

Can Law Manage Competitive Energy Markets

David B. Spence

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CAN LAW MANAGE COMPETITIVE ENERGY MARKETS?

David B. Spence†

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Over the last three decades, the world's industrialized democracies have introduced competition into previously noncompetitive, regulated markets. While this deregulatory¹ trend is by no means absolute or uniform, what were once tightly regulated airline, banking, minerals, telephone, gas, and electric markets are now far more open and less regulated than ever before.² Where governments once favored state ownership or intrusive public utility regulation, they now seem willing to restructure regulated markets to try some form of competition. In the energy industry, these first experiments with competition have not gone smoothly. Emerging

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¹ This trend is popularly known as "deregulation." See, e.g., Jim Yardley, *Texas Learns in California How Not to Deregulate*, N.Y. TIMES, Jan. 10, 2001, at A12. However, many scholars prefer the term "restructuring," since a great deal of regulation remains. See, e.g., David B. Spence, *The Politics of Electricity Restructuring: Theory vs. Practice*, 40 WAKE FOREST L. REV. 417 (2005).

² For a general discussion of this trend, see COMPETITION IN REGULATED INDUSTRIES (Dieter Helm & Tim Jenkinson eds., 1998).

energy markets have shown wholesale price volatility³ and higher-than-expected prices⁴ in both the United States and Europe. The inability of prospective entrants to secure access to energy⁵ (for resale to prospective customers), to the network⁶ (for delivering energy to customers), or to both has further hampered the move toward a single European market in energy. These disappointing experiences with restructured energy markets have slowed the march toward markets in some places and spawned frustration among the proponents of restructuring. The movement toward markets continues but much more haltingly and cautiously than before.⁷

Can restructuring work? More specifically, can law manage competitive energy markets so that they realize the promise of lower prices? In order to answer that question, we must first address others. First, what is the objective of restructuring? How do we measure success? Are we seeking a Pareto improvement⁸ over the status quo, or is a Kaldor-Hicks improvement⁹ sufficient? If we seek Kaldor-Hicks improvements, can law protect the vulnerable in these new markets without destroying the markets themselves? In this Article, I argue that policymakers and commentators have underappreciated the role politics plays in answering these questions, sometimes ignoring the tension between the political imperatives and economic imperatives that guide the restructuring process.

After explaining in Part I of the Article how and why energy markets have been restructured, Part II examines briefly our initial experiences with restructuring in both the United States and Europe. That examination acknowledges that restructuring has not (yet) achieved the benefits for which some of its proponents hoped. Part III ascribes at least some of the responsibility for these defeated expectations to conflicts between the political and economic imperatives driving the restructuring process. Part IV concludes with a plea for a policy that does not paper over these conflicts and does not shield ratepayers (read, voters) from an essential truth about

³ See *infra* Part II.A.

⁴ See *infra* notes 68–76 and accompanying text.

⁵ See *infra* Part II.C.1.

⁶ See *infra* Part II.C.2.

⁷ See *infra* notes 143–47 and accompanying text.

⁸ Economists use the term “Pareto efficient” to refer to a distribution of resources for which no different distribution can make someone better off without making someone else worse off. See HAL R. VARIAN, *INTERMEDIATE MICROECONOMICS: A MODERN APPROACH* 15 (7th ed. 2006). Thus, a Pareto improvement is a change that makes at least one person better off without making anyone worse off. See *id.*

⁹ Economists use the term “Kaldor-Hicks efficient” to refer to a distribution that maximizes social net benefits. See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 13–14 (7th ed. 2007). Thus, a Kaldor-Hicks improvement is a change that increases social net benefits but does not necessarily make everyone better off. See *id.* at 14.

energy markets: namely, *if* we choose to seek the net benefits of market efficiency, we must also accept that *net* benefits are not merely benefits. That is, they represent benefits to some (or during some periods of time) and costs to others (or at other times). Part IV suggests that by confronting voters with this tradeoff, they ought to choose, through their elected representatives, either to accept the costs that come with market benefits or to pay more for less price risk.

I

FROM REGULATION TO MARKETS

The recent restructuring of energy markets represents a sharp departure from traditional thinking and historical practice. Shortly after the creation of the electric and gas industries more than a century ago, policymakers in Europe and the United States concluded that both industries were natural monopolies for which competition was inappropriate due to their large economies of scale, or decreasing marginal and average costs across a very large range of output.¹⁰ Hence, a monopoly supplier would be more efficient from a cost standpoint. However, a monopoly supplier left to its own devices would produce goods of a lower quantity at a higher price, thereby capturing for itself some of what would, in a competitive market, be consumer surplus.¹¹ Because energy was too important a commodity to be left to the whims of the market,¹² governments the world over determined that they would be deeply involved in electric and gas sales and services as providers, regulators, or both.

Consequently, in much of the world, electric and gas services were provided by state-owned firms, at least until very recently.¹³ In Europe, for example, state-owned firms were the norm prior to the

¹⁰ See James McManus, *Natural Gas*, in 2 ENERGY LAW AND TRANSACTIONS ch. 50, § 50.04 [1][a][i]–[ii] (David J. Muchow & William A. Mogel eds., 2003); Jeffrey W. Meyers & Robert M. Lamkin, *Electricity*, in 2 ENERGY LAW AND TRANSACTIONS, *supra*, ch. 52, § 52.02.

¹¹ See, e.g., VARIAN, *supra* note 8, at 429–30. This captured consumer surplus is termed “producer surplus.” See *id.* at 431–32. Monopoly pricing will also reduce the total value of the producer surplus and the consumer surplus in a market. See *id.* at 432–33. This lost value is called the “deadweight loss.” *Id.*

¹² See McManus, *supra* note 10, § 50.04 [1][a][i]–[ii]; Meyers & Lamkin, *supra* note 10, § 52.03.

¹³ See, e.g., Gerald D. Prager, *Pemex at the Crossroads: A National Oil Industry in Crisis*, 15 Hous. J. INT’L L. 115, 139 (1992) (explaining that, as of 1992, Guatemala was Latin America’s only oil-producing nation without a state-owned oil company).

late 1980s,¹⁴ and they remain common in the developing world.¹⁵ In the United States, by contrast, private provision of these services was the dominant model,¹⁶ though not the only one.¹⁷ Under this model, governments licensed private firms as monopoly suppliers, closely regulating their rates and conditions of service.¹⁸ Each of these approaches to the provision of energy services had its own way of controlling the tendency of monopoly sellers toward monopoly pricing. In democracies using the state-owned enterprise model, political pressure—namely, voters' desire for cheap, reliable energy—would act as a check on monopoly pricing.¹⁹ Countries using the private sector model used regulation to control price. In the United States, for example, the Federal Power Act of 1935 and its state analogs created regulatory agencies to review the electric and gas rates charged

¹⁴ See Arek Krasnodebski & Tomasz Janas, *Energy Transactions in the European Economic Community*, in 6 ENERGY LAW AND TRANSACTIONS, *supra* note 10, ch. 163, 163-1 to -2. Examples include the predecessors to firms like France's Electricite de France (EDF), Italy's Enel and Eni, Germany's E.On, Spain's Endesa, and Britain's National Power (NP) and PowerGen (PG).

¹⁵ For example, Mexico's Comisión Federal de Electricidad, *see* John P. Mathis et al., *Electric Power and Natural Gas Legislation in Mexico and the New Regulatory Framework*, in 6 ENERGY LAW AND TRANSACTIONS, *supra* note 10, ch. 165, §§ 165.01-.02, and Brazil's Eletrobras, *see* James v. Derrick, Jr. & Robert H. Walls, Jr., *Natural Gas and Electric Markets in South America*, in 6 ENERGY LAW AND TRANSACTIONS, *supra* note 10, ch. 164, § 164.03[3] (noting, however, that privatization has begun), and most of Latin America relies on state-owned firms to provide gas and electric service. *See id.* § 164.01[1].

