

Intrastate Natural Gas Regulation: An Alternative Perspective

Richard J. Pierce, Jr.†

Professor Kelly has chosen a topic that is both timely and challenging.¹ The major reforms in federal regulation that occurred in the 1980s² have created a dynamic, competitive market in natural gas. State regulators confront a daunting task in attempting to devise appropriate changes in their methods of regulating local distribution companies (LDCs).³ The many difficult problems facing them have a single source: gas is a commodity, but gas service is not. An MMBtu of gas in the ground in Texas is currently worth less than a dollar. An MMBtu of gas at a particular plant site or residence at a particular moment in time can be worth two dollars, five dollars, ten dollars, or even more. Getting the gas to a particular location at a particular time is a costly, complicated, and capital-intensive process. It requires use of multiple, immobile, idiosyncratic assets, including production and gathering facilities, high pressure pipelines, storage fields, and low pressure distribution lines.

The only viable option available to state regulators is to regulate some functions of LDCs and to rely on unregulated market forces to govern other functions. These two regimes are inherently in tension, however, when they are applied to a single firm that incurs common costs in the process of performing multiple integrated functions. The existence of regulatory constraints on some of the firm's activities invariably distorts its incentives with respect to its unregulated, or loosely regulated activities. The existence of large common costs plagues any attempt by the regulatory body to eliminate the sources of distortion.

I agree with many of Professor Kelly's most important conclusions and proposals. She argues that: (1) an LDC should not be regulated as a monopolist, to the extent that it functions in a competitive market;⁴ (2) unbundling of LDC functions will increase prices to some and decrease prices to others by eliminating cross-subsidies;⁵ (3) the resulting price increases to the prior beneficiaries of cross-subsidies will be less than the price increases they would otherwise

†Paul J. Kellner Professor of Law, Columbia University.

1. Suedeen G. Kelly, *Intrastate Natural Gas Regulation: Finding Order in the Chaos*, 9 YALE J. ON REG. 355 (1992).

2. See Richard J. Pierce, Jr., *Reconstituting the Natural Gas Industry from Wellhead to Burnertip*, 9 ENERGY L. J. 1 (1988); Richard J. Pierce, Jr., *Reconsidering the Roles of Regulation and Competition in the Natural Gas Industry*, 97 HARV. L. REV. 345 (1983).

3. See RICHARD J. PIERCE, JR., REGULATION AND COMPETITION IN NATURAL GAS DISTRIBUTION (1990).

4. See Kelly, *supra* note 1, at 370.

5. *Id.* at 371.

experience, because unbundling is a means of avoiding uneconomic bypass of the LDC;⁶ and, (4) gas consumers should be allowed to decide for themselves whether the benefits of purchasing unbundled service exceed the costs.⁷

As these many points of specific agreement suggest, I agree with Professor Kelly's most basic proposal: gas service should be made available on an "unbundled" basis. At least some consumers should have the option to purchase gas from one source, storage service from a second source, pipeline transportation service from a third source, and physical distribution service from a fourth source. I fear that Professor Kelly has overestimated the beneficial effects of unbundling, however, and I am concerned that state regulators may go too far in encouraging distributors to unbundle and in encouraging consumers to commit to purchase unbundled services. Professor Kelly's enthusiastic support for unlimited unbundling would be far more troubling in the absence of her two sentence qualification of that support: "After unbundling, the LDC will still provide prepackaged service to those customers who find it cheaper to have the LDC procure and transport their gas. Today, these probably comprise the bulk of the LDC's customers."⁸ Unfortunately, some of her more specific proposals have the potential to distort consumer decisionmaking by making unbundled service seem far more attractive than it is, while others have the potential to eliminate the availability of bundled service entirely.

My differences with Professor Kelly have four sources. First, high transaction costs make purchasing unbundled gas service uneconomical for small consumers. Second, allowing consumers to purchase unbundled gas service, while simultaneously protecting them from the risks attendant to that decision by shifting those risks to LDCs, could produce disastrous results. Third, Professor Kelly's attempt to finesse this problem by suggesting that regulators charge consumers for the cost of standby service will not work. Fourth, Professor Kelly's implicit assumption that regulators can address a variety of problems by allocating common costs among consumers is unfounded.

