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THE FERC RESTRUCTURING RULE: IMPLICATIONS FOR LOCAL DISTRIBUTION COMPANIES AND STATE PUBLIC UTILITY COMMISSIONS

Daniel J. Duann
Senior Institute Economist

THE NATIONAL REGULATORY RESEARCH INSTITUTE
The Ohio State University
1080 Carmack Road
Columbus, Ohio 43210

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EXECUTIVE SUMMARY

The promulgation of Federal Energy Regulatory Commission Order 636 (the Restructuring Rule) represents both an end and a beginning to federal regulatory reforms of interstate pipelines. On the one hand, it concludes previous initiatives aimed at making pipelines open-access transporters. On the other hand, it presents a new challenge to the gas industry where services are unbundled and reliability determined not by the suppliers' inherent obligation but by the buyers' own ability to obtain gas and transportation. Consequently, the focus of government regulation has shifted from defining conditions of open-access transportation to overseeing the revamp of supply and service portfolios in a more competitive market.

The Restructuring Rule, though it signifies substantial changes, is not a sudden and fundamental shift in pipeline regulation. It is merely a recognition, formalization, and acceleration of the regulatory reforms that were already in progress. As proposed in the Restructuring Rule, interstate pipelines will be regulated, not as "public utilities" as they were under the Natural Gas Act, but as "common carriers" of natural gas. This "common carrier" paradigm correctly reflects and accommodates the characteristics of pipeline operation where significant economies of scale exist in gas transportation but not in procurement or pooling.

The Restructuring Rule initiates four broad categories of policy reform. They are (1) the unbundling of transportation and sales (commodity) services and the elimination of the pipeline's obligation to provide bundled gas, (2) the specification of conditions for equitable transportation service and the adoption of a straight-fixed-variable (SFV) transportation rate, (3) the institution of new primary and secondary transportation capacity assignment mechanisms, and (4) the full passthrough of transition costs subject to prudence review. All these policy initiatives are closely related to the improvement of a regulated primary transportation market and the creation of a competitive secondary transportation market.

The implementation of the Restructuring Rule has progressed well and by the end of September 1993, the FERC had approved the compliance plans of all affected pipelines. The Restructuring Rule is still subject to judicial review. As the judicial review is in an early stage, it is difficult to predict the eventual outcome. However, it can be reasonably expected that the major provisions (in particular, the unbundling of gas services and the mandate of equitable transportation services) of the Restructuring Rule will not be altered, and the changes that have

already occurred in the gas industry will not be reversed even if the court eventually rules against the FERC.

Assuming a full implementation of the Restructuring Rule, most gas market participants will need to make substantial adjustments in order to compete and prosper in the restructured gas market. The local distribution companies (LDCs) and their customers have the highest stakes and need to make the largest adjustments. The LDCs can no longer rely on the pipelines to provide bundled (commodity, transportation, load-balancing, and back-up) services, nor can they rely on the FERC to set rates for pipeline services and simply pass the costs to their customers. The LDCs will have complete control, and consequently total responsibility, in securing economical and reliable gas supplies and transportation.

The natural gas industry has been in transition from the traditional three-tier structure to a four-market structure (interstate transportation, commodity gas, core distribution, and noncore distribution) since the initiation of the FERC open-access transportation programs in the early 1980s. The Restructuring Rule will accelerate the transformation process but not significantly influence the direction of change. The four segments of the commodity gas market (wellhead, spot, futures, and options) have been quite competitive and free from government regulation. The full participation of interstate pipelines in the commodity gas market is the only significant change, and this market is likely to become even more competitive with the participation of many more buyers and sellers.

Regarding the core distribution market, the LDC will still be the sole supplier for bundled gas and continue to be subject to state public utility regulation. The size of the core distribution market is expected to be reduced somewhat as the SFV transportation rate and the full passthrough of transition costs make core distribution service more expensive, and as more core (captive) customers gain the ability, experience, and confidence to purchase gas directly rather than from the LDC.

The noncore distribution market (where the customers can switch to other fuels or suppliers) is similar in many aspects to the citygate market prior to the promulgation of the Restructuring Rule. Noncore customers may use the LDC's facilities to transport gas or may bypass the LDC completely. An LDC still has the obligation to provide service but the noncore customers are not required to take gas from the LDC. The Restructuring Rule is expected to accelerate the expansion of the noncore distribution market as the core distribution service becomes more expensive and more equitable intrastate transportation services are made available.

As for the effects of the Restructuring Rule on the interstate transportation market, the primary market, which deals with the initial allocation of transportation services, will still be subject to cost-based regulation by the FERC. New transportation services (such as no-notice transportation and open-access storage) will be introduced. A FERC-sanctioned secondary market for transportation capacity with uniform and centralized transaction mechanisms will be established. However, the extent of participation and the degree of competition in the secondary market, and the efficacy of allocating transportation capacity to those customers who value it the most are still to be determined. More significantly, certain conditions imposed by the FERC may unnecessarily restrain the development of an active secondary transportation market.

The Restructuring Rule also has significant implications for the state public utility commissions, and, not unexpectedly, they have different but generally cautious views about the Rule's potential impact. In the short term, the state commissions should actively participate, and encourage the LDCs to do the same, in court cases and FERC proceedings (which have been largely completed) to mitigate cost shifting against the core distribution customers. In the long run, state commissions will need to consider adopting additional gas procurement oversight and incentive mechanisms to encourage the LDCs to take advantage of a more competitive gas market. They may also have to reexamine and possibly restructure the service portfolios of their jurisdictional LDCs. A partial deregulation of gas service to the noncore customers and some revisions to current state transportation programs should be actively considered.

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FOREWORD

This study is the latest in a series of Institute analyses of the reconfiguration of the natural gas industry in the United States and its implications for state regulators. It sees the Restructuring Rule of Order 636 as a continuation and perhaps an acceleration of regulatory reforms begun in the 1980s. The focus is largely on what commissions may need to look for as LDCs take on greater responsibilities for gas supply and delivery in the face of broadened options.

I believe you will find it of interest.

Douglas N. Jones
Director, NRRI
Columbus, Ohio
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CHAPTER 1

INTRODUCTION

The interstate gas market has gone through a fundamental transformation in the last fifteen years. This transformation was brought about in part by the shift in the demand and supply of natural gas but, more importantly, by the changes in federal pipeline regulation.[1] These regulatory changes culminated in the promulgation of Orders 636, 636-A, and 636-B (hereinafter referred to as the Restructuring Rule) by the Federal Energy Regulatory Commission (FERC) in 1992.[2] The intended goals of the Restructuring Rule are the complete unbundling of pipeline services and the fostering of a competitive national gas market through equal and open access to pipeline transportation capacity by all suppliers and users.

The Restructuring Rule will significantly alter the operation and regulation of interstate pipelines in many ways but it is not a sudden and fundamental shift in pipeline regulation. In many aspects, the Restructuring Rule is merely the recognition, formalization, and acceleration of the regulatory reforms that were initiated in the Natural Gas Policy Act of 1978 (NGPA) and subsequent FERC actions on blanket certification, off-system sales, and open-access transportation. According to the FERC, the Restructuring Rule is a "logical outgrowth of the changes in both the (pipeline) industry and its regulation as they have evolved over the last fifty plus years."

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[1] A detailed discussion of the regulatory changes instituted in the last fifteen years can be found in J. Stephen Henderson et al., *Natural Gas Producer-Distributor Contracts: State Regulatory Issues and Approaches* (Columbus, OH: The National Regulatory Research Institute, 1988); and Robert E. Burns et al., *State Gas Transportation Policies: An Evaluation of Approaches* (Columbus, OH: The National Regulatory Research Institute, 1989). An extensive description of the history and evolution of the natural gas market and government regulation is available in Richard J. Pierce, Jr., "Reconstituting the Natural Gas Industry from Wellhead to Burnertip," *Energy Law Journal* 9 (1988): 1-57.

[2] Order 636 was issued on April 8, 1992, Order 636-A on August 3, 1992, and Order 636-B on November 27, 1992.

The promulgation of the Restructuring Rule represents a turnabout to the original "common carrier" paradigm advocated by the Federal Trade Commission (FTC) in 1935.[3] As proposed in the Restructuring Rule, interstate pipelines will be regulated, not as "public utilities" as they have been under the NGA, but as "common carriers" of gas. This "common carrier" paradigm correctly reflects and accommodates the characteristics of pipeline operation where substantial economies of scale exist in transportation but not in procurement or pooling.[4] Under this regulatory paradigm, a pipeline will still provide transportation services under cost-based regulation (at least in the primary capacity market) but it will no longer retain any inherent "obligation to serve" to its customers other than those specified in the contract. Furthermore, pipelines are allowed to compete with other suppliers in selling commodity gas at an unregulated price. Thus, competition is promoted where multiple suppliers are viable and regulation is retained in the areas where competition is not feasible.

Although the Restructuring Rule is a continuation of previous regulatory reforms, many gas market participants will still face additional risk and responsibility in the restructured gas market, especially in the short term when additional costs to end-use customers are obvious but the benefits less clear. Consequently, many gas market participants have expressed concerns about the downside and certain transition issues associated with the Restructuring Rule. Their

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[3] As originally proposed by the FTC, pipelines would be regulated as "common carriers" and be included as part of the Public Utility Holding Company Act of 1935. But Congress removed this title and enacted a separate bill, the Natural Gas Act of 1935 (NGA), in which the main federal regulatory requirements were the certification of facilities, the use of tariffs in governing rates, and the specification of an obligation to serve. See Pierce, "Reconstructing the Natural Gas Industry from Wellhead to Burnertip," for more discussion on the origin of federal regulation of interstate pipelines, in particular the legislative background of the NGA and the distortions created by the application of a public utility mode of regulation on interstate pipelines.

[4] Ibid. On the other hand, under the "public utility" paradigm, a pipeline is protected from competition for both the transportation and sale of gas, and the initiation and abandonment of services and facilities must be approved in advance by the FERC. Also, the sales for resale in interstate commerce, transportation in interstate commerce, and to facilities used for such sales and transportation are all subject to federal regulation, and the rates for such services must be just, reasonable, and not unduly discriminatory. Most of these will be substantially modified under the Restructuring Rule.

concerns include the possibility of reliability degradation to residential customers, the shift of throughput risk from pipelines to local distribution companies (LDCs), and the magnitude and allocation of transition costs to captive customers. On the other hand, the FERC and a number of gas industry analysts have identified many difficulties and weaknesses associated with current pipeline regulation. They claimed existing federal regulations have failed to match the changes in the marketplace and thus rendered the interstate gas market unstable and inefficient. From their perspective, a more competitive industry structure and a new regulatory framework are sorely needed.[5]

This study does not intend to dwell on the desirability or the potential costs and benefits of the Restructuring Rule since these issues have been thoroughly debated. Additionally, the implementation of the Restructuring Rule has been progressing well and will continue unabated unless the court remands the Orders to the FERC for substantial changes. All pipeline compliance plans have been approved by the FERC and most of them will be effective by November 1, 1993. This study instead focuses on how the natural gas industry, in particular the LDCs and state public utility commissions, can better respond to this regulatory reform.

[5] See, for example, Harry G. Broadman, "Natural Gas Deregulation: The Need for Further Reform," *Journal of Policy Analysis and Management* 5 (1986): 496-516; and Arlon R. Tussing, "Completing the Transition to Competitive Markets," Testimony Before United States Senate, Committee on Energy and Natural Resources, Subcommittee on Mineral Resources Development and Production, Washington, D.C., September 26, 1989.

Restructuring Rule and Its Significance

The Restructuring Rule contains four broad categories of policy initiative. First, it mandates the unbundling of pipeline transportation and commodity gas (sales) services and eliminates the pipelines' inherent (noncontractual) service obligation to their customers. The pipelines are also required to make available a no-notice transportation service to those customers who desire it and are allowed to compete with other entities in providing commodity gas to all customers.[6] Second, the Restructuring Rule promulgates specific conditions for the provision of equitable transportation services to all shippers and adopts a straight-fixed-variable (SFV) transportation rate.[7] These policies will affect the relative competitive positions of various market participants and may lead to considerable cost shifts from pipelines to LDCs and from high-load-factor customers to low-load-factor customers.

Third, the FERC will institute new secondary capacity assignment mechanisms in place of existing capacity brokering and "buy-sell" programs.[8] These new secondary

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[6] A no-notice transportation service is defined as the service under which firm shippers can receive delivery of gas on demand up to their firm entitlement on a daily basis without incurring daily balancing and scheduling penalties even though they still can be assessed monthly balancing and scheduling penalties.

[7] Under the SFV transportation rate, all transportation-related fixed costs are assigned to the demand charge of transportation service. Over the years, the FERC has adopted a number of transportation rate design methods reflecting the different ways of allocating the fixed transportation costs to demand and commodity charges. They include the fixed-variable formula (similar the SFV rate contained in the Restructuring Rule) used in the 1950s, the Seaboard formula (where part of the fixed costs are allocated to commodity charges) in the 1960s, the United formula (where an even larger portion of the fixed costs are allocated to the commodity charge) adopted in 1973, and the modified fixed-variable rate used in the 1980s.

[8] The "buy-sell" program refers to a particular type of transportation capacity reassignment mechanism which is designed primarily to circumvent the FERC's limitations on capacity reallocation. Under it, a "transportation-privileged" shipper buys the gas from the ultimate customer (who does not have access to the specific segment of the pipeline) at the intake point of the pipeline and then resells that gas back to the customer at the delivery point. The acts of buy and resell are totally unrelated to the supply of commodity gas, but are a way to obtain transportation capacity which is not available to the ultimate customer.

capacity allocation mechanisms are likely to require the extensive use of new transaction tools such as competitive bidding and an electronic bulletin board (EBB). They will also influence the efficient use and expansion of the interstate pipeline network. Fourth, the Restructuring Rule allows the pipelines to pass through all transition costs to their customers subject to a prudence review by the FERC. In response, the gas industry needs to develop a proper definition of transition costs that is fair to all involved and to preserve and promote vigorous efforts in renegotiations between pipelines, producers, LDCs, and end users.

Under the current division of federal and state regulatory authority, only interstate pipelines are subject to FERC jurisdiction and thus are the only entities directly affected by the Restructuring Rule. However, given the critical role of interstate pipelines in transporting gas from major production fields to consumption centers, other market participants will undoubtedly be affected by the Restructuring Rule in many ways.

The effects of the Restructuring Rule on individual pipelines vary greatly. Some pipelines had already made the transition to unbundled transportation-dominated systems before the promulgation of the Restructuring Rule. They need to make only minor adjustments to their current service portfolios. For other pipelines, the restructuring processes are quite extensive and demanding and the restructured service portfolios drastically different from current ones. As a group, the interstate pipelines responded favorably to the Restructuring Rule knowing that prudently-incurred transition costs would be fully recovered from their customers, the SFV rate could provide more certainty in cost recovery, and they would have more freedom in setting prices for their services.[9]

[9] Though not stated in the FERC Orders or in any discussion of the Restructuring Rule, it can be expected that the success of the Restructuring Rule depends largely on the participation and cooperation of interstate pipelines, and the best way to get the cooperation of interstate pipelines is to formulate a policy that is beneficial to most if not all of them. Put another way, if the Restructuring Rule were to require the pipelines to absorb a significant portion of the transition costs, the pipelines would surely vigorously resist and delay the full implementation of the Restructuring Rule.

Gas producers generally support the Restructuring Rule even though it does not address any issues directly related to gas production.[10] For most producers, a substantially deregulated gas market allows the end-use customers to select from many gas suppliers and to purchase only those services they need. The added flexibility in buying and selling gas can make natural gas a more attractive fuel in comparison with other forms of energy. The market demand for gas may increase accordingly.

Large end users, such as industrial plants and electric utilities, may benefit considerably from the Restructuring Rule. These customers are less adversely affected or can even benefit from the adoption of the SFV rate because they are mostly high-load-factor customers with flexible and lower requirements for firm transportation capacity. Also, these customers are already actively involved in buying gas directly (thus depending less on gas supplied by the pipelines) and will be less affected by the passthrough of transition costs.[11] Nevertheless, some electric utilities were concerned about the allocation of transition costs and their priority of receiving gas in case of supply curtailment.[12] Certain independent power producers have also complained about the replacement of existing capacity brokering programs with the new capacity-release mechanisms.

The LDCs, being the largest customers of most pipelines and having an inherent obligation to serve their own customers, are more cautious about the substantial changes contained in the Restructuring Rule. Some LDCs (especially the smaller ones), for example, were concerned about the effects of the elimination of traditional citygate service on their ability to supply gas throughout the winter peak periods. Certain LDCs indicated that the FERC should have

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[10] The FERC did indicate that the Restructuring Rule would provide all gas market participants with the prices of distinct elements associated with the full range of services available and this would facilitate the unimpeded operation of market forces to stimulate natural gas production.

[11] Transition costs refer to the costs incurred by the pipelines in association with the implementation of the Restructuring Rule. Four types of transition cost are identified: Account 191 balance, gas-supply realignment costs, stranded costs, and new facilities costs. More discussion of the transition costs can be found in Chapter Three.

[12] See "LDCs' Concerns Have Not Received the Consideration They Deserve," *Inside F.E.R.C.* (March 15, 1993): 10-11.

encouraged nonpipeline suppliers to market a service essentially comparable to the traditional pipeline sales service rather than eliminate completely the bundled service to achieve comparability. Still others suggested that the FERC should not mandate a single rate design for all pipelines and expressed concerns about the substantial increase in rates facing residential and small commercial customers.

All these concerns indicate that most gas market participants will need to make some adjustments in order to compete and prosper in a drastically restructured gas market even though they have accumulated a certain amount of knowledge and experience in adapting to previous regulatory reforms. The LDCs and their residential and small commercial customers need to make the largest adjustments and have the highest stakes due to their gas demand and procurement characteristics. Specifically, the LDCs can no longer rely on the pipelines to supply a bundled gas service. Nor can they rely on the FERC to set rates for pipeline services and just pass the costs on to their own customers. The LDCs will have complete control, and consequently total responsibility, in securing reliable and economic gas supplies and transportation services. Furthermore, the traditional back-up, load-balancing, and supplementary-supply services provided by the pipelines, especially in peak periods, are no longer bundled with the sale of commodity gas.

The Restructuring Rule has significant implications for the state public utility commissions since they are the primary regulatory authorities over the LDCs. State commissions have somewhat different, but generally skeptical views, regarding the alleged benefits of the Restructuring Rule. Some criticized the FERC for putting market competition ahead of the interests of captive customers, for allowing the full passthrough of transition costs, and for adopting an approach that was not "flexible" enough.[13]

[13] See "FERC's Order 636: The Restructuring of the Gas Industry," *NARUC Bulletin* (December 7, 1992): 9-11.

Nevertheless, the pipeline reforms proposed in the Restructuring Rule are here to stay and the state commissions need to prepare themselves and their jurisdictional LDCs to deal with a broad range of issues. In the short term, state public utility commissions should actively participate, and encourage the LDCs to do the same, in court cases and FERC proceedings to mitigate possible cost shifting against their core customers. In the long run, state commissions will need to put in place new gas procurement oversight and incentive mechanisms to encourage the LDCs to take advantage of a more competitive market. The state commissions also need to review and revise existing state transportation programs, and to reexamine and possibly restructure the service portfolios of their jurisdictional LDCs.

Criteria, Assumptions, and Focuses

Various parties have invoked a broad range of criteria for evaluating the effects of the Restructuring Rule. These criteria include the strengthening of industrial competitiveness, creation or retention of jobs, reduction of dependence on foreign oil, and economical and "environmentally responsible" production of electricity. All these are desirable goals. But in all likelihood federal pipeline regulation may only play an incidental role in achieving these goals. Other factors besides federal regulation are much more influential. Consequently, the most relevant criterion in assessing and formulating responses to the Restructuring Rule is the performance of the national gas market, namely the efficient use and development of natural gas resources. Specifically, the Restructuring Rule should be evaluated on whether the restructured gas market can allocate the transportation capacity and commodity gas to the users who value them the most, and whether the gas fields and the interstate pipeline network can be developed and utilized to the fullest extent consistent with market demand.