¹⁶ In the late nineteenth and early twentieth centuries, public demand for electric power grew, and electric systems arose in major American metropolitan areas. Some were publicly owned, others privately owned. Some used central station technology, delivering power over a grid; others employed smaller, geographically distributed generators. *See* Meyers & Lamkin, *supra* note 10, § 52.01. The fight over public versus private ownership is chronicled in ROBERT A. CARO, *THE POWER BROKER: ROBERT MOSES AND THE FALL OF NEW YORK* (1975). *See also* Patrick McGuire & Mark Granovetter, *Business and Bias in Public Policy Formation: The National Civic Federation and Social Construction of Electric Utility Regulation, 1905-1907* (Aug. 1998) (unpublished manuscript, on file with author). That fight eventually produced the system we have today, dominated by state-chartered, vertically integrated, investor-owned utilities providing monopoly electric service within their designated service areas, using their own central-station technology and distribution grid. *See* PAUL L. JOSKOW & RICHARD SCHMALENSEE, *MARKETS FOR POWER: AN ANALYSIS OF ELECTRIC UTILITY DEREGULATION* 11-13 (1983).

¹⁷ Fifteen percent of American consumers of electric power receive their service from publicly owned entities, such as municipal power agencies like the Los Angeles Department of Water and Power or federal power agencies like the Tennessee Valley Authority. Another nine percent belong to rural electric cooperatives. Investor-owned utilities serve the remainder. *See* U.S. ENERGY INFO. ADMIN., *ELECTRIC POWER INDUSTRY OVERVIEW*, available at <http://www.eia.doe.gov/cneaf/electricity/page/prim2/toc2.html> (last visited Mar. 8, 2008).

¹⁸ *See* JOSKOW & SCHMALENSEE, *supra* note 16, at 13 (describing the franchising process).

¹⁹ In nondemocratic societies, a Machiavellian equivalent may have been at work. Rulers whose legitimacy does not come from elections might depend on the provision of a sound economy to ensure social stability and their own legitimacy. Certainly, the provision of cheap and reliable energy services is an integral part of that mission.

by private monopoly service providers.²⁰ Traditional regulation guaranteed that licensed monopoly energy service providers would be able to charge administratively established rates that allowed the companies a “fair” return on their prudently made investments.²¹ In return, these “public utilities” agreed to meet a variety of service obligations to the general public, including the obligation to serve all eligible customers and provide a reliable source of supply.²² State public service commissions regulated retail rates, and the Federal Energy Regulatory Commission (FERC) regulated wholesale rates.²³

Whether state-owned or privately owned and publicly regulated, energy service providers in many places were vertically integrated companies, producing most of their own energy (and buying some on wholesale markets), transmitting²⁴ it over their own distribution systems, and selling it directly to their retail customers.²⁵ Figure 1 represents such a situation. In Figure 1, EnergyCo owns: (i) the energy

²⁰ See Meyers & Lamkin, *supra* note 10, § 52.02.

²¹ The standard way of describing the ratemaking process is to say that in rate cases, utility commissions typically make rate decisions using the following equation: $R = Br + O$, where R represents the company's total revenue requirements, B represents the rate base, r represents the permissible rate of return on investment, and O represents permissible operating expenses. See SIDNEY A. SHAPIRO & JOSEPH P. TOMAIN, *REGULATORY LAW AND POLICY: CASES AND MATERIALS* 109 (3d ed. 2003). Assets that are used for and useful to the company's task of supplying electric service are includable within the rate base, and the company is guaranteed a fair rate of return on these assets. See *id.* at 110. Most states treat any prudently made investment in such assets as properly includable in the rate base. See *id.* at 111.

²² These obligations include the duty to provide reliable service to all qualified customers, rules against discrimination in the provision of the service, and more. See, e.g., 66 PA. CONS. STAT. ANN. §§ 1501–1502 (West 2000 & Supp. 2007).

²³ The jurisdictional line between the FERC and state commissions does not perfectly track the line between wholesale and retail transactions, but prior to unbundling, the FERC did not exercise jurisdiction over prices of retail energy transactions. See *New York v. FERC*, 535 U.S. 1, 5–7 (2002).

²⁴ Traditionally, American regulators have used the term “transmission” to describe the movement of electricity over the high voltage network, and “distribution” to describe the movement of electricity over lower voltage lines closer to the end users. See Meyers & Lamkin, *supra* note 10, § 52.01. Similarly, regulators use the term “transportation” to describe the movement of gas through high-pressure pipes, and “distribution” to describe movement through smaller pipes closer to end users. See Jonathan D. Schneider et al., *Natural Gas Transportation*, in 4 *ENERGY LAW AND TRANSACTIONS: CUMULATIVE SUPPLEMENT* ch. 83, § 83.01 (David J. Muchow & William A. Mogel eds., 2004). Consistent with recent practice at both the FERC and the European Commission, when discussing general issues associated with the movement of energy through a delivery network, I will use the term “transmission.”

²⁵ See *New York v. FERC*, 533 U.S. at 5. There were many specific exceptions to this general truth in different places. For example, in the United States, gas producers were unaffiliated with gas pipelines, at least until recently. See McManus, *supra* note 10, § 50.03[1][a]. In Germany, retailers of electricity were not affiliated with the generators and transmission owners. See Thomas von Danwitz, *Regulation and Liberalization of the European Electricity Market—A German View*, 27 *ENERGY L.J.* 423, 427–28 (2006) (describing the three-tiered German system). Nevertheless, it is fair to say that prior to restructuring, a large degree of vertical integration was commonplace in many parts of the world.

production units (electric generators or gas production wells) that contribute energy to the network; (ii) the transmission and delivery network; and (iii) the energy that runs through the network, which in turn is sold to its customers. Under this traditional vertically integrated structure, arms-length wholesale energy transactions were rare.²⁶ When the monopoly service provider lacked the energy to meet demand, it could purchase energy from neighboring providers; when those neighboring providers needed energy, the monopoly service provider could return the favor.²⁷ As the owner of the network, it provided the necessary balancing services—it balanced supply and demand over time to ensure that the amount of energy in the network was sufficient to meet ever-changing customer demands.²⁸ Customers paid a rate for energy service that reflected all of these functions—production, distribution, and sale of energy—bundled together into one service.

The impulse to restructure the electric and gas industries had both an economic and a political basis. Its economic rationale was part of a sea change in economic thinking in the 1970s and 1980s, which saw increased faith in the ability of markets to achieve efficient outcomes through competition and reduced faith in the ability of governments to achieve efficient outcomes through regulation or production of service.²⁹ State-owned and regulated firms had very little incentive to keep the cost of service low. Indeed, most state-owned firms were not self-financed, and often there were no profits to maximize.³⁰ Correspondingly, American public utilities had an incentive

²⁶ See Meyers & Lamkin, *supra* note 10, § 52.01[6][[b][ii]] (discussing the more common practice of cooperation through pooling).

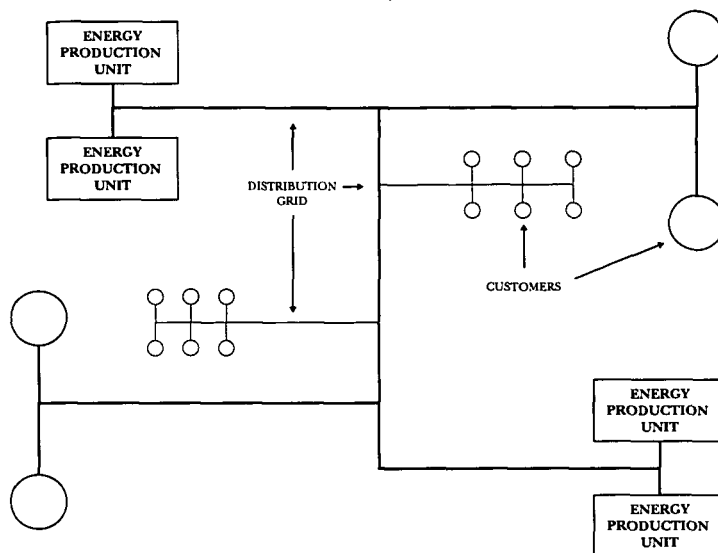
²⁷ See Richard D. Cudahy, *Whither Deregulation: A Look at the Portents*, 58 N.Y.U. ANN. SURV. AM. L. 155, 172 (2001).