I. The Limits of Unbundling

Professor Kelly's enthusiastic support for unbundling of gas service is understandable. Were it not for the existence of the complicated transportation, storage, and distribution systems linking gas producers and gas consumers, the gas market would have all the characteristics of the mythical atomistically competitive market paradigm to which economists refer in explaining the many wonderful effects of markets. Thousands of gas producers would be able to compete to make sales to millions of gas consumers. Unbundling has the

6. *Id.* at 371 n.79.

7. *Id.* at 380.

8. *Id.* at 369.

potential to approximate this result. If the owners of pipelines and distribution systems are required to make their facilities accessible to other potential suppliers of gas on a nondiscriminatory basis, the structurally competitive gas sales market should yield optimal gas prices to consumers. This is the theory on which the federal government predicated its revolutionary change in policy in the mid-1980s. That policy change has already produced handsome dividends to consumers, even though federal regulators continue to grapple with a number of knotty problems concerning appropriate terms of access.⁹ Professor Kelly relies on the same reasoning to support an extension of the federal policy on pipeline access to the context of state regulation of LDCs. The change in context, however, has significant effects on the viability and potential beneficial effects of the policy.

A. The High Transaction Costs of Purchasing Unbundled Gas Service

Purchasing gas service on an unbundled basis offers significant potential advantages to a consumer. The biggest single advantage is access to multiple potential suppliers of the gas itself. In many circumstances, consumers also may be able to choose among several suppliers of pipeline transportation service and of storage service. Access to multiple suppliers of those services has the potential to yield lower prices and a wider variety of service options.

However, these benefits come at a cost. In order to buy reliable gas service on an unbundled basis, a consumer must take numerous steps.¹⁰ First, the consumer must determine the relevant characteristics of each of the potential suppliers. Is this firm honest and competent? Does it have the assets required to make its contractual commitments credible? Second, the consumer must negotiate contracts with each supplier. In this process, it must exercise care to insure both that each individual supplier is committed to provide the quality of service the consumer desires and that the contractual commitments are well-coordinated to complement each other. Finally, the consumer must interact frequently with each supplier under the terms of the several contracts to obtain coordinated performance.

Purchasing gas service on such a fully unbundled basis requires considerable time and expertise. Its benefits are likely to exceed its costs only for consumers

9. In 1990, the Federal Energy Regulatory Commission (FERC) proposed additional major changes in its approach to regulation of pipeline transportation. See *Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation*, 56 Fed. Reg. 38,372 (1990). The federal government must make several more changes in policy to create an effective market in gas transportation capacity. See Richard J. Pierce, Jr., *Experiences with Natural Gas Regulation and Competition in the U.S. Federal System: Lessons for Europe*, in *EUROPEAN ENERGY POLICY FOR NATURAL GAS IN THE INTERNAL MARKET* (Ernst Mestmacker ed., forthcoming 1992). On April 8, 1992 FERC issued Order 636, a several hundred page rule revising its policies. 59 F.E.R.C. ¶61,030. This Comment does not analyze these changes because the rule was unavailable to the author at the time this Comment went to press.

10. For a more detailed description of this process, see PIERCE, *supra* note 3, at 19-33.

who purchase very large quantities of gas. Even many small LDCs lack the resources and expertise to construct and to implement the portfolio of contracts required to purchase unbundled service. The costs of unbundled service swamp the benefits not only for residential and small commercial consumers, but also for most institutional consumers, like schools and hospitals, and for many industrial consumers.

Consumers also can purchase gas service on a partially unbundled or rebundled basis. A large number of new market intermediaries have emerged over the last several years to supply rebundled gas service to LDCs and to consumers. They are variously referred to as brokers, aggregators, or marketers. A market intermediary can perform all of the acquisition, contracting, and coordinating functions previously described. It will do so only for a price, of course, but its potential access to economies of scale, scope, coordination, and risk diversification can give it a major cost advantage over all but the largest consumers.

At least in theory, a large market intermediary should be able to perform the acquisition, contracting, and coordinating functions required to rebundle gas service as efficiently as an LDC of comparable size. The availability of rebundled gas service from one or more market intermediaries has the potential to create a situation in which unbundled service offers net benefits even for relatively small-volume consumers.