Given the complexity and the broad range of issues associated with the implementation of the Restructuring Rule, it is essential to define a proper boundary of inquiry through the specification of certain basic assumptions. Three basic assumptions are made in this study: the major provisions of the Restructuring Rule will be fully

implemented, a tightly balanced gas market will continue into the future, and the technology of gas consumption, production, transportation, and distribution will not change significantly in the near term.

As the Restructuring Rule is still subject to judicial review, some court-mandated changes are possible. But it is difficult to pinpoint the areas where the court challenge may eventually succeed. A reasonable approach is to assume the main thrusts of the Restructuring Rule, specifically the elimination of bundled pipeline merchant function and the requirement of equitable access to transportation capacity, will remain after the judicial review.[14] There are several reasons for this assessment. As indicated, the Restructuring Rule is not a totally new initiative but a continuation of previous regulatory reforms. Given the FERC's considerable experience in addressing the court's concerns in the past, it is hard to imagine that the FERC would fashion a policy that was fundamentally antagonistic to the court's interpretation of relevant statues. One (former) FERC Commissioner even indicated that the Restructuring Rule was backed by "the strongest legal record the Commission has ever had and the court would uphold at least 90 percent of it."[15] Furthermore, some industry observers have suggested that court action was not likely to start in earnest any time soon and since "so much time will have elapsed. . .and so many fundamental business relationships will have been changed. . .

[14] Some possible legal challenges to the Restructuring Rule have been identified in Daniel J. Duann and David Hatcher, "Pipeline Gas Service Comparability Rule: What Can State Regulators Do Now?" *NRRI Quarterly Bulletin* 13 (September 1992): 265-82. For example, the FERC, under the NGA, may not have the authority to impose on pipeline customers the obligation to pay for costs that the pipelines incur to remedy their own participation in an unreasonable restraint of trade.

[15] See "Having FERC on Your Side Is a Bit Like Owning a Pet Rottweiler," *Inside F.E.R.C.* (May 3, 1993): 10-11.

that the changes the Commission wants to impose on the industry will be accomplished regardless of what a court may rule eventually."[16]

This study further assumes that current gas demand and supply trends toward a tightly balanced market will continue in the near future. In other words, no prolonged gas surplus or sustained gas shortage is foreseen for the next five to ten years. With the essentially deregulated wellhead and citygate markets, there is very little chance for the recurrence of a prolonged and structurally-induced gas surplus or shortage similar to those in the mid-1970s and mid-1980s. Actually, the current thinking seems to be that the gas deliverability surplus has and will continue to dissipate over the next few years and that gas demand and supply are moving into balance. In the next few years the gas market will be tight and characterized by greater price volatility, increased cost pressure, and growing concerns over supply reliability even though no gas shortage is projected.[17] A recent Energy Information Administration report even indicated that the so-called "gas bubble" had depleted almost completely and gas demand could exceed supply by December 1993 under a worst-case scenario.[18]

Future gas demand and supply may change drastically due to socioeconomic and political factors. For example, the implementation of the natural gas vehicle and

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[16] See "FERC Finishes Order 636: Utilities, Other Generators Still Dissatisfied," *Electric Utility Week* (December 7, 1992): 10-11. Specifically, some pipelines have started seeking reassignment of their gas supply and transportation capacity contracts to minimize gas supply realignment costs associated with the implementation of the Restructuring Rule. See "Pipelines Have Begun Actions to Reconfigure Their Gas Supply," *Inside F.E.R.C.* (August 10, 1992): 12-13.

[17] See "NGSA: Producers Reducing Inventory to Improve Market Dynamics," *Inside F.E.R.C.* (July 19, 1993): 15; and "Consultants See Tighter Gas Market, Heightened Reliability Concerns," *Inside F.E.R.C.* (August 10, 1992): 3-4.

[18] See "With Bubble Depleted, Drilling Must Pick Up Substantially, EIA Says," *Inside F.E.R.C.* (March 29, 1993): 5-6.

demand-side management provisions of the Energy Policy Act of 1992, the expansion of gas trades between the United States, Canada, and Mexico, and the unexpected crude oil price spikes and supply interruptions caused by Mideast political developments, all may tip the demand and supply balance. It is difficult to predict the eventual impact of these factors on the gas market. A sensible approach is to assume the impacts of these socioeconomic factors will cancel each other and the fundamental supply and demand balance in the gas market will not be altered. This is not to say there will be no significant shifts in the supply and demand for gas as well as the market price of gas. It simply indicates that a balanced gas market is likely to prevail and be maintained during and after the period when the Restructuring Rule is being implemented.

The implication of a balanced gas market is that concerted efforts must be expended by the sellers and buyers to survive and succeed in the restructured gas industry. Specifically, the implementation of the Restructuring Rule will not lead to a "gas bubble" where a buyer can simplify its procurement strategy to an exclusive reliance on short-term procurements or to a chronic shortage where sellers can rely on a tight market to automatically increase the value of their gas resources and delivery infrastructures.

The third assumption is that the technologies of gas consumption, production, transportation, and distribution, as well as the political institutions that regulate the gas industry will not change significantly, at least in the near term, with the implementation of the Restructuring Rule. Over an extend period of time, some innovations in gas production, consumption, and even regulatory institutions are possible. This assumption in turn signifies that current gas demand and supply characteristics and the physical infrastructure of producing and delivering gas will not be altered anytime soon. The current division of regulatory authority between the FERC and state commissions will remain. The demand for gas will continue to exhibit considerable seasonal variation with peak demand in the winter heating months. A network of underground pipelines will still be the most economical way of transporting and distributing gas in large quantity and over a long distance. There are significant economies of

scale in transporting and distributing gas and a regulated monopoly (whether it be an interstate pipeline or an LDC) remains the preferred institution for providing these services.[19]

Accordingly, interstate pipelines will still be the only entity that physically transports gas over state lines even though the rights to transportation capacity may be owned and exchanged by other entities. The LDCs will continue to provide bundled gas service to their core customers within their franchised service areas. The relation between the LDCs and their noncore customers will evolve further but the exact form of change depends on the actions of individual state public utility commissions. The above three assumptions are indeed very general and most discussions on the Restructuring Rule may assume them implicitly. Nevertheless, it is useful to specify these assumptions explicitly so that a proper context for the subsequent analysis can be established.

This study focuses specifically on two aspects of the Restructuring Rule. First, this study concentrates on the implications of the Restructuring Rule for the LDCs and state public utility commissions. Clearly, as a result of the restructuring of the pipeline industry, the role of government regulation in the interstate market will be significantly reduced. The local distribution market will become the focus of government regulation with a large number of issues yet to be resolved. In addition, state commissions do not have direct authority over most decisions made by interstate pipelines, gas producers, and end-use consumers. Only the behavior of the LDCs can be directly affected by the state commissions and, consequently, more policy suggestions to the state commissions in regulating the LDCs are needed.

Second, this study does not provide an estimation of the total cost and benefit resulting from the implementation of the Restructuring Rule. Such a cost-benefit analysis is best done before the regulation is promulgated when substantial changes are more likely to be considered and adopted. The time for doing so has clearly passed.

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[19] Here, the term "regulated monopoly" is used broadly; so a "common carrier" pipeline is considered a regulated monopoly, even though it does not have an exclusive franchise area or an obligation to serve.

The FERC concluded that the Restructuring Rule would produce net social benefits of $15 billion to $42 billion over the seven-year period from 1994 to 2000.[20] This study does not dispute or support this range of figures. In any event, the results of such an analysis are speculative even with best efforts expended.[21] The GAO has conceded that the costs and benefits could not be determined with precision until after the Restructuring Rule was fully implemented.[22]

In summary, this study focuses mainly on the concerns of LDCs and state commissions regarding the supply of reliable and economical peak-load gas service to captive customers rather than trying to provide a comprehensive analysis of the Restructuring Rule. It is more a practical guide in formulating new policies than a detailed evaluation of an important regulatory reform.

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[20] See Federal Energy Regulatory Commission, Office of Economic Policy, *Costs and Benefits of the Final Restructuring Rule* (Washington, D.C.: Federal Energy Regulatory Commission, Spring 1992). However, the General Accounting Office (GAO) has criticized this benefit estimate as "based on various independent projections of increased gas use that did not consider Order 636,. . .and also did not consider new costs that could result from Order 636 such as the costs. . .that distribution companies may incur in obtaining gas supplies and transportation services under multiple contracts. Additional costs to society could also result if service reliability is diminished." See "GAO Skeptical of FERC's Anticipated Order 636 Benefits, Impacts," *Inside F.E.R.C.* (July 19, 1993): 1, 11-13.

[21] The first difficulty in estimating potential costs and benefits is that the effects of the Restructuring Rule tend to extend over a lengthy period of time, and the demand and supply and price forecasts, essential in all cost-benefit analysis, may not be reliably obtained over such a long period of time. Second, the Restructuring Rule encompasses various segments of the gas market where the responses of other participants (such as a state commission) may affect the outcome considerably. At the present time, unfortunately, there is no easy way of obtaining reliable information about their responses.

[22] See "Draft GAO Report on Cost Impact of Order No. 636 Projects $400 Million Greater Cost Shift to LDCs and Their Customers Than FERC Forecasted, Resulting in A Cost Increase to Residential Customers of 9 Percent or Less," *Foster Natural Gas Report* (July 22, 1993): 1-4.

Organization of the Report

This study consists of five chapters. Chapter Two describes the rationales and provisions of the Restructuring Rule and its current status of implementation, as well as the transformation of the natural gas industry in the last fifteen years. The gas market structure that is likely to emerge after the full implementation of the Restructuring Rule is outlined in Chapter Three. The emphasis here is on the interstate transportation market and the noncore distribution market. The implications of the SFV transportation rate and the full passthrough of transition costs to the LDCs (and eventually the end-use customers) are also included in this chapter. Chapter Four focuses on the regulatory challenges facing state commissions as a result of the implementation of the Restructuring Rule and four long-term policy options are discussed. They include the development of additional oversight mechanisms for gas procurement, the establishment of incentive regulation to encourage better decisions by the LDCs, the revision of current intrastate transportation programs, and the restructuring of the local distribution market. Some concluding remarks are provided in Chapter 5. A synopsis of the more recent significant developments in federal pipeline regulation is included as Appendix A.

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CHAPTER 2

REGULATORY AND STRUCTURAL TRANSFORMATION OF THE NATURAL GAS INDUSTRY

The promulgation of the Restructuring Rule represents both an end and a beginning to the federal regulatory reforms of interstate pipelines. On the one hand, it concludes the previous initiatives in making pipelines open-access transporters. On the other hand, it presents a new challenge where services are unbundled and their reliability decided not by the sellers' inherent obligation but by the buyers' own ability to obtain gas supplies and transportation. The Restructuring Rule shifts the overall focus of regulation from defining conditions of open-access transportation to overseeing the revamp of supply and service portfolios by the gas companies in a more competitive market.

As a result of regulatory reforms in the last fifteen years, the interstate and local distribution markets have gone through significant transformation. The Restructuring Rule will accelerate the pace of transformation but it will not influence the direction of change. The trend toward unbundled services and equitable transportation access will continue. Intensive competition, rather than government regulation, will become the driving forces in setting prices and quantities for most gas market segments.

The structural transformations of the interstate and local distribution markets have been parallel.[1] The establishment of open-access transportation is the most notable example. After the FERC firmly established the conditions of interstate open-access transportation services through Orders 436 and 500, many state commissions started developing policies and guidelines regarding the provision of transportation services by their jurisdictional LDCs for end-use customers.[2] The

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[1] See David B. Hatcher and Arlon R. Tussing, *State Regulatory Challenges for the Natural Gas Industry in the 1990s and Beyond* (Columbus, OH: The National Regulatory Research Institute, 1992).

[2] A more detailed discussion on the development of state gas transportation policies, including the economic rationales, legal strategies, major policy provisions, and evaluation criteria can be

(continued...)

Restructuring Rule is likely to generate similar results; that is, the unbundling and partial deregulation of pipeline services may eventually lead to the unbundling and partial deregulation of local distribution services.

Three trends were most prominent in the transformation of the natural gas industry: a drastic increase in the amount of gas directly purchased by customers (whether they are LDCs or end-use customers), a rapid proliferation of new arrangements for procurement and transportation, and a significant increase in the number of market intermediaries that can facilitate gas transactions.[3]

Development and Contents of the Restructuring Rule[4]

The FERC issued Order 636, *Final Rule on Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation Under Part 284 of the Commission's Regulation*, on April 8, 1992. This Order contained many policies similar to those proposed in the mega-NOPR but it did include some important changes.[5] The extension of service unbundling to all customers (including the small customers that were exempted previously) and the elimination of service repackaging by pipelines were the

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found in Robert E. Burns et al., *State Gas Transportation Policies: An Evaluation of Approaches* (Columbus, OH: The National Regulatory Research Institute, 1989).

[3] See Daniel J. Duann, "Direct Gas Purchases by Local Distribution Companies: Supply Reliability and Cost Implications," *The Journal of Energy and Development* 14 (Fall 1989): 61-93.

[4] A summary of the more significant developments in federal regulations prior to the Restructuring Rule is provided in Appendix A.

[5] See Appendix A for more discussion on the contents of the mega-NOPA.

most notable. To further ensure the reliability of citygate service, a no-notice transportation service was established in addition to traditional firm transportation service. On August 3, 1992, the FERC issued Order 636-A making a number of significant modifications to the original Order.[6] Order 636-B was issued on November 27, 1992, and made no changes to the regulations already adopted but did clarify certain issues raised by various parties in response to Orders 636 and 636-A.[7] The issuance of Order 636-B completed the FERC's initial action on the Restructuring Rule. From then on, the FERC shifted its attention to the review of compliance plans filed by individual pipelines.[8]

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[6] These modifications included (1) a requirement that pipelines permanently offer to small customers a special one-part, unbundled volumetric transportation rate based on the existing imputed load factor, (2) a twenty-year cap on the term of contracts which must be matched by an existing customer to retain firm capacity, (3) a condition directing pipelines to sell gas to small customers at a cost-based rate for one year after the effective date of their compliance plans, (4) a new capacity-release provision allowing short-term deals to proceed without advance posting or bidding, and (5) a requirement that pipelines recover 10 percent of their supply-realignment costs through their interruptible transportation rates.

[7] The FERC reaffirmed that pipelines should maintain their one-part volumetric rates computed on an imputed load factor, adopt certain measures to avoid significant cost shifting due to SFV rates, and use a period of less than twenty years as the cap on contract terms. The FERC further clarified that (1) with respect to the implementation of the SFV rate, the pipeline costs could be allocated on the basis of both peak and annual gas usage, (2) the releasing shippers were allowed to release firm transportation capacity under a volumetric rate, and (3) a prearranged capacity-release transaction could begin without a bidding period if it was at the maximum rate and met all the other terms and conditions of the release.

[8] Some parties argued that Order 636-B raised major new determinations by the FERC which required a reply, and thus a rehearing of Order 636-B should be granted so that their right to appeal elements of Order No. 636-B to the court would not be jeopardized. A review of the iteration of the Restructuring Rule and related FERC proceedings can be found in "Petitioners Seek Rehearing of Order No. 636-B Despite FERC Stipulation Barring Such Requests," *Foster Natural Gas Report* (January 7, 1993): 25-30.

The Rationales and Goals of the Restructuring Rule

In the Restructuring Rule, the FERC elaborated the rationales for the total unbundling of pipeline services. It pointed out that current bundled gas service had led to inefficient use of scarce resources (in particular, pipeline transportation capacity) that disadvantaged all gas market participants.[9]

In addition, the FERC contended that the current regulatory regime in the natural gas market was unstable. Specifically, long-term supply contracts were rarely available or credible, the interstate pipeline network was neither fully nor efficiently utilized since pipelines lacked appropriate incentives to use the system efficiently, and the provision of unequal transportation services forced the FERC to keep needless regulatory control over the gas market.[10] As for the alternatives to the unbundling of pipeline service, they were viewed as ineffective or infeasible under current statutes and regulations.[11] Specifically, continuing the current form of pervasive regulation was shown to be inefficient. Complete deregulation of pipelines was possible but impractical since it would require new legislation and would not address the market power that many pipelines still retained over transportation. Ordering pipeline divestiture was beyond the

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[9] For example, the FERC indicated that although pipeline sales only accounted for 21 percent of the delivery to the market, they required over 60 percent of the peak-day capacity available. Furthermore, currently over 50 percent of throughput was done through interruptible transportation service while only 28 percent was accomplished through firm transportation service. The FERC argued that end-use customers were disadvantaged because they had to pay both demand charges and interruptible transportation rates, and nonpipeline suppliers were disadvantaged because they could not compete for long-term supply arrangements due to a lack of firm transportation capacity. Pipelines were also disadvantaged since they had certificate and contractual obligations requiring them to stand ready to provide gas on demand without notice, while the customers were under no obligation to buy gas from them, and pipelines did not have the price flexibility to compete with unregulated sellers.

[10] See Federal Energy Regulatory Commission, Office of Economic Policy, *Costs and Benefits of the Final Restructuring Rule* (Washington, D.C.: Federal Energy Regulatory Commission, 1992).

[11] Ibid.

FERC's power and there were better ways of achieving scope economies than by retaining bundled service.

The FERC had two basic goals in developing the Restructuring Rule. First, it wanted to ensure that all shippers had meaningful access to the pipeline transportation grid so that willing gas buyers and sellers could meet in a competitive, national market to make the most "economically efficient" deals possible. Second, it wanted to ensure that end-use customers could continue to have, either through direct purchases or through continued reliance on the LDCs, an adequate supply of gas at a reasonable price. The basic approach adopted by the FERC in achieving the two goals was to regulate the pipelines not as public utilities but as open-access transporters and to allow them to provide unbundled commodity gas at unregulated prices if they chose.

Main Provisions of the Restructuring Rule[12]

Unbundling Pipeline Services and Clarifying Service Obligations

Under the Restructuring Rule, existing bundled sales services and sales contracts are terminated and converted into separate sales and transportation contracts. Interstate pipelines are further directed to establish a point of sale as far upstream as possible. The FERC also indicates that, after the restructuring proceedings, interstate pipelines will be allowed to terminate the services to interruptible and short-term (one year or less) firm transportation and unbundled firm and interruptible sales customers at the expiration of the contract. As for the termination of long-term transportation service, two limitations still apply. A pipeline and its customers may continue the pipeline's service obligations by extending the term of the contract through rollover or evergreen provisions, and a pipeline may not abandon service if the customer elects, within a

[12] As the Restructuring Rule contains numerous changes to the regulation of interstate pipelines, this section will only highlight the most important changes. Also, the discussions provided here are used to lay a foundation for subsequent analysis and should not be viewed as a legal interpretation of the Restructuring Rule.

reasonable time, to exercise a right of first refusal by agreeing to match the terms (as to price and length) of another offer to purchase service from the pipeline.

Regarding the sales of commodity gas, a blanket sales certificate for unbundled firm and interruptible sales service will be issued for the open-access transportation pipelines. For one year from the effective date the blanket sales certificate was granted, the pipelines are required to sell gas to the small customers that elect to continue buying gas from the pipelines at a cost-based rate. There will be no limitations or restrictions on pipeline unbundled interruptible sales services except for some standards of conduct.

Setting Equitable Transportation Conditions

The Restructuring Rule specifies that pipelines must provide equal and open- access transportation for all gas supplies. It does not prescribe any uniform terms and conditions for the transportation services; these terms and conditions will be decided in individual compliance proceedings. The Restructuring Rule does codify two principles in setting the conditions for transportation services. First, nothing in a pipeline's tariff can inhibit the development of market centers or pooling areas.[13] Second, the pipelines must provide timely and equal access to any and all information necessary for buyers and sellers to arrange gas sales and capacity reallocation (at a minimum, this must include the availability of capacity at receipt points, on the mainline, at delivery points, and in storage fields, and whether the capacity is available from the pipeline directly or through capacity releasing).