²⁸ Gas networks have very little associated storage capacity, see William F. Bailey et al., *State Regulation of Oil and Gas Production*, in 1 ENERGY LAW AND TRANSACTIONS: CUMULATIVE SUPPLEMENT, *supra* note 24, ch. 5, § 5.01[2], and electric networks have essentially none, see Reinier H.J.H. Lock & Marlene L. Stein, *Electricity Transmission*, in 4 ENERGY LAW AND TRANSACTIONS: CUMULATIVE SUPPLEMENT, *supra* note 24, ch. 81, § 81.02[1]. That means that at any given moment, the amount of energy being added to the system by producers necessarily equals the amount of energy being removed by users. Constant pressure moves gas throughout the network; without sufficient pressure, customers cannot take gas from the system. See INST. OF GAS TECH., NATURAL GAS IN NONTECHNICAL LANGUAGE 43 (Rebecca L. Busby ed., 1999) (describing the system of high-pressure natural gas pipelines). Similarly, electrons move through the electric grid following the path of least resistance. See *id.* These essential facts create the need for balancing services and management of the network to ensure reliability of service. See *id.* The network managers must ensure that as demand fluctuates, additional energy is ready to come on- and off-line at very short notice and that pathways are not too congested, among other things. See *id.*

²⁹ See SIDNEY A. SHAPIRO & JOSEPH P. TOMAIN, REGULATORY LAW AND POLICY: CASES AND MATERIALS 20–21 (3d ed. 2003) (describing a move away from regulation in general and noting the effect on natural gas and electricity industries).

³⁰ State-owned firms sometimes provided service for free or for a nominal charge. This was true not only in former Soviet block countries but in some democracies as well.

FIGURE 1: ENERGYCO'S SERVICE AREA



to maximize capital investment instead because under the traditional “cost plus fair return” approach to setting rates, a larger “rate base” meant more revenues.³¹

Furthermore, rate regulation of investor-owned utilities entails considerable transaction costs.³² Regulators must depend on the regulated firms to divulge their cost information. While Commission staff and ratepayer advocate groups intervene in rate cases and review this information with a fine-tooth comb, they cannot hope to overcome the information asymmetries inherent in the process.³³ To its critics, a system with high transaction costs, information asymmetries, and perverse incentives will yield unnecessarily high electric rates in both wholesale and retail markets.³⁴

India, for example, subsidized residential prices and provided free electricity to farms. HUBERT H. REINEBERG, *India's Electricity Sector in Transition: Can Its Giant Goals Be Met?*, 19 *ELECTRICITY J.* 77 (2006) (describing artificially low electricity rates historically in India). Mexican history is similar. See Rafael Friedmann & Claudia Sheinbaum, *Mexican Electric End-Use Efficiency: Experiences to Date*, 23 *ANN. REV. ENERGY ENV'T* 225 (1998) (describing Mexican subsidies historically). Even if state-owned firms charged for service, they were not necessarily operated as profit-maximizing businesses, and their revenues may have gone into the national treasury and been used for purposes other than those of the firm.

³¹ See *supra* notes 20–22 and accompanying text (discussing how public utilities could charge rates to receive compensation for good investments).

³² See Antonio Estache & David Martimort, *Politics, Transaction Costs, and the Design of Regulatory Institutions* 1 n.2 (World Bank Pol. Research, Working Paper No. 2073, 1999), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=620512 (describing transaction costs in regulation as an asymmetric information problem).

³³ See *id.*

³⁴ For a good discussion of these efficiency issues, see Stephen Breyer, *Analyzing Regulatory Failure: Mismatches, Less Restrictive Alternatives, and Reform*, 92 *HARV. L. REV.* 547, 551,

This criticism formed the philosophical basis of the deregulatory agenda of the Reagan and Thatcher governments in the 1980s,³⁵ and economists began to challenge the premise that the provision of energy service is a natural monopoly at all. Energy service might be a natural monopoly if the production and delivery of energy were necessarily one bundled product; but they are not. Rather, the production and delivery of energy are two separate products. Delivery—transmission and distribution service—is a natural monopoly because the construction of duplicate delivery networks between two points is often inefficient. The production (and sale) of energy, however, is not a natural monopoly. We can *unbundle* production (and sales) from distribution so that buyers in wholesale and retail markets can choose their energy supplier even if they must take delivery service from a monopoly provider. Competition in energy production should eventually weed out those producers that cannot provide reliable service at competitive prices. Accordingly, consumers—broadly defined to include all consumer classes—should benefit from the cost discipline that competition brings.³⁶ In this way, competitive markets should represent a Kaldor-Hicks improvement over regulated markets. Thus, proponents of restructuring argued that distribution service should remain regulated while energy production should be open to competition.

Once this theoretical foundation was fully developed, restructuring of the electric and gas industries ensued remarkably quickly. In the 1980s, the Thatcher government in the United Kingdom privatized state-owned gas and electric firms, eventually breaking up the former state-owned monopoly and mandating unbundling of production from distribution.³⁷ At the same time, in the United States, a series of FERC initiatives in the 1980s and early 1990s mandated the unbundling of production and wholesale sales from distribution in

609 (1979) (providing a basic framework for analyzing regulation and concluding that the energy market is a good candidate for “less restrictive alternatives” to regulation).

³⁵ See Ronald Chen & Jon Hanson, *The Illusion of Law: The Legitimizing Schemas of Modern Policy and Corporate Law*, 103 MICH. L. REV. 1, 10–11 (2004) (noting that Margaret Thatcher thought that “[g]overnment was doing too much” and that Ronald Reagan shared her ideological views); see also Daniel Yergin, *The Revolution of 1979*, WALL ST. J., May 3, 1999, at A22 (describing the joint message of Margaret Thatcher and Deng Xiaoping as an economic revolution embracing markets over communism).

³⁶ See, e.g., Memorandum from the Elec. Power Supply Ass’n on the Benefits of Competition 4–5, available at http://www.epsa.org/forms/uploadFiles/347900000011.filename.Competitive_Benefits_Memo_-_121003.pdf (last visited Mar. 8, 2008) (citing several examples of price reductions after increased competition in power suppliers).

³⁷ See William W. Hogan, Professor of Public Policy and Administration, John F. Kennedy School of Government, Harvard University, Making Markets in Power, Lecture at the Royal Society for the Encouragement of Arts, Manufactures & Commerce 4–5 (Feb. 21, 2000), available at <http://ksghome.harvard.edu/~whogan/rso0200.pdf>.

the gas industry,³⁸ transforming pipelines that were once middlemen selling bundled energy services into “common carriers” providing delivery services to all users on a nondiscriminatory basis.³⁹ Shortly thereafter, the FERC and Congress⁴⁰ brought full unbundling of wholesale electricity markets,⁴¹ prompting more vertically integrated

³⁸ Gas shortages in the 1970s and market distortions borne (in part) of poor regulation prompted the FERC to restructure gas markets first. See generally Richard J. Pierce, Jr., *Reconstituting the Natural Gas Industry from Wellhead to Burnertip*, 9 ENERGY L.J. 1 (1988) (summarizing the disastrous experiment with regulating producer sales and the road to deregulation of such sales). In 1985, the FERC issued Order 436, compelling any pipeline providing voluntary third-party transmission services to do so on a nondiscriminatory, open-access basis. See Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol, Order No. 436, 50 Fed. Reg. 42,408 (Oct. 18, 1985) (to be codified at 18 C.F.R. pts. 2, 157, 250, 284, 375, and 381). Seven years later, the FERC ordered full unbundling of transmission and energy sales by all pipelines in Order 636, freeing pipeline customers—mostly local distribution utilities, electric generators, and large industrial users—to purchase their gas from the least-cost seller, using the pipeline only for transmission services. See Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol; Order Denyin Rehearing and Clarifying Order Nos. 636 and 636-A, Order No. 636-B, 57 Fed. Reg. 57,911 (Dec. 8, 1992) [hereinafter FERC Order No. 636-B] (to be codified at 18 C.F.R. pt. 284).

