
<td>73</td>
<td>48</td>
<td>20.0</td>
</tr>
<tr>
<td>1924</td>
<td>58.7</td>
<td>51.7</td>
<td>42.0</td>
<td>24.8</td>
<td>341,740</td>
<td>66</td>
<td>43</td>
<td>15.0</td>
</tr>
<tr>
<td>1925</td>
<td>60.9</td>
<td>52.4</td>
<td>45.2</td>
<td>23.3</td>
<td>331,422</td>
<td>64</td>
<td>44</td>
<td>10.5</td>
</tr>
<tr>
<td>1926</td>
<td>64.1</td>
<td>57.0</td>
<td>45.1</td>
<td>25.2</td>
<td>341,702</td>
<td>66</td>
<td>44</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Source: Data assembled from articles on natural gas which appeared in various yearly volumes of Mineral Resources of the U.S., Part 2, in the years between 1910 and 1926. This series was published by the Geological Survey of the Department of the Interior, and has since become the Minerals Yearbook of the Bureau of Mines of the Department of the Interior.
FIELD MARKET FOR NATURAL GAS 251

present day.29 Out of this experience developed the attitudes which were crystallized in Mr. Justice Jackson’s opinion in Hope: the market does not efficiently allocate the end use of gas and does not operate to create additional supplies in times of shortage.

But there was an additional factor which made adjustment to the new supply schedule even more disruptive. The market for natural gas was partly regulated and partly unregulated. The local distribution utilities were subject to state utility regulation. Where their gas supply was intrastate, the state utility commission had complete and effective jurisdiction. Since the scarcity of gas did not of itself raise costs, utility regulation substantially slowed the increase in prices which would otherwise have taken place. Since the supply was decreasing and demand remained the same, shortages followed. At the same time, if the gas was supplied to the local distribution utility by an interstate pipeline, the state utility commission could not constitutionally exercise jurisdiction over that supply. Consequently, gas moving in interstate commerce was sold in an unregulated market and the price increased.

This situation first created problems for West Virginia, a producing state. During the winter of 1916 and 1917 scarcity of gas caused prolonged interruption of interruptible supplies leading to substantial disruption of industrial activity in the state.30 At the same time West Virginia was producing almost 60 per cent of the gas in the region. The carbon black industry, dependent on cheap and plentiful gas, was still operating, and was not to leave the state completely until 1931.31 In the midst of abundance the citizens of West Virginia were distressed to find that there was a shortage of supply for their own industries.

The cause was not difficult to find. Because natural gas consumed in West Virginia was produced in West Virginia, the state utility commission

29 The Consolidated Natural Gas Company, a holding company whose subsidiaries constitute the former Standard Oil gas companies (including Consolidated River Supply Corp., successor to Hope Natural Gas Corp.) is the most important producing company in the Appalachian region. Consolidated reported in 1967 that “[w]e have] played a major role in the development of the Appalachian gas fields. We have pioneered new methods in exploring for and producing gas in this area, which is close to our markets. And we have been able to produce and purchase a relatively level volume of gas from these fields for many years. Last year we produced and purchased 148 billion cubic feet of Appalachian gas. This total approaches post-World War II highs and comes close to our all-time record of 164 billion cubic feet set in 1916. We drilled 167 wells in 1967, of which 128 were producers. In 1968 we propose to spend $10,600,000 for our Appalachian production program and will continue our emphasis on exploratory wells in this area.” Consolidated Natural Gas Co., 1967 Ann. Rep. 16 (1968).

30 Phillip P. Steptoe & George M. Hoffheimer, Legislative Regulation of Natural Gas Supply in West Virginia, 25 W. Va. L.Q. 257, 258-59 (1918).

31 G. R. Hopkins & H. Backus, Carbon Black, 1931 Bureau of Mines II, 36 (1933). See Table 1 for the decline in carbon black production in West Virginia after 1921.
had effective jurisdiction. That commission proceeded to follow basic cost of service principles. In 1918 it explicitly refused to recognize an “inherent” value of natural gas for ratemaking purposes.

[C]ounsel for applicant argue that natural gas, by reason of its recognized value as a fuel for certain industrial enterprises, and on account of the added comfort and convenience incident to its use as a domestic fuel as compared with other available fuels for that purpose, the gas as such possesses an intrinsic value inherent in its natural characteristics that should be taken into consideration in fixing the rates to be paid therefor. . . . However, we are clearly of opinion that, in fixing rates for natural gas, we should not be guided by the fact that it is more desirable as a substance for heating and lighting than other available fuels, but should only be guided and controlled by the reasonable value of the service rendered and commodity supplied. This value should be such as will secure to the producer a fair return for its investment and enterprise, and at the same time be within reasonable limits, such as the consumer can afford to pay.\(^{32}\)

Gas brought higher prices in the unregulated, interstate market. The gas available was sold, wherever possible, at the higher price. In a 1917 memorandum to the Governor of the state, two West Virginia lawyers spelled the situation out.

The result of all this is obvious. In a foreign State, Ohio, or Pennsylvania, with a local gas production approaching exhaustion or inadequate for the public needs, with the place of consumption far removed from the influential possibilities of the cost of transportation, as a factor in ratemaking, a much higher scale of rates is charged, and apparently paid with willingness by consumers, for West Virginia gas. How far these rates are fixed or controlled in those States by administrative bodies corresponding to our Public Service Commission, we need not stop to inquire. But in those States it is apparent that rates are regulated or tolerated in the local interest, so that they remain at a point sufficiently high to attract to them the gas of West Virginia, regardless of the necessities of this State. The strongest temptation has therefore been offered to these companies, and, as it appears, has been easily yielded to, to divert to those foreign States as large a volume of West Virginia gas as possible, and to contract away an inordinate proportion thereof, in neglect of West Virginia, her people and her laws.\(^{33}\)

In 1918 the West Virginia legislature passed a law requiring the gas companies to satisfy all the demands of their West Virginia customers before exporting gas to other states.\(^{34}\) In 1923 the statute was declared un-


\(^{33}\)Steptoe & Hoffheimer, supra note 30, at 262.

\(^{34}\)1919 W. Va. Acts ch. 71. A summary of the events leading to the passage of the act can be found in Eugene D. Thoenen, History of the Oil and Gas Industry in West Virginia 285-88 (1964).
FIELD MARKET FOR NATURAL GAS

constitutional by the United States Supreme Court as a violation of the interstate commerce clause in a suit brought by the states of Ohio and Pennsylvania.\textsuperscript{35}

But the situation was no more satisfactory to the regulators in the consuming states. Since the cost of purchased gas for the local distributors rose, rate increases had to be allowed. Where costs became so high that further increases would not increase profitability, the gas companies abandoned their facilities. Although the regulators were sometimes successful in preventing the abandonment of service,\textsuperscript{36} they were powerless to deal with the basic problem: the increasing cost of imported gas.

In the midwestern region, on the other hand, the problem was one of too much gas. Gas had been first found in the oil fields of eastern Kansas and Oklahoma. In the early 1900's a local network of gas pipelines spread out across the oil producing region. The finds were at first thought to be small, and Oklahoma quickly acted to conserve its presumably limited supply by forbidding the export of any natural gas from the state.\textsuperscript{37} The Supreme Court declared that statute unconstitutional in 1911.\textsuperscript{38}

The early fears that the midwestern natural gas supply would be as limited as the Appalachian proved unfounded. The gas supply continued to increase and the network of pipelines crept outwards. In the 1920's the supply of gas increased even more with the discovery of two huge fields in which gas was found in unprecedented quantities not in association with oil, but by itself. One field, the Hugoton field, was located in southwestern Kansas; the other, the Panhandle field, in the Texas Panhandle.

In this situation of abundance the principal problem was waste. Gas produced in association with oil was a necessary by-product of oil production. If there was no market for it, it was flared at the well. Non-associated gas wells could be capped. But if one well in the field was connected to a pipeline or a carbon black plant, owners of neighboring wells were confronted with the prospect of having their gas drained away. This forced them to sell their gas immediately, further depressing the price and encouraging the development of wasteful uses such as carbon black plants or natural gasoline extraction plants. This problem could only be solved by regulation which controlled production so as to prevent drainage.\textsuperscript{39}

\textsuperscript{35} Pennsylvania v. West Virginia, 262 U.S. 544 (1923).
\textsuperscript{36} City of Jamestown v. Pennsylvania Gas Co., 263 F. 437 (W.D.N.Y. 1920).
\textsuperscript{37} 1907 Okla. Sess. Laws, Ch. 67 (1908).
\textsuperscript{38} Oklahoma v. Kansas Nat. Gas Co., 221 U.S. 229 (1911).
\textsuperscript{39} Final Report of the F.T.C. on Utility Corporations, S. Doc. 92 Pt. 84-A, 70th Cong., 1st Sess. 101-10 (1936). The problem could also have been solved by negotiations among
The 1935 report of the Federal Trade Commission to Congress on the natural gas industry is incorporated by reference into the preamble of the Natural Gas Act. The Report duly noted the conditions in both fields, and made recommendations for dealing with both problems. However, the Natural Gas Act responded only to the problems of the Appalachian fields; the problem of controlling production was left to the states. The FTC Report found the cause of the problem in the Appalachian fields to be not a declining supply, about which nothing could be done, but the "monopolies" of the interstate pipeline holding companies who were free to raise their prices without regard to the consumer interest. The response was a traditional utility rate base regulatory scheme applicable to interstate pipeline operations.