A consumer's task is much easier when it acquires unbundled service in a rebundled form by contracting with a market intermediary. It still must exercise great care, however, to obtain reliable service. It must ensure that the market intermediary's contractual commitments are credible. Is the firm honest? Is it competent? Is it large enough to take advantage of the significant economies of scale, scope, coordination, and risk diversification? The new market intermediaries are a heterogeneous lot. Some are subsidiaries of major oil companies, gas pipeline companies, or large LDCs. Other market intermediaries operate out of phone booths and rely on the extremely risky assumptions that: (1) the spot market price of gas will remain low at all times; and, (2) relatively inexpensive interruptible transportation and distribution services will be available at all relevant times. Some small volume consumers who buy rebundled service from an intermediary may derive net benefits, but many will wake up one morning to discover that, instead of gas service, they have a theoretically valid cause of action for breach of contract against an absent or bankrupt intermediary.

I assume that Professor Kelly has these problems in mind when she recognizes that "the bulk of the LDC's customers" will find it advantageous to continue to purchase bundled gas service from the LDC.¹¹ She goes on,

11. Kelly, *supra* note 1, at 370.

however, to make proposals that are inconsistent with this conclusion. She characterizes as compatible with the new structure of the gas market a state ban on an LDC's participation in "the competitive, unbundled gas market...."¹² Professor Kelly supports the arguable need for such a ban with her concern that LDCs may act in anticompetitive ways if they are permitted to participate in the newly unbundled market. Although this is a legitimate concern, it cannot be allayed by banning LDCs from providing unbundled service while permitting LDCs to provide bundled service. Either form of LDC participation in the market creates the risk of anticompetitive behavior. Whether an LDC sells gas on a bundled or unbundled basis, it has an incentive to engage in practices that favor its sales over third party sales.¹³ Thus, Professor Kelly's position on state bans of LDC participation in the newly unbundled market contradicts her recognition that most consumers will find it advantageous to continue to purchase bundled service from LDCs.

Professor Kelly notes that many state regulators have limited the availability of unbundled service to gas consumers based on criteria such as a minimum volume of gas consumption or capability to use alternate fuels.¹⁴ She decries these limits as "classic regulatory paternalism."¹⁵ She urges instead that states allow any consumer to opt for unbundled service so that a customer can "balance the benefits and costs... himself."¹⁶ I, too, value consumer sovereignty. It makes sense, however, only if state regulators are willing to allow consumers to bear the adverse consequences of any interruption in gas service, or dramatic increase in the cost of gas service, attributable to the consumer's own decision to rely on unbundled or rebundled service. State regulators must be willing to make the politically courageous, or perhaps politically suicidal, decision to allow residential consumers, hospitals, and schools to bear the risks of purchasing unbundled gas service. Otherwise, consumers will not balance "the benefits and costs" of such a decision because a high proportion of the costs of the decision will be borne by third parties.

12. *Id.* at 377.

13. See *Public Utility Holding Company Act Amendments: Hearings on S.1869, S.1870, and S.1871 Before the Subcomm. on Securities of the Senate Comm. on Banking, Housing, and Urban Affairs*, 97th Cong., 2d Sess. 486, 493-94 (1982) (statement of Assistant Attorney General Baxter explaining how utilities can circumvent regulation by paying high transfer prices to unregulated affiliates).

14. Kelly, *supra* note 1, at 381.

15. *Id.*

16. *Id.*

B. Price Distortions from Risk Reallocation

Professor Kelly does not attempt to convince state regulators to allow all consumers to bear the risks of purchasing unbundled service. Rather, she urges regulators to require LDCs to provide standby service to consumers who opt for unbundled service in order to encourage consumers to purchase unbundled service.¹⁷ She attempts to reconcile this obvious regulatory cross-subsidy to unbundled service with her argument that consumers should “balance the costs and benefits” of unbundled service by urging state regulators to allow distributors to charge a price based on the full cost of such standby service.¹⁸

Professor Kelly has underestimated the difficulty of determining the cost of mandatory standby service. How would a state regulator determine the cost of providing compulsory standby service to a consumer? It would have to apply the complicated analytical tools used to evaluate insurance markets, incorporating, at a minimum, considerations of moral hazard and adverse selection.¹⁹ Initially, the state regulator would need to estimate the probability that an LDC will be required to provide gas under the standby service. That probability is the reciprocal of the risk that a market intermediary will default on its commitment to provide rebundled service. However, default risk is highly variable, difficult to determine, and greatly affected by the availability of mandatory standby service. With standby service available, consumers would have an incentive to choose low cost, high risk intermediaries. The state regulators would have to calculate a different cost-based standby service rate applicable to each market intermediary's customers based on an individualized assessment of each market intermediary's risk of default. If the state applied the same rate to each customer without regard to the highly variable default risk posed by each intermediary, customers would have an incentive to contract only with the lowest cost, highest risk intermediaries. An identical incentive structure led to the federal government's loss of hundreds of billions of dollars in the savings and loan crisis.