³⁹ See generally Pierce, *supra* note 38 (discussing the distinction between “common carriers” and “public utilities” in regulatory law). It was not until Order 636 that pipelines were saddled with the obligation to provide nondiscriminatory transmission service to the public. See FERC Order No. 636-B, *supra* note 38.

⁴⁰ The pressure to unbundle transmission from sales in the electricity industry had been building in the United States since passage of the Public Utility Regulatory Policies Act of 1978 (PURPA), one of the statutory responses to the energy crises of the 1970s. Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, § 2, 92 Stat. 3117, 3119 (codified as amended in scattered sections of 7, 15, 16, and 30 U.S.C.). PURPA seeks to promote the development of renewable and efficient generation technologies by offering nonutility entrepreneurs financial incentives to build generation plants using such technologies. See *id.* The statute required electric utilities to purchase power from these plants, called “qualifying facilities” or “QFs,” at favorable rates. See *id.* By the 1990s, Congress and the FERC were growing more comfortable with the notion that production and wholesale sales of electricity could be a competitive business. For example, in 1992, Congress expanded the class of nonutility generators to include “exempt wholesale generators” (EWGs); EWGs did not need to meet the size and fuel specifications of QFs but could sell power wholesale without having to comply with the extensive requirements applicable to investor-owned utilities under the Federal Power Act. See Energy Policy Act of 1992, Pub. L. No. 102-486, § 711, 106 Stat. 2776, 2905–10 (codified as amended in scattered sections of 15 U.S.C.).

⁴¹ While the Energy Policy Act of 1992 and prior FERC actions had already mandated that utilities supply third parties with transmission services under certain circumstances (called “wheeling”), wholesale electricity restructuring began in earnest with FERC’s Orders 888 and 889, issued in 1996. See Energy Policy Act of 1992; § 721, 106 Stat. at 2915; Open Access Same-Time Information System (Formerly Real-Time Information Networks) and Standards of Conduct, Order No. 889, 61 Fed. Reg. 21,737 (May 10, 1996) [hereinafter FERC Order No. 889] (to be codified at 18 C.F.R. pt. 37); Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities, Order No. 888, 61 Fed. Reg. 21,540 (May 10, 1996) [hereinafter FERC Order No. 888] (to be codified at 18 C.F.R. pt. 37); FERC Order No. 636-B, *supra* note 38. Order 888 required transmission line owners to file so-called “open-access tariffs” offering nondiscriminatory transmission services and to “functionally unbundle[]” transmission from electricity sales. See FERC Order No. 888, *supra*. Order 889 mandated transparency in

electric utilities to sell or spin off generation assets and to separate their transmission and distribution functions from their production, either legally or functionally within the firm.⁴² To facilitate this separation, the FERC encouraged the formation of independent transmission-system operators to manage transmission systems;⁴³ and by the end of the twentieth century, robust gas and electric wholesale markets were common in the United States.⁴⁴

The restructuring of American retail energy markets has been more gradual and less uniform. A sizeable minority of American states have followed the national lead, taking a variety of different approaches to unbundle production and retail electric sales from local distribution, thus introducing competition into retail sales markets.⁴⁵ Only a few American states have tried to unbundle energy sales from distribution in gas services.⁴⁶ The California energy crisis of 2000–2001 cowed some states into halting their restructuring plans, though retail competition continued in sixteen states and the District

transmission services by requiring all takers of transmission services (including affiliates of the transmission owner) to take such services using an open-access posting system. See FERC Order No. 889, *supra*.

⁴² See FERC Order No. 888, *supra* note 41. Full legal separation was not required though some firms chose that route. See *id.* at 21,552.

⁴³ See *id.* This action was prompted by the concern that fragmented ownership of the transmission grid would hinder the development and smooth operation of electricity markets, as each of many owners demanded a separate rate from customers for the transmission of electricity along each segment of the grid (so-called “pancaking” of rates). Order 888 encouraged transmission owners to transfer operational control over their transmission lines to independent system operators (ISOs) who would manage the grid independently from the interests of any particular transmission system stakeholder. See *id.* Order 888 prompted the formation of ISOs in New York, the Middle Atlantic region (so-called “PJM,” or Pennsylvania-New Jersey-Maryland ISO), New England, and a few other places. See *id.* at 21,593–94. In an attempt to further encourage and broaden the geographic scope of this trend, the FERC issued Order 2000, encouraging the formation of so-called Regional Transmission Organizations (RTOs). See Regional Transmission Organizations, Order No. 2000, 65 Fed. Reg. 810 (Jan. 6, 2000) [hereinafter FERC Order No. 2000] (to be codified at 18 C.F.R. pt. 35). See generally FERC, RTO/ISO, <http://www.ferc.gov/industries/electric/indus-act/rto.asp> (last visited Feb. 1, 2008) (describing the existing RTOs and providing a map with links to regional-specific information).

⁴⁴ See ENERGY INFO. ADMIN., U.S. NATURAL GAS MARKETS: RECENT TRENDS AND PROSPECTS FOR THE FUTURE 1, 16, 20 (2001); Stephen P. Sherwin, *Deregulation of Electricity in New York: A Continuing Odyssey 1996–2001*, 12 ALB. L.J. SCI. & TECH. 263, 273, 278–80 (2001).

⁴⁵ See ENERGY INFO. ADMIN., *supra* note 44, at 20; Sherwin, *supra* note 44, at 273, 278–80; Mark Hand, *Retail Choice Rides Again: A Mixed Market in the Lone Star State*, PUB. UTIL. FORT., July 15, 2002 (Magazine), at 16; David Sibley & Steven Wolens, *Plans for Texas’ Deregulation Are Looking Bright*, SAN ANTONIO EXPRESS-NEWS, Dec. 29, 2000, at 5C; Yardley, *supra* note 1.

⁴⁶ For a summary of state efforts to restructure retail gas markets, see ENERGY INFO. ADMIN., NATURAL GAS RESIDENTIAL CHOICE PROGRAMS (2007), available at http://www.eia.doe.gov/oil_gas/natural_gas/restructure/restructure.html (classifying the restructuring efforts of states according to active unbundling, inactive or limited unbundling, unbundling in the implementation phase, partial unbundling, no unbundling, and discontinued unbundling programs).

of Columbia.⁴⁷ Regardless of the uneven nature of American retail restructuring, wholesale trading markets in both gas and electricity continued to thrive in many parts of the United States.⁴⁸

While the United States was restructuring its markets, the privatization of European state-owned energy firms⁴⁹ and the European Union's commitment to a "single market" in goods and services⁵⁰ fed the restructuring impulse in Europe. The European Commission's first initiatives toward the creation of competitive European energy markets came in the late 1990s in a series of directives⁵¹ to national governments, which laid the groundwork⁵² for the unbundling of production, sales, and distribution. The Commission's 2003 directives⁵³ finally mandated functional unbundling⁵⁴ of integrated firms and es-

⁴⁷ See VA. STATE CORP. COMM'N, 2005 PERFORMANCE REVIEW OF ELECTRIC POWER MARKETS: UPDATE AND PERSPECTIVE 34 (2005), http://www.scc.virginia.gov/caseinfo/reports/2005_rose.pdf (reporting that sixteen states and the District of Columbia allow retail access to electricity markets). See *infra* notes 238–242 and accompanying text for a description of postrestructuring developments in American states.