II. EXTENSION OF THE NATURAL GAS ACT TO PRODUCERS

It seems fairly clear from the legislative history that the Natural Gas Act was not intended to apply to independent producers of natural gas. Indeed the FTC report had chronicled unfair treatment of the independents by the pipelines as one of the monopoly abuses of the pipelines. However, the language chosen to express the scope of the act was ambiguous. "The provisions of this chapter shall apply to the sale in interstate commerce of natural gas for resale . . . but shall not apply to the production or gathering of natural gas." The main clause would seem to apply to any sale to an interstate pipeline, since such a sale would be a sale for resale in interstate commerce. Limitation of the scope of the act had to come from the "production or gathering" exemption. Yet the Committee report on the bill stated:

The quoted words ["production and gathering"] are not actually necessary, as the matters specified therein could not be said fairly to be covered by the language affirmatively stating the jurisdiction of the Commission, but similar language was used in previous bills, and rather than invite the contention, however unfounded, that the elimination of the negative language would broaden the scope of the Act, the committee has included it in this bill.
This comment can mean only one of two things. Either the committee forgot that there were independent producers and therefore assumed that the only sales for resale that occurred were by the pipelines to the distribution companies; or the phrase "production and gathering" refers not to the regulation of sales at all, but only to regulation of the installation and operation of facilities used in production and gathering.

The Federal Power Commission soon took the position that independent producers were not subject to the act, construing the act as if it read: "this chapter shall apply to the sale in interstate commerce of natural gas for resale except sales by producers of natural gas unaffiliated with an interstate pipeline." The Commission supported this construction on the ground "that Congress had in mind a much simpler set-up of the industry than that which actually prevails." After some wavering, this construction prevailed in the Commission. It also prevailed in Congress from whom the producers, uncertain of the eventual construction of the act, sought a clear exemption. But President Truman vetoed the exemption bill.

The scope of the act was conclusively resolved by the Supreme Court in 1954. In Phillips Petroleum Co. v. Wisconsin the Supreme Court reversed the Commission and held that Phillips, a large producer of natural gas but a company that did not operate any long distance interstate gas pipelines, was subject to the act. Production and gathering was interpreted to mean the "physical activities, facilities and properties used in the production and gathering of natural gas." The opinion was formal, focusing on the language of the act. The only hint of the purpose of the regulation came when the Court said that "Protection of consumers against exploitation at the hands of natural gas companies was the primary aim of the Natural Gas Act."

The opinion in Phillips has a peculiarly arid quality. Reaching a result required neither by the legislative history nor the language of the statute, the Court gave no reason for the regulation. Overriding the expertise of the Federal Power Commission and substantially increasing its administrative burden, the Court gave no indication of how the regulation was to be carried out. Nevertheless, there is a certain perverse historical correctness about the decision. If one sees as the real focus of the Natural Gas Act the problems created by shortage, then it makes sense to extend the regulation to pro-

---


47 2 F.P.C. at 206.


49 1950 Public Papers of the Presidents of the United States 257 (1965).

50 347 U.S. 672 (1954).

Id. at 685.
ducers. In 1938 it was the ability of the interstate pipelines to raise their price to the local distributors because of a diminishing supply that was the focus of Congressional attention. But regulation of pipelines could not really solve this problem. If the pipelines alone were regulated, the demand for gas would simply be transmitted back to the producing field, and would be translated into a higher price for the gas at the well. President Truman spelled it out more directly in his veto message to Congress in 1949.

[T]he demand for natural gas has been growing phenomenally in recent years, and its natural advantages as a fuel, coupled with its present price advantage, indicate that demand may soon be pressing hard upon total supplies. Under these circumstances, there is a clear possibility that competition will not be effective, at least in some cases, in holding prices to reasonable levels. Accordingly, to remove the authority to regulate, as this bill would do, does not seem to me to be wise public policy.

Later cases make it tempting to conclude that this was what the Court had in mind in Phillips. But if so, the Court said nothing about it in the opinion.

The producers turned to Congress immediately, and obtained a bill exempting them from the act. But President Eisenhower vetoed it because of the lobbying techniques used to obtain passage of the bill. The Commission undertook to regulate the producers on an individual cost of service basis. But soon finding itself immersed in a mass of paper work, it also sought legislative relief. The lobbying scandal, however, had made exemption of the producers politically unattractive. Throughout the remainder of the Eisenhower administration the Commission slogged through its paperwork.

51 The field price "problem" was thoughtfully discussed in the Note, supra note 45, at 1484-1500.

52 1950 Public Papers of the Presidents of the United States 257 (1965).


54 1956 Public Papers of the Presidents of the United States 256-57 (1958). See also Hearings Relative to Senate Resolution 205 Before the Select Comm. for Contribution Investigation of the Senate, 84th Cong., 2d Sess. (1956); Hearings of the Oil and Gas Lobby Investigation Before the Special Comm. To Investigate Political Activities, Lobbying, and Campaign Contributions of the Senate, 84th Cong., 2d Sess. (1956).

55 1956 F.P.C. Ann. Rep. 19 (1957). The most important recommendation of the Commission was that the act be amended to provide "a standard for pricing or evaluating natural gas as a commodity which would not require use of a rate base or traditional utility ratemaking principles, but which would enable the Commission to weigh the interests of the consumer in low prices with the necessity of providing assurance of future gas supplies." Id. See Hearings on H.R. 6790 & H.R. 6791 Before the House Comm. on Interstate and Foreign Commerce, 85th Cong., 1st Sess. (1957). By 1960 James M. Landis felt that he could state that "the Federal Power Commission without question represents the outstanding example in the federal government of the breakdown of the administrative process." James M. Landis, Report on Regulatory Agencies to the President-Elect 54 (Print of the Senate Comm. on the Judiciary, 86th Cong., 2d Sess. 1960).
The initiative for determining the nature of the regulation imposed in the Phillips case fell to the Supreme Court.

III. THE CHANGING NATURE OF THE INDUSTRY

But even as the Supreme Court in Phillips was arguably carrying out the logical implications of the Congressional policy adopted in the Natural Gas Act, the structure of the industry had already undergone a radical transformation. At the time of the FTC Report to Congress the transformation was imminent, a transformation which would eliminate the conservation problem of the midcontinent area and the shortage problem of the Appalachian area. The driving force of this transformation was technology.

It is easy to overlook the importance of improved technology in the natural gas industry. The basic structure of the industry has remained the same since its beginning: wells, compressors and pipe. But the technology has steadily and unspectacularly provided deeper wells, more powerful compressors, and bigger pipe. Above all, bigger pipe. The cost of constructing (principally the cost of the pipe, largely dependent upon the circumference) and operating (dependent upon the friction produced by the inside area of pipe in contact with the gas) a pipeline is a function of its radius; the pipeline's capacity is a function of the square of the radius. The contribution of the technology has been to make the fabricating and laying of large diameter pipe economically feasible and to produce compressors large enough to utilize their capacity. With the development of thin walled high strength steel pipe and welded joints in the 1920's, long distance twenty-four inch pipelines became feasible. At the same time the discovery of the Hugoton and Panhandle fields provided geographically concentrated, large volume production which could feed such large pipelines without the necessity for geographically dispersed and costly gathering systems. In the late twenties three pipelines were begun, each aiming for large northern markets which could capitalize on the large volume economies of such a pipeline. One company, the Northern Natural Gas Company, constructed a pipeline to Omaha and Minneapolis. Another company, the Natural Gas Company of America, constructed a pipeline to Chicago. A third company, the Panhandle Eastern Pipeline Company, constructed a pipeline east from Kansas across Missouri and Illinois to the Indiana border, there connecting with the westernmost extension of the Columbia gas system.

68 Actual cost estimates are set forth in M. A. Adelman, The Supply and Price of Natural Gas 49 Table III (1962).
68 Id. Pt. 84A at 243-44; Id. Pt. 62 at 400.
69 Id. Pt. 84A at 246; Id. Pt. 84 at 1269-76; Id. at 1660-61.
These projects were planned in the late 1920’s. The onset of the depression slowed their progress. Panhandle Eastern reached the Indiana state line in 1932, and the potential existed for the transportation of midcontinent gas into the Appalachian region. But the adjustments required in the operation of the Columbia system to actually utilize the gas at eastern points in the system, requiring a complete reversal of the flow, were complex and the actual flow of gas into the Columbia system was relatively insubstantial. In 1936 extension of the Panhandle Eastern system into Detroit, by then the longest pipeline in the world, was completed.

The economic controls imposed during World War II aggravated the Appalachian shortage problem to the point of crisis as well as creating shortages in the midcontinent system. Under the prevailing price freeze policy, the price of natural gas was frozen. Yet increasing personal incomes and a high level of industrial activity led to substantially greater demand. Shortage of fuel oil caused home owners to switch to natural gas wherever possible. But except for industries supplied on an interruptible basis, the natural gas supply system did not lend itself to rationing. Complete interruption of industrial supply was an unsatisfactory alternative, meaning as it did the disruption of vital war industries. The wells of the Appalachian region were pushed to their maximum production. Even in the plentiful midcontinent area the unavailability of materials for additional pipeline capacity led to shortages, shortages that were to last in many areas until 1949.

The situation in the Appalachian system was eased by the completion of a natural gas pipeline in November of 1944 from the Louisiana fields to Cornwall, West Virginia by the Tennessee Gas and Transmission Co. Interconnections between the Panhandle Eastern Co. and the Ohio Fuel Gas Co. were completed between Detroit and Toledo. But the winter of 1944 was the coldest in 25 years. The ensuing crisis is dramatically described in the official history of the Petroleum Administration for War.

The first of three emergency shortage periods lasted from January 1 to January 8; the second, the worst, from January 25 to February 6; and the last,

60 In 1934 Panhandle sold 1,700,000 Mcf of gas at the Indiana state line. Total sales were 23,900,000 Mcf. Id. Pt. 84-I at 1701.


63 Id. at 231. Tennessee Gas & Transmission Co., 3 F.P.C. 575 (1943) (granting of certificate of public convenience and necessity).

February 18 to 21. Curtailment of industrial loads began January 1. The next day the Columbia Gas and Electric System, one of the five principal systems of the region, advised that it was in danger of "losing" the small towns north of Dayton, Ohio, and was having difficulty to hold the load in Dayton.