The definition of transportation was broadened to include storage and it specifies that pipelines can use storage only for system management and no-notice transportation and not for providing sales service.[14] Any unneeded storage capacity will be sold to transportation customers on an open-access, nondiscriminatory, contract basis. Pipelines are also required to

[13] The market centers are defined as downstream points where buyers and sellers meet and pooling areas at the upstream point where producers and buyers meet. The Restructuring Rule, however, does not mandate the creation of either marketing centers or pooling areas.

[14] Obviously, the policing of this regulation will be a challenging task for the FERC.

provide a no-notice, firm transportation service if they were providing a bundled citygate, firm sales service on the effective date of the Restructuring Rule. Furthermore, a pipeline is required to give firm shippers flexible delivery points in its distribution area in the same manner as it gives firm shippers flexible receipt points in the production areas.

With respect to supply-related curtailment, the pipeline must curtail its sales customers without affecting its transportation customers. But, in the case of capacity-related curtailment, pipelines can have transportation curtailment plans (such as pro-rata allocations of capacity) different from their sales curtailment plans.

Adopting New Methodology for Setting Transportation Tariff

The FERC proposed an SFV rate under which pipelines are required to assign all transportation-related fixed costs to the demand (reservation) charge. But other methods for setting transportation rates are not precluded. If the SFV rate will lead to a 10 percent or greater increase in revenue responsibility for any customer class, then a phase-in plan (such as one-part volumetric rate or seasonal contract entitlement levels for small customers over four or fewer years) is required. The Restructuring Rule also specifies the minimum amount of information required in the pipeline transportation tariff.[15]

Instituting New Transportation Capacity Assignment Mechanisms

The Restructuring Rule adopts two new generic capacity allocations and reassignment mechanisms. One requires downstream pipelines to assign their firm transportation capacity (and

[15] The required information includes: (1) the methods for allocating aggregate receipt-point capacity, individual receipt-point capacity, mainline-segment capacity, storage capacity, and delivery-point capacity; (2) the flexibility allowed for shippers in changing receipt and delivery points; (3) the supply and capacity curtailment provisions, scheduling of gas injection into the mainline and storage, scheduling of delivery from storage and mainline, setting and charging of penalties, balancing rights, and the instantaneous receipt and delivery of gas; and (4) the conditions for providing no-notice transportation service.

contract storage capacity) on the upstream pipelines on a nondiscriminatory basis to their firm shippers that desire upstream capacity. Also, downstream pipelines will not be allowed to relinquish upstream pipeline capacity unless their firm customers have the first opportunity to gain access to the upstream pipeline capacity. If the downstream pipeline is unable to shed unwanted upstream capacity through releasing, it can seek to recover costs associated with the stranded upstream capacity as a transition cost.

The second allocation mechanism requires all open-access pipelines to provide a capacity-releasing mechanism through which all shippers can voluntarily resell all or part of their transportation capacity to any person who wants to obtain that capacity. But all offers must be put on the pipeline's electronic bulletin board and contracting is to be done directly with the pipeline. Subject to certain conditions, the shippers can release capacity with a contract period of less than one calendar month without prior posting on the EBB or bidding. Current capacity-assignment programs such as capacity brokering and "buy-sell" arrangements are allowed to continue but all new programs are required to conform to the new conditions specified or be terminated.

Determining and Allocating Transition Costs

The natural gas industry cannot instantaneously get into the new regulatory framework. Contracts and certificate obligations will have to be renegotiated, revised, or terminated. The transition to fully unbundled pipeline services will entail certain costs and a pipeline will need to propose mechanisms for recovery of these costs. The Restructuring Rule specifies four types of transition costs: (1) unrecovered gas costs or credits remaining in the purchased gas adjustment (PGA) Account 191 when a pipeline adopts market-based pricing for its gas sales and terminates its PGA mechanisms (Account 191 balance), (2) costs incurred by pipelines realigning their existing gas supply contracts with producers in connection with implementing this rule (gas supply realignment costs), (3) costs of a pipeline's assets now used to provide bundled sales service, such as gas in storage and capacity on upstream pipelines, that cannot be directly assigned to customers

of the unbundled services (stranded costs), and (4) costs associated with physically implementing the Rule (new facilities costs).

For an Account 191 balance, the FERC will permit pipelines to directly bill their former bundled, firm-sales customers whether or not the customers elect to continue as firm-sales customers after implementation of the rule. The pipelines must permit customers to pay the direct billing in either a lump sum over twelve months or over some other reasonable period of time.

Pipelines will be allowed to recover the full amount of eligible prudently-incurred gas-supply-realignment costs and a pipeline will be permitted to use either a negotiated exit fee or a reservation fee surcharge recoverable from firm-transportation customers.[16] Stranded costs and new facilities costs are to be treated like all other prudently-incurred costs and the pipeline should file to recover such costs in a generic rate filing under NGA section 4. This will permit a full review of their legitimacy and case-specific decisions on how to allocate these costs.

Perspective of the Restructuring Rule

Though the Restructuring Rule contains an extremely large number of policy initiatives, it is important to grasp its basic elements and to view it in the context of the evolution of federal natural gas regulation. First, the Restructuring Rule, though intended to bring more competition, will not lead to a total deregulation of interstate pipelines. Prices of the commodity gas and certain unbundled services will be deregulated, but the price and service terms of transportation service (at least the initial allocation of transportation capacity) are still subject to FERC regulation.

Second, the Restructuring Rule does not impose a fixed and uniform compliance procedure. The degree and speed of adaptation by various interstate pipelines, LDCs, and state public utility commissions can show great variations due to their own particular circumstances.

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[16] Two levels of review will be conducted on the supply realignment costs: an eligibility review to determine whether the resulting realignment costs are attributable to the implementation of the Restructuring Rule and a prudence review that decides whether the contract terms and realignment costs were reasonable in light of the market conditions existing when the contract was negotiated, renegotiated, or terminated.

The FERC also shows considerable flexibility regarding the final forms of the compliance plans. Exceptions and deviations have been granted for various pipelines.

Finally, the Restructuring Rule represents a significant regulatory challenge to the LDCs and state commissions. The options and responsibilities for the LDCs in devising gas procurement strategies are expanded substantially.[17] Also, as a "trickle-down" of the open-access transportation service in the interstate market, the LDCs are likely to be required (either by the natural development of the gas market or by the regulatory mandate imposed by state commissions) to provide more transportation and other noncommodity (such as storage and load balancing) services for industrial and fuel-switchable customers. In response, the responsibility of the state public utility commissions will increase. They will need to consider some short-term options and several long-term strategies, such as the institution of new gas purchase oversight and incentive mechanisms, in response to the increased control of the LDCs in gas procurement.

Implementation of the Restructuring Rule

The Restructuring Rule promulgates certain procedures and filings to be made by interstate pipelines. The Restructuring Rule only provides broad policy guidelines and leaves the specific terms and conditions of new pipeline services, the rates for such services, and the recovery of transition costs to individual restructuring proceedings. Interstate pipelines were encouraged to start early negotiations, no later than June 8, 1992, with interested parties to reach a common understanding on the restructuring plans. Then, all affected pipelines were to file compliance plans between October 1, 1992 and December 31, 1992, detailing their tariffs and service conditions with the FERC for approval. The FERC would then approve the plan as filed or provide further direction for a revised plan.

Approval of Pipeline Compliance Plans

[17] See Hatcher and Tussing, *State Regulatory Challenges for the Natural Gas Industry in the 1990s and Beyond*.

The FERC has adopted a rather compressed schedule in reviewing and approving the pipeline compliance plans. By the end of September 1993, the FERC had reviewed, modified, or approved the compliance plans of all pipelines subject to the rule. In its orders on these compliance plans, the FERC found all seventy-six pipelines to be in compliance with the Restructuring Rule and set the effective dates accordingly (see Table 2-1).

In recognition of the vast differences among interstate pipelines, the FERC adopted a light-handed approach for the implementation of the Restructuring Rule. Considerable leeway is provided to individual pipelines and their customers to develop and reconcile compliance plans that fit their particular needs. For example, the FERC allowed several pipelines (Texas Eastern Transmission Corporation, Colorado Interstate Gas Co., Natural Gas Pipeline Co. of America, and East Tennessee Natural Gas Co.) to retain some upstream capacity, in a deviation of the general policy, to support system-management and no-notice transportation services.[18] Also, the Iroquois Gas Transmission System was allowed to continue using a modified-fixed-variable transportation rate with one of its customers to encourage the development of gas-fired

[18] See "Langdon Dissents As FERC Eases Stance on Retaining Upstream Capacity," *Inside F.E.R.C.* (April 19, 1993): 1-2.

TABLE 2-1

EFFECTIVE DATES OF INTERSTATE PIPELINES' COMPLIANCE PLANS

Pipeline	Effective Date
Transwestern	2/1/93
Gulf States	2/11/93
Caprock	4/1/93
Panhandle	5/1/93
OkTex	5/20/93
Tetco	6/1/93
Algonquin	6/1/93
Phillips	6/1/93
Western Gas Interstate	6/1/93
ANR Storage	7/1/93
Gateway	7/1/93
Kentucky West Virginia	7/1/93
Sabine	7/31/93
Gasdel	8/1/93
National Fuel	8/1/93
Western Trans.	8/1/93
Kern River	8/1/93
Mojave	8/1/93
Blue Lake	8/1/93
MIGC	8/16/93

TABLE 2-1--Continued

Pipeline	Effective Date
West Gas	9/1/93
Equitrans	9/1/93
Tennessee	9/1/93
Questar	9/1/93
Arkla	9/1/93
MidLa	9/1/93
Trunkline	9/1/93
Iroquois	9/1/93
Alabama Tennessee	9/1/93
Midwestern	9/1/93
Riverside	10/1/93
Ozark	10/1/93
Overtrust	10/1/93
WIG	10/1/93
Algonquin LNG	10/1/93
CNG	10/1/93
KN Energy	10/1/93
East Tennessee	10/1/93
Carnegie	10/1/93
Tarpon	10/1/93
Williams	10/1/93
CIG	10/1/93
El Paso	10/1/93
Northern Boarder	11/1/93
FGT	11/1/93
HIOS	11/1/93
UTOS	11/1/93
Great Lakes	11/1/93
Northwest	11/1/93
MRT	11/1/93
PGT	11/1/93
Paiute	11/1/93

TABLE 2-1--Continued

Pipeline	Effective Date
Texas Gas	11/1/93
Transco	11/1/93
United	11/1/93
Granite State	11/1/93
Columbia	11/1/93
Columbia Gulf	11/1/93
Chandeleur	11/1/93
Gas Transport	11/1/93
Black Marlin	11/1/93
South Georgia	11/1/93
Southern	11/1/93
Louisiana-Nevada	11/1/93
Northern Natural	11/1/93
ANR	11/1/93
Sea Robin	11/1/93
Viking	11/1/93
Michigan Gas Storage	11/1/93
Williston	11/1/93
Canyon Creek	12/1/93
Natural	12/1/93
Stingray	12/1/93
Trailblazer	12/1/93
Valero	1/1/94
Pacific Interstate Offshore	1/1/94

Source: Federal Energy Regulatory Commission, September 29, 1993.

cogeneration.[19] The Pacific Gas Transmission Co. was permitted to use a different method for recovering the gas supply realignment costs. Specifically, the company would absorb 25 percent of the cost of restructuring its Canadian gas supplies, pass through another 25 percent to its parent, Pacific Gas and Electric Co., in a direct billing, and flow through the remaining 50 percent to customers via a volumetric surcharge.[20] In addition, the open-access shippers on the Pacific Gas Transmission's expansion pipelines were exempted from paying a supply-related transition cost surcharge as long as they continued to pay incremental rates on the soon-to-be-completed project.

Certain pipelines' compliance plans, such as those of Transwestern Pipeline Co. and Panhandle Eastern Pipe Line Co. were approved and their effective dates (February 1, 1993 in the case of Transwestern) were set much earlier than the dates for other pipelines.[21] Generally speaking, these pipelines had already completed many of the restructuring tasks or had commenced discussions on restructuring before the Restructuring Rule. They probably had no or very few sales customers following previous pipeline-initiated restructuring, the gas merchant activities might have been consolidated into a separate marketing affiliate, and they have become relatively experienced in the dissemination of information to their shippers using an EBB. All this could ease the burden of making the compliance filings.

Prospect of Judicial Review

As the FERC has completed the approval of all pipeline compliance plans, the resolution of the court case, Atlanta Gas Light Co. and Chattanooga Gas Co. et al. v. FERC, Nos. 92-8782 et al. is the only uncertainty in the implementation of the Restructuring Rule. The main issues of

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[19] See "FERC Cites Need to Aid Gas-Fired Generation in Granting SFV Waiver," *Inside F.E.R.C.* (June 21, 1993): 3-4.

[20] See "PGT Order Adopts Order 528-Type Treatment of Transition Costs," *Inside F.E.R.C.* (July 19, 1993): 3-4.

[21] See "Transwestern Becomes First Pipe to Complete Restructuring Process," *Inside F.E.R.C.* (February 8, 1993): 4-5.

contention before the U.S. Court of Appeals for the Eleventh Circuit are whether the FERC can invoke section 5(a) of the Natural Gas Act to abrogate all bundled sales contracts between pipelines and their customers and whether the FERC has exceeded its section-5(a) authority by mandating a generic cost-allocation mechanism, the SFV rate.[22]

The judicial review is still in an early stage. It is difficult to predict the timing or the eventual outcome of the judicial process. A total or substantial reversal by the court seems unlikely at the present time. As indicated before, the Restructuring Rule is a continuation of previous regulatory reforms rather than a totally new initiative. So it would be unusual for the court to remand the Restructuring Rule to the FERC for substantial changes given the extensive judicial reviews of earlier related FERC pipeline reforms. The FERC is also unlikely to craft a policy which may be viewed as fundamentally antagonistic to the court's previous interpretation of relevant statues. Actually, it has been argued by some parties, such as the Exxon Corporation, that the gas industry restructuring since 1983 "has been incremental, and. . .has been guided, in large part, by the direction provided by the U.S. Court of Appeals for the District of Columbia (D.C. Circuit), with each order building upon the prior directions of that court and addressing issues raised in the prior opinions of the court."[23] If this is indeed the case, then the previous "involvement" of the courts (in particular, the D.C. Circuit) in the development of FERC pipeline policies is probably the most important, though unspoken, reason for the venue fight between the opponents and proponents of the Restructuring Rule. Obviously, there is no assurance that the D.C. Circuit Court will necessarily be more sympathetic to the arguments for the Restructuring Rule. But, it seems that the D.C. Circuit will be less likely, compared to other Circuit Courts, to overturn some of the principles it set in previous rulings.

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[22] See "Venue Battle Developing Over Selection of Eleventh Circuit to Review Order Nos. 636 and 636-A," *Foster Natural Gas Report* (October 8, 1992): 5-6.

[23] Ibid.

Nevertheless, the court did demand some important changes to the FERC open-access transportation programs. Thus, substantial modifications to some of the more controversial provisions contained in the Restructuring Rule cannot be totally ruled out. A substantial revision of the FERC Orders becomes more likely as the Eleventh Circuit Court, which presumably is less restrained by the prior decisions of another Circuit Court, will hear the court case. This venue choice may increase the degree of uncertainty about the final outcome of the judicial review.

Based on an examination of the FERC-Court conflicts over the open-access transportation policy during the period of 1985 to 1990, it was concluded that it would be relatively easy for the FERC to impose changes on industry practices and structures when its initiative did not threaten any party with a large wealth loss or present any party with an opportunity for a large wealth gain.[24] But when the wealth transfer issues were significant, Congress and the Court would exert significant influence and the FERC's power in shaping the direction of change would be reduced. Most industry analysts believe the Restructuring Rule will have considerable consequences in wealth transfer and, if previous patterns hold, the court may indeed drastically change the Restructuring Rule. However, it is difficult to determine whether the effect on wealth transfer is "significant" or not and to infer the possible outcome of the judicial review accordingly.

Decline of the Three-Tier Market Structure

In the past, the U.S. natural gas industry was characterized by a rigid three-tier structure with long-term contracts as the dominant form of gas transactions. Under this

[24] See Charles G. Stalon, "Pipeline Open Access and the Deregulation of Natural Gas Production," Conference on Policy Approaches to the Deregulation of Network Industries, American Enterprise Institute, Washington, D.C., October 10-11, 1990.

industry structure, the LDCs obtained their supplies (primarily through twenty-year or longer contracts with various minimum-take, reserve-dedication, and price-escalation provisions) from interstate pipelines. The pipelines, in turn, obtained the right to take gas from producers through similar long-term arrangements. The regulatory framework accompanying the three-tier market structure was also quite rigid. The FERC set the tariffs and service conditions of interstate pipelines through traditional cost-based ratemaking methods. At the same time, the state public utility commissions, obligated to fully pass through the FERC-determined tariffs, set the rates and service conditions for LDC service using similar ratemaking principles. The pipelines and LDCs assumed a service obligation (which is independent of the sales contracts) to their respective customers in exchange for the assurance of recovering all reasonably incurred costs. In essence, both the pipelines and the LDCs were regulated as public utilities even though a pipeline's franchised territories were not clearly defined.

Three distinct markets exist in this three-tier gas industry. The wellhead market set the price and quantity of gas produced in the fields and sold to interstate pipelines. The citygate market determined the price and quantity of gas sold by the pipelines to LDCs. The wellhead and the citygate markets were jointly referred to as the interstate market. Then there is the local distribution market, where the LDCs sold gas to all end users within their service territories. Under this industry structure, gas was provided as a delivered, bundled good from wellhead to burnertip and interstate pipelines played a particularly critical role in the delivery process. The pipeline acted as both a merchant and a transporter of gas. It committed long-term purchases to producers and financed and built the required physical facilities to transport gas from production fields to consumption centers. Without interstate pipelines, the large amount of gas produced in the Southwestern part of the United States would not be delivered to the consuming centers in Eastern, Western, and Midwestern states. The amounts of gas consumed and produced would be much less than they are today and natural gas would be a far less important energy resource.

There were strong technical and economic reasons for the prevalence of this particular market structure as well as the dominance of long-term contracts.[25] They are not repeated here. At the same time, the natural gas industry has performed reasonably well over a long period of time as the amounts of gas produced and consumed, the total mileage of the interstate pipeline network, and the number of customers all increased tremendously. The end-use customers also enjoyed a high level of reliability and reasonable cost of gas services. However, this three-tier market structure experienced considerable stresses and performed poorly during the mid-1970's supply shortage and the early to mid-1980's gas surplus. The three-tier market structure was permanently altered after the enactment of the Natural Gas Policy Act of 1978 (NGPA). A new gas industry structure that centered around direct gas purchases and spot contracts with flexible supply and take provisions has emerged.

Transformation of the Interstate Market

The new trends in gas procurement and transportation were first manifested in the interstate gas market. For example, the amount of customer-owned gas transported by major pipelines increased six-fold, from 777 billion cubic feet (Bcf) in 1981 to 4,458 Bcf in 1986 and the amount of pipeline-owned gas transported decreased from 10,233 Bcf to 5,841 Bcf in the same period.[26] In 1989 pipeline-owned gas accounted for 25.3 percent of total throughput, a

[25] See Congressional Research Service and The National Regulatory Research Institute, *Natural Gas Regulation Study* (Washington, D.C.: U.S. Government Printing Office, 1982); John Harold Mulherin, "Vertical Integration and Long-Term Contracts in the Natural Gas Industry," (Ph.D. dissertation, University of California at Los Angeles, 1984); and Scott E. Masten and Keith J. Crocker, "Efficient Adaption in Long-Term Contracts: Take-or-Pay Provisions for Natural Gas," *American Economic Review* 75 (December 1985): 1083-93.