The next step in this difficult ratemaking process would require state regulators to predict the market conditions in which the LDC is likely to be required to deliver gas as a result of its regulatory obligation to provide standby service. The risk of market intermediary default varies significantly over time,

17. *Id.* at 390.

18. *Id.* at 391. Professor Kelly's attempt to analogize returning customers to new customers does not work. It is relatively easy to forecast the modest future incremental demand of new customers. It is impossible to predict the extent to which an LDC will be required to provide involuntary standby service to large numbers of returning customers who have been effected by the default of one or more unregulated market intermediaries.

19. For excellent analyses of insurance markets, see Steven P. Croley & Jon D. Hanson, *What Liability Crisis? An Alternative Explanation for Recent Events in Products Liability*, 8 YALE J. ON REG. 1 (1991); George L. Priest, *The Current Insurance Crisis*, 96 YALE L. J. 1521 (1987).

depending on the relative scarcity of gas, transportation service, storage service, and distribution service. The risk of intermediary default is greatest when market conditions increase the relative scarcity, and hence the price, of one or more of the components of the rebundled gas service. Thus, for instance, the LDC serving Chicago potentially would have to be in a position to provide standby service to millions of consumers on the coldest day in January. To be able to fulfill its contingent, involuntary standby service obligation, an LDC would be forced to enter into long-term contractual relationships through which it obtains contingent access to reliable supplies of gas, gas storage service, and transportation service far in excess of its requirements to meet its voluntary contractual commitments. Contracts of that type are extraordinarily expensive.

The LDC's only other option is to be prepared to acquire gas, transportation service, and storage service on the spot market whenever an intermediary defaults. At present, it is unclear whether the LDC would be able to acquire an essential component of standby service, pipeline transportation capacity, because federal regulators seem reluctant to allow resale of this service.²⁰ Even assuming the LDC were able to acquire all of the components of standby service on short notice, it would have to pay a high price for each component given the market conditions in which its obligation to provide standby service is most likely to be triggered.

If state regulators actually established "cost-based" rates applicable to mandatory standby service, the cost of the combination of rebundled service purchased from a market intermediary and mandatory standby service from the LDC would exceed the cost of bundled service from the LDC. Of course, it is highly unlikely that any state regulators actually would establish "cost-based" rates for standby service. To do so would require a sophisticated understanding of both the gas market and the market for insurance, as well as intensive investigation of the characteristics of each market intermediary. Indeed, the state inevitably would find it necessary to establish an elaborate set of regulations to govern all market intermediaries.

II. The Limitations of State Regulators

Professor Kelly consistently overestimates the capabilities of state regulators. Both the major changes in federal gas policy that began in the 1980s and the changes in state gas policy Professor Kelly recommends have the potential to yield benefits only because of the institutional limitations of regulators. If regulators had a sophisticated understanding of markets and the institutional capability to apply that understanding, we would have been better off with the

20. FERC has proposed to prohibit "capacity brokering," i.e., resale of pipeline transportation capacity. See Pipeline Service Obligations, *supra* note 9, 56 Fed. Reg. at 38,376-7.

status quo ante, pervasive regulation of the gas market. Professor Kelly's unjustified faith in the capacity of state regulators is apparent in her persistent reliance on the assumption that regulatory establishment of "cost-based rates" will solve the many problems state agencies now confront in regulating LDCs.

Throughout the article, Professor Kelly refers to the desirability of cost-based rates for all unbundled services, including transportation and distribution.²¹ I cannot tell what definition of cost she has in mind: marginal cost, opportunity cost, stand alone cost, or fully allocated embedded cost. Given the context in which she refers to cost, her reference probably is to fully allocated embedded cost, since state regulators traditionally have applied that accounting construct. Professor Kelly's frequent contrast between cost-based rates and rates affected by cross-subsidization²² underlies her belief that the traditional regulatory definition of cost is likely to produce good results in the context of transportation and distribution rates once market forces eliminate any cross-subsidies that previously distorted LDC rate structures.