The expression of "losing a town" fails to convey, except to those in the industry, its implications of potential loss of life and property damage. What would happen in such an eventuality is that pressure would get so low in the gas mains that it would be impossible to light the burners in gas-consuming equipment. It would then be necessary to go to every meter connection and close the supply valve before the pressure could be raised again in the mains. Then before the supply valve at the meter could be opened, an inspection would have to be made to determine that all appliances were shut off. Otherwise, particularly with appliances such as those equipped with pilot lights, opening of the supply valve at the meter might fill premises with gas and a spark would touch off an explosion.

Before the Appalachian emergency was over the distribution systems of Columbus, Cleveland, and Cincinnati were among those that were almost "lost." With the shortage of manpower during the war, particularly as experienced in gas distribution, a town the size of Columbus, if "lost," would be out of gas service for 6 weeks to 2 months.

Immediately upon learning of Columbia's predicament, other utility companies diverted gas from industrial consumers in Kentucky, West Virginia, and western Pennsylvania, and . . . the Panhandle Co. was ordered to increase the maximum its deliveries into the Appalachian area.

. . . .

Six days after the second emergency period started total curtailment of gas service amounted to 55 percent. This included curtailment of service to 24 percent of consumers in class 7, comprising top critical war factories. On February 2, the Michigan Consolidated Gas Co., which supplied the tremendously important war center of Detroit, instituted complete curtailment, including delivery to war products plants throughout the area, so that gas might be diverted to prevent the collapse of the Appalachian system. The curtailment, fortunately, lasted only half a day, but long enough for Detroit's City Hall to lament against shutting down that city's war plants "to provide gas for nonessential civilian uses in the East." The complaint was unjustified. Use of gas in the Appalachian area was rigidly controlled. For 3 days its use to heat amusement places was banned, and there was talk of shutting even schools and churches.

. . . .

Army Ordnance experts have estimated that more than 300,000 tons of steel for the war program were lost as a result of the gas curtailments, as well as a sizable volume of finished products. . . . The "Battle of the Appalachian" spotlights a great wartime accomplishment of the natural gas industry.\(^6\)

The war firmly established that the future supply of the Appalachian

\(^6\)Frey & Ide, supra note 62, at 231-32.
system would be the midcontinent region. After the War the Texas Eastern Gas Transmission Co. purchased the famous Big Inch, used during the war to transport crude oil and petroleum products, and converted it to the transportation of natural gas. The pipeline system expanded rapidly, and natural gas for the first time reached Baltimore, New York, and Boston. New pipelines were constructed. In the west, the El Paso Natural Gas Co. constructed further to the west and brought southwestern gas to the California market. As the demand for midcontinent gas increased, so did its price.

IV. THE SUPREME COURT AND THE NEW "PROBLEM"

The Supreme Court returned to the problem of the purpose of the regulation imposed by the first Phillips decision in 1959 in Atlantic Refining Company v. Public Service Commission (called the CATCO case in the literature, from the initials of the three producing companies involved). The Commission had granted a certificate of public convenience and necessity authorizing a large sale of Louisiana Gulf Coast gas at 22.4 cents per Mcf. The Commission had twice refused to issue such a certificate, and proposed that the certificates be conditioned on an initial price of 18 cents per Mcf, to be increased after 24 hours to a price of 22.4 cents per Mcf. The difference was that under the Act the amount of the increase would be subject to refund if subsequently found unreasonable, while any amount approved in the initial certificate would not be subject to refund. The producers balked and the Commission backed down. In CATCO the Court reversed the Commission's approval of the sale as required by the "public convenience and necessity" because of the lack of evidence in the record to support that conclusion. The Commission had expressed the fear that if the 22.4 cent price was not approved, the producers would sell their gas in the intrastate Louisiana market. To this the Court inaccurately replied: "Since some 90% of all commercial gas moves into the interstate market, the sale of such vast quantities would hardly be profitable except interstate."

The CATCO opinion is ambiguous. The explicit rationale was the need to insure that prices collected above the prevailing and presumably legal price

---

68 Id. at 394. The Court's figure is way off. 1958 Bureau of Mines 317 Table 8 shows that 57.5 per cent of all gas marketed in the United States and 66.3 per cent of all gas marketed in Louisiana moved in interstate commerce. For a discussion of the impact of federal regulation on the substantial intrastate markets see Edmund W. Kitch, The Permian Basin Area Rate Cases and the Regulatory Determination of Price 116 U. Pa. L. Rev. 191, 206-10 (1967).
levels were collected subject to refund. The Court talked as if this could be achieved under the Act only by refusing to certify an initial price and forcing the producers to file for an increase, although it now appears that the initial certificate itself may be conditioned on a refund obligation.\textsuperscript{69} This rationale is related to a second, and in retrospect more important, aspect of the opinion. The Court reasoned from the premise that prices higher than prevailing prices were questionable simply because they were higher.

The price certificated will in effect become the floor for future contracts in the area. . . . New price plateaus will thus be created as new contracts are made and unless controlled will result in "exploitation" at the expense of the consumer, who eventually pays for the increases in his monthly bill.

. . . .

Our examination of the record here indicates that there was insufficient evidence to support a finding of public convenience and necessity prerequisite to the issuance of the permanent certificates. The witnesses tendered developed little more information than was included in the printed contracts. As the proposed contract price was higher than any paid by Tennessee, including offshore production in the West Delta area of Louisiana, it is surprising that evidence, if available, was not introduced as to the relative costs of production in the two submerged areas. Moreover the record indicates that the proposed price was some 70\% higher than the weighted average cost of gas to Tennessee; still no effort was made to give the "reason why." More damaging was the evidence that this price was greatly in excess of that which Tennessee pays from any lease in southern Louisiana.\textsuperscript{70}

This suspicion of price increases became the central focus of natural gas price regulation. The Commission and the courts interpreted \textit{CATCO} to require that the initial price of a gas sale must be "in line" with existing prices.\textsuperscript{71} The Supreme Court interpreted the price freeze aspect of \textit{CATCO} as the controlling one in two cases in the early 1960's.\textsuperscript{72} In the cases the Court approved a clause in first a temporary and then a permanent certificate of a public convenience and necessity forbidding a filing for a rate increase for a specified period of time. Such a moratorium could only be justified on the ground that price increases, whether or not subject to refund, must be prevented.

The experience since our opinion in \textit{[CATCO]} . . . indicates that a triggering of price rises often results from the out-of-line initial pricing of certificated gas. These effects become irreversible and splash over into intrastate sales, thus generating


\textsuperscript{71} See Johnson, Producer Rate Regulation in Natural Gas Certification Proceedings: \textit{CATCO} in Context, 62 Colum. L. Rev. 773 (1962).

reciprocal pressures that directly affect jurisdictional rates. . . . [T]he possibility of refund does not afford sufficient protection.73

In CATCO the Supreme Court was responding to the substantial increases in field prices which occurred during the 1950's. Such an increase could have been a response to a developing gas shortage. In fact the supply of gas during the period was increasing sharply.74 An entirely different process was at work. The large volume required for efficient operation of long distance pipelines and the economies inherent in a geographically compact gathering system meant that each pipeline was initially developed in a different field. But as the volumes available and the number of pipelines in the producing regions increased competition started to develop for gas production. The price a monopsonist pipeline offers is determined by the marginal cost of production. Where the gas has already been discovered, as was the case in many southwestern fields in the 1950's, this is the relatively low cost of producing the gas. Under competition, however, the price of gas in the field will be a function not of the marginal cost of production, but of the city gate price, less the cost of transportation. During the 1950's the field market for natural gas was changing from monopsony to competition, and the price rose accordingly.75

The magnitude of this rise can be illustrated by the Federal Power Commission's figures, summarized in Figure I. The average revenue per Mcf of natural gas received by producers from interstate pipelines rose from 9.09 cents in 1953 to 16.45 cents in 1961, when the steady increase was finally halted. But the true nature of this price increase can only be understood by comparing the price levels to the consumers during this period with the prices to producers. This has been done in Table 2, which compares the consuming price in New York with the production price in Louisiana, the principal source of New York gas, during the years 1950 to 1961. The period opens with an annual consumption of natural gas in New York state of 65,000 million cubic feet about three times the 22,000 million cubic feet consumed in New York in 1917, the peak year of the Appalachian crisis. On March 31, the Transcontinental Gas Pipe Line Co. commenced operation of a pipeline from the Louisiana Gulf Coast fields to New York city,76 an area that had not previously been provided with natural gas. By 1952 the volume of gas consumed in New York state had almost tripled and the average price had almost doubled. But after 1952 prices declined some and then rose again,

75 Paul W. MacAvoy, Price Formation in Natural Gas Fields (1962), is a careful study of market conditions during this period which reached this conclusion.
## TABLE 2