[26] See Energy Information Administration, *Wellhead Purchases by Interstate Natural Gas Pipeline Companies Since the NGPA* (Washington, D.C.: Energy Information Administration, 1988), 2; and "Pipes' Sales Slide Eases in '88; Carriage, Throughput Both Gain," *Inside F.E.R.C., Special Report* (April 24, 1989).

considerable reduction from 38.7 percent in 1987.[27] More recent data shows a similar trend even though the pace of increase in directly-purchased gas has slowed somewhat. From 1989 to 1991, the amount of pipeline gas sales decreased 43 percent (from 4,321 Bcf to 2,467 Bcf) while the throughput increased 2 percent (from 16,823 Bcf to 17,098 Bcf) in the same period.[28] The percentage of gas transported for others in the total throughput has also increased from 74 percent to 86 percent.

The trend toward direct gas purchases and reliance on short-term procurement options was primarily motivated by three factors: the wide availability of and access to transportation services, the price advantages of spot purchases over long-term contracts, and the intense interfuel competition and state regulatory mandates on "least-cost" gas procurement.[29] The wide availability of open-access transportation services established the physical means by which gas buyers (mainly the LDCs) could use their connecting pipelines only for transportation and procure gas directly from producers or other pipelines. Without open-access transportation the pipeline customers had no alternative but to continue to purchase bundled gas from their connecting pipelines. Under the FERC open-access transportation programs, the pipelines could become open-access transporters or could provide transportation on a case-by-case basis on behalf of an LDC or intrastate pipeline. The FERC's initiatives in opening up the interstate transportation network were quite successful and by the end of 1989 all major interstate pipelines had become open-access transporters.

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[27] See Daniel J. Duann et al., *Gas Storage: Strategy, Regulation, and Some Competitive Implications* (Columbus, OH: The National Regulatory Research Institute, 1990).

[28] See "More of the Same for Major Pipes: Sales Down, Throughput Up in 1991," *Inside F.E.R.C., Special Report* (May 18, 1992).

[29] Obviously, the shift from pipeline purchase to direct purchase was not always a smooth transition as the LDCs were taking on much more and complex responsibility in finding suppliers and arranging transportation. Further discussion regarding the tasks of a direct gas purchase can be found in Daniel J. Duann et al., *Direct Gas Purchases by Gas Distribution Companies: Supply Reliability, and Cost Implications* (Columbus, OH: The National Regulatory Research Institute, 1989).

The cost advantage of spot purchases over long-term contracts with pipelines provided the economic motivations for the LDCs and certain end users to buy gas from entities other than their connecting pipelines. Throughout the 1980s natural gas was in abundant supply and in a period of substantial supply surplus, the price in the spot market (where prices reflected current demand and supply conditions) was likely to be lower than the average cost of the pipelines' supply portfolios, which consisted mainly of gas obtained under the high-priced, long-term contracts signed in the late 1970s. The attractiveness of spot purchases was further enhanced by a particular regulatory mandate whereby interstate pipelines still had a service obligation to the LDCs for their full historical level of contract demand and the LDCs could always go back to the pipelines in the case of a supply interruption.[30] Consequently, the LDC's gas-supply reliability would not be reduced as a result of increased direct gas purchases while the costs of gas supplies could be lowered considerably.

The intensive interfuel competition in some local distribution markets, the state commissions' policies mandating LDCs to obtain gas at "least-cost," and other types of gas procurement requirements also contributed to the substantial increase in direct gas purchases. The threat of bypass and shifting to either other fuels or other suppliers by the LDCs' customers forced the LDCs to consider bypassing their current pipeline suppliers or using transportation service only in order to find cheaper gas supplies. Similarly, when the LDCs faced more stringent state requirements on gas procurement, they looked for alternative supply options to the bundled gas supplied by the interstate pipelines.

Evolution of the Local Distribution Market

During the period when the interstate gas market went through a drastic transformation, the local distribution market also underwent a less pronounced, but no less significant, evolution. The evolution of the local distribution market mirrored the transformation in the interstate market

[30] Under the Restructuring Rule, the pipeline's obligation to provide bundled commodity gas service is eliminated and this will no longer be the case.

in many ways.[31] Substantial increases in the amount of gas transported for end-use customers, intensive competition from pipelines and other LDCs, and the increasing popularity of more flexible pricing characterized the evolution of the local distribution markets. Given the considerable diversity in state policies dealing with open-access transportation and bypass, it is not easy to obtain a complete picture of the extent of direct gas purchases at the distribution level. Some regional data for the growth of natural gas transportation from 1982 to 1987 are available.[32] They show that, as a percentage of total delivery, transportation for industrial and electric utilities ranged from 28 percent in the West South Central to 0 percent in New England in 1982. In 1987, it had increased to 55 percent and 4 percent, respectively.

Once again, easier access to transportation service, cost advantages of short-term procurement options, and intensive interfuel competition and state regulatory mandates were the main impetuses for the evolution in the local distribution market.[33] However, the local distribution markets have some characteristics that differentiate them from the interstate market. These characteristics have restrained the extent of direct gas purchases which are generally limited to large industrial plants, electric utilities, and some purchasing cooperatives.

The key factor is the presence of a large number of core customers. For most LDCs, residential and small commercial customers account for a large portion of the customers typically served. The portion of gas provided for residential and small commercial customers is even more significant during peak-demand periods. Gas also provides more than half of the energy consumed in a typical residential household. Any unexpected gas service interruptions, whether

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[31] In certain ways, the changes in the local distribution market preceded the changes in the interstate market. For example, the use of unbundled transportation service by industrial and electric utility customers was originally heavily concentrated in the producing states of Texas, Oklahoma, and Louisiana and began to expand in the industrial areas of the mid-Atlantic and Midwestern states in the mid-1980s and later in Western states. See Energy Information Administration, *Growth in Unbundled Natural Gas Transportation Services: 1982-1987* (Washington, D.C.: Energy Information Administration, 1989).

[32] Ibid.

[33] See Burns et al., *State Gas Transportation Policies*; and Hatcher and Tussing, *State Regulatory Challenges for the Natural Gas Industry in the 1990s and Beyond*, for further discussion on the rationales for direct purchase in the local distribution market.

they are caused by the LDCs' increased reliance on direct purchase or not, will have serious consequences.

In comparison, an interstate pipeline typically has only a small number of "requirements customers" (such as municipal gas utilities) who depend entirely on the pipeline for commodity gas and transportation. In the past, federal regulation required the pipeline to maintain a service obligation (similar to that between an LDC and its customers) for these customers. But, these customers only account for a very small portion of most pipelines' service loads. So a complete unbundling of sales and transportation services and the elimination of service obligations does not necessarily lead to major disruptions or adjustments for the pipelines and their customers.

In addition, even if open-access transportation is available in the local distribution markets, most residential and small commercial customers may not have the experience and expertise to engage in direct gas purchases. The residential and small commercial customers can use other entities or form cooperatives to procure gas. However, the cost savings will be rather limited given the relatively small loads of most of these customers. In short, the implementation of open-access transportation in an LDC's service territory has been, and will continue to be, a much more complex issue than that in the interstate market.

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CHAPTER 3

THE NATURAL GAS MARKET AFTER THE RESTRUCTURING RULE

Clearly, a new gas industry structure has emerged even before the promulgation of the Restructuring Rule. With increased direct gas purchases and wide use of transportation-only service, the traditional three-market structure (wellhead, citygate, and local distribution) was being replaced by a four-market (commodity gas, interstate transportation, core distribution, and noncore distribution) structure.[1] The Restructuring Rule will accelerate this transformation process. Specifically, the unbundling of transportation and sales services and the reconfiguration of service obligation will eliminate the bundled merchant function of interstate pipelines. The establishment of a competitive secondary transportation market will increase the responsiveness and efficiency of the transportation markets. A broad range of new services, such as market-area aggregation, supply-area storage, market-area storage, and repackaging agencies will also be introduced. New marketing tools and various market intermediaries, such as an electronic bulletin board (EBB), and real-time metering and dispatching equipment are likely to be developed and used extensively.

A cursory examination of the approved pipeline compliance plans indicates that the possible changes and critical issues in the restructuring proceedings are numerous and vary considerably among different pipelines. It is impossible to detail all possible changes in the gas industry, and consequently, only the most fundamental changes that may occur as a result of the Restructuring Rule are outlined here.

Given the basic features of the Restructuring Rule, the interstate transportation market will experience the most drastic changes. The commodity gas market, which has

[1] See Daniel Duann et al., *Gas Storage: Strategy, Regulation, and Some Competitive Implications* (Columbus, OH: The National Regulatory Research Institute, 1990).

been quite competitive, may become more so even though no structural changes are expected. The noncore distribution market, as an "extension" of the interstate transportation market, will also undergo a considerable transformation if the state public utility commissions take on an active role in reformulating local distribution services. It will be further expanded as more currently captive customers find it more advantageous to arrange their own commodity gas and transportation services. As for the core distribution market, its regulatory and market structures will not be altered in the near term, but its size may be reduced eventually.

In addition to the structural changes in the various segments of the gas markets, cost shifting is also an important consequence of the Restructuring Rule. Many provisions in the Restructuring Rule will affect the cost of gas services facing the local distribution companies and their customers. The two more significant initiatives are the full passthrough of transition costs and the adoption of a straight-fixed-variable transportation rate. Since the FERC does not have the authority to set the terms and prices for local distribution services, the cost implications to the end-use customers are mostly indirect, that is, the cost shifting is passed through from the pipelines to the LDCs and then from the LDCs to the end users.

Commodity Gas Market

The commodity gas market includes the wellhead market, spot market, gas futures market, and more recently, the gas options market. In a sense, there is only one market for commodity gas and these various market segments merely reflect the different terms and conditions under which commodity gas is being exchanged. The traditional wellhead market deals mainly with gas transactions under long-term contracts with various minimum-take and reserve-dedication provisions. The spot market deals with short-term (one year or less) transactions characterized by best-effort take and delivery guarantees. The futures market is concerned with the standardized

exchange of gas at a future date and at a specific location, and the options market with the exchange of rights to buy and sell gas futures.[2]

The commodity gas market decides the overall level of gas production and the value of the commodity gas available at specific time periods and delivery points. Gas producers, marketers, investors and speculators, and interstate pipelines all can act as sellers in this market. LDCs, pipelines and their subsidiaries, industrial and commercial firms, power plants, marketers, and investors and speculators are potential buyers.

The wellhead market has been substantially free from regulation since the passage of the NGPA and was completely deregulated as of January 1, 1993.[3] The other three commodity gas markets have never been under federal and state gas regulations and are not expected to be regulated in the future. There are typically many buyers and sellers in the four commodity gas markets and previous studies generally conclude that these markets are either very competitive due to the nature of the transactions or "structurally competitive" with no single participant exercising significant market power.[4]

The implementation of the Restructuring Rule will not drastically change the composition and competitive nature of the commodity gas market. The only significant change that can be foreseen is the clarification of the role and previous restrictions on interstate pipelines, which will eventually lead to their full participation in the commodity

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[2] A detailed discussion on the operation, advantages, and disadvantages of the various segments of the gas commodity market is available in Daniel J. Duann et al., *Direct Gas Purchases by Gas Distribution Companies: Supply Reliability and Cost Implications* (Columbus, OH: The National Regulatory Research Institute, 1989).

[3] The Natural Gas Wellhead Decontrol Act of 1989 amended the NGPA and eliminated both price and nonprice control (primarily the obligation to serve under the Natural Gas Act) by January 1, 1993.

[4] See, for example, Stephen Breyer and Paul W. MacAvoy, "The Natural Gas Shortage and the Regulation of Natural Gas Producers," *Harvard Law Review* 86 (1973): 941-87; and Energy Information Administration, *Producer Revenues, Prices, and Concentration in the Natural Gas Market* (Washington, D.C.: Energy Information Administration, November 1983).

gas market. After the approval of its compliance plan, a pipeline is free to sell the unbundled commodity gas at market-based prices as long as it completely separates its transportation and commodity gas sales functions. It is not easy to project the degree of participation and the competitive position of interstate pipelines in the future commodity gas market. But in all likelihood, the degree of competition in this market will increase just by having more sellers and buyers.

One related issue is the reliability of commodity gas directly purchased by the pipeline customers. There are some concerns that pipeline customers who previously obtained a bundled gas service from the pipelines may not be able to procure reliable gas supply and transportation on their own. It was also argued that the interstate pipelines could provide more reliable gas service to individual customers since they generally had more diversified supply sources and were large aggregators of gas requirements.[5] Nevertheless, there is little empirical evidence to suggest that a bundled service with an inherent service obligation per se will necessarily make it more or less reliable than the separate acquisition of transportation and commodity services under contract if the pipeline customer possesses adequate experience and expertise in buying gas and arranging transportation. Actually, it has been argued that the increased use of direct gas purchases could actually increase the flexibility and responsiveness (in price and quantity adjustments) of the aggregate gas market which might reduce the possibility of supply shortage or surplus.[6] Some even argued that utility regulation might indeed make a utility supply commitment weaker than an unregulated contractual supply obligation because the regulatory commissions seldom require the jurisdictional utilities

[5] See Daniel J. Duann, "Direct Gas Purchases by Local Distribution Companies: Supply Reliability and Cost Implications," *The Journal of Energy and Development* 14 (Fall 1989): 61-93.

[6] Ibid.

to perform on a contractual obligation that turned-out to be unprofitable, nor do they compel compensation for failure to perform.[7]

Arguably, that bundled pipeline sales have been viewed as more reliable in the past may simply be due to the fact that the FERC did not require the pipelines to provide truly equal transportation service to their nonsales customers as compared with that provided to their regulated sales customers.[8] Another possible explanation for the perception that bundled gas service is more reliable may be that in the past gas companies, being given the mandate to provide service on demand and with the assurance of recovering all reasonable costs, were more likely to procure more gas and arrange more backup services than necessary. Once the gas companies were not required to assume an obligation to serve and were not assured of cost recovery, the option of procuring more gas than required was no longer available. The risk or the perception of risk of supply interruption would increase. In other words, the imposition of service obligation and the assurance of cost recovery have the effect of encouraging gas companies to incur additional costs for "enhanced" supply reliability. The additional costs allowed, rather than the service obligation itself, contributed to the increased supply reliability.

Core Distribution Market

The segmentation into the core and noncore markets may be the most significant change to the provision of local distribution gas service. Not surprisingly, the development of proper responses to this segmentation poses the biggest challenge to the state public utility commissions. On the one hand, state commissions want to make sure that the imposition of utility regulation will not hinder the provision of a wide variety of gas services by many potential suppliers. On the other hand, the state commissions want to assure the provisions of reliable bundled gas services to

[7] See Arlon R. Tussing, "Completing the Transition to Competitive Markets," Testimony Before the United States Senate, Committee on Energy and Natural Resources, Subcommittee on Mineral Resources Development, and Production, Washington, D.C., September 26, 1989.

[8] Ibid.

those customers who have no alternative suppliers, while still restraining any undue exercise of monopoly power by the LDCs in providing service to core customers.[9]

Core distribution service refers to the traditional bundled service provided to customers who are unable or unwilling to switch to alternative fuels or other gas suppliers. This market is on the opposite spectrum from the commodity gas market in terms of the degree of competition and government regulation. It has been subject to strict state regulation in the past and will probably remain so in the foreseeable future. This market is characterized by the monopoly of the LDC, the LDC's inherent obligation to serve all customers who demand service, and the provision of gas as a bundled package of transportation, storage, load-balancing, and backup services. The local distribution market is inherently a less-competitive market as compared to the interstate gas market. In many instances, only an LDC possesses the physical facilities for moving gas to or from a given point, enabling the LDC to serve additional gas loads at a substantially lower cost than any new "stand-alone" facilities.

Because of these characteristics, the establishment of state transportation programs that promote substantial direct gas purchases by some fuel- and supplier-switchable end-use customers has not significantly affected the structure and operation of the core distribution market. The Restructuring Rule is not likely to alter the seller-buyer relationship or the number of sellers in the core distribution markets either, at least initially. It can be expected that over the next few years the price of core distribution services will increase, maybe considerably, as a result of the passthrough of transition costs and the adoption of SFV transportation rates. Also, the opportunities for certain core customers to purchase gas directly may increase as the conditions for transportation access become more equitable and more market intermediaries and new transaction mechanisms make the task of finding alternative suppliers easier and less costly. Given these enhanced economic incentives and the possibility of buying gas directly, a number of currently captive customers may choose to become noncore customers over time. Consequently, the number of customers and amount of gas sold in the core distribution market will be reduced as a result of the Restructuring Rule.

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[9] See "The Growing Competition in the Local Gas Distribution Industry," *NARUC Bulletin* (December 7, 1992): 17-19.

Noncore Distribution Market

Noncore distribution service refers to the provision of bundled gas sales or unbundled intrastate transportation service by the LDCs to those customers who have either the ability to switch to another fuel or can arrange to purchase gas from other entities. Just as the federal reforms have enhanced competition and reduced the market power of pipelines in the interstate market, state regulatory reforms have eroded considerably the monopoly position of the LDC over the last decade. A large group of noncore customers has emerged. Three categories of users are potentially noncore customers.[10] The first category is made up of "bypassing-capable" customers who, primarily due to their locations, can obtain lower-cost gas by building a spur line or other connection line to gas suppliers other than the LDC. The second category is comprised of "fuel-switchable" customers who have the capability of using other types of fuels and will indeed do so if the price of gas increases above the cost of oil, coal, or other alternative fuels or when gas service is curtailed or perceived as unreliable. The third category includes those "energy-intensive users" who are very sensitive to business-cycle and market conditions and may reduce their level of gas usage due to relocation or closing.

These noncore customers may use the LDC's transportation facilities or may bypass the LDC completely in arranging their own gas supplies. Under the current state regulatory framework, an LDC has the obligation to provide service to these noncore customers but these customers do not have the obligation to take bundled gas from the LDCs. In this aspect, the noncore sales market is very similar to the citygate market before the promulgation of the Restructuring Rule, where the pipeline customers do not have to purchase from pipelines but pipelines are required to stand ready to serve them. Because some customers are no longer captive to the LDC, the state commissions are facing the difficult question of defining the LDCs' responsibility to those noncore customers who are not required to purchase bundled gas service

[10] See David B. Hatcher and Arlon R. Tussing, *State Regulatory Challenges for the Natural Gas Industry in the 1990s and Beyond* (Columbus, OH: The National Regulatory Research Institute, 1992).

from their connecting distribution companies.[11] The assurance of providing comparable intrastate transportation services to these customers is another issue to be addressed.

The promulgation of the Restructuring Rule is expected to accelerate the expansion of the noncore distribution market for various reasons. First, the noncore customers are in an attractive position since they can aggressively purchase gas from sources other than the LDCs and still rely on the LDCs to provide service during peak periods when the gas supply is tight. Second, as the pipelines are required to provide more equitable transportation service, the possibility of direct purchase will increase. Third, as a result of the cost shifting caused by the adoption of the SFV rate and the full passthrough of transition costs, the noncore customers, with their load characteristics (high-load factor and more use of interruptible service), will tend to face a lower total cost of transportation service. This lower transportation cost will, in turn, encourage the noncore customers to purchase more gas directly. Given the diversity in the establishment and adjustment of state transportation programs and the restructuring of the local distribution markets, the eventual size and composition of particular noncore distribution markets, under different state jurisdictions, may show great variations.

In response, an LDC can adopt several options to enhance its competitive position in the noncore market. First, the LDC can use selective discounting for sales and transportation services to retain or expand its load or throughput, provided it does not unduly discriminate against core customers. Second, the LDC can actively participate in the secondary capacity market to increase the value (or, put another way, reduce the cost) of the pipeline transportation capacity it already contracted for. Third, it may use innovative ratemaking techniques to remove any distortions associated with the existing cost-based tariffs. A more detailed discussion of these policy options is provided in the next chapter.