⁴⁸ Gas markets are well developed and mature, with trading organized around "hubs." Organized electricity markets tend to exist where states have restructured markets around an ISO or RTO. For a good summary of the major American gas and electric trading hubs, see FERC OFFICE OF MKT. OVERSIGHT AND INVESTIGATIONS, 2004 STATE OF THE MARKETS REPORT 7–8 (2005), available at <http://www.ferc.gov/market-oversight/st-mkt-ovr/som-rpt-2004.pdf>.

⁴⁹ See Stilpon Nestor & Ladan Mahboobi, *Privatisation Trends*, FIN. MARKET TRENDS No. 72, Feb. 1999, at 131–32, available at <http://www.oecd.org/dataoecd/57/27/1897869.pdf>; see also JOSKOW & SCHMALENSSEE, *supra* note 16 (providing background on the electric-power industry and its deregulation).

⁵⁰ See Single European Act, art. 13, 1986 O.J. (L 169) 7 (EC). Member states of the European Union (EU) signed the Single European Act in 1986, committing the EU to the formation of a single market in goods and services by 1992. The Act modified the foundational laws of the EU, which were embodied in a series of treaties beginning with the 1957 Treaty of Rome. See Single European Act, 1986 O.J. (L 169) (providing a concise summary of the EU's foundational laws and of the Single European Act).

⁵¹ At the European level, the European Commission's Directorate of Energy and Transport has been the primary actor pushing restructuring, primarily through "directives" which do not have the force of law. Rather, they direct national governments to enact domestic legislation implementing the directive. The consequences for failure to implement the directive are specified by the treaties that form the basic law of the European Union. In most cases, the European Commission initiates proceedings against the noncompliant member state that could eventually culminate in litigation before the European Court of Justice. See Charles W. Smitherman III, *Growing Pains: European Union Enlargement and the Restructuring of the European Commission Under the Treaty of Nice*, 15 FLA. J. INT'L L. 243, 249–54 (2002) (describing this enforcement process); see also European Comm'n, *Report from the Commission to the Council: Explaining Europe's Enlargement*, COM (2002) 281 final (June 5, 2002) (analyzing the challenges and benefits of the enlargement of the European Union).

⁵² Council Directive 98/30, art. 13, 1998 O.J. (L 204) 6–7 (EC) (laying the groundwork for later restructuring by mandating that integrated firms keep separate accounts for transmission and energy sales).

⁵³ Council Directive 2003/55, 2003 O.J. (L 176) 57 (EC).

⁵⁴ Council Directive 2003/54, arts. 10, 15, 2003 O.J. (L 176) 37, 45, 46 (EC) (specifically declining to mandate full legal or "ownership" unbundling).

tablished a timetable for introducing competition and consumer choice throughout European gas and electricity markets.⁵⁵ Like their American counterparts, the 2003 directives encouraged member states to form independent transmission system operators⁵⁶ to manage networks independently of any particular system stakeholder. Despite the lack of physical integration of the energy transmission network across many national borders and the absence of a single European energy regulator to enforce restructuring mandates directly, increasingly active wholesale markets are now functioning in the United Kingdom,⁵⁷ Scandinavia,⁵⁸ France,⁵⁹ Belgium,⁶⁰ and various parts of central Europe.⁶¹

II

THE PERFORMANCE OF ENERGY MARKETS SO FAR

So, how have energy markets performed so far? While results are mixed, both American and European regulators have struggled with the problem of cultivating energy markets that will promote healthy competition in energy sales, reduce prices for all customers, and control the exercise of market power by incumbents.

A. Prices

While there is some disagreement about the particular effects of restructuring on prices, restructuring has not brought the kind of general decline in energy prices across customer classes that many expected. Separating cost-based price effects from the effects of differing regulatory regimes is extremely difficult, and academic studies of the effects of restructuring reach conflicting conclusions. Among studies of American markets, studies of the so-called PJM electricity market,⁶² reputed to be one of the most efficient in the United States, tend to find measurable efficiency gains in the form of lower-

⁵⁵ *Id.* art. 10, at 52–53.

⁵⁶ The European Commission uses this term, which is frequently abbreviated “TSO,” to refer to independent operators of delivery networks. In the American system, they are called either ISOs or RTOs. These organizations provide a variety of network management functions and their management decisions are made without regard to the wishes of the delivery system owners.

⁵⁷ ELEXON, <http://www.elexon.co.uk> (last visited Feb. 2, 2008).

⁵⁸ Nord Pool, <http://www.nordpool.com> (last visited Feb. 2, 2008).

⁵⁹ Powernext, <http://www.powernext.fr> (last visited Feb. 2, 2008).

⁶⁰ Belpex, <http://www.belpex.be> (last visited Feb. 2, 2008).

⁶¹ See European Comm’n, Directorate Gen. for Competition, *Report on Energy Sector Inquiry*, at 331–35, SEC (2006) 1724 (Jan. 10, 2007), available at http://ec.europa.eu/comm/competition/sectors/energy/inquiry/full_report_part4.pdf (providing a detailed, current discussion of existing European energy markets).

⁶² “PJM” stands for “Pennsylvania-New Jersey-Maryland” and refers to the market administered by the PJM independent system operator and regional transmission organization, the borders of which extend well beyond those three states. For a map of the PJM’s

than-expected prices.⁶³ Some other studies are less sanguine about markets, ascribing to restructuring not only cost increases but also a host of other ills. American wholesale gas markets appear to be functioning fairly well,⁶⁴ unlike their European counterparts;⁶⁵ however, in neither place is retail competition in gas sales widespread.⁶⁶ Studies of the effects of restructuring on European energy prices reach similarly conflicting conclusions, some praising the apparently well-functioning U.K. markets, but most concluding generally that prices have increased in most European markets since the 2003 directives. While the European Commission believes that gas price increases are attributable to factors other than restructuring,⁶⁷ prices have nevertheless been volatile and high.

Whether or not prices are lower than they would have been but for restructuring, they certainly are not lower than they were before restructuring. It is clear that prices remain high in many places and large price disparities persist across regions. In the fourth quarter of 2006, residential retail customers in New England paid over fifty percent more for gas⁶⁸ and about twice as much for electricity as their

market, see PJM, Territory Served, <http://www.pjm.com/documents/maps/pjm-zones.pdf> (last visited Mar. 24, 2008).

⁶³ See, e.g., Bruce Biewald et al., Synapse Energy Econ., Inc., Elec. Prices in PJM: A Comparison of Wholesale Power Costs in the PJM Mkt. to Indexed Generation Serv. Costs (June 3, 2004) (on file with The PJM Interconnection, L.L.C.); Scott M. Harvey et al., Analysis of the Impact of Coordinated Electricity Markets on Consumer Electricity Charges (Nov. 20, 2006) (unpublished manuscript, on file with LECG), available at http://www.ksg.harvard.edu/hepg/Papers/LECG_Analysis_112006pdf.pdf (finding benefits in both the PJM and New York State markets); Ronald J. Sutherland, Ctr. for the Advancement of Energy Mkts., Estimating the Effects of Restructuring Elec. Mkts.: An Application to the PJM Region (Sept. 2003), available at <http://www.caem.org/website/pdf/PJM.pdf> (estimating significant savings across customers classes within the so-called PJM market in the middle Atlantic region of the United States); see also ENERGY INFO. ADMIN., NATURAL GAS MARKETER PRICES AND SALES TO RESIDENTIAL AND COMMERCIAL CUSTOMERS: 2002–2005 (2007), available at http://www.eia.doe.gov/pub/oil_gas/natural_gas/feature_articles/2007/marketerprices/marketerprices.pdf (concluding that customers in New York, Pennsylvania, New Jersey, and Maryland who purchased gas from competitive suppliers paid less than those who purchased gas from regulated utilities); Kira R. Fabrizio, Nancy L. Rose & Catherine D. Wolfram, *Do Markets Reduce Costs? Assessing the Impact of Regulatory Restructuring on U.S. Electric Generation Efficiency*, 97 AM. ECON. REV. 1250 (2007) (finding that investor-owned electric generating plants in states that restructured their wholesale electricity markets experienced greater efficiency gains, in the form of cost reductions, than plants that were insulated from competition).