**New York Gas Market 1950-1961**

<table>
<thead>
<tr>
<th>Date</th>
<th>New York Consumption Price</th>
<th>New York Well Price</th>
<th>Louisiana Well Price</th>
<th>New York Consumption Used</th>
<th>Percentage of Industrially in New York</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>82.8</td>
<td>25.1</td>
<td>5.3</td>
<td>65,157</td>
<td>16</td>
</tr>
<tr>
<td>1951</td>
<td>105.8</td>
<td>25.1</td>
<td>5.8</td>
<td>144,920</td>
<td>26</td>
</tr>
<tr>
<td>1952</td>
<td>143.1</td>
<td>29.2</td>
<td>6.7</td>
<td>180,747</td>
<td>25</td>
</tr>
<tr>
<td>1953</td>
<td>128.8</td>
<td>31.6</td>
<td>8.2</td>
<td>197,878</td>
<td>28</td>
</tr>
<tr>
<td>1954</td>
<td>127.1</td>
<td>32.6</td>
<td>8.9</td>
<td>225,844</td>
<td>25</td>
</tr>
<tr>
<td>1955</td>
<td>99.2</td>
<td>29.5</td>
<td>11.3</td>
<td>243,513</td>
<td>23</td>
</tr>
<tr>
<td>1956</td>
<td>106.5</td>
<td>28.3</td>
<td>11.4</td>
<td>268,408</td>
<td>22</td>
</tr>
<tr>
<td>1957</td>
<td>128.9</td>
<td>28.4</td>
<td>11.2</td>
<td>299,153</td>
<td>27</td>
</tr>
<tr>
<td>1958</td>
<td>124.9</td>
<td>30.5</td>
<td>12.9</td>
<td>343,326</td>
<td>28</td>
</tr>
<tr>
<td>1959</td>
<td>132.5</td>
<td>30.5</td>
<td>15.4</td>
<td>379,928</td>
<td>30</td>
</tr>
<tr>
<td>1960</td>
<td>127.0</td>
<td>30.9</td>
<td>17.1</td>
<td>419,460</td>
<td>31</td>
</tr>
<tr>
<td>1961</td>
<td>133.4</td>
<td>29.5</td>
<td>18.7</td>
<td>435,417</td>
<td>29</td>
</tr>
</tbody>
</table>


### Figure I

**Sales of Natural Gas by Domestic Producers to Interstate Pipeline Companies, 1953-1966**

*Source: Federal Power Commission, Sales by Producers of Natural Gas to Interstate Pipeline Companies 1966 at XXII (1967).*
never exceeding the 1952 peak while the volume of gas consumed steadily increased. The fact that gas in New York was not becoming more expensive is confirmed by the fact that the New York production price remained quite stable after 1952. But at the same time in Louisiana a dramatic price increase was occurring. Prices rose from 6.7 cents in 1952 to 18.7 cents in 1961, roughly a 300% increase. The stable price at one of the principal points of consumption suggests that this was due only to the fact that the charge for transmitting gas from the field to the consumer was declining. And this decline did not have to be very great to result in a large percentage increase in field prices. The field price accounted for about 10 per cent of the delivered price of Louisiana gas in New York, and a ten per cent decrease in charges for transmission would almost double the field price.

The dramatic increase in field prices was reminiscent of the Appalachian gas crisis. The Supreme Court offered a solution based on the conceptions of the gas industry that had grown out of that event of forty years before. In fact, the new situation was entirely different. The higher prices developed not out of scarcity but the economies and competitive pressures of abundance.

The Federal Power Commission extended the Supreme Court's policy from new contracts to all field prices when in September, 1960 it announced its intention to abandon the individual cost of service method for regulating producers and adopt an area price method. Under the area price method a uniform selling price is determined for each field. Along with its announcement of the shift to area price regulation, the Commission issued two area price "guidelines" for each of the major producing areas. One price was the price above which the Commission would not certify new sales. The other was the price above which the Commission would not approve applications for price increases. In each area, the first price was set at the level of the highest price at which a sale in the area had been previously certified; the second at the average price for all sales in the area. The guidelines apply until the area rate proceedings are completed. The result is that maximum price for new gas supplies are frozen at 1959-1960 levels and that all price increases on old supplies above the guideline must be collected subject to refund. As the Federal Power Commission said proudly in 1963 of a decision to deny rate increases in the southern Louisiana and Mississippi fields, "the decision . . . demonstrated [the Commission's] . . . determination to hold the line against increases in natural gas prices."

80 Brief of Petitioner Wisconsin at 31, Id.
An examination of the area price proceedings shows that they will, when completed, continue to carry out this price freeze policy.\footnote{82}{Edmund W. Kitch, The Permian Basin Area Rate Cases and the Regulatory Determination of Price, 116 U. Pa. L. Rev. 191, 206-13 (1967).}

V. IMPLEMENTATION OF THE PRICE FREEZE

The Court's in-line price doctrine and the Commission's guidelines appear to have had an important impact on the field market for natural gas. Figure I shows that the steady increase of the average field price between 1953 and 1961 has subsequently leveled off. The interpretation of this leveling off is difficult. The coincidence between the date of the guidelines and the break in the upward trend in prices suggests that the regulation is responsible. But there are several factors which suggest that the market, not the regulation, has been responsible for the price stability.

Most important, price stability was achieved too quickly to be attributable to the regulation. The in-line price 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 increases. 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.

The existence of a decline is suggested by two factors. First is the large quantities of gas which have been developed during the 1960's. Although they are inconclusive, the additions to reserves during the 1960's are indeed impressive.\footnote{83}{In 1960 additions to reserve were 13,969,849,000 Mcf, net production: 13,090,450,000. In 1963, 12,800,908,000 and 14,762,266,000. In 1965, 21,329,779,000 and 16,252,293,000. Bureau of Mines.}
Second, there is the increasing competition from electricity and coal.

Natural gas has been faced with significant technological changes in both of its major competing energy sources. The rapid development of air conditioning during the 1950's shifted the electric peak load from winter to summer. The electric companies, now faced with surplus capacity in the winter, have for the first time become a factor in the heating market. The cost of coal has steadily declined as the result of automation.\footnote{84}{The decline dates from 1957. 1960 Bureau of Mines II 20 Table 16. On an index treating the 1957-59 average price as 100, the wholesale price of bituminous coal has declined from 99.7 in 1958 to 96.5 in 1965. 1963 Bureau of Mines II 29 Table 27; 1965 Id. at 25 Table 29.}

These competitive pressures can best be seen in the market for electric power generation. Power plants have been an important growth segment for natural gas, as shown in Table 3. The percentage of natural gas used
## TABLE 3
**The National Market for Gas 1955-1966**
Average Revenues Cents Per Mcf

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>12.7</td>
<td>n.a.</td>
<td>n.a.</td>
<td>21.5</td>
<td>22.3</td>
<td>23.3</td>
</tr>
<tr>
<td>1956</td>
<td>13.7</td>
<td>n.a.</td>
<td>28.4</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>1957</td>
<td>13.0</td>
<td>n.a.</td>
<td>29.5</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>1958</td>
<td>12.8</td>
<td>n.a.</td>
<td>31.4</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>1959</td>
<td>13.8</td>
<td>n.a.</td>
<td>32.6</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>1960</td>
<td>13.9</td>
<td>n.a.</td>
<td>35.1</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>1961</td>
<td>14.0</td>
<td>26.7</td>
<td>36.6</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>1962</td>
<td>14.2</td>
<td>27.0</td>
<td>36.4</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>1963</td>
<td>14.6</td>
<td>26.9</td>
<td>36.0</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>1964</td>
<td>14.9</td>
<td>26.5</td>
<td>34.5</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>1965</td>
<td>14.5</td>
<td>26.7</td>
<td>34.3</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>1966</td>
<td>15.2</td>
<td>26.9</td>
<td>33.8</td>
<td>24.6</td>
<td>26.0</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Data from articles on natural gas in annual editions of the Minerals Yearbooks, Vol. 2: Fuels, put out by the Bureau of Mines of the Department of the Interior; FPC, Statistics for Interstate Natural Gas Pipeline Companies 1966 at XVII, Table 11 (1967); id., 1963 at XV, Table 13.*

## TABLE 4
**Selected State Markets for Gas 1955-1966 Average Price at Point of Consumption**
Cents Per Mcf

### Middle Atlantic States

<table>
<thead>
<tr>
<th>Date</th>
<th>New York Industrial</th>
<th>All Sales</th>
<th>Industrial</th>
<th>All Sales</th>
<th>Pennsylvania Industrial</th>
<th>All Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>60.2</td>
<td>99.2</td>
<td>59.4</td>
<td>146.0</td>
<td>52.6</td>
<td>73.5</td>
</tr>
<tr>
<td>1956</td>
<td>64.3</td>
<td>106.5</td>
<td>58.8</td>
<td>147.0</td>
<td>50.1</td>
<td>70.7</td>
</tr>
<tr>
<td>1957</td>
<td>65.1</td>
<td>128.9</td>
<td>49.8</td>
<td>145.6</td>
<td>50.1</td>
<td>72.7</td>
</tr>
<tr>
<td>1958</td>
<td>63.7</td>
<td>124.9</td>
<td>48.9</td>
<td>150.5</td>
<td>48.2</td>
<td>73.7</td>
</tr>
<tr>
<td>1959</td>
<td>61.4</td>
<td>132.5</td>
<td>48.7</td>
<td>140.4</td>
<td>53.0</td>
<td>78.1</td>
</tr>
<tr>
<td>1960</td>
<td>66.2</td>
<td>127.0</td>
<td>50.6</td>
<td>147.6</td>
<td>52.2</td>
<td>80.3</td>
</tr>
<tr>
<td>1961</td>
<td>64.5</td>
<td>133.4</td>
<td>52.9</td>
<td>148.9</td>
<td>52.8</td>
<td>82.3</td>
</tr>
<tr>
<td>1962</td>
<td>65.6</td>
<td>115.5</td>
<td>56.1</td>
<td>143.3</td>
<td>52.7</td>
<td>82.3</td>
</tr>
<tr>
<td>1963</td>
<td>60.4</td>
<td>110.4</td>
<td>53.3</td>
<td>137.5</td>
<td>50.0</td>
<td>79.9</td>
</tr>
<tr>
<td>1964</td>
<td>56.7</td>
<td>111.6</td>
<td>47.3</td>
<td>133.7</td>
<td>51.6</td>
<td>82.4</td>
</tr>
<tr>
<td>1965</td>
<td>65.5</td>
<td>115.5</td>
<td>50.4</td>
<td>136.1</td>
<td>52.1</td>
<td>81.6</td>
</tr>
<tr>
<td>1966</td>
<td>60.4</td>
<td>117.8</td>
<td>55.0</td>
<td>138.2</td>
<td>51.9</td>
<td>81.5</td>
</tr>
</tbody>
</table>

*Source: Data from articles on natural gas in annual editions of the Minerals Yearbooks, Vol. 2: Fuels, put out by the Bureau of Mines of the Department of the Interior.*
in electric power generation has increased from 12.7 per cent in 1955 to 15.2 per cent in 1966. Between 1955 and 1964 the percentage of electricity generated from natural gas increased from 17.9 per cent to 23.2 per cent.  