Interstate Transportation Market

[11] See "Debate on LDC Restructuring Long on Questions, Short on Answers," *Inside F.E.R.C.* (May 24, 1993): 10-11.

The interstate transportation market has been the focus of previous regulatory reforms.[12] All four major policy options in the Restructuring Rule center around the creation of an efficient and equitable transportation market (including both the primary and secondary transportation markets) which, in turn, will make other gas markets more competitive.[13]

The emergence of the market for transportation-only service is a relatively new development. Before the institution of the FERC open-access transportation programs in the early 1980s, there was no separate gas transportation market because gas was always provided as a bundled product from sellers to buyers including their subsequent buyers.[14] Thus, the transportation market has not been as well-developed and organized as the commodity gas market, and new transaction mechanisms are still being tested and developed. More importantly, due to the technical and economic nature of a transportation network, the interstate transportation market will probably never become as competitive as the commodity gas market.[15] Currently,

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[12] A extensive review of the evolution of the federal transportation programs can be found in Philip M. Marston, "Pipeline Restructuring: The Future of Open-Access Transportation," *Energy Law Journal* (1991): 53-79. In addition to interstate transportation, there are also intrastate transportation markets where the LDCs or intrastate pipelines provide transportation services for end users or gas companies for transportation within the state. The intrastate transportation markets are typically much smaller markets and fall within the jurisdiction of a particular state.

[13] The primary transportation market refers to the initiation allocation of pipeline transportation capacity to its customers. The secondary market can be viewed as a "resell" market where the pipeline customers can dispose of their contracted transportation capacity through a variety of capacity-release mechanisms.

[14] However, it should be noted that the revenue requirements for transportation were always determined separately by the FERC even though the pipeline customers were not charged a separate transportation tariff. Basically, the pipelines were allowed to pass through directly the cost of the commodity gas and earned a return only on the capital invested in delivering gas from the wellhead to the citygate.

[15] An extensive review of the elements of market power in the pipeline industry can be found in Harry G. Broadman, "Elements of Market Power in the Natural Gas Pipeline Industry," *The Energy Journal* (January 1986): 119-38. It identifies four endogenous factors that contribute to the presence of significant market power in the interstate gas transportation market. They are the horizontal dominance in receiving and delivering markets, the way vertical transactions are organized, the bundling of commodity services with transportation, and the entry and exit barriers

(continued...)

twenty-three major interstate pipelines control a large part of the nation's transportation network so the number of potential sellers for transportation service in any particular region is rather limited. Many LDCs and end users are connected to only one interstate pipeline.

In addition, gas transportation covers many services, some of which may be competitive while others may not. For example, the provision of storage service in certain line segments may be competitive but there may be only one pipeline that can supply the required backup and load-balancing services. It is difficult to define the transportation service at a particular geographic area as competitive or not given this circumstance. Furthermore, the operation of the interstate pipeline network needs close technical coordination and cooperation which may have to coexist with the economic competition among pipelines. The nature of the transportation grid as a network also makes the exercise of market power in certain segments of the grid possible.

All of these particular features of the gas transportation network will undoubtedly complicate the analysis of competition in the transportation market.[16] It should also be noted that there may be considerable regional differences in the utilization of existing transportation capacity and consequently the need for constructing new pipelines.[17]

Transportation Service in the Restructured Gas Industry

(...continued)
to pipeline competition. It concludes that because of the economic and technical economies of scale in transportation endemic to the gas industry, interstate pipelines inherently possess opportunities to exercise market power and therefore, some form of regulatory oversight is desirable.

[16] See *Report of Commissioner Branko Terzic, Chairman FERC Pipeline Competition Task Force on Competition in Natural Gas Transportation* (Washington, D.C.: Federal Energy Regulatory Commission, May 1993).

[17] For example, only relatively small additional volumes of gas (1.1 billion cubic feet (Bcf) per day) can be transported into the Northeast and Western regions even during off-peak periods while significant additional gas (8.4 Bcf per day) can be moved into the Midwest region during the off-peak period. So it is no surprise that most new pipeline capacity additions currently planned are intended to meet either a shift in supply sources or the growing new markets in the Northeast, Southeast, and Western regions.

The Restructuring Rule will transform the interstate transportation market in many ways. Nevertheless, the transportation market will not be totally deregulated and the primary market will still be subject to cost-based regulation by the FERC. The main changes that can be expected in the interstate transportation market are an increase in the number of new transportation services (such as no-notice transportation and open-access storage), the establishment of a secondary market with uniform and centralized transaction mechanisms, and possibly a significant increase in the number of buyers and sellers as the conditions and quality of service are made more equitable.

There are four reasons for the emphasis on the interstate transportation market in current and previous gas regulatory reforms. First of all, the establishment and operation of an efficient (though not necessarily competitive) transportation market requires continued governmental regulation. The construction and operation of a large gas transportation network has considerable economies of scale and requires close coordination.[18] A large amount of capital is also required for building a transportation pipeline. The widely fluctuating rate of utilization of special-purpose (connecting to particular load centers and supply sources) transportation facilities also limits the number of potential suppliers in the interstate transportation market. A competitive market for transportation service is infeasible and it is unrealistic to expect that competition can totally replace governmental regulation, at least not initially. The FERC will not be successful in applying the same approach of total deregulation for the wellhead market to the restructuring of the interstate transportation market.

Some have argued that there have always been circumstances in which rivalry among or between pipelines exists and the bulk of transportation services purchased by the major LDCs is either subject to competitive sale or to the competitive pressure arising from a potentially

[18] A review of the technological and financial aspects of a natural gas pipeline network and its monopolistic characteristics in operation and control can be found in Congressional Research Service and The National Regulatory Research Institute, *Natural Gas Regulation Study* (Washington, D.C.: U.S. Government Printing Office, 1982).

contestable market in which a new competitor can enter with only a minimal investment.[19] It has also been argued that certain competitive characteristics have emerged in the gas transportation market and a workable contestable market can be made to perform similarly to a workable competitive market if regulatory barriers to entry and exit were eased and equal access mandated.[20] There may be some merits to these arguments, but the current and potential degrees of competition in the gas transportation market are clearly an issue to be debated in the years ahead.

Second, the interstate transportation market has been subject to a questionable regulatory paradigm in the past and additional actions may be required to correct the distortions already created. Interstate pipelines were regulated as "public utilities" before the establishment of the federal open-access transportation programs in the early 1980s. The inefficiency and distortions created by the application of this "public utility" paradigm have been well documented and will not be repeated here.[21] In comparison, the prevailing regulatory doctrines on the commodity gas and core distribution markets are essentially correct and workable. No substantial regulatory reforms are required for these two markets.

Third, the access to transportation capacity can significantly affect the competitive position of various gas market participants. The interstate transportation network has been identified as the "bottleneck" of the gas delivery system. Whether a particular seller or buyer can, or will, participate in the gas market depends largely on its access to the interstate transportation

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[19] See Hatcher and Tussing, *State Regulatory Challenges for the Natural Gas Industry in the 1990s and Beyond.*

[20] See Richard J. Pierce, Jr., "Reconstituting the Natural Gas Industry from Wellhead to Burnertip," *Energy Law Journal* 9 (1988): 1-57.

[21] See, for example, Dan Alger, "A Policy Context for FERC-Sponsored Laboratory Experiments Concerning Market-Based Regulation of Natural Gas Transportation," *FERC Office of Economic Policy Technical Report*, 88-1 (Washington, D.C.: Federal Energy Regulatory Commission, July 1988). Specifically, the problems in the transportation market include misallocation of transportation capacity due to inaccurate price signals, inflexibility of rates to changed market conditions, inefficient entry and exit decisions due to the lack of good estimates of benefits and costs, and a high direct cost of transportation regulation. It is expected that the Restructuring Rule will resolve some of these problems to a considerable degree.

network. Without meaningful and equitable access to transportation service by all market participants, the objective of making the gas market more competitive cannot be achieved. Actually, the whole foundation of the Restructuring Rule is to assure the provision of open and equal access to transportation by all buyers and sellers.

Fourth, the availability of transportation capacity is the key to reliable gas service. More specifically, the ability of a particular customer to obtain reliable gas service hinges largely on whether it can obtain the necessary transportation capacity at a particular time and place. The reliability of gas service is decided by two factors: the amount of commodity gas available and the amount of capacity available to transport it.[22] The deregulation of the commodity gas market together with a current estimation of the proven natural-gas-resource base clearly indicates that a sufficient amount of commodity gas is available in the foreseeable future and a sustained supply shortage caused by insufficient gas production is very unlikely.[23] Thus, the availability of pipeline capacity to transport gas becomes the more serious constraint in meeting the future demand for gas.

FERC's Basic Approach of Transportation Market Restructuring

Because the interstate transportation market cannot be made more efficient through total deregulation or by simply adding more buyers and sellers, a new approach is required. The promulgation of the Restructuring Rule represents such an attempt. Two general approaches

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[22] See Duann, "Direct Gas Purchases by Local Distribution Companies."

[23] A recent estimate by the Potential Gas Agency at the Colorado School of Mines indicated that the total U.S. gas-resource base (the gas that can be recovered by conventional means and assuming adequate price/cost relationships) was 1,019 trillion cubic feet (Tcf) at the end of 1992, which was approximately fifty-eight times current annual production. It further concluded there was a consensus that a large, accessible potential gas resource exists which could make a larger contribution to future energy supply. See "The U.S. Gas Resource Base, Including Proved Reserves, Was 1,019 Tcf," *Inside F.E.R.C.* (June 21, 1993): 4.

have been suggested in the past.[24] One is an "incremental" approach by which the existing FERC regulation in the primary transportation market is maintained but a secondary market is created. The other is a "drastic" approach in which a new administrative process (such as auctions) is used in setting rates and approving entry to the primary market. There are two problems associated with the "drastic" approach: the significant market power held by the pipelines in the initial allocation of transportation capacity cannot be overcome and the effectiveness of applying auctions for highly interdependent gas services is still unproven.[25] The FERC basically chose an incremental two-pronged approach in its attempt to make the transportation market, and consequently other gas markets, more efficient.

On the one hand, the FERC will continue to use government regulation to ensure that all gas buyers and sellers have equal access to the interstate transportation network. This is based on the belief that increased participation will lead to increased competition and more competition will lead to a better allocation of gas resources. These regulations also reflect the FERC's belief that most transportation capacity is still owned and controlled by a small number of interstate pipelines and government regulation is still required in setting the initial allocation and tariffs for transportation capacity. By imposing cost-based prices and open-and-equal access, the FERC assures that pipelines do not receive monopoly profits and all buyers can obtain reasonably-priced transportation services, at least initially.

On the other hand, the FERC wants to create a "competitive" and dynamic secondary transportation capacity market that can reassign the capacity to those who value it most. Under the capacity-release mechanism, firm-capacity holders may permanently or temporarily release the capacity without limitations on quantity, duration, and recall rights. The price in the secondary market will be determined through market demand and supply and not regulated by the FERC (though it still cannot exceed the maximum lawful rate applicable). The entity seeking to release

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[24] In addition to these two general approaches, several options that might further the goal of achieving equal and open-access transportation have been suggested. See Marston, "Pipeline Restructuring: The Future of Open Access Transportation."

[25] See Alger, "A Policy Context for FERC-Sponsored Laboratory Experiments Concerning Market-Based Regulation of Natural Gas Transportation."

the capacity must notify the pipeline of the terms under which it will release the capacity and the offer must be posted on the pipeline's EBB. Prearranged capacity reallocation between different capacity holders is allowed but it must still be subject to competitive bidding through the pipeline's EBB.

Clearly, the secondary market as envisioned by the FERC is not a truly "competitive" market for various reasons. First, the pipelines' participation in the secondary market is restricted to the amount of unused capacity and subject to a regulated ceiling price so that the pipeline will not use the secondary market to enhance its own market power or to evade cost-of-service revenue restrictions. Second, regarding the participation of other entities, all transactions must still go through the pipeline and the holders of transportation capacity must use the pipeline as their exclusive agent. This approach has the advantage of preventing an unregulated entity from gaining control of a large amount of transportation capacity and exercising its considerable market power to distort the price and quantity of transportation service to its advantage. A totally unregulated secondary market may essentially transfer the profits otherwise available to the pipelines to the LDCs and other pipeline customers who obtain transportation capacity under a FERC-sanctioned price, which is possibly lower than the market-clearing price.[26]

Primary Market for Transportation Capacity

The initial allocation of pipeline transportation capacity can be further delineated into two aspects: the allocation of a pipeline's own transportation capacity and the allocation of the pipeline's entitlement to upstream transportation capacity. The basic approach used by the FERC in the primary market is to allocate the transportation capacity to the pipeline's current firm sales and transportation customers. Specifically, the pipelines that currently provide bundled-sales service are required to offer a no-notice transportation service that will permit shippers to

[26] There are some strong criticisms regarding the use of a uniform and centralized mechanism for the reallocation of pipeline capacity. This issue will be further discussed in later sections. See, for example, Hatcher and Tussing, *State Regulatory Challenges for the Natural Gas Industry in the 1990s and Beyond*.

transport gas up to their maximum contractual entitlement without prior notice. Open and equal access to pipeline storage service is also required. Before the implementation of the Restructuring Rule, there existed a large number of tariff restrictions on the provision of firm transportation service that included the number of receipt points, total receipt-point capacity, access at constrained receipt points, and access to storage. These will be eliminated. Furthermore, current firm-transportation customers can exercise a right of first refusal, subject to the maximum lawful price applicable, to retain their current capacity rights. But if no other customers offer a higher bid for the capacity, the original customer must retain the capacity until the end of the contract. Some variations in allocating the initial transportation capacity can be structured and approved in individual compliance plans. Transportation tariffs are still to be approved by the FERC and are based mostly on the embedded costs of the pipeline in providing the transportation services.

There may be some arguments about the advantages and disadvantages of the primary transportation capacity allocation mechanisms adopted by a particular pipeline. But in general, the operation and resulting allocation and price in the primary transportation market are clearly defined and recognized. Setting of the transportation tariff and service conditions, rather than the allocation mechanism itself, are the key variables in the primary transportation market. After all, a pipeline customer will decide the amount of firm transportation capacity it contracts for not just based on its historical contract level but also on the price of such a service in relation to the prices available in the secondary market and the quality and price of other services such as storage and interruptible transportation.

Secondary Market for Transportation Capacity

Significance of the Secondary Market

The creation of an efficient market for interstate transportation services is the primary objective of the Restructuring Rule. The establishment of a uniform and centralized mechanism for adjusting contracted capacity is the key element in creating an efficient transportation market. The flexibility in reducing or increasing contracted transportation capacity has always been a

concern for pipeline customers as the demand for gas is highly seasonal and varies considerably over time. Any shifts in the service load, gas supply sources and prices, and availability and price of alternative transportation routes will alter the customer's need and utilization of contracted transportation capacity.

The importance of having some flexibility in adjusting transportation capacity is further enhanced as more competition is introduced in the interstate gas market. In the past, the demand for transportation service in the highly-regulated interstate market was relatively stable and the extent of direct gas purchases was rather limited. Consequently, the pipeline customers had a pretty good idea about the amount of transportation capacity they would need in the future. Furthermore, in most instances the pipeline customers were not concerned about the disposition of transportation capacity since the cost of pipeline transportation service was already included as part of the cost of bundled gas service set by the FERC and could be passed directly to their customers.

Though it was not a serious concern in the past, the pipeline industry did have some experience in the disposition of transportation capacity, primarily through some "gray markets" transaction mechanisms. One of the most notable is the "buy-sell" agreement where a "transportation-privileged" shipper buys the gas from the ultimate customer at the intake point on the transporting pipeline and then resells that gas back to the customer at its delivery point.[27] For this type of transaction, the buying and reselling of gas really have nothing to do with the supply of commodity gas. Rather, the exchange of commodity gas serves to create a vehicle to circumvent the FERC's restriction on transferring transportation capacity from one entity to another.

With the implementation of the Restructuring Rule, the size of the secondary capacity market will definitely increase as pipeline services are unbundled and the bundled merchant function is eliminated. There will be more instances of unneeded and insufficient capacity as gas demands facing the pipeline customers become more volatile and unpredictable. In addition, even though the FERC-set unit price of transportation services per se may not be legally challenged,

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[27] See Ibid., for more discussion on this and other types of transactions that can circumvent the FERC's limitations on reallocating transportation capacity.

the state commissions still can review the prudence of gas procurement and transportation arrangements made by the LDCs before passing through the associated costs to ratepayers. Thus, an LDC will need to take every possible opportunity to maximize the value of its unneeded transportation capacity. Actually, the disposition of transportation capacity in the secondary market may turn out to be one of the more important mitigation measures available to the LDCs in dealing with the cost shifting caused by the use of SFV rates since the LDCs can resell the transportation capacity for which they have no immediate need.

Functions of a Secondary Market

The existence of a secondary market is generally recognized as an efficient means for allowing willing parties to reallocate resources subsequent to their initial allocation. For most competitive goods and services, the primary and secondary market are so closely related to each other that it will be difficult or even impossible to distinguish the two.[28] The spot and futures markets for petroleum are a good example. As will be made clear in a later section, the relationship between the primary (generally, a regulated market) and secondary (in most instances, a competitive market) markets for utility service is more complicated.

Overall, the existence of a secondary market for regulated utility services still has considerable merit.[29] Specifically, a secondary market provides additional flexibility in adjusting to changing market conditions and customer preference; it also creates alternatives to the utility services offered, and it may reduce the risk assumed by the buyers if they can dispose of unneeded services through an organized market. In the case of gas transportation service, the absence of a secondary transportation capacity market can create some serious distortions including: unnecessary "shortage" of firm and peak-load transportation services as the customers cannot

[28] Ibid.

[29] Ibid.

reassign the unused capacity, transportation not allocated to the highest bidders, and continued price discrimination against most price-inelastic core customers.[30]

Until recently, the resale of transportation capacity to the highest bidder has been restricted by the FERC and the state commissions. The main reason for such restrictions was that the regulators generally preferred to have a tight control over the service terms and price of a regulated service sold in a secondary market. The FERC further stated in the Restructuring Rule that permitting a secondary market to operate without strict regulatory oversight might create a few monopoly resellers who could exercise considerable market power on the secondary market. In order to exert more control over the secondary transportation market, the FERC and a few states have considered the options of certification of resellers, price caps, and strict service conditions to prevent potential monopolistic exploitation. But, the tasks of regulating so many possible resellers could turn out to be an insurmountable task, probably even more troublesome than the FERC's previous attempt in setting prices for individual gas wells.

There are also strong arguments that the restriction is unnecessary and detrimental to the full and efficient operation of the secondary capacity market.[31] It has also been argued that the development of rules to govern a constantly-changing secondary market in capacity rights was far more important than the initial allocation of transportation capacity. This is because an efficient allocation of any scarce good depends not on its initial allocation but on its transferability in a competitive market.[32] Clearly, the reconciliation of the objectives and operation of a regulated primary market with a "competitive" secondary market for transportation service is the most difficult and unsettled issue in the restructuring of the interstate transportation market.

Requirements for a Competitive Secondary Transportation Market

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[30] Ibid.

[31] See Tussing, "Completing the Transition to Competitive Markets;" and Duann and Hatcher, "Pipeline Gas Service Comparability Rule: What Can State Regulators Do Now?"

[32] See Pierce, "Reconstituting the Natural Gas Industry from Wellhead to Burnertip."

Under the new FERC capacity-release mechanisms, a pipeline customer may release capacity subject to certain restrictions. Specifically, the matching of buyers and sellers will be done through the pipelines and the pipeline will become the releasing party's exclusive agent. All negotiated deals between pipeline customers must be posted on the pipeline EBB system and exposed to competing bids. Furthermore, the pipeline customers are not allowed to bid for transportation service offered by another customer that exceeds the pipeline's filed rate for similar service. A pipeline is also required to advertise its own unused capacity on its EBB but is not allowed to give priority in selling its own unused capacity before selling the capacity released by its customers.