⁶⁴ See *infra* notes 86–90 and accompanying text.

⁶⁵ See *infra* notes 91–98 and accompanying text.

⁶⁶ Tom Tiernan & Bob Matyi, *While Switching Is Up in Texas and Illinois, Market Conditions Weaken in Most Areas*, PLATTS POWER MKTS. WK., Feb. 26, 2007, at 1.

⁶⁷ Comm'n of the European Cmty., *Communication from the Commission to the Council and the European Parliament: Prospects for the Internal Gas and Electricity Market*, at 4, COM (2006) 841 final (Oct. 1, 2007).

⁶⁸ See ENERGY INFO. ADMIN., SHORT-TERM ENERGY OUTLOOK 15 tbl.6c (2007), available at <http://www.eia.doe.gov/pub/forecasting/steo/oldsteos/mar07.pdf> (showing that New

counterparts in the central part of the country.⁶⁹ More importantly, those consumers facing the highest prices reside in the very states that pursued electricity restructuring, while their counterparts living in regions where retail restructuring was not the norm continue to pay less.⁷⁰ There are clear regional disparities in Europe as well. For example, during 2006, some Italian users' average electricity prices were almost fifty percent higher than for their central European counterparts.⁷¹

To what factors can we attribute the persistence of high prices and regional rate disparities? Some analysts ascribe the bulk of the problem to increases in the cost of inputs.⁷² The European Commission holds this view,⁷³ though it also attributes high prices to the failure of robust competition to materialize in some European markets.⁷⁴

Englanders paid more than \$16 per thousand cubic feet (mcf) of gas while some residents of the central part of the country paid less than \$11).

⁶⁹ *Id.* at 19 tbl.8c (demonstrating that New Englanders paid more than 16 cents per kilowatt-hour (kwh) while those in other regions sometimes paid less than 8 cents).

⁷⁰ *Id.* In looking at Table 8c, note that rates in both the middle Atlantic and New England regions (where virtually every state restructured its energy markets) are much higher than those in the east south-central region, where none did.

⁷¹ See European Comm'n, Directorate Gen. of Energy and Transp., *Quarterly Review of European Electricity and Gas Prices*, Issue 8 at 3, 4 (Sept. 2006), available at http://ec.europa.eu/energy/electricity/publications/doc/review/2006_09_qr08.pdf (showing prices ranging from €100 per megawatt-hour (mwh) for residential users and €60/mwh for industrial users in central Europe, as compared to prices of €140 and €100/mwh, respectively, in Italy). Variation in gas prices was driven by prices at the few supply points through which most of Europe's gas is imported (mainly from Russia). *Id.* at 5.

⁷² The majority of new electric generation in both the United States and Europe is natural gas fired, and in many markets, the "marginal plant"—the plant serving the last unit of demand and thereby clearing the market—burns natural gas. Thus, unforeseen and significant increases in natural gas prices can wreak havoc with short-term electricity markets.

⁷³ The Commission says that electricity prices have, "on average across all users, remained relatively constant in real terms," despite fuel cost increases and that this "clearly demonstrates the effect of increasing efficiency in electricity supply." Comm'n of the European Cmty's, *supra* note 67, at 4.

⁷⁴ *Id.* at 5. Specifically, the Commission blames incomplete implementation by member states of the 2003 directives. *Id.* at 6. In European Union parlance, the process of implementing Commission directives at the member-state level is called "transposition." When a member state fails to transpose a Commission directive fully, the Commission may initiate "infringement" proceedings, multi-stage processes that begin with a Commission investigation and may culminate in litigation against the offending member state before the European Court of Justice. See Treaty Establishing the European Community (consolidated version), Dec. 29, 2006, arts 226–28, 2006 O.J. (C 321) E/37, E/144–45. The Commission has "launched 34 infringement procedures against 20 Member States for violation and non transposition of the existing Directives." Comm'n of the European Cmty's, *supra* note 67, at 6; see also Memorandum from the European Comm'n on EU Energy Mkts. (Dec. 12, 2006), available at <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/06/481&format=PDF&aged=1&language=EN&guiLanguage=en> (citing Austria, Belgium, the Czech Republic, Germany, Estonia, Spain, France, Greece, Ireland, Italy, Lithuania, Latvia, Poland, Sweden, Slovakia, and the United Kingdom as recipients of "reasoned opinions" for various failures to transpose the 2003 energy directives).

Others ascribe high prices to this same general problem of too few sellers chasing too many customers, a problem that offers the few sellers in the market the opportunity to exert market power over prices.⁷⁵ This “too few sellers” problem, in turn, may result from regulators’ inability to prevent incumbent sellers from imposing entry barriers on prospective competitors.⁷⁶ If this analysis is correct, there is a broken market equilibrium in energy, one in which incumbents’ market power is self-sustaining; in other words, incumbents’ market power may be both cause and consequence of the barriers to entry in energy markets. Regulators and policymakers are devoting a great deal of effort to understanding this dynamic and to replacing the current broken market equilibrium with a functioning, competitive market equilibrium.

B. Market Power

The destructive role played by sellers who abused market power in California’s electricity market is well known and thoroughly documented.⁷⁷ California electricity markets were opened to competition in the late 1990s,⁷⁸ and in the winter of 2000–2001, prices on California’s wholesale spot market spiked, sometimes reaching daily averages 500 times higher than long-term historical norms.⁷⁹ The persistence and magnitude of the problem led to the transfer (through energy sales) of billions of dollars from wholesale buyers (retail service providers) to wholesale sellers,⁸⁰ drove one major electricity seller into bankruptcy, and imposed rolling blackouts on Californians.⁸¹ While a

⁷⁵ See London Econ., Structure and Performance of Six European Wholesale Elec. Mkts. in 2003, 2004 and 2005, Part IV (Feb. 26, 2007), available at http://ec.europa.eu/comm/competition/sectors/energy/inquiry/electricity_final_part4.pdf (presenting a study of electricity prices in six EU countries, conducted by consultancy London Economics, which found that variation in market concentration explained a large portion of the variation in retail price: that is, the lack of competition in sales drove prices higher). For a fuller discussion of this issue, see *infra* Part III.B.

⁷⁶ For a more complete discussion of this analysis, see *infra* Part III.C.

⁷⁷ See FED. ENERGY REGULATORY COMM’N, THE WESTERN ENERGY CRISIS, THE ENRON BANKRUPTCY, AND FERC’S RESPONSE, available at <http://www.ferc.gov/industries/electric/indus-act/wec/chron/chronology.pdf> (chronicling the “major Commission actions during and following the Western energy crisis and Enron’s collapse”).

⁷⁸ *Id.* at 1.

⁷⁹ See Michael W. Lynch & Adrian Moore, *Power Tripped*, REASON, June 2001, at 32.

⁸⁰ In petitions to the FERC after the crisis, buyers on California’s wholesale market claimed to have been overcharged by more than \$9 billion. The FERC ultimately decided that the figure was a little less than half that. FED. ENERGY REGULATORY COMM’N, THE COMMISSION’S RESPONSE TO THE CALIFORNIA ELECTRICITY CRISIS AND TIMELINE FOR DISTRIBUTION OF REFUNDS 3 (2005), available at <http://www.ferc.gov/legal/staff-reports/comm-response.pdf>.