But coal for electric power has become increasingly competitive with the development of unit train hauling and mine mouth power plants. The increasing competitiveness of coal is revealed in Table 5. In 1958 gas was cheaper than coal for power generation in every area of the country except East South Central and Mountain. The average cost of coal per million Btu was 27.4 cents, of gas 19.5. In 1964 coal was cheaper than gas in all regions except West North Central and Pacific, where coal was not a market factor. The national average cost per million Btu of coal had fallen to 24.6, gas had risen to 25.3.

The hypothesis that there has been a decline in the field market price is further supported by the data on the average price realized by the interstate pipelines as set forth in Table 3. The average price realized by the pipelines rose until 1961, then stabilized, and fell slightly in 1964. This pattern might be attributed not to the market, but to the pipeline regulation. However, it is confirmed not only by the over-all averages, but by the

<table>
<thead>
<tr>
<th>Date</th>
<th>Industrial</th>
<th>All Sales</th>
<th>Industrial</th>
<th>All Sales</th>
<th>Industrial</th>
<th>All Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>52.4</td>
<td>80.4</td>
<td>31.4</td>
<td>56.9</td>
<td>65.9</td>
<td>111.9</td>
</tr>
<tr>
<td>1956</td>
<td>53.9</td>
<td>82.2</td>
<td>32.6</td>
<td>59.6</td>
<td>64.2</td>
<td>107.5</td>
</tr>
<tr>
<td>1957</td>
<td>53.0</td>
<td>80.5</td>
<td>32.4</td>
<td>61.2</td>
<td>63.3</td>
<td>104.4</td>
</tr>
<tr>
<td>1958</td>
<td>54.2</td>
<td>80.3</td>
<td>35.7</td>
<td>69.1</td>
<td>62.6</td>
<td>102.9</td>
</tr>
<tr>
<td>1959</td>
<td>60.8</td>
<td>82.9</td>
<td>36.4</td>
<td>71.0</td>
<td>58.1</td>
<td>98.5</td>
</tr>
<tr>
<td>1960</td>
<td>57.8</td>
<td>80.0</td>
<td>38.3</td>
<td>74.9</td>
<td>60.5</td>
<td>98.8</td>
</tr>
<tr>
<td>1961</td>
<td>54.7</td>
<td>82.3</td>
<td>30.8</td>
<td>73.1</td>
<td>60.3</td>
<td>95.3</td>
</tr>
<tr>
<td>1962</td>
<td>52.4</td>
<td>82.5</td>
<td>40.6</td>
<td>78.9</td>
<td>58.8</td>
<td>91.5</td>
</tr>
<tr>
<td>1963</td>
<td>53.1</td>
<td>82.3</td>
<td>40.1</td>
<td>77.4</td>
<td>57.9</td>
<td>89.7</td>
</tr>
<tr>
<td>1964</td>
<td>42.6</td>
<td>81.0</td>
<td>39.1</td>
<td>73.2</td>
<td>49.5</td>
<td>83.5</td>
</tr>
<tr>
<td>1965</td>
<td>51.9</td>
<td>79.5</td>
<td>37.3</td>
<td>72.5</td>
<td>51.8</td>
<td>82.6</td>
</tr>
<tr>
<td>1966</td>
<td>53.0</td>
<td>77.7</td>
<td>40.8</td>
<td>70.0</td>
<td>50.7</td>
<td>80.6</td>
</tr>
</tbody>
</table>

Energy Source as Per Cent of All Electricity Generated

<table>
<thead>
<tr>
<th>Year</th>
<th>Coal</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>52.1%</td>
<td>17.9%</td>
</tr>
<tr>
<td>1961</td>
<td>51.6%</td>
<td>22.3%</td>
</tr>
<tr>
<td>1964</td>
<td>52.3%</td>
<td>23.2%</td>
</tr>
</tbody>
</table>

1964 from 1964 Bureau of Mines II 8 Table 7; 1961 and 1955 from 1963 Id. 14 Table 7.
### TABLE 5

**Cost of Fuel in Steam-Electrical Power Generation 1955-1964**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New England</td>
<td>35.4</td>
<td>36.6</td>
<td>36.0</td>
<td>38.8</td>
<td>41.4</td>
<td>37.9</td>
<td>41.0</td>
<td>46.9</td>
<td>40.7</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>28.4</td>
<td>35.7</td>
<td>30.8</td>
<td>30.0</td>
<td>40.2</td>
<td>31.9</td>
<td>31.9</td>
<td>45.9</td>
<td>32.1</td>
</tr>
<tr>
<td>East North Central</td>
<td>23.9</td>
<td>69.1</td>
<td>22.2</td>
<td>24.6</td>
<td>74.3</td>
<td>21.7</td>
<td>25.8</td>
<td>68.2</td>
<td>23.1</td>
</tr>
<tr>
<td>West North Central</td>
<td>26.5</td>
<td>31.0</td>
<td>22.6</td>
<td>26.9</td>
<td>43.4</td>
<td>22.1</td>
<td>28.2</td>
<td>47.6</td>
<td>22.2</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>25.9</td>
<td>36.0</td>
<td>25.3</td>
<td>28.1</td>
<td>39.5</td>
<td>25.2</td>
<td>29.0</td>
<td>46.2</td>
<td>25.8</td>
</tr>
<tr>
<td>East South Central</td>
<td>18.3</td>
<td>43.8</td>
<td>18.3</td>
<td>18.7</td>
<td>42.4</td>
<td>19.8</td>
<td>19.4</td>
<td>46.1</td>
<td>21.6</td>
</tr>
<tr>
<td>West South Central</td>
<td>20.5</td>
<td>40.0</td>
<td>11.4</td>
<td>15.2</td>
<td>40.4</td>
<td>12.4</td>
<td>14.9</td>
<td>41.7</td>
<td>12.9</td>
</tr>
<tr>
<td>Mountain</td>
<td>21.7</td>
<td>24.9</td>
<td>21.6</td>
<td>22.0</td>
<td>26.0</td>
<td>22.0</td>
<td>22.0</td>
<td>25.1</td>
<td>22.2</td>
</tr>
<tr>
<td>Pacific</td>
<td>—</td>
<td>27.8</td>
<td>23.8</td>
<td>—</td>
<td>33.0</td>
<td>25.0</td>
<td>—</td>
<td>41.5</td>
<td>26.5</td>
</tr>
<tr>
<td><strong>Average, U.S.</strong></td>
<td><strong>25.2</strong></td>
<td><strong>33.2</strong></td>
<td><strong>18.0</strong></td>
<td><strong>26.2</strong></td>
<td><strong>37.9</strong></td>
<td><strong>18.5</strong></td>
<td><strong>27.5</strong></td>
<td><strong>44.4</strong></td>
<td><strong>19.5</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New England</td>
<td>40.1</td>
<td>40.7</td>
<td>37.8</td>
<td>37.7</td>
<td>35.8</td>
<td>34.5</td>
<td>36.5</td>
<td>36.0</td>
<td>35.6</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>32.3</td>
<td>38.5</td>
<td>32.0</td>
<td>30.8</td>
<td>35.5</td>
<td>33.0</td>
<td>30.0</td>
<td>35.1</td>
<td>35.7</td>
</tr>
<tr>
<td>East North Central</td>
<td>25.8</td>
<td>68.5</td>
<td>24.6</td>
<td>25.6</td>
<td>73.2</td>
<td>24.5</td>
<td>25.3</td>
<td>65.5</td>
<td>25.3</td>
</tr>
<tr>
<td>West North Central</td>
<td>28.1</td>
<td>51.3</td>
<td>22.0</td>
<td>27.5</td>
<td>46.7</td>
<td>22.4</td>
<td>27.0</td>
<td>43.4</td>
<td>23.0</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>28.6</td>
<td>39.7</td>
<td>27.6</td>
<td>27.2</td>
<td>35.5</td>
<td>29.7</td>
<td>26.3</td>
<td>35.6</td>
<td>31.8</td>
</tr>
<tr>
<td>East South Central</td>
<td>19.4</td>
<td>37.6</td>
<td>21.6</td>
<td>19.1</td>
<td>47.1</td>
<td>23.4</td>
<td>19.6</td>
<td>50.3</td>
<td>24.8</td>
</tr>
<tr>
<td>West South Central</td>
<td>15.6</td>
<td>41.8</td>
<td>12.9</td>
<td>15.8</td>
<td>43.2</td>
<td>15.0</td>
<td>32.3</td>
<td>45.1</td>
<td>16.7</td>
</tr>
<tr>
<td>Mountain</td>
<td>21.9</td>
<td>25.2</td>
<td>22.2</td>
<td>21.3</td>
<td>24.3</td>
<td>25.7</td>
<td>20.2</td>
<td>25.0</td>
<td>27.8</td>
</tr>
<tr>
<td>Pacific</td>
<td>—</td>
<td>42.0</td>
<td>26.5</td>
<td>—</td>
<td>34.8</td>
<td>32.0</td>
<td>—</td>
<td>32.3</td>
<td>33.4</td>
</tr>
<tr>
<td><strong>Average, U.S.</strong></td>
<td><strong>27.4</strong></td>
<td><strong>39.6</strong></td>
<td><strong>19.5</strong></td>
<td><strong>26.5</strong></td>
<td><strong>35.2</strong></td>
<td><strong>22.3</strong></td>
<td><strong>26.0</strong></td>
<td><strong>34.5</strong></td>
<td><strong>23.8</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New England</td>
<td>36.2</td>
<td>37.7</td>
<td>36.3</td>
<td>35.5</td>
<td>36.1</td>
<td>35.1</td>
<td>34.1</td>
<td>34.7</td>
<td>34.6</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>29.9</td>
<td>36.2</td>
<td>37.7</td>
<td>29.0</td>
<td>34.2</td>
<td>37.2</td>
<td>27.2</td>
<td>32.1</td>
<td>33.3</td>
</tr>
<tr>
<td>East North Central</td>
<td>25.0</td>
<td>64.7</td>
<td>26.4</td>
<td>24.9</td>
<td>70.5</td>
<td>25.7</td>
<td>24.8</td>
<td>69.8</td>
<td>24.9</td>
</tr>
<tr>
<td>West North Central</td>
<td>26.2</td>
<td>47.4</td>
<td>22.8</td>
<td>26.6</td>
<td>49.7</td>
<td>23.8</td>
<td>26.4</td>
<td>50.1</td>
<td>23.8</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>25.8</td>
<td>35.2</td>
<td>32.5</td>
<td>25.6</td>
<td>34.6</td>
<td>32.3</td>
<td>25.5</td>
<td>34.4</td>
<td>32.6</td>
</tr>
<tr>
<td>East South Central</td>
<td>19.7</td>
<td>50.9</td>
<td>25.4</td>
<td>19.3</td>
<td>48.9</td>
<td>25.4</td>
<td>20.0</td>
<td>47.5</td>
<td>24.5</td>
</tr>
<tr>
<td>West South Central</td>
<td>—</td>
<td>43.8</td>
<td>19.0</td>
<td>—</td>
<td>42.2</td>
<td>19.5</td>
<td>16.6</td>
<td>38.3</td>
<td>19.4</td>
</tr>
<tr>
<td>Mountain</td>
<td>19.6</td>
<td>25.6</td>
<td>28.5</td>
<td>22.7</td>
<td>25.1</td>
<td>29.0</td>
<td>20.4</td>
<td>27.4</td>
<td>27.7</td>
</tr>
<tr>
<td>Pacific</td>
<td>—</td>
<td>32.6</td>
<td>35.2</td>
<td>—</td>
<td>33.6</td>
<td>34.8</td>
<td>—</td>
<td>33.0</td>
<td>36.1</td>
</tr>
<tr>
<td><strong>Average, U.S.</strong></td>
<td><strong>25.8</strong></td>
<td><strong>35.5</strong></td>
<td><strong>25.1</strong></td>
<td><strong>25.6</strong></td>
<td><strong>34.5</strong></td>
<td><strong>26.4</strong></td>
<td><strong>25.0</strong></td>
<td><strong>33.5</strong></td>
<td><strong>25.9</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New England</td>
<td>33.4</td>
<td>34.4</td>
<td>34.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>26.0</td>
<td>31.7</td>
<td>33.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East North Central</td>
<td>24.6</td>
<td>68.2</td>
<td>24.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West North Central</td>
<td>26.0</td>
<td>50.4</td>
<td>24.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Atlantic</td>
<td>25.4</td>
<td>33.9</td>
<td>32.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East South Central</td>
<td>19.3</td>
<td>50.1</td>
<td>24.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West South Central</td>
<td>14.9</td>
<td>42.6</td>
<td>19.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mountain</td>
<td>19.2</td>
<td>25.7</td>
<td>26.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific</td>
<td></td>
<td>30.7</td>
<td>32.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Average, U.S.</strong></td>
<td><strong>24.6</strong></td>
<td><strong>32.6</strong></td>
<td><strong>25.3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