A related issue is the capacity release by project-financed pipelines (such as Ozark Gas Transmission System and Overthrust Pipeline Co.). Originally, shippers on project-financed pipelines were barred from participating in the secondary capacity market because their tariffs prohibit conversion from individually certificated transportation to open-access blanket transportation and the FERC restricted participation in capacity-release programs to the latter. However, the FERC decided to grant special waivers to allow shippers on such pipelines to release unused capacity without first converting to open-access transportation.[33]

There are certain concerns related to the creation of a successful centralized capacity-release mechanism as envisioned by the FERC. The establishment of the EBB is the first practical issue to be resolved. There has been considerable agreement on what capacity-release information the EBB should contain. But some issues are still left unresolved: the need for a pipeline to provide a breakout of scheduled firm and interruptible transportation instead of simply the total available capacity, the extent to which contract information is necessary for capacity release, the extent of liability and who bears such liability for incorrect information on EBBs, whether uploading data from a user to a pipeline is essential for capacity release, and who pays for the costs of the EBB.[34]

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[33] See "FERC Allows Shippers on Project-Financed Pipes to Release Capacity," *Inside F.E.R.C.* (June 21, 1993): 1-2.

[34] "Industry Divided on Need for EBB Listing of Available IT Capacity," *Inside F.E.R.C.* (July
(continued...)

The disincentive for bilateral negotiation is another concern. As all negotiated deals are subject to the "raiding" of others, the pipeline customers may not want to devote time and money to finding out the possible buyers or sellers of transportation capacity at a specific time and location. This concern can be alleviated somewhat by the liberal grandfathering policy contained in the Restructuring Rule. Under the grandfathering policy, not only existing capacity brokering and buy/sell transactions but also the capacity reallocation contracts executed before the implementation of the FERC-approved capacity-release program by the transporting pipeline are protected.

The third concern is whether it will work to combine buying and selling of commodity gas through individual bargaining in the unregulated commodity market and buying and selling transportation service through a centralized auction mechanism. Actually, some FERC-sponsored laboratory experiments seemed to indicate such a combination may not work adequately.[35]

The last, and probably most serious, concern is the existence of a maximum lawful rate applicable to all transactions in the secondary market. By putting a price ceiling on a structurally-competitive market, the market clearance price may not be discovered and the limited transportation capacity may not be allocated to those customers who value it most. More importantly, a shortage in transportation capacity may occur. If so, the original purpose of using a secondary market to alleviate the distortion in the primary market would be defeated. There are substantial economic benefits to be derived in allowing a market-determined price in the secondary capacity market.[36] If price is not artificially restrained, the opportunity cost of not releasing capacity goes up and more transportation capacity is released to those who value it more than the current capacity holders. Also, the buyers of released capacity will be able to ascertain the relative value of holding gas versus capacity as there is a clearing market for both these services.

(...continued)
12, 1993): 7-8.

[35] See Alger, "A Policy Context for FERC-Sponsored Laboratory Experiments."

[36] See Gregory M. Lander and Cheryl L. Loewen, "The Multi-Nodal Capacity Market: Trading Up to A Competitive Natural Gas Industry," mimeo., 1991.

The extent of competition that can be achieved eventually in the secondary transportation market is the biggest uncertainty in the restructuring of the transportation market. This is a critical issue because the extent of competition will determine whether and to what extent the secondary market will be subject to FERC regulation now and in the future. The FERC Pipeline Competition Task Force Report concluded that market-based rates were suitable in two markets: the secondary, firm capacity-release markets and the hub-to-hub transportation-corridor markets (the main transportation routes among market centers). It also suggested that secondary capacity is "similar" to interruptible transportation capacity and if the interruptible market is deregulated, then the secondary market should be deregulated. The Interstate Natural Gas Association of America also argued that given the transparency of the secondary market and its expected large number of buyers and sellers (preventing any exercise of market power) regulation should be limited to market oversight in the form of monitoring EBBs and resolving complaints.[37]

The size of the secondary transportation market is expected to expand after the full implementation of the Restructuring Rule. However, the eventual degree of participation and utilization of the secondary transportation market by the pipeline customers in relation to the primary market is still to be decided by, among other factors, the cost of participation, the experience in forecasting future capacity needs, and the price and availability of other types of transportation services.

Definition and Magnitude of Transition Costs

The disposition of "transition costs" is not new to the natural gas industry. By definition, transition costs refer to those expenses that are "temporary" in nature. There are always some costs of adjustment associated with any change to the regulatory and market structures. In the Restructuring Rule, four types of costs are characterized as transition costs: Account 191 balance, gas-supply realignment (GSR) costs, stranded costs, and new facilities costs. Out of the four types of transition costs, the GSR cost is the most controversial. The other three types of

[37] See "Terzic Task Force Focuses on Secondary Market for Transportation," *Inside F.E.R.C.* (January 25, 1993): 7.

transition costs are more easily defined and recognized: Account 191 balance is essentially an unpaid balance or credit for the gas already being used, and the stranded and new facilities costs are the costs of facilities that are made obsolete or are required due to the implementation of the Restructuring Rule. The justifications and costs for making these facility adjustments can be determined accurately in most instances.

On the other hand, the determination of the GSR cost is more ambiguous because it involves the outcomes of negotiations between pipelines and producers and their perception about the future direction of gas prices. Evaluations of the efforts and the accuracy of perception by the negotiated parties about the future are quite subjective. The GSR cost is also the largest part of the transition costs. The FERC calculated that the total transition costs amounted to $4.8 billion and the GSR cost was about two-thirds of that at $3.2 billion.[38] The FERC Chair indicated that these figures should be viewed as a "worst case" scenario and that there were also large offsetting transition benefits to those transition costs.[39] A more recent compilation of additional pipeline filings showed a total transition cost of $5.7 billion.[40] When reviewing the FERC estimates, the General Accounting Office indicated that approximately 90 percent of these costs would have been paid by customers even if the Restructuring Rule had not been adopted.[41] If this is indeed the case, the burden of the transition costs attributable to the Restructuring Rule may not be as severe as initially feared.

Given the nature of the transition costs and the number of pipelines involved, it is a huge and difficult undertaking to obtain an independent and reliable assessment about the size of the

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[38] See "Chair Moler Responds to House Energy Committee Questions about Order No. 636 and FERC Policies in General; Pipeline Estimates Indicate Transition Costs Could Reach $4.8 Billion," *Foster Natural Gas Report* (March 18, 1993): 1-7. This figure was derived based on the estimation provided by interstate pipelines in their compliance filings through March 1, 1993.

[39] Ibid.

[40] "Draft GAO Report on Cost Impact of Order No. 636 Projects $400 Million Greater Cost Shift to LDCs and Their Customers Than FERC Forecasted, Resulting in A Cost Increase to Residential Customers of 9 Percent or Less," *Foster Natural Gas Report* (July 22, 1993): 1-4.

[41] Ibid.

transition costs. The eventual size of the transition costs depends on many factors: the pipeline's efforts to control renegotiation, the prudence review of the FERC, and the market prices of gas. For example, a sustained increase in spot gas prices could lead to a significant reduction in the aggregate amount of GSR costs as the pipelines should have more leverage because producers should be willing to have contracts modified or bought out at a lower price.[42] But it also depends on whether the spot prices remain at or above current levels and on the types of contracts being renegotiated.

Because the pipelines are given the opportunity to collect all costs incurred either as a direct consequence of implementing the Restructuring Rule or as a consequence of actions taken by customers electing choices under the Rule, clear incentives exist for the pipelines to interpret the costs qualifying under this definition expansively. In general, the FERC conducts two levels of review. One review is for the proper attribution to the transition cost category and another for the prudence in the occurrence of such costs. Some criteria for the prudence review are whether arm's-length negotiations were vigorous between the pipeline and the gas supplier, and whether the terms of the contract giving rise to the transition costs "were reasonable in light of the market conditions" extant when the contract was negotiated, renegotiated, or terminated.[43] Also, the transition costs must reflect the full disclosure of all relevant information as to the "authenticity, attributability, and prudence" of such claimed costs and demonstrate that the amount of claimed costs reflects a maximum mitigation effort.

A market-based approach in allocating the gas realignment costs can be considered. Under this approach, no specific cost-allocation mechanism is used and a pipeline will not necessarily recover all its gas realignment costs. Instead, the amount of GSR costs eventually recovered will depend on the difference between the current market price and the cost of the

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[42] "If Spot Gas Prices Stay Up, Will Order 636 Transition Costs Fall?" *Inside F.E.R.C.* (May 10, 1993): 13-14.

[43] Some concerns were expressed that, given the FERC's record on prudence reviews of pipeline's gas-supply contracts, there were few reasons to believe that pipelines would not have most of their supply realignment costs judged acceptable. See Daniel J. Duann and David Hatcher, "Pipeline Gas Service Comparability Rule: What Can State Regulators Do Now?" *NRRI Quarterly Bulletin* 13 (September 1992): 265-82.

initial contracts. This approach may be desirable in both efficiency and equity aspects but for practical reasons it is very unlikely to be adopted.[44] As discussed before, the pipelines are likely to vigorously resist the implementation of the Restructuring Rule if they are required to absorb a large portion of the transition costs, which may happen if a market-based approach is adopted. Furthermore, it may be perceived as somewhat unfair to require the pipelines to pay for government-mandated changes. Obviously, similar arguments can be made about why the end-use customers should be required to shoulder most of the transition costs as currently mandated by the Restructuring Rule.

In summary, the allocation of transition costs is a complex and controversial issue. Undoubtedly, there are substantial legal and economic problems associated with the various methods of allocating transition costs. Two observations have been drawn from the previous experience in dealing with transition costs.[45] First, the assurance that the gas market will perform efficiently in the future is far more important than attempting to effect an absolutely equitable allocation of transition costs. Second, any attempt to attain precision through individualized adjudication of each dispute is certain to bog down in a long administrative morass that imposes inordinate costs on all gas market participants. These are valid observations and the approach adopted by the FERC may turn out to be the "best" one in the sense that a large amount of uncertainty is removed while not unduly delaying the restructuring process.

Incentive Effects of the SFV Rate

Even though pipeline transportation service was not separately provided and priced prior to the FERC open-access transportation programs, the allocation of transportation-related costs has always been the focus of the pipeline ratemaking process. The prevailing FERC ratemaking methodology automatically passed through all the costs incurred by the pipelines in obtaining commodity gas from the producers. The facilities of the pipelines were viewed as essential only in

[44] See Pierce, "Reconstituting the Natural Gas Industry from Wellhead to Burnertip."

[45] Ibid.

delivering gas from the wellhead to the citygate and not for use in gas production or in obtaining commodity gas. The total revenue requirement of an interstate pipeline was the sum of commodity gas costs plus the return of and on the capital invested in the gas delivery facilities. The total revenue requirement was then allocated among the pipeline's customers.

The Restructuring Rule adopts a specific method of allocating transportation-related costs based on the demand characteristics of the customers. Under the SFV rate, all fixed costs (the costs that do not vary with the pipeline throughput) are included in the demand charge and all variable costs are included in the commodity charge. Compared with existing transportation rates, the SFV-rate-design methodology will increase the demand charge and lower the commodity charge. The costs of transportation services to the LDCs, which typically require firm transportation service and have low load factors, will increase and the customers of the LDCs, in turn, will face significant cost shifting.

The FERC estimated that the adoption of SFV rates would cause an annual shift of $800 million in pipeline companies' fixed costs to the LDCs and their customers. The municipal distributors, as represented by the American Public Gas Association, projected a cost shift of $4.3 billion, and the GAO estimated that without any mitigation measures, the cost shifting amounted to $1.2 billion per year and typical residential customers might pay up to 9 percent more on their gas bills depending on how the LDCs allocated the cost increase to their customers.[46] The GAO indicated that the difference between the FERC's estimates and its own estimates was mainly due to the assumptions about the LDC's use of interruptible transportation service and the costs of such service.[47] The GAO also characterized the $4.3 billion estimate by the American Public Gas Association as much too high because it was based on incorrect pipeline company revenue data and an incorrect presumption that only firm-service customers paid all the pipelines' fixed costs.[48]

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[46] See "GAO Skeptical of FERC's Anticipated Order 636 Benefits, Impacts," *Inside F.E.R.C.* (July 19, 1993): 1, 11-13.

[47] See "Draft GAO Report on Cost Impact of Order No. 636," 1-4.

[48] Ibid.

In addition to cost shifting, the adoption of the SFV rate will also insulate the pipeline from any risk of underrecovering its return to invested capital. In other words, the pipeline will be able to recover all fixed costs through firm transportation and storage services. Consequently, a pipeline may no longer be concerned with the actual utilization of its transportation facilities. But, this assertion may exaggerate the indifference pipelines will exhibit to increasing throughput on their systems.[49] This is because the ability to collect the fixed reservation charge from the customers at the present time depends on inducing them to reserve the right to use a pipeline's service in the future. Any pipeline observed to operate at close to empty most of the time will have a difficult task convincing its customers that they should pay a nonrefundable fee to reserve space on the pipeline's system. Thus, a pipeline still has the incentive to insure sufficient throughput so that its customers perceive a significant probability that, absent their paying the fixed charges for reserved space, they will be unable to get the full amount of service they subsequently wish to purchase.

The FERC has suggested some mitigation measures that can lessen the effects of cost shifting to the LDCs and their core customers. But, there are some concerns about the effectiveness of these measures. In particular, the FERC has not mandated the use of any single type of mitigation measure. One primary tool of mitigation is the use of capacity release. But this measure is totally dependent on the vitality of a market that is still to be developed. Furthermore, some aspects of mitigation are permanent while others apply only during a four-year phase-in period and the baseline for evaluating SFV rates is not explicitly stated. In addition, the implementation of the Restructuring Rule will eliminate the triennial review of pipeline rates which, irrespective of the result of the adoption of SFV rates or the unbundling of pipeline sales and transportation, will place a greater burden on pipeline customers to challenge the appropriateness of the pipeline rates. It was also suggested that the increased certainty of cost recovery and the associated reduction of risk for pipelines, as a result of the adoption of the SFV rate, should lower the allowed rate of return accordingly.

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[49] See Duann and Hatcher, "Pipeline Gas Service Comparability Rule."

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CHAPTER 4

STATE REGULATORY ISSUES AND STRATEGIES

Although the regulatory reforms in the past have been parallel at the federal (interstate) and state (local distribution) levels, the interstate and local distribution markets do have their own unique characteristics. It is not feasible for state public utility commissions to use exactly the same approaches as those adopted by the FERC in restructuring the local distribution market. The state commissions must identify, and some have already done so, the critical issues and develop regulatory options based on their own unique demand and supply conditions.[1]

In the short term, the key issue for most state commissions is the moderation of cost shifting caused by the adoption of straight-fixed-variable transportation rates and the passthrough of transition costs. Most industry observers believe that the majority of the benefits will flow almost immediately to pipelines or gas producers, while the majority of the costs will be incurred by pipeline customers; in particular, those customers buying firm transportation service. Thus, it is primarily the LDCs and their core customers that will bear the costs of restructuring. A state commission's options in mitigating cost shifting can be pursued along two avenues: the participation in court cases and FERC proceedings and the use of policy statements and rulemaking proceedings within their own jurisdictions.[2]

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[1] For example, the Public Utilities Commission of Ohio has used a roundtable process in trying to develop a common interpretation and understanding of the Restructuring Rule, and to reach a consensus on actions and guidance for the LDCs. Five working groups focusing on specific areas of concern were established: gas emergency rules and curtailment; customer/end-user capacity utilization and release programs; evaluation of the gas cost-recovery mechanisms; no-notice service/peak-day supply availability; and transition costs and rate structure. The Pennsylvania Public Utility Commission has identified the allocation of transition costs, the formulation of new state transportation programs, and the possible revisions of purchased gas adjustment clauses as the most urgent issues in dealing with the Restructuring Rule. See "Pennsylvania Girds for Ripple Effect of Order 636 Restructuring," *Inside F.E.R.C.* (August 23, 1993): 1-2.

[2] A detailed analysis of the short-term strategies available to the state commissions can be found in Daniel J. Duann and David Hatcher, "Pipeline Gas Service Comparability Rule: What

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In the longer term, the issue of how to restructure the supply and service portfolios of the LDCs so that they can compete successfully with others should be the primary concern of the state commissions. Under the Restructuring Rule, an LDC can no longer rely on the pipelines to supply gas whenever needed. Nor can an LDC count on industrial plants and commercial entities as loyal customers who will not switch to other suppliers or alternate fuels. The state commissions must develop some mechanisms that will encourage and allow the jurisdictional LDCs to restructure their supply and service portfolios in order to take advantage of a more competitive gas market. The state commissions have expressed some concern about the LDCs' ability to meet the additional responsibilities placed upon them as a result of restructuring in the interstate market.[3] A major task of the LDCs is to develop confidence in their ability to meet the new challenges and to instill that confidence in state commissions. In response, the state commissions need to provide clear guidance (even in the instances where a case-by-case approach is emphasized) to the LDCs and to consider the adoption of a more collaborative approach in smoothing the transition process for the LDCs.

Various long-term strategies have been suggested.[4] Among them, four policy initiatives are of the most significance. They are the adoption of new gas purchase oversight and monitoring procedures, the development of new incentive mechanisms, the review and revision of state transportation programs, and the deregulation of the noncore distribution market.

Issues, Constraints, and Procedures

Before examining the policy options available to state commissions, it is useful to highlight the key issues that are likely to emerge after the full implementation of the Restructuring Rule. The role of the LDCs in gas procurement and gas disposition will be changed substantially.

(...continued)
Can State Regulators Do Now?" *NRRI Quarterly Bulletin* 13 (September 1992): 265-82.

[3] See "LDCs Want Market-Based Regulation, But States Need More Convincing," *Inside F.E.R.C.* (May 3, 1993): 7-8.

[4] Ibid.

Regarding the procurement of gas, the LDC will become a more active buyer in the commodity gas market. It can purchase gas from many entities other than the interstate pipelines. As for the provision of transportation service, the pipelines will still be the main providers but the development of a secondary market and the availability of new procurement options will reduce the significance of the FERC-set initial allocation of pipeline transportation capacity.

In terms of the disposition of gas (namely, the provision of gas distribution service), the LDC will assume three distinct roles instead of the traditional role of being the monopoly supplier to all customers. It will become the sole provider of bundled service to core customers, one of the many possible suppliers of commodity gas to noncore customers, and the main provider of transportation-only service to noncore customers.

There are contrasting views on the desirability and possibility of restructuring the local distribution market. There are questions regarding whether noncore customers can always obtain commodity gas at a lower price than the LDC given the limited experience and expertise in gas procurement of many noncore customers and the expected tightening of gas supply in the future. The cost advantage of spot purchases over long-term procurements may not be sustained. Others also suggested there might not be sufficient economic incentives for noncore customers to consider using unbundled services after all (especially, if their gas requirements are relatively small compared to the typical sizes of gas contracts).[5]

Facing the more active LDCs, the traditional role of state commissions in regulating the bundled distribution services will also be in need of some adjustments. In summary, there are five issues that present the most significant challenges to the LDCs and state commissions: the specification of "transition costs" and the method FERC prescribes to recover these costs; the adoption of the SFV pipeline transportation rate; the replacement of new FERC-mandated capacity-release mechanisms for current state-sanctioned capacity brokering and buy-sell transactions; the oversight and incentive for LDCs' gas procurement; and the demarcation between customers with vastly different demand characteristics and supply alternatives and the respective obligation to serve imposed on the LDCs.

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[5] See "Debate on LDC Restructuring Long on Questions, Short on Answers," *Inside F.E.R.C.* (May 24, 1993): 10-11.

State public utility commissions and LDCs cannot resolve these issues in isolation or by just following the approaches adopted by the FERC. Certain constraints associated with most local distribution markets must be considered. The most significant constraint is the presence of a large number of core residential customers who have no alternative suppliers and very limited fuel-switching abilities. Due to the highly fluctuating demand and the relatively small load of most core customers, the connection of two or more gas distribution systems to the same customer is not likely anytime soon. Furthermore, even if open-access transportation is mandated, many residential customers may not have the inclination, expertise, or bargaining skills necessary to find the most economical and reliable gas supply and transportation services.