⁸¹ The extended period during which California retailers were forced to buy power at prices in excess of retail sales prices drove Pacific Gas and Electric Company, one of the three major incumbent utilities in California, into bankruptcy. See Leslie Berkman, *Bankruptcy by Utilities a Walk into the Unknown*, PRESS ENTERPRISE (Riverside, CA), Jan. 18, 2001, at

supply-demand imbalance and cost factors played a large part in creating the problem, regulators subsequently determined that the state's poorly designed market also created easy opportunities for sellers to exert market power over price and to otherwise "game" the system.⁸² Many sellers took those opportunities, provoking enforcement actions by the FERC, the U.S. Commodities Futures Trading Commission, and the U.S. Justice Department that have resulted in more than three billion dollars in refunds, hundreds of millions of dollars in civil and criminal fines, and jail sentences for some individuals involved in the scandal.⁸³

While the California market was uniquely susceptible to the acquisition and abuse of market power,⁸⁴ some version of this problem can arise in any market where there are sufficiently few sellers or sufficiently small supply margins, and American and European regulators remain concerned about abuses of market power. While the United States retains competitive wholesale gas markets,⁸⁵ the FERC has been

A1 (discussing the "uncertainties . . . about how the state's power system would continue to operate if Southern California Edison Company and Pacific Gas and Electric enter[ed] bankruptcy proceedings"); Nancy Vogel & Nancy Rivera Brooks, *Rolling Blackouts Push Energy Crisis from Threat to Reality*, L.A. TIMES, Jan. 18, 2001, at A1 (describing the January 17 California blackouts as "the most visible result of the months-long energy crisis that has pushed the state's two largest utilities . . . to the brink of bankruptcy"). One of the other incumbents, Southern California Edison Company, saw its credit rating fall from "A++ to D." Katharine Fraser, *Electric Power: Wall Streeters See Cloudy Picture for Power Market Restructuring*, INSIDE FERC (PLATTS), June 18, 2001, at 7; see also Dave Lindorff, *Judging the Judges*, INVESTMENT DEALERS' DIG., Aug. 13, 2001, at 32, 35-36 (discussing why major ratings agencies reacted so slowly to the California crisis).

⁸² FED. ENERGY REGULATORY COMM'N, FINAL REPORT ON PRICE MANIPULATION IN WESTERN MARKETS: FACT-FINDING INVESTIGATION OF POTENTIAL MANIPULATION OF ELECTRIC AND NATURAL GAS PRICES ES-1 (PA02-2-00) (2003).

⁸³ Largest Fines, Penalties and Refunds Ordered by Federal and State Authorities Against Corporations for Manipulation of the West Coast Energy Market & Natural Gas Price Index Manipulation, PUB. CITIZEN, available at <http://www.citizen.org/documents/camarketfines.pdf> (last visited Mar. 24, 2008).

⁸⁴ Purchases through the short-term (spot) market provided the majority of daily energy loads for the California market of 2000. The California market cleared by matching buyers' willingness to pay bids with sellers' willingness to accept bids, allowing every seller to charge the market-clearing price. Because generation was in short supply, sellers could rest assured that their capacity would be needed to serve load, meaning that sellers would likely accept their bid. Because of the cap on retail prices, demand remained high and this condition persisted. Sellers exacerbated the problem by scheduling a variety of fraudulent transactions, such as making capacity available to serve imaginary loads or relieving congestion and thus earned themselves money through arbitrage, making capacity available to serve imaginary loads, or relieving congestion. See FED. ENERGY REGULATORY COMM'N, *supra* note 82, at VI-26 to VI-30 (providing a summary of the various ways market participants gamed the system).

⁸⁵ Even before the restructuring of wholesale energy markets, the FERC deregulated third-party wholesale sales of gas because pipelines were largely unaffiliated with producers/sellers and the producer/seller market was decentralized and competitive. After a disastrous experiment in regulating rates charged to pipelines by gas producers, Congress eventually permitted FERC to withdraw from the regulation of such sales. See Pierce, *supra* note 38, at 11.

more cautious about market power in electricity markets and has been assiduous about conditioning grants of the right to sell energy at market rates (rather than regulated rates) on the seller's absence of market power in the market in question.⁸⁶ In its order requiring unbundling of electric sales from delivery, the FERC was careful to insist that the right to sell energy at market rates was a function of the seller's *inability* to influence the market price unilaterally.⁸⁷ The FERC's careful attention to this problem before granting sellers the power to sell at market-based rates⁸⁸ has not prevented complaints after the fact that sellers have indeed exercised market power over energy prices, even outside California.⁸⁹ The FERC pays continuing

⁸⁶ The FERC's history of assessing and monitoring market power is described in a recent proposal to change the test it uses for identifying the presence of market power:

Over the years, the Commission developed a four-prong analysis used to assess whether a seller should be granted market-based rate authority: (1) Whether the seller and its affiliates lack, or have adequately mitigated, market power in generation; (2) whether the seller and its affiliates lack, or have adequately mitigated, market power in transmission; (3) whether the seller or its affiliates can erect other barriers to entry; and (4) whether there is evidence involving the seller or its affiliates that relates to affiliate abuse or reciprocal dealing.

Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Utilities, 71 Fed. Reg. 33,102, 33,102 (June 7, 2006) (to be codified at 18 C.F.R. pt. 35); cf. Dartmouth Power Assocs. Ltd. P'ship, 53 F.E.R.C. 61,117 (1990) (describing an individual order granting market-based rate setting to a wholesale electricity seller prior to FERC Order 888).

⁸⁷ FERC Order No. 888, *supra* note 41, at 21,553 (May 10, 1996) ("In reviewing applications to sell at market-based rates, whether from new (unbuilt) capacity or existing capacity, we require that the seller (and each of its affiliates) must not have, or must have mitigated, market power in generation and transmission and not control other barriers to entry. In order to demonstrate the requisite absence or mitigation of transmission market power, a transmission-owning public utility seeking to sell at market-based rates must have on file with the Commission an open access transmission tariff for the provision of comparable service.").

⁸⁸ The Commission's current *ex ante* test for market power in electric generation uses two "market power screens": (i) a so-called "pivotal supplier analysis," based on uncommitted capacity at the time of the market's annual peak demand; and (ii) a "market share analysis" of uncommitted capacity applied on a seasonal basis. The screens are not dispositive in determining the presence of market power, but satisfying both screens creates a rebuttable presumption of the absence of market power. For a thorough description of how these screens work, see Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Utilities, 71 Fed. Reg. at 33,105.

⁸⁹ In 1998, electricity prices spiked in Midwest markets prompting concern about the possible role played by the exercise of market power. See Robert J. Michaels & Jerry Ellig, *Electricity: Price Spikes by Design?*, 22 REGULATION 20, 20 (1999). Even outside the context of crises, the FERC routinely responds to expressions of concern about the presence of market power in energy markets. See Sw. Power Pool, Inc., 118 F.E.R.C. 61,120 (2007) (rejecting proposed tariff revisions by the Southwest Power Pool in part because of concerns about the susceptibility of the tariff to the exercise of market power by electric generators); Long Island Power Auth., 118 F.E.R.C. 61,109 (2007) (denying challenge to New York ISO tariff because of concerns that generators could exercise market power if the challenge were granted); Exelon Corp. Pub. Serv. Enter. Group, Inc., 113 F.E.R.C. 61,299 (2005) (denying challenge to merger because concerns over the ability to exercise market power

attention to this issue, with an eye toward avoiding and remedying situations where market power may influence prices.