average revenue from unregulated direct sales. This nation-wide data is
inconclusive, however, because changes in the average might result not
from a change in the market for natural gas but simply from a change in
the average distance that the pipelines transport the gas. Indeed an in-
crease in the average distance between the point of production and the
point of consumption appears to account for a substantial part of the roughly
30 per cent increase in average pipeline revenues per Mcf between 1955
and 1961. But by 1961 almost all areas of the country were served with
natural gas and the rapid geographical expansion of the pipeline system that
was characteristic of the 1950's had ended. A similar price pattern emerges
from the average revenue data of the Bureau of Mines for the major northern
consuming states. The price series from sample states in both the Middle
Atlantic and East North Central regions set forth in Table 4 seem to
indicate a drop in the consumer price for gas, particularly in the industrial
sector of the market, between 1961 and 1964. Most striking is the price data
for New Jersey, New York, Michigan and Wisconsin. The data for Illinois
and Pennsylvania is less clear, but suggests a slight decline in price. A decline
in the prices received by the pipelines should have been reflected in a
decline in field prices.

The magnitude of the decline has apparently been small. Given the rela-
tively small volumes of gas flowing under the older contracts, a small de-
cline in the price would counteract the percentage increase in gas flowing
under the new contracts and stabilize the average. The decline is at least
small enough so that without field price data correlated with information
about contract dates, delivery points, gas quality and pressure it is impossible
to prove conclusively. The data in Figure I, Table 3 and Table 4 suggest
that the market declined slightly below the ceiling between 1961 and 1963,
broke rather sharply in 1964, and then recovered slightly.

Even though the market declined slightly, substantial incentives for
producers to avoid the price control remained. As a result, significant
technical problems in the enforcement of price control under the Natural
Gas Act have already been revealed.

The first set of problems arises from three major jurisdictional gaps in the
Natural Gas Act. The design of the act was to limit the return on some, but
not all, of the activities involved in the production and distribution of
natural gas. The Commission has had to use its ingenuity to reach trans-

86 The FPC has published since 1961 an annual volume listing all sales by producers,
state, county, volume and price. But no information is given about the date of the gov-
erning contract, the quality and pressure of the gas and the location of the delivery point.
FPC, Sales by Producers of Natural Gas to Natural Gas Pipeline Companies 1961-1963; FPC,
Sales by Producers of Natural Gas to Interstate Pipeline Companies 1964-66. MacAvoy, supra note 75, used the contracts themselves to obtain this type of data for his study.
actions not covered by the act in order to prevent effective evasion of the price freeze. This task has been made relatively simple by the Supreme Court which in every case to come before it has construed the Act so as to make a price freeze policy effective.

The first evasive device to come before the Commission and the Court was based on the fact that the act does not apply to sales not “sales for resale.” A large consumer of natural gas could enter into a sale not for resale by purchasing reserves in the field and then contracting with the interstate pipeline simply for transportation. Since the reserves are sold to the consumer, the sale of the gas itself would not be subject to the Act. However, the pipeline would have to be granted a certificate of public convenience and necessity for the transportation of the gas. In 1959 the Commission was presented with such an arrangement in Transcontinental Gas Pipe Line Corp.\(^7\)

The Consolidated Edison Company of New York had entered into contracts for the delivery of 50,000 Mcf daily with producers in Texas. Edison contracted with Transco for transportation of the gas to a generating plant in mid-town Manhattan. The Commission denied Transco a certificate for the transportation partly because of the adverse impact of the arrangement on the field price for natural gas. The Commission stated that if such transactions were permitted there would be increased competition for gas reserves, and indicated a clear preference for monopsony.

The impact of large demand on relatively limited supply is certain enough to raise rates and field prices if only one bidder is bringing that demand to bear on the supply. How much more serious is that impact when it is in the form of multiple bidders, each attempting to reserve to itself a firm supply. Inevitably, there would be upward pressure on rate levels in the fields.\(^8\)

Before the Supreme Court Consolidated Edison and Transco argued that the Commission was in effect outlawing a form of transaction which was perfectly legitimate under the statute. The Court answered:

\[\text{T]he Commission did not exalt form over substance in an attempt to aggrandize the scope of its jurisdiction; rather, whenever the Commission discussed the non-jurisdictional nature of this sale, it tied this discussion into an analysis of one or the other of the substantive evils it was seeking to prevent.}\(^9\)

This is to say, whenever the Commission exceeded its jurisdiction it did so because it was necessary to make the regulation effective. Although the Commission’s opinion had been written before CATCO, the Court brought the CATCO in-line doctrine to its support.\(^10\) The Court’s turgid discussion

\(^7\) 21 F.P.C. 138 (1959).
\(^8\) Id. at 141.
\(^10\) Id. at 29.
concluded that the Commission was properly concerned with the field price because it is "a problem that is not, by its very nature, one with which state regulatory commissions can be expected to deal." Apparently the Court meant that the states were unlikely to hold the price in line.

Five months after the Commission had considered the Transco case, it was faced with another effort to evade the regulation. The act applies to sales of gas. Suppose a sale of gas was converted into a sale of a leasehold? Would it then be outside the act so that the Commission would have no control over the price? In 1949 the Supreme Court had held that sale of a leasehold interest was not a transaction subject to the Act.

Four producers in the Rayne Field of Southern Louisiana had sought certificates of public convenience and necessity for the sale of gas at 22.4 cents per Mcf plus production taxes to Texas Eastern Transmission Co. The applications were approved by the hearing examiner, but while the case was pending before the Commission the Court of Appeals for the District of Columbia decided CATCO. The applicants, sensing the in-line doctrine just around the corner, withdrew their applications and restructured the transaction. Texas Eastern, through a subsidiary corporation, agreed to purchase the leases. The subsidiary gave long term notes for the leases which provided for acceleration if production exceeded specified amounts. One of the producers agreed to manage the production.

The Commission approved the new arrangement. The Court of Appeals for the District of Columbia reversed. The court noted that although the Commission did not have jurisdiction over the sale, it did have jurisdiction over Texas Eastern and a duty to determine whether the cost of the purchase was justified. Since the court thought the Commission in its opinion had approved the cost of the purchase without supporting evidence, it remanded for further consideration. On remand the Commission decided that it did have jurisdiction over the sale.

Any other result would exalt form over substance, would give greater weight to the technicalities of contract draftsmanship than to the achievement of the purposes of the Natural Gas Act, and would impair our ability to control the price received for gas sold to the pipelines in interstate commerce to the detriment of the ultimate consumer.