Unfortunately, the problem of establishing appropriate rates for transportation and distribution is considerably more difficult than her discussion suggests. The bulk of the costs of the transportation and distribution functions are common costs. The fully allocated embedded cost method of assigning common costs to particular customers or customer classes is completely artificial. It yields rates that are unrelated to any economically relevant definition of costs and are incompatible with the operation of a competitive market in transportation and distribution service.

Lawyers and accountants constantly propose methods of allocating common costs based on the implicit assumption that there are right and wrong ways to perform this difficult task. That assumption is wrong. Common costs can be allocated among customers only by applying a series of unprincipled tautologies. I cannot improve on the analogy Fred Kahn uses to describe the futility of this effort. "It is not like looking for a black cat in a room in which all the lights have been turned out. *There is no cat there.*"²³

Moreover, use of fully allocated embedded costs as the basis for distribution rates is certain to produce undesirable results in many circumstances.²⁴ Assume, for instance, that the marginal cost of distributing a unit of gas to a particular customer at a particular time is ten cents and the fully allocated cost is fifty cents. In this fairly typical situation, forty cents of the "cost" of the

21. See, e.g., Kelly, *supra* note 1, at 395. In a footnote added after this Comment was written, Professor Kelly disavowed any attempt to define "cost" for purposes of her proposed plan. *Id.* at 361 n. 17

22. *Id.* at 364.

23. Alfred E. Kahn, *The Uneasy Marriage Between Regulation and Competition*, 1 *TELEMATICS* 12 (1984).

24. For additional illustrations of the undesirable effects of using fully allocated costs, see Richard J. Pierce, Jr., *Using the Gas Industry as a Guide to Reconstituting the Electricity Industry*, 13 *J. RES. IN L. & ECON.* 7, 40-47 (1991).

distribution service is the result of an inherently arbitrary allocation of common costs to the customer. Suppose the customer is willing to pay no more than twenty cents for distribution service in this situation because it has access to alternative fuels or alternative sources of gas. If the state regulator insists that the LDC charge the fifty cent "cost-based rate," the LDC loses the opportunity to obtain a contribution to its common costs equal to ten cents times the number of units of distribution service the customer would have been willing to buy. Viewed from the perspective of the customer, the LDC, and the LDC's other customers, the regulators' insistence on a predetermined "cost-based rate" produces a clear lose-lose-lose outcome. If the state regulator instead permitted the lower rate, it would produce a clear win-win-win outcome.

Professor Kelly's failure to recognize the impossibility of allocating common costs and the counterproductive effects of using rates based on fully allocated embedded costs in circumstances where many customers have access to inexpensive alternatives to regulated distribution service creates problems throughout her article. Those problems are most apparent in her discussion of the choice state regulators must make between "the determinate rate approach" and "the flexible rate approach." She seems to believe that the second approach is unnecessary if the first approach is implemented through use of "cost-based" rates.²⁵ That belief is unfounded if, as seems likely, her reference is to rates based on fully-allocated cost. State regulators must confer on LDCs considerable pricing flexibility in order to further their consumer protection mission.

Professor Kelly makes important points in her explanation of the disadvantages of the flexible rate approach.²⁶ State regulators should constrain the pricing flexibility of LDCs in some manner to avoid, or at least to reduce, the potential adverse consequences she describes. It is extraordinarily difficult, however, to devise appropriate limits on a firm's pricing flexibility or to implement other mechanisms that expose regulated firms to appropriate incentives in this situation. Economists have long debated this difficult question.²⁷ By ignoring that debate, Professor Kelly proposes a regulatory regime that is significantly incomplete.

25. Kelly, *supra* note 1, at 393-99.

26. *Id.* at 397.

27. See, e.g., Richard J. Pierce, Jr., *supra* note 4, at 42-55; Southern California Edison Co., 46 F.E.R.C. ¶ 61,300 (1989) (dissenting opinion of Commissioner Stalon); William B. Tye, *Pricing Rail Competitive Access in the Transition to Deregulation with the Revenue/Variable Cost Test*, 32 ANTITRUST BUL. 101 (1987); William J. Baumol & David E. Bradford, *Optimal Departures from Marginal Cost Pricing*, 60 AM. ECON. REV. 265 (1970).

Conclusion

It would be easy to make too much of the shortcomings in Professor Kelly's plan. Many of the central elements of her plan are directionally correct. No one has yet proposed a comprehensive method of regulating LDCs that does not create new problems in attempting to resolve old problems. In this difficult area, the search must be for a satisfactory second best solution that represents a compromise among societal goals. Professor Kelly's paper aids that search materially.