The second constraint is the prospect of a more balanced gas market and the possibility of drastic price spikes. The presence of a balanced gas market will make the sole reliance on spot-market purchase and other short-term procurement options a risky strategy because of the possible volatile price movement in the spot market and the increasing likelihood of supply curtailment.

The third constraint is the costs, in particular, the knowledge and expertise of the LDCs and the human and financial resources available to the state commissions, associated with using new supply and service options and the application of new regulatory policies. For example, it was suggested that the lack of interest by LDCs in using gas futures contracts as a risk-management tool, even though the futures market was quite successful, might be attributed less to the deficiencies of the product or the market itself and more to the lack of clear guidance from state commissions especially regarding treatment of trading profits and losses.[6]

The state public utility commissions can use two procedures in developing policy options in response to the Restructuring Rule. One is the issuance of a general policy statement. Another is the use of a regular rulemaking process. A state commission may adopt one procedure for a particular issue and another procedure for a separate issue depending on the complexity of the issues and the timing required for reaching a resolution as well as other factors. For example, the Pennsylvania Commission issued a policy statement on how the LDCs were to treat pipeline

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[6] David W. Wirick, "Establishment of the Natural Gas Futures Market: Regulatory Watershed or Non-Event?" *NRRI Quarterly Bulletin* 12 (June 1991): 217-27.

transition costs in early 1993 and later used a rulemaking process in formulating a new state transportation program. The use of policy statements regarding broad policy matters is appealing because it can be accomplished expeditiously, reserving the detailed implementation of the policy for subsequent regulatory proceedings. The advantage of speedy resolution is particularly critical in the early stages of implementation when the need is greatest for communicating clearly and quickly with LDCs and other interested parties who must act swiftly to effect their own restructuring and compliance strategies at the federal level. There are several areas where the pronunciation of a general policy statement could be quite effective. One area is the sharing of transition costs between an LDC and its customers. Another area is the general standards of performance governing the LDC's participation in the pipeline compliance proceedings.

In comparison, the use of rulemakings does not lend itself to rapid resolution of regulatory issues. However, it does permit a deliberative and methodical investigation of major regulatory challenges. The most likely candidates for the use of a rulemaking process are the rate-design issues that may require special consideration and the standards applicable to LDC participation in pipeline capacity-release programs.

Oversight of Gas Purchases

Since LDCs can no longer buy a bundled gas service from interstate pipelines at FERC-set rates, the LDCs will have complete control of the procurement of gas. The state commissions must then apply a higher degree of scrutiny to the LDCs' procurement decisions. The challenge of lining-up their own gas supply is especially great for the small LDCs who may have only limited experience and resources in buying gas directly. These small gas utilities may have to form purchasing cooperatives or consolidate with other gas utilities.

In response to the regulatory and market changes associated with previous regulatory reforms, state commissions adopted various policies aimed at improving the LDCs gas

procurement decisions in the past.[7] These oversight procedures include the review of gas procurement contracts, purchased gas adjustment (PGA) incentive regulation, the requirement of least-cost purchasing, and prudence review. Most of these procedures are still applicable at the present time while state commissions are responding to the implementation of the Restructuring Rule. In this section, two broad policy approaches are discussed: the ex post prudence review and the prior review and collaborative development of a gas procurement plan. Other approaches can be viewed as variations of these two basic approaches. The use of incentives for improving gas procurement decisions will be discussed in the next section.

It is evident that the risk for the LDC in buying too much or too little commodity gas and transportation capacity or paying too much for gas services always exists. No matter how strict the state oversight is, the risk of making "errors" in gas procurement cannot be totally eliminated. So the objective of state oversight is not to require the LDCs to develop a "perfect" gas procurement strategy but to eliminate any systematic and preventible "errors" or "distortions" that are attributable to the LDCs. In other words, the emphasis of the state commission's involvement should be to communicate clearly with the LDCs regarding their responsibility and flexibility in arranging gas supplies without the threat of later penalties arising from regulatory hindsight. The oversight of the state commissions is not to dictate in advance any specific gas procurement strategies because the state commissions, in most instances, are not able to make better gas procurement decisions about an LDC's particular needs than the LDC itself.

There are two dilemmas facing state commissions in overseeing LDC gas purchases. One is the proper degree of involvement required and another is to balance the "inherent" conflict between being a part of the prior planning process and a part of the post-review process at the same time.[8] Not surprisingly, each of the following two options--prudence review and prior review of procurement plans--has its own weaknesses and strengths. Overall, the prior review

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[7] See Daniel J. Duann et al., *Direct Gas Purchases By Gas Distribution Companies: Supply Reliability and Cost Implications* (Columbus, OH: The National Regulatory Research Institute, 1989).

[8] See "Unbundling at LDC Level Will Feature New Set of Problems, NARUC Told," *Inside F.E.R.C.* (August 3, 1992): 13.

and collaborative development of a gas-procurement plan by state commissions and LDCs may be the more promising approach.

Prudence Review

In addition to the PGA and regular rate-case proceeding, prudence review is one of the most widely used procedures in state gas purchase oversight. A 1989 survey found that thirty-one state commissions had conducted some type of review or considered the prudence issue.[9] A prudence review is defined as a retrospective, factual inquiry into the LDC's direct gas purchasing decisions. It can take place in the context of a PGA proceeding, a rate case, or a separate proceeding. There are four well-understood guidelines for a successful prudence inquiry: a rebuttal of the presumption of prudence, a rule of reasonableness under the circumstances, a proscription against hindsight, and a retrospective factual inquiry.[10] In the case of gas procurement, these four principles can be interpreted as follows. First, the LDC's purchase decisions are considered prudent unless a particular gas purchase decision is challenged. Then, there is a need to develop evidence about whether the decisions that went into the gas procurement determination were prudent when made. After that, state regulators need to apply a standard of reasonableness regarding the circumstances known at the time in evaluating the evidence. A prudence review is typically an elaborate and involved process because the state commissions and the LDCs need to reconstruct the market environment upon which the procurement decisions were made initially. It can be a huge undertaking even under the best circumstances.

There are arguments for and against the use of a prudence review in a more competitive gas market. On the one hand, it has been suggested that a prudence review would allow the state commissions to share the information and experience available to the LDCs and to "catch up"

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[9] See Duann et al., *Direct Gas Purchases By Gas Distribution Companies: Supply Reliability and Cost Implications*.

[10] Robert E. Burns et al., *The Prudent Investment Test in the 1980s* (Columbus, OH: The National Regulatory Research Institute, 1985).

their gas procurement information and expertise.[11] In other words, a prudence review is viewed as a valuable learning tool for the state commissions and such a learning experience will improve the oversight of gas procurement. On the other hand, it was argued that a prudence review, as currently structured, offered only downside risk, with no upside potential to profit on gas purchases to the LDCs. It has been further suggested that a prudence review should focus on the process of gas procurement rather than the outcomes, should rely on prospective standards, and give proper weight to nonprice factors, such as reliability.[12]

It can be expected that the applicability and effectiveness of prudence review in gas purchase will be quite limited in the future. It may still be used in the first few years

[11] See "Prudence Tests? Pre-Approval? LDCs, Regulators Ponder Supply Review," *Inside F.E.R.C.* (May 24, 1993): 11-12.

[12] Ibid.

after the implementation of the Restructuring Rule because during this period some LDCs will still be relatively inexperienced in direct gas procurement, and the possibility of "errors" on the part of the LDC is high. In addition, the extent of direct gas purchase and market competition is less expansive than what can be achieved eventually, and the LDC's supply portfolio may not be as diversified and dynamic as it may become eventually. Under this circumstance, the task of conducting a prudence review is more manageable and the benefits of such a review are more substantial.

As the gas market restructuring progresses into the future, the net benefits of conducting such a prudence review will diminish. Prudence review, as an elaborate and deliberate process, is best applied when the strategies and options of gas procurement are relatively stable. Given the dynamic and competitive nature of the restructured gas market and the multitude of procurement options that are likely to emerge after the full implementation of the Restructuring Rule, an LDC will have a wide range of procurement options (such as long-term contracts, spot purchases, gas futures and options) and its procurement strategies may change constantly. It will be a very demanding task to conduct a prudence review strictly based on the principles outlined above.

Prior Review of Gas Procurement Plan

This strategy allows the state commissions, the LDC, and other parties (such as consumers' counsels and industrial intervenors) to discuss and possibly reach an agreement in advance regarding the LDC's gas purchasing goals and strategies. The LDC will still have the responsibility to implement the agreed-upon strategy while the state commissions will continue to review the actual gas procurement to determine its prudence and reasonableness but only in light of the mutually-agreed-upon goals and strategies. The review and development of such a procurement plan can be done either through a formal procedure or through informal discussions. Prior review of gas procurement plans has been less widely used by state commissions than prudence review in the past.[13] But given the difficulties of applying prudence review in a more

[13] A 1989 NRRI survey found that only seven states (Alaska, California, Maine, Utah,

(continued...)

dynamic and competitive market, the importance of prior review and collaborative development of a gas procurement plan in gas purchase oversight is likely to increase.[14]

The approach of prior review and collaborative development recognizes the imperfection and asymmetry of information available and the possible advantages of an LDC over the state commission in making gas procurement decisions. The emphasis is not in deriving the best prediction about the future but to establish a consensus about what is likely to happen in the future and plan the necessary actions accordingly. An accepted gas procurement plan will give the state commission a yardstick by which to measure the LDC's performance and the LDC some known criteria upon which its gas purchase decisions will be evaluated. There is no assurance that the agreed-upon gas procurement plan will necessarily minimize the cost of gas supply after the fact, just as no other regulatory tools can achieve this objective either.

The main disadvantage of the prior-review approach is that the procurement plan may be developed and agreed on far ahead of time and the gas market conditions may have changed considerably. By the time the procurement plan is implemented, it is clearly a less desirable plan. Since the LDC's gas procurement decisions will still be evaluated based upon the agreed-upon plan, the LDC will have little incentive to make the necessary adjustments, knowing it will not be penalized for not changing the procurement plan. The implied fixity of an agreed gas procurement plan appears to be counterproductive.

In addition, the implementation of the prior review approach is not an easy task and in certain cases the development of the advance gas procurement plan is just as cumbersome and deliberate as a prudence review. Still, some argue that integrated resource planning (IRP) presents an appropriate context for the review and development of an LDC's gas procurement plan. Compared to the IRP in the electric industry, the gas IRP is still in an early stage of development. The experiences and practices used in the electric IRP may be transferred to the

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(...continued)
Vermont, West Virginia, and Wyoming) had some advance approval procedures for reviewing LDC gas procurement.

[14] See "Regulator: Residential Will Be On Short End of Order 636 Benefits," *Inside F.E.R.C.* (June 1, 1992): 6-7.

gas IRP. But, some unique characteristics of the gas industry, specifically that gas production and interstate transportation are outside the purview of state commissions and gas supply and facility planning generally have a much shorter planning horizon than those in the electric industry, should be carefully considered in applying the IRP process.[15]

The exact criteria and procedure for implementing the prior review and collaborative development approach depend on the unique conditions of the LDC. One approach is the preapproval of a gas supply portfolio structure which only sets the parameters on the relative shares of different types of purchases (such as spot purchases, contracts with prices indexed to the spot market, and fixed price contracts) with variable prices between a floor and ceiling.[16] Based on these prespecified parameters, the LDC then would make its supply choices, perhaps relying on competition or other incentives, to minimize the cost of the supply portfolio.

An alternative approach is to specify only some general guidelines, not specific procurement options. This approach will give the LDC some idea of what kind of gas procurement strategies are acceptable. It also can add flexibility in gas procurement as the LDCs are provided with some incentives to respond to changes in the gas market. But this approach may reduce the commission's authority in overseeing gas purchases. Overall, the prior review and collaborative development of a gas purchase plan appears to be more compatible than the prudence review with the current gas market characteristics of competitive pricing and diversified supply alternatives. It is particularly useful in the case where the LDC is serving a broad range of customers and has many supply options.

Incentive Regulation for LDCs

[15] See Michael E. Samsa and William F. Hederman, "Gas Utility Resource Planning: How Far Does the Electric Analogy Go?" *Public Utilities Fortnightly* (October 1, 1992): 40-42.

[16] See Adam B. Jaffe and Joseph P. Kalt, "Oversight of Regulated Utilities' Fuel Supply Contracts: Achieving Maximum Benefit From Competitive Natural Gas and Emission Allowance Markets," Record of Proceedings: Conference on Natural Gas Use State Regulation and Market Dynamics in the Post 636 Energy Policy Act Era, New Orleans, Louisiana, April 26-28, 1993.

In addition to the direct oversight of gas procurement by the LDCs, a widely-discussed alternative that may improve the LDC's gas procurement decisions is the establishment of some explicit performance-based incentive provisions. In a sense, any government regulation can be considered as a certain form of incentive regulation that is used to direct the regulated entities to behave in a more "desirable" way. Various incentive provisions have been used in the gas industry and other regulated industries in the past with different degrees of success. This section discusses three incentive mechanisms for gas procurement: spot-price indexing, price caps, and flexible rate-of-return pricing.[17]

The basic premise for using incentive regulation to improve LDC gas procurement is a recognition that information asymmetry exists between the state commissions (who in general have less information) and the LDCs. It is difficult to assess whether the information asymmetry will be increased or decreased as a result of the restructuring of the gas industry. In any event, the task of applying the traditional "command-and-control" regulatory approach will be made more difficult as the procurement options increase substantially and the purchasing strategies change frequently.

Three tasks are involved in the design of gas procurement incentives. They are the establishment of a benchmark (for example, a cost index, a price cap, or a target rate of return), allocation of penalties and rewards, and the specification of a review (reconciliation) period.[18] The differences between the incentive mechanisms discussed here are mainly reflected in the values chosen for these three parameters.

Spot-Price Indexing

Up to now, the focus of gas procurement oversight has been largely on the determination of an objective valuation of commodity gas and the treatment of the difference between this

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[17] See Mohammad Harunuzzaman et al., *Incentive Regulation for Local Gas Distribution Companies Under Changing Industry Structure* (Columbus, OH: The National Regulatory Research Institute, 1991).

[18] Ibid.

valuation and the actual costs incurred by the LDCs. Since the various segments (wellhead, spot, futures, and options) of the commodity gas market reflect the different conditions and terms upon which the gas is exchanged, some price differences can be expected among the four market segments. The question at hand is to decide which price best represents the value of commodity gas for regulatory purposes.

Some have suggested that spot price is the most accurate indicator at any particular time regarding the value of the commodity gas at a specific point in time and in the future.[19] Consequently, the spot price of gas can be considered as an unambiguous and clearly defined benchmark for the LDC's procurement behaviors in a largely competitive gas market. At least one state commission (California) has made some rudimentary efforts to implement some of the features of this incentive scheme.[20] A typical spot-price indexing method can be summarized as follows. A weighted-average cost of the spot-market supplies available to the LDC is calculated and used as the benchmark (allowable unit cost) for gas provided to core customers. Any gas purchase cost exceeding the allowable unit cost is shared between the LDC and the core

[19] See David B. Hatcher and Arlon R. Tussing, *State Regulatory Challenges for the Natural Gas Industry in the 1990s and Beyond* (Columbus, OH: The National Regulatory Research Institute, 1992).

[20] Ibid.

customers; likewise, any savings are also shared between the LDC and the core customers, and any storage-related costs that are incurred as a result of arbitrage (the difference in spot prices) is also shared based on some predetermined formula of resulting costs and benefits. The sharing mechanisms may not be symmetric between costs and savings and they can also vary considerably among different LDCs. Some additional adjustments are required to reflect the particular conditions of the LDCs. They include the adjustment of an upstream spot price to a downstream citygate price, the addition of transportation costs, and the inclusion of costs for investments in production-area storage facilities.

There are some arguments against the use of spot-price indexing. One is this approach's exclusive reliance on spot contracts which will prevent the consideration of other factors such as service reliability and fuel diversification and may be of special importance to particular LDCs. Another criticism is that this approach may not necessarily lead to the minimization of the cost of gas services since other cost elements such as the availability and tariffs of transportation and storage services are ignored or relegated to a less important consideration. The third criticism is that this approach may unnecessarily prevent the LDC from engaging in other types of procurement contracts such as long-term contracts or gas futures which can unnecessarily restrain efficient risk-reducing (since the LDC as a public utility may have a better risk-assumption capability than a small gas producer) and risk-shedding contractual opportunities.[21]

Overall, these are not serious concerns as the spot-price indexing approach is quite flexible. Certainly some of the unique considerations of a particular local distribution company can be incorporated into the price index and the incentives provided to the LDC can be adjusted accordingly. The use of spot-price indexing is a promising approach as the size of the spot market increases and certain secondary commodity-gas transaction mechanisms (such as gas futures and options) are established

[21] Ibid.

and more widely used. Under this circumstance, the spot price can indeed fully reflect the diverse evaluations made by all gas market participants. This incentive mechanism also has the advantages of being easily understood and having a relatively lower cost of implementation compared to other more elaborate incentive mechanisms.

Price Caps

Price-cap regulation refers to a mechanism whereby prices for specific services provided by a particular utility are allowed to change by certain indices that reflect cost changes for some broader economic unit (such as the whole industry) without a formal review. Price-cap regulation has been used in the telecommunications industry and has recently been considered for the electric industry. For LDCs, price-cap regulation may be applied to both the procurement of gas as well as the supply of distribution service. A cap on the cost of gas procurement may be viewed as a variation of spot-price indexing in the sense that a cap, determined by the state commission, is used in place of a market-determined spot price and no sharing is allowed for any cost exceeding the cap.

The focus here is on the application of price caps for the provision of core distribution services. By placing a limit on the price the LDC can charge for its services to core customers, presumably the LDC will try to obtain commodity gas and transportation service as efficiently as possible and there will be no need to oversee the gas procurement decisions per se. As will be discussed further in the next section, noncore distribution service is likely to be deregulated in the future, so the discussion of price caps here is limited to its application to core distribution service.

There are complex problems to be resolved in the implementation of any price-cap regulation. These problems include the selection of the initial price cap, the choice of adjustment indices, the types of services covered, and the period for reconciliation. The proponents of price caps have argued that this incentive mechanism could improve both pricing and production efficiency since the LDCs would have more flexibility to change their prices as market conditions changed and would have stronger incentives to buy more economical gas and to reduce their

operating costs.[22] It was also claimed that price caps could reduce the administrative costs for state commissions, LDCs, and other interested parties. However, the production efficiency improvements of price caps for LDCs may not be as large as previously thought.[23] Also, price caps may not necessarily reduce the administrative costs associated with rate-case filings. Furthermore, price caps can create some "political" or "public relations" problems for the state commissions since a price-cap incentive mechanism will likely produce extremely high profits during some periods.

In summary, the application of price caps for core distribution services will not necessarily induce significant cost savings or service improvements similar to those which may occur in other industries. As the implementation of the Restructuring Rule will further reduce the size of the core distribution market, the opportunity for cost savings under price caps regulation in the natural gas industry may be restrained accordingly.

Flexible Rate-of-Return Pricing

This incentive mechanism can be viewed as a variation of price-cap regulation. Under flexible rate-or-return pricing, a "dead band" range of allowable rate of return instead of a single price ceiling becomes the focus of regulation. The LDC is allowed to retain all profits earned within a specific range of rate of return. Once the LDC earns a higher or lower rate of return outside the specific range, a sharing arrangement between the LDC and its customers is used to allocate the "excess profits" or the "profit shortfall." The main benefit of this approach is its simplicity in design and implementation. Compared to price caps, less information is required since questions related to the determination of the cap, the price index, and industry efficiency improvements are no longer relevant.[24] But, it can be argued that under flexible rate-of-return

[22] See Harunuzzaman et al., *Incentive Regulation for Local Gas Distribution Companies Under Changing Industry Structure*.