---

91 Id.
94 Public Serv. Comm'n v. FPC, 257 F.2d 717 (3d Cir. 1958).
96 Public Serv. Comm'n v. FPC, 287 F.2d 143 (D.C. Cir. 1960).
The Supreme Court affirmed.

[It] is perfectly clear that the sales of these leases in Rayne Field, a proven and substantially developed field, accomplished the transfer of large amounts of natural gas to an interstate pipeline company for resale in other States. That is the significant and determinative economic fact. To ignore it would substantially undercut Phillips, and because of it the Commission . . . acted properly in treating these sales of leasehold interests as sales of natural gas within the meaning of the Natural Gas Act.98

The third jurisdictional gap in the Act is that it does not and probably could not apply to sales by Canadian producers to international pipelines for export to the United States. In 1954 the Commission took the position that it could not authorize importation of Canadian gas as the sole source of supply for the Pacific Northwest because of its inability to protect American consumers from unreasonable prices.99 It felt its jurisdictional inadequacy so strongly, in fact, that it decreed that the Pacific Northwest should be supplied with gas from southwestern fields over 1,000 miles away rather than with Alberta natural gas less than 500 miles away. But when the successful American applicants applied to import the same gas from the rejected Canadians, the Commission approved without comment.100 The Commission first faced the problem of what it could do to “protect” the American consumer on gas imported from Canada in 1960. In Pacific Gas Transmission Co.101 pipelines owned by Pacific Gas and Electric Company proposed to transport gas from the Alberta-British Columbia border to northern California. The gas was obtained by means of contracts with the Alberta producers who would receive prices higher than the prevailing prices in American fields102 even though they were farther from the major points of consumption. The Examiner imposed additional conditions on the project.

Blanket authorization might imply . . . acceptance during the life of the gas fields of the paradoxical economic preference of Canadian producers in respect of their ability to charge what the market will bear, over American producers restricted by regulation in the consumer interest.103

The Examiner required the parties to report on the field price of the natural gas which they acquired and to reserve “the possibility that, after completion of the project, the Canadian producers and the Canadian companies may be

102 See Initial Decision, Id. at 160-67.
103 Id. at 167.
FIELD MARKET FOR NATURAL GAS

subjected, despite their existing contracts, to such further regulations as may be evolved for the protection of American consumers.104 The Commission reversed the Examiner and approved the project without conditions. The Commission did so because it found that the Canadian regulation was sufficiently broad to provide protection of the public interest. The Commission was particularly impressed by the provision giving the Alberta Board of Public Utility Commissioners broad powers over field prices and giving them broad discretion to use any reasonable method in arriving at a price.105

The Commission chose to overlook, however, the fact that the public interest of Alberta as a major gas exporting province is different from the interest of the United States, as a gas importer. Alberta’s interest is the same as that of an American producing state—to obtain a high price for its exports. The only way in which the Commission could have effectively dealt with the problem would have been to extend the in-line pricing doctrine to the Canadian border. It is not clear why the Commission did not do so at the time the in-line doctrine was applied to the American fields. One problem was that the occasional history of Canadian import transactions, occurring in single transactions involving large volumes at a point in the distribution system after gathering had taken place, made it difficult to extrapolate an “in-line” price. The Commission might also have feared an adverse reaction from a Canadian government hesitant to see its wealth of natural gas reserves largely dedicated to American consumption.108

In 1967 the Commission changed its hands off position and applied a new version of the in-line pricing doctrine to a new proposal for additional imports from Canada to the Pacific Northwest.107 The Commission limited the import price to a price equivalent to that charged by the exporter to large Canadian consumers.108 This version of the in-line doctrine is not designed to put Canadian producers on the same basis as American producers. Rather, it is designed to prevent the development of a price differential between the Canadian domestic and export markets. As we have seen, the American exporting states early attempted to reserve for themselves a large part of their reserves and thereby enjoy the consequence of a lower domestic price. Canada’s National Energy Board has been following the

104 Id. at 168.
105 Id. at 137-38.
108 First Report of the Canadian Royal Comm’n on Energy to the Governor in Council 10 (1958): “The Commission is of the opinion that, if the granting of an export license would in any way interfere with the supply of the reasonably foreseeable natural gas requirements of those parts of Canada within economic reach of the producing provinces, permission to export should be withheld.”
108 Id. at 9-11.
same policy for Canada. The efforts of the producing states were nullified by the interstate commerce clause; but Canada is not a member of our federal union. Ironically, the Natural Gas Act has achieved in part the objective of the producing states. Since interstate sales in the field are subject to regulation while intrastate sales are not, the intrastate sales involve fewer costs and are therefore made at a lower price. But the Federal Power Commission has not yet insisted that all interstate sales should be made at the same price as intrastate sales. At this writing the National Energy Board of Canada has refused to accept the Commission’s price limitations.

Approval of this [export] application would seem to carry with it, despite any protestations we might make, a de facto acceptance of the in-line method of pricing our gas exports, with its implication that the only way to improve export prices in future would be to increase prices charged by the transmission company to its Canadian distributor customers.

The second area of difficulty in enforcing the price freeze policy has been the fact that although the price of a contract may be in compliance with the regulation, other non-price terms of the contract may have been altered so as to substantially enhance the value of the sale to the producer. The principal weakness of both the in-line price doctrine and the guidelines is that they specified nothing about the terms of the contract other than price. In such a situation, the simplest way to avoid the regulation was simply to tie sales of high quality gas to sales of inferior gas and sell the entire package for the ceiling price. The Commission has become sensitive to this problem and in its Permian Basin area rate decision made the area price subject to adjustments for energy content, pressure and impurities. But the Commission has done nothing about two other factors which are important determinants of the value of the gas—location and the size of the reserves available from each well. Pipelines can to some extent increase the “price” by moving the delivery point closer to the well and taking on more of the costs of production. It should be possible to partly nullify the area price regulation by tying sales of gas from small wells far from the principal market with sales of gas from large wells closer to the market.

Beyond the desirability of the gas itself, there are other factors which affect the value of a contract. Most important are the terms of payment.

108 See Trans-Canada Pipe Lines Ltd., Canadian National Energy Board Report to the Governor in Council (mimeo March 1960); Alberta & S. Gas Co. Ltd., Id. (mimeo July 1965).

109 See Robert W. Gerwig, Natural Gas Production: A Study of Costs of Regulation, 5 J. Law & Econ. 69 (1962).

For instance, if the pipelines agree to make payments in advance, that is equivalent to offering a higher price. Or the purchaser may offer the seller a guarantee as to the regularity of the payments he will receive. In the industry these are known as “take or pay” contracts and assure the seller that he will receive at least a minimum payment under the sales contract no matter how much gas is actually taken. In 1961 the Commission became concerned about the prepayment situation of some pipelines. It issued a notice of proposed rule making designed to limit the use of terms of this type. The rule was finally issued in 1967, and when issued it was relatively innocuous, providing only that the pipeline under such a contract must be given a five-year period to actually take the gas without any additional charge. The Commission explained its action on the ground that the prepayment situation had substantially improved.

While we maintain concern over the potential harm which could be caused by an undue burden of excess prepayment balances, we are cognizant of the fact that there are but a limited number of pipeline companies who currently have made prepayments to the same degree as that prevalent in earlier years. Most companies have been able to reduce their prepayment burdens. One major contribution to the alleviation of the burden has been our relaxation of the 12-year deliverability requirement for pipeline companies.

The improvement in the prepayment situation is probably due to the decline in the field market price. If the market price rises, the Commission’s rule will not prevent the use of prepayment to minimum payment provisions as a device for evading the price ceiling.

Another problem results from the fact that a producer sale of natural gas often involves a sale of two things: pipeline gas and the extractable liquids. Customarily the producer is paid a price for the gas plus a share of the revenues obtained by the pipeline from the liquids. But in some cases a guarantee has been given that the producer’s share of the liquid revenues will be at least a designated minimum. But payments ostensibly made for liquids can in fact be hidden payments for natural gas.

One answer to the problem would be to forbid any separate payment for the liquids and treat the total payment under the contract as the controlling price. Such an approach, however, would result in the same price for gas of

112 26 Fed. Reg. 4615 (1961). The proposed rule limited payments to be made for gas not taken to 80 per cent of the contract volume and limited the daily contract volume to one Mcf for each 8,000 Mcf of reserves under the contract.


114 FPC Order 334, 32 Fed. Reg. 865 (1967). The relaxation of the 12-year average deliverability requirement was made in FPC Order 279, 29 Fed. Reg. 4873 (1964). The relaxation of this requirement could not have had any more than a short term impact on the field market.
greatly different worth. Another approach would be to ascertain the actual value of the liquids and require that the payment for the liquids could not exceed their value. But this would be a difficult and complex rule to administer because the value of the liquids would have to be calculated from their value when extracted less the costs of extraction.

In 1963 the Commission confronted the problem in *El Paso Natural Gas Co.* Its solution was rather arbitrary. It held that it had no objection to arrangements which provided for sharing liquid revenues but that it did object to any flat minimum guarantee for the liquids. "To permit [the one cent minimum] . . . would be tantamount to a flat allowance of 18 cents per MCF in an area in which the in-line price is no more than 17 cents per MCF." The Commission in 1967 relaxed its position to hold that such a one cent minimum guarantee in a contract was not objectionable, as long as it was not actually utilized because the revenues under the sharing agreement exceeded the minimum. The result is that as long as the liquids revenue to the producer exceeds one cent, the contract is all right; but when they fall below one cent the one cent minimum is invalidated if it makes the total price greater than the ceiling. This approach still leaves the possibility that the sharing percentages can be manipulated to favor the producer, although the Commission would probably intervene where the producer's share was unusually high. It does, however, limit the amount of the payments which can be made ostensibly for liquids but in fact for gas, to the actual revenues generated by the sale of the liquids.

If and when market prices obtainable in the field move above the price ceilings, even more substantial incentives will exist to evade the regulation. No doubt other means will be developed to accomplish that purpose. The Commission will have to be vigilant to ensure that the regulation applies to all sales in the interstate market and that transactions are not rearranged so as to increase the value of the contract package to the producer even though the price complies with the ceiling.

V. The Future of the Regulation

For the moment all is well with the Federal Power Commission's regulation of natural gas field prices. The Commission can pride itself on having constructed price control regulation out of a traditional regulatory statute; increasing reserves and competition in the consumer fuel market have made its regulation look even more effective than it can possibly be. But what of

---

119 Id. at 1184.
the day when the market is no longer in equilibrium at the ceiling price? Will the Commission's regulation under the Natural Gas Act provide the appropriate response?

In its Permian Basin opinion the Commission has fairly well outlined what will happen in such a situation. In the Permian Basin opinion the Commission established a two price system. The first price, the old gas price (in the Permian Basin area, 14.5 cents), applies to natural gas committed to interstate commerce before January 1, 1961, and all gas produced in association with oil. The new gas price (16.5 cents in the Permian Basin area) applies to all non-associated gas committed to interstate commerce after January 1, 1961. The Commission adopted this two price system because it found that the supply of new non-associated gas was "more" responsive to price, while the supply of gas already committed to interstate commerce and gas produced in association with oil was "less" responsive. Therefore, reasoned the Commission, there is no need to offer a higher price for the "old" gas because a higher price cannot increase supply. The January 1, 1961 date was chosen in recognition of the fact that the two price system carried forward in modified form the dual pricing system first established in the price guidelines issued in 1960.119

These prices are set for the foreseeable future. The gas having been committed to interstate commerce, there is no need to offer a higher price to induce its production. When in the future the new gas price proves insufficient to stimulate the development of adequate supplies, a "new new" gas price will be issued applicable to gas sold after the date of its promulgation.120

The most serious problem with this system is the probability that the Commission will not permit the "new new" gas price to rise at a rate fast enough to assure adequate supply. In the history of natural gas regulation much has been made of the fact that the supply of natural gas is relatively inelastic. The more important fact is that the supply of natural gas is responsive to price. It is true that in the Appalachian gas crisis production declined and prices rose. But the undeniable fact is that because of those higher prices production has continued for more than forty years at a substantial rate. The fact that the supply schedule for gas is relatively inelastic may mean that it is possible to transfer wealth from producers to consumers by means of a price ceiling with less loss than if it were more elastic. But so what? The loss—the gas left unproduced—remains for all of society. The only fact the history can prove is that supply responds to price. The exact degree of elasticity at any particular time cannot be known, it is constantly

118 Area Rate Proceeding 61-1 (Permian Basin), 34 F.P.C. 159 (1965).
119 Id. at 188-89.
120 Id. at 227.
shifting as the geological facts and the technology change. In a world of
necessary ignorance the safest position for the Regulator is not to allow a
single large price increase, which would bring criticism from those opposed
to higher prices, but a small price increase followed by a wait to see if it will
be sufficient to attract the needed supply. If not, then another small increase,
followed by a similar wait. The Commission’s action in the Permian Basin
case follows this pattern. Gas price ceilings were set at or just barely above
the present market.\footnote{Id. at 188: “The separate price we fix herein for new gas-well gas in the Permian Basin should serve to furnish a practical test of whether in fact it will result in bringing forth additional supplies.”} Any further increase will need Commission approval.

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 is slowed by the period needed for regulatory con-
ideration. Because the outcome of the Commission’s consideration will be
based on arbitrary and unpredictable considerations, the industry cannot
count on an inevitable increase. Therefore, those involved in the develop-
ment of additional reserves will have to wait until the increase has actually
been allowed before they make commitments based on the expectation of
the higher price. The “inelasticity” of political and regulatory mechanisms
is responsible for the fact that the last two major adjustments in the field
market have been made by means of the market rather than regulation. The
Appalachian crisis was followed by regulation of the interstate gas market
only after nineteen years. In 1960 the Commission clamped a ceiling on the
field market only after the upward price trend of the fifties resulting from
increased transmission efficiencies and competition had halted. But the next
time an upward shift in the field market occurs the Commission will be
firmly astride the field market. It will respond just as slowly as it has in the
past. The tragedy is that the next increase may be another increase in the
field price, like the increase of the 1950’s, without any corresponding increase
in the delivered cost of gas to consumers. In the 1970’s many natural gas
pipelines will be fully depreciated. The depreciation charges are now running
about eight per cent of revenues.\footnote{See FPC, Statistics for Interstate Natural Gas Pipeline Companies 1966 at XII Table 21 (1967).} Given the fact that the pipelines are in
place and most cannot be used for any other purpose, it will be profitable
for their owners to transport gas from the field to market at a cost equal to
the cost of operation. This decrease in the transmission charge could lend
to another substantial field price increase without an increase in the price
charged consumers. But the regulation will interfere with the ability of the
consumer to use this cost saving as a way of bidding for additional supplies
of gas.

In the field market the regulation will only cause the loss of gas which
would otherwise be produced. In the consumer markets the possible consequences are even more disturbing. The transportation system is subject to rate base regulation which prevents price increases due to scarcity. Therefore, when and if the price ceiling in the field becomes economically effective, the price ceiling will be transmitted forward to the consuming market. There will be a shortage. We have had experience with two periods of crisis in the gas supply. The first, the Appalachian crisis, was largely handled through the market. Consumers switched one by one from natural to mixed or manufactured gas, or other forms of fuel as the price rose to the point where it was profitable for them to do so. The percentage of industrial use declined steadily and substantially. In World War II, on the other hand, there was effective price control. All customers continued to consume until the system was brought to the brink of collapse, a collapse which was only avoided by the mandatory disruption of a wide range of activities. The gas supply system simply does not lend itself to enforceable rationing. Price control without rationing creates a market crisis which, in the case of natural gas, can literally be disastrous.

These difficulties are compounded by the multi-price system. The pipelines and the distributors of natural gas are subject to regulation which requires average cost pricing. Thus the consumer of natural gas will face a price based upon the average cost of old, new and new new—being supplied to his system. This cost will be lower than the actual cost of producing the gas necessary to satisfy that consumer’s demand. Thus, to illustrate, the consumer may face a price based upon an average field price of 18 cents plus transportation charges of 60 cents, but acquisition of the supply necessary to satisfy his demand may cost a “new new” price of 26 cents. Since more consumers will be willing to pay 78 cents for the gas than 86 cents, the demand for the “new new” gas will be greater than is actually justified by its economic value to the ultimate consumers. The regulation creates a market in which the amount of gas demanded is in excess of the amount that would be demanded if purchasers were faced with prices based on the actual marginal cost of producing the gas.\(^{128}\) This excess demand will make the shortage problem more acute.

These implications of the multi-price system are even more troublesome in the context of imported gas. Eventually the United States will have to turn to foreign sources for significant amounts of its “new new” gas. This gas will probably either come overland from Canada or Mexico, or by undersea

\(^{128}\) The exact reverse of the situation created by the regulation of the market for milk, where the consumer faces a dual price system and the producer an average price. In regulated milk markets more milk is produced than would be produced if farmers faced a price based on the marginal value of their production to the consumer. See Reuben A. Kessel, Economic Effects of Federal Regulation of Milk Markets, 10 J. Law & Econ. 51, 58-60 (1967).
pipeline or methane tanker from Venezuela. The Canadian experience suggests that we will not be able to avoid paying the market price for this gas; certainly as the domestic supply decreases our bargaining position will weaken. But it is ironic that the price of domestic gas is held down with the consequence that the demand for foreign gas is increased.

In the field, the multi-price system leads to further waste. The fact is that the supply of "old" and associated gas, although less responsive than the supply of new non-associated gas, is to some degree responsive to price. In the case of associated gas, the amount of the income from gas may affect the time when a well is abandoned. Even if the time involved is only a month or so, the gas lost because of an earlier abandonment is lost forever. Old non-associated gas wells may need further work, or further development of other producing depths covered by the original contract. Whether or not to undertake this work will be determined by the old gas price. The Commission has recognized the need for exceptions where wells are not longer profitable to operate.124 But simply obtaining such exceptions will be complex and time consuming. The gas that would have been produced at the market price is, again, lost forever.

This discussion is premised on the assumption, of course, that the regulation will be effective. But the market for natural gas is of sufficient diversity and complexity so that it is reasonable to question whether or not the price control will be completely effective. This is particularly so in view of the small staff of the Commission. One of the principal reasons given for the institution of the area approach in 1960 was that the Commission had insufficient staff to deal with rate problems on a producer by producer basis.125 The shift to an area rate procedure, however, was largely a sleight of hand. It did unify in a single proceeding one question—the permissible price. But it left hidden the need to enforce that price determination on a contract by contract basis. The Commission was quite unrealistic about this problem in Permian Basin, leaving the resolution of the amount of the quality and pressure discounts on each individual contract to negotiation between the parties.126 When it is in the interest of both parties to avoid the price ceiling, they cannot be counted on to enforce it. Perhaps when the Commission realizes the magnitude of the task of enforcing price control and the public clamor that will follow from a failure to stop widespread evasion, it will realize its own interest in keeping the price ceilings above the market.

124 34 F.P.C. 226.
125 Phillips Petroleum Co., 24 F.P.C. 537, 545-46 (1960): "Thus, if our present staff were immediately tripled, and if all new employees would be as competent as those we now have, we would not reach a current status in our independent producer rate work until 2043 A.D.—eighty-two and one half years from now."
126 34 F.P.C. 225. "[S]hould it be found that evasion or abuse is prevalent, it may be necessary to take measures to fix the precise price variations corresponding to variations in gas quality." Ibid.