[23] Ibid.

[24] Ibid.

pricing the cost-control incentive will not be that much different from the incentive effects of regulatory lag under the traditional rate-of-return regulation. This approach also has apparently no direct effect in adding flexibility for pricing core-distribution service. It is a somewhat compromising approach which may be viewed as a transition from the current cost-based regulation to a more "direct" incentive regulation.

Realignment of Distribution Services

In addition to the restructuring of an LDC's gas supply portfolio, the reconfiguration of local distribution services is also an important strategy to be considered by the state commissions. Actually, the discussion of incentive regulation in the last section already touched upon several issues related to the realignment of distribution services. The Restructuring Rule will lead to a substantial transformation of the gas supply portfolio of the LDCs which in turn will result in further realignment of the distribution services provided to the end-use customers. Three critical elements were identified for the restructuring of local distribution services: separation of utility and nonutility functions, deregulation of nonutility activities, and equal access among competitors to regulated services.[25] The emphasis of this section is on the development of two regulatory policies that are essential to the competitiveness of the LDCs in a restructured gas market. One is the review and revision of state transportation programs which deal mainly with the issue of equal access to the LDC's gas transportation facilities. Another is deregulation of the noncore distribution market which is concerned with the separation of utility and nonutility activities.

Revision of State Transportation Programs

The development of interstate open-access transportation programs has lead to a parallel development at the local distribution level. In the earlier implementation of the federal open-

[25] See Arlon R. Tussing, "Open Network Regulation of the Natural-Gas Industry in California," Seventh California Natural-Gas Transportation Conference, San Francisco, California, November 16, 1989.

access program, one FERC Chairman publicly urged the LDCs to become open-access transporters and intended to encourage this by conditioning an LDC's authority to resell capacity on becoming an open-access transporter even though the FERC has no authority to mandate that LDCs provide open access.[26] The state commissions and LDCs were also facing the continued threat of bypass at the local distribution market. In response, the state commissions instituted various transportation programs to open up the LDC-controlled transportation network within the states. According to an NRRI survey conducted in 1988, a vast majority (thirty-eight of forty-five respondents) of the state commissions have considered and adopted some type of gas transportation policy.[27] Obviously, over the five-year period since this survey was conducted, there were unavoidable many changes in state transportation programs. However, a comprehensive review of these changes is not possible without an extensive survey of state commissions. This section will provide only two examples of the recent efforts in reforming state regulation regarding transportation services provided by the LDCs within a particular state to indicate the possible directions of revision.

The California Public Utilities Commission (CPUC) has recently started a proceeding to develop policies and rules to increase pricing flexibility and incentives for the LDCs.[28] Specifically, the CPUC extended the gas ratemaking cycle from two to three years to protect customers from the risk of absorbing discounts made by utilities. The CPUC set rates rather than revenue requirements for tariffed noncore transportation services. It also increased the LDCs' ability to negotiate customer-specific contracts, and discouraged predatory pricing by limiting discounted rates for customer-specific contracts to the individual customer's long-run marginal cost.

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[26] See "Hesse Turns Up Heat to Get LDCs to Become Open-Access Transporters," *Inside F.E.R.C.* (May 9, 1988): 1-2.

[27] See Robert E. Burns et al., *State Gas Transportation Policies: An Evaluation of Approaches* (Columbus, OH: The National Regulatory Research Institute, 1989).

[28] See "California PUC Proposes Gas Transportation Pricing Regulatory Changes," *NARUC Bulletin* (January 11, 1993): 4-5.

The staff of the Public Utilities Commission of Ohio (PUCO) has recommended revisions to the PUCO's Gas Transportation Program Guidelines and Gas Emergency Rules.[29] Under the proposed guidelines, LDCs will no longer retain an obligation to provide commodity gas to their transportation-only customers. Furthermore, LDCs will be responsible for establishing reasonable procedures and mechanisms to insure that the transportation customer's deliveries to the citygate are adequate to meet the customer's consumption on a timely basis. The curtailment of transportation service shall be consistent with the quality of service purchases and an LDC's curtailment plans unless specified otherwise in the transportation agreement.

The are a number of new issues that state commissions will need to consider in reviewing and revising their own transportation programs. One issue is the expansion of the definition of transportation to include storage, load balancing, and other auxiliary services. The appropriate terms, conditions, and prices of balancing service are a particularly critical issue since balancing is a much more important service to the LDCs noncore customers than to pipeline customers.

The second issue is the development of transportation capacity-releasing mechanisms applicable to noncore customers. It is expected that the primary market (the initial allocation) for intrastate transportation services will still be governed by the state public utility regulations. A secondary market for reallocating intrastate transportation capacity may be established. But the development of the secondary market for intrastate transportation services will be much more restrained in comparison with the secondary market for interstate transportation services. In other words, the end-use customers are likely to be subject to more restrictions on the acquisition and disposition of transportation capacity since the number of potential participants and the extent of competition in this secondary market are rather limited. Actually, it is arguable that all unneeded transportation capacity should be reverted back to the local distribution companies at rates set by the commission.

The third issue is the setting of priorities for all transportation customers in the event of curtailment and system emergencies in light of the restructuring of the interstate transportation market and the likely deregulation of noncore customers. Some potential noncore customers will

[29] Public Utilities Commission of Ohio, In the Matter of the Implementation of FERC Order 636 and Related Matters, Staff Recommendations for Implementation, August 4, 1993.

be hesitant to purchase unbundled distribution service without some understanding about the priority and options they have in the case of a curtailment.

Deregulation of Noncore Customers

By definition, a noncore customer has the freedom to choose different fuels and suppliers and is not obligated to buy the bundled gas service (including both commodity gas and transportation) from the local distribution company. As a reciprocal response, an LDC should not be held responsible for providing bundled gas service to these noncore customers. Currently, an asymmetry in obligation exists between the LDC and its noncore customers. This asymmetry was created by the reforms of the state gas transportation programs in the late 1980s. The same asymmetry in service and take obligation was present in the interstate market before the implementation of the Restructuring Rule. The main approaches adopted by the FERC in eliminating this asymmetry are the total unbundling of gas services and the creation of a national secondary market for transportation services.

The question at hand is whether the same approaches can be applied to correct the current asymmetry in service and take obligations which exist in the local distribution market. The presence of a large number of core customers who have no alternative to the bundled-sales service provided by the LDCs will limit the applicability of the federal approach. The LDCs will continue to hold durable market power over the core customers, mainly residential and small commercial customers. But some have argued that even residential and small commercial customers may no longer be captive in the near future.[30] Various small residential customers, local school districts, and residential cooperatives can and have aggregated their loads in order to buy gas and arrange transportation services at favorable terms. Nevertheless, it is clear that at the present time, and in the foreseeable future the LDCs' service obligation to the core customers will not be relaxed or eliminated unless there are fundamental changes in the technologies of gas

[30] Hatcher and Tussing, *State Regulatory Challenges for the Natural Gas Industry in the 1990s and Beyond*.

production, transportation, and distribution. More importantly, there does not seem to be any political support for a total deregulation of the local distribution market.

At the present time, the noncore distribution service seems to be the only viable candidate for deregulation. As discussed before, the current status of the noncore distribution market, in many aspects, is the mirror image of the interstate market before the promulgation of the Restructuring Rule. Many of the rationales for unbundling and deregulating advocated by the FERC are also applicable and the lessons learned in the restructuring process can provide useful guidance.

It was also suggested that the reforms and restructuring in the telecommunications and electric industries have provided "a trustworthy preview of the agenda facing the state regulatory agencies in the 1990s" and that distribution customers would press for the LDCs to offer a similar menu of discrete services that the FERC has required the interstate pipelines to provide.[31] Under this proposed deregulation framework, the LDCs will be precluded from procuring commodity gas for sale to noncore customers, will be required to provide some transportation services (in particular short-term firm or interruptible transportation service or a long-term contractual transportation service) for

[31] Ibid.

their noncore customers, and will be required to continue to provide bundled-sales service to core customers under some kind of spot-price-indexing incentive mechanism.

As expected, there are also strong objections to the complete unbundling of the LDCs' services for noncore customers.[32] One is the "pooling" argument which indicates that an LDC can offer producers or marketers a steadier monthly take and obtain a more favorable price by pooling the highly seasonal residential and commercial loads with the steadier nonheating loads of noncore customers. The second objection is the incurrence of new "take-or-pay" costs as the LDCs are required to readjust their supply portfolios when suddenly a substantial number of customers are no longer being served by them.

There are certain issues that state commissions need to address in the implementation of a complete deregulation of the noncore distribution market. Some of these are conceptual and some are practical matters. For example, in what form and to what degree can the regulated LDCs be permitted to compete with other providers for transportation and noncore sales services. Affiliates or subsidiaries with separate management and accounting records from the LDCs may have to be created to undertake these new competitive businesses. In addition, if these affiliates are created, there is the question of how to assure that they can deal with the LDCs on the same arms-length basis as any other parties in obtaining transportation, storage, and load-balancing services. Lastly, the allocation of the potentially large amount of transition costs that may occur as the LDCs suddenly lose a significant portion of their service load needs to be addressed. In short, many of the issues that are hotly debated now as a result of the implementation of the Restructuring Rule will be argued in the many local distribution markets if a total deregulation of the local noncore distribution market is to be implemented.

[32] Ibid.

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CHAPTER 5

CONCLUSIONS

The Restructuring Rule is a continuation of the pipeline regulatory reforms initiated by the Federal Energy Regulatory Commission in the early 1980s. It does not signal a new direction in pipeline regulation, it will mainly accelerate the gas market restructuring that was already in progress. Although the Restructuring Rule contains extensive new policy initiatives, its basic framework is surprisingly simple. The FERC will continue to regulate interstate pipelines, not as "public utilities" as they have been under the Natural Gas Act, but as "common carriers" of gas as advocated by the Federal Trade Commission in 1935. This "common carrier" paradigm correctly recognizes and accommodates the economic and technical characteristics of pipeline operation.

The focus of the Restructuring Rule is on improving and stimulating the operation and expansion of the interstate transportation network, and indeed it has the greatest impact on the transportation market. One key to improving this market is to make it more accessible and equitable for all potential buyers and sellers rather than by just adding more buyers and sellers. Furthermore, a competitive secondary market should be established to correct any misallocation in the regulated primary market. In spite of some arguments about the degree of potential competition in the interstate transportation market, it is clear that this market can never be restructured in the same way or be made as competitive as the commodity gas market. The approach of total deregulation used in restructuring the wellhead market is clearly infeasible for this market.

The Restructuring Rule also has a significant impact on the noncore distribution market. The expansion of this market will be accelerated as the cost of noncore gas service is reduced and the ability and possibility of some previously captive customers to directly buy and transport gas are enhanced. Eventual deregulation and elimination of service obligation to these noncore customers in the local distribution market, similar to what the Restructuring Rule does in the citygate market, will be an important issue before the state commissions in the years ahead.

The structures and competitive positions of the participants in the commodity gas market will not be significantly affected by the Restructuring Rule. The commodity gas market has been deregulated for a number of years and is quite competitive. It will remain so in the foreseeable future. As for the core distribution market, the implementation of the Restructuring Rule may eventually reduce the size of the core distribution market considerably, but the local distribution companies will still be the sole suppliers for bundled gas and will still be regulated by the states.

The FERC has adopted a compressed schedule in implementing the Restructuring Rule. Roughly one-and-one-half years after the promulgation of the initial Order, the FERC has approved all pipeline compliance plans, well within the target date of full implementation by November 1, 1993. The only uncertainty left in the implementation process is the judicial review by the Eleventh Circuit Court. Since the Restructuring Rule is basically a continuation of previous regulatory reforms that have survived extensive judicial reviews in the past, it can be expected that the key provisions of the Rule, namely the unbundling of pipeline services and the elimination of pipeline service obligation, will be sustained by the court. More importantly, even if the court eventually rules against the FERC, the changes in the gas industry as espoused in the Restructuring Rule may not be easily reversed because a considerable amount of time has passed and new transaction relationships have been forged and cemented.

As the FERC's involvement in the implementation of the Restructuring Rule is near completion, most of the short-term issues facing the state commissions and LDCs, primarily those related to the mitigation of cost shifting to captive end-use customers, are of limited relevance right now. Instead, the state commissions and LDCs may want to focus on the development of long-term strategies that can help the LDCs to serve and to compete in the restructured gas industry. Specifically, the state commissions may consider the institution of some mechanism for the collaborative development and prior review of the LDCs' gas procurement plans. They also need to evaluate the possibilities and constraints of adopting spot-price indexing for core distribution services. The state transportation programs may be reviewed and revised with emphasis on defining new services such as load balancing, the disposition of excess and insufficient transportation capacity by end-use customers, and the priority of curtailment for different groups of customers. Finally, the noncore distribution service may be unbundled and

deregulated, though in a more restrained fashion, along the same lines the interstate gas market has been transformed by the Restructuring Rule.

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APPENDIX A

A SYNOPSIS OF FEDERAL REGULATORY DEVELOPMENTS PRIOR TO THE RESTRUCTURING RULE

Since 1978, Congress and the FERC have instituted a number of legislations and regulations aimed at correcting the experienced and perceived deficiencies in the interstate gas market. Two of the most significant developments prior to the formal issuance of the Restructuring Rule were the enactment of the Natural Gas Policy Act of 1978 (NGPA) and the promulgation of FERC Orders 436 and 500. A brief review of the mega-NOPR (*Notice of Proposed Rulemaking on Pipeline Service Obligation and Revisions to Regulations Governing Self-Implementing Transportation Under Part 284 of the Commission's Regulations*) is also provided here. The NGPA substantially deregulated the wellhead price of natural gas, FERC Orders 436 and 500 established the basic framework for providing interstate open-access transportation service, and the mega-NOPR provided a preview of the Restructuring Rule.

The Natural Gas Policy Act of 1978

The severe gas shortage in the interstate market in the mid-1970s and the FERC's difficulty in setting wellhead gas prices were the key impetuses for the enactment of the Natural Gas Policy Act of 1978. The objective of the NGPA was to encourage gas exploration and production by eliminating wellhead price control for a substantial part of the nation's gas fields. The distinction between interstate and intrastate gas markets was also abolished to make more gas available to the interstate market. Higher price ceilings for the first sales of natural gas were instituted to encourage the development of new supply sources, and certain new transportation arrangements were introduced to provide more flexibility in gas supply. The dedication of gas reserves, irrespective of any term limit in the sale contract or underlying production rights to a particular sale of gas, was also eliminated.

The NGPA did not substantially and directly affect the interstate transportation or the citygate markets. The relationships between a pipeline and its suppliers and customers remained largely unchanged. Nevertheless, the partial deregulation of wellhead prices and the elimination of dedicated reserves for sales led to more competition in the gas market. More importantly, the generally positive effects of the NGPA in encouraging gas production and moderating prices, even if they were not universally recognized initially, lent some credibility to the paradigm of replacing traditional utility regulation with market competition. In a sense, the enactment of the NGPA started the process of dismantling the old Natural Gas Act's regulatory framework that has been in place since the 1930s, and laid the foundation for subsequent regulatory reforms.

FERC Orders 436 and 500

After the enactment of the NGPA, the supply of natural gas indeed increased substantially. This supply increase, however, came at a particularly "bad" time. The significant increase in gas supply, coupled with a sustained reduction in gas demand due to extensive energy conservation efforts and back-to-back economic recessions, reversed the prevailing gas market condition from chronic shortage to prolonged surplus (the so-called "gas bubble"). This oversupply condition was further complicated by the gas procurement strategies adopted at that time by almost all pipelines and LDCs. The then-prevailing procurement strategies of signing long-term contracts with high take obligations were based on the erroneous assumptions that the demand for gas would continue to outstrip supply, the price of gas and competing fuels would continue to increase in the foreseeable future, and the end-use customers would not be able to switch to other fuels and suppliers.

With the persistent gas surplus and a prolonged and steep decline in oil prices, the pipelines and the FERC were confronting new market realities and regulatory challenges, in particular the disposition of high-priced gas procured by interstate pipelines under long-term, take-or-pay contracts signed in the late 1970s (the "take-or-pay" problem). The FERC initiated a series of reforms aimed at resolving the take-or-pay problem. This series of regulatory reforms included the FERC Policy Statement on Off-System Sales in 1983, the Special Marketing

Programs in 1983, and the two NOPRs concerning blanket certification in 1984. These initiatives have been referred to by some as the "reconstitutive strategies" for the natural gas industry. Five implementation issues for the reconstitution process were identified: (1) overcoming the reluctance of pipelines to provide equal access, (2) allocating transition costs, (3) policing affiliated transactions, (4) allocating and reassigning pipeline capacity, and (5) expediting certification of new capacity. They are strikingly similar to the issues facing the natural gas industry now in the implementation of the Restructuring Rule.

In the same period, the D.C. Circuit Court decided two cases, Maryland People's Counsel Decisions I and II (MPC I and II) regarding the pipeline customers' challenge to the aforementioned FERC initiatives. As a response to the court's remands in MPC I and II, the FERC issued Order 436 on October 9, 1985 and five subsequent modifications in 1985 and 1986. These Orders established the basic framework for a pipeline to provide open-access, nondiscriminatory transportation service that allowed downstream gas users, such as LDCs and industrial end users, to buy gas directly from producers and to ship that gas via interstate pipelines.

A number of local gas distributors, as represented by The Associated Gas Distributors, once again challenged the new regulatory policies set forth in Order 436. In June 1987, the D.C. Circuit Court, while upholding most parts of Order 436, remanded it back to the FERC for further clarification on the rationales for certain issues. In response, the FERC issued Order 500 in August 1987 and nine subsequent modifications in following years.

In summary, FERC Orders 436 and 500 espoused three types of policy reforms. First, the interstate pipelines who chose to become open-access transporters were required to allow their firm sales customers to convert their firm sales entitlement to a volumetrically equivalent amount of firm transportation service over a five-year period. Second, the pipelines were required to offer their open-access transportation services without discrimination or preference. Third, the pipelines were required to design maximum rates to ration capacity during peak periods and to maximize throughput for firm service during off-peak periods and for interruptible service during all periods. These FERC Orders were intended to make all interstate pipelines providers of open

and equitable transportation service, and indeed by the end of 1989 all major interstate pipelines had opted to become open-access transporters.

The Mega-NOPR

The voluntary provision of open-access transportation by interstate pipelines was a big step in the right direction but it did not resolve all issues related to the creation of a truly competitive interstate gas market. There was still a potential for discrimination by pipelines regarding the pricing, delivery, and other service terms for transportation services provided for nonsales customers. Also, the pipelines' service obligation to their customers has not been modified to reflect a new seller-buyer relationship. Additional FERC actions were called for by various gas market participants.

In attempting to resolve the transportation service comparability issue, the FERC issued the mega-NOPR on July 31, 1991. The mega-NOPR proposed several important policy initiatives aimed at establishing guidelines for the provision of truly comparable pipeline services for all customers. They included: the complete unbundling of sales and transportation services except for small customers; the repackaging by pipelines of their unbundled services to replicate their bundled, citygate sales services; the mandate of open access to transportation and storage with comparable quality for all gas suppliers; the assignment of upstream pipeline capacity now held by downstream pipelines to their firm transportation customers; the requirement that all pipelines implement a new capacity-release program; the issuance of a blanket certificate for unbundled sales service and pregranted abandonment; and the adoption of a straight-fixed-variable rate for transportation service.

These proposed changes were developed based on certain conclusions the FERC drew regarding the comparability of pipeline transportation services. Specifically, the FERC believed that service unbundling should have no perceptible effect on the reliability of a pipeline's peak-day delivery services for residential customers. The FERC also contended that the pipeline should maintain a reasonable operational control of the pipeline facilities, and that the pipeline services

can be unbundled into separate transportation, storage, and balancing services with complete equality for all gas supplies, price transparency, and without cross-subsidization.