European regulators face even more basic market-power problems. Even before the California crisis, energy regulators in British markets were struggling with problems associated with the exercise of market power by electricity producers.⁹⁰ The Scandinavian market regulator also has investigated alleged abuses of market power in its electricity markets.⁹¹ The 2003 European Union directives address this widespread issue using the language of European competition law,⁹² specifying that national regulatory authorities in member states must ensure “appropriate and efficient mechanisms for regulation . . . so as to avoid any abuse of a dominant position, in particular to the detriment of consumers, and any predatory behaviour.”⁹³ Because of continuing concerns about this problem, the European Commission’s Competition Directorate undertook an investigation of the energy industry in 2006 and found a persistent problem with producers exercising market power in European energy markets:

Wholesale gas trade has been slow to develop, and the incumbents remain dominant on their traditional markets Incumbents trade only a small proportion of their gas on gas exchanges

Although electricity trading is more developed, sales on wholesale electricity markets generally reflect the significant level of concentration in generation. Analysis of trading on power exchanges shows that, in a number of them, generators have scope to exercise market power by raising prices⁹⁴

There is no single European energy regulator to oversee providers’ exercise of market power on European markets, and the Commission has become dissatisfied with its continually futile attempts to

were unwarranted); PPL Mont., L.L.C., 112 F.E.R.C. 61,237 (2005) (instituting a Section 206 proceeding to investigate whether the applicant was capable of exercising market power).

⁹⁰ Carl Mortished, *Ofgem Moves to Stop Generators Abusing Power*, TIMES (London), Dec. 24, 1999, at 22.

⁹¹ See, for example, Nord Pool’s conclusion that a major electricity seller had withheld generation to exert market power over sales prices in the Nord Pool market. Press Release, Nord Pool, Investigation of Elspot Bidding in Week 18 (July 6, 2000), http://www.nordpool.com/information/participant_information/finnish/2000/2000-029.html.

⁹² Article 82 of the European Community Treaty prohibits abuse of a dominant market position. Treaty Establishing the European Community (consolidated version), Dec. 29, 2006, 2006 O.J. (C 321) E/37, E74.

⁹³ Council Directive 2003/55, *supra* note 53, art. 5, at 57 (concerning common rules for the internal market in natural gas and repealing Council Directive 98/30, *supra* note 52, art. 25, para. 8, at 1).

⁹⁴ European Comm’n, *supra* note 61, at 7. The report explains further that the problem in electricity markets is sufficiently serious that “even during off-peak hours markets remain highly concentrated and that concentration levels, even in the less concentrated markets, reach significant levels at peak hours.” *Id.*

force member states into implementing the 2003 energy directives faithfully.⁹⁵ The Commission's inquiry into competition in the energy industry signals the possibility that it will use its powers under the European Union's antitrust rules to "forcefully pursu[e] infringements of Community competition law (antitrust) in the sector wherever the Community interest so requires."⁹⁶ The Commission's unannounced inspection of several major energy companies in 2006 is further evidence of its intent to use competition law to supplement restructuring under the 2003 directives.⁹⁷

C. Market Entry

What is it that allows market power to persist? What deters entry by prospective competitors into these profitable markets? According to regulators, part of the problem may be market entrants' inability to gain access to energy and the delivery network.

1. Access to Energy

To enter the energy sales market, one must have a product to sell. Prospective entrants into electricity markets face the choice of generating their own power to sell or purchasing power from existing generators. Likewise, entrants into gas markets must acquire gas, by either producing it or purchasing it from others. It can be difficult for new entrants to gain access to energy where energy production is not a near- or medium-term option and current providers control existing sources through, for example, long-term contracts.

In the United States, the problem of ensuring access to energy for new entrants is confined, for the most part, to electricity markets.⁹⁸ By the time restructuring came to American wholesale gas markets, the industry was emerging from a poorly designed regulatory regime in which pipelines tied up large amounts of gas in long-term contracts between producers and local distribution companies.⁹⁹ Unbundling

⁹⁵ See *id.* at 4, 31.

⁹⁶ *Id.* at 12.

⁹⁷ See Memorandum, European Comm'n, Competition: Comm'n Has Carried Out Inspections in EU Gas Sector in Five Member States, MEMO/06/205 (May 17, 2006) (describing unannounced inspections of energy firms in member states of Germany, Italy, France, Belgium, and Austria); see also Memorandum, European Comm'n, Competition: Comm'n Confirms Inspections in the Energy Sector, MEMO/06/220 (May 30, 2006) (describing follow-up inspections carried out in Germany); Memorandum, European Comm'n, Competition: Comm'n Has Carried Out Inspections in the German Electricity Sector, MEMO/06/483 (Dec. 12, 2006) (describing series of inspections conducted in Germany unrelated to inspections carried out in May 2006).

⁹⁸ See *supra* notes 88–89 and accompanying text.

⁹⁹ See Pierce, *supra* note 38, at 48–49, for a description of how this situation came to be. In response to gas shortages in the late 1970s, Congress passed the Natural Gas Policy Act, which allowed a phased deregulation of producer-to-pipeline sales. See *id.* at 11. Desperate for energy, pipelines signed long-term "take or pay" bundled service contracts with

helped the FERC free up the gas covered by those contracts, permitting most prospective wholesalers to obtain gas from producers.¹⁰⁰

However, when restructuring came to the American electricity market in the 1990s, vertical integration was the norm and the problem of ensuring that new entrants had access to energy was a central concern. Because the FERC's jurisdiction extends to wholesale energy rates but not directly to generation,¹⁰¹ it could not force energy firms to divest their generation rights. Nevertheless, its policy of limiting the authority to charge market-based rates to entities lacking market power has discouraged concentration in generation markets.¹⁰² Furthermore, the FERC has, on occasion, revoked sellers' market-based rate-setting authority after the seller acquired market power, returning those sellers to cost-based regulated wholesale rates.¹⁰³ In addition, most restructuring states have, as an exercise of their direct regulatory authority over electricity generation, required or strongly encouraged divestiture of generation by incumbent utilities.¹⁰⁴ Although the availability of this divested capacity has helped, it has not

producers at prices that soon far exceeded short-term market prices when the supply side of the market responded (in apparently unforeseen ways). *See id.* at 11, 40.

¹⁰⁰ FERC Order No. 436 effectively rescinded the energy sales portion of those bundled service contracts, freeing wholesale buyers and sellers to contract directly with one another. Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol, Order No. 436, 50 Fed. Reg. 42,408 (Oct. 18, 1985) (to be codified at 18 C.F.R. pts. 52, 157, 250, 284, 375, and 381); *see* Pierce, *supra* note 38, at 24–25. Many of those new energy sales contracts were for much shorter terms. *See* Pierce, *supra* note 38, at 24–25.

¹⁰¹ Federal Power Act section 201(b)(1) states:

The provisions of this subchapter shall apply to . . . the sale of electric energy at wholesale in interstate commerce The Commission shall have jurisdiction over all facilities for such transmission or sale of electric energy, but shall not have jurisdiction . . . over facilities used for the generation of electric energy

16 U.S.C. § 824(b)(1) (2000).

¹⁰² *See supra* notes 85–89 and accompanying text. FERC also prohibits power sales at market-based rates between a franchised public utility (whose purchases will be recoverable through retail rates) and an affiliate. *See* Aquila, Inc., 101 F.E.R.C. 61,331, 62,373 (2002).

¹⁰³ *See* Powerroots, L.L.C., 117 F.E.R.C. 61,007 (2006) (revoking market-based rate authority of seller); *see also* Illumina Energy Solutions, Inc., 118 F.E.R.C. 61,171 (2007) (same).

¹⁰⁴ Some states, including Massachusetts, Maine, and California, required incumbent utilities to spin off specified percentages of their electric generation to avoid market power problems and recover maximum stranded costs. *See* ME. REV. STAT. ANN. tit. 35-A, § 3204 (1988 & Supp. 2006); ENERGY INFO. ADMIN., THE CHANGING STRUCTURE OF THE ELECTRIC POWER INDUSTRY 1999: MERGERS AND OTHER CORPORATE COMBINATIONS ch. 6 (1999), available at http://www.eia.doe.gov/cneaf/electricity/corp_str/chapter6.html; FRED BOSSELMAN ET AL., ENERGY ECONOMICS AND THE ENVIRONMENT 953–54 (2d ed. 2006). Other states, such as Texas, provided various financial incentives for firms to divest, such as enhanced rights to recover costs “stranded” by restructuring. *See* BOSSELMAN ET AL., *supra*, at 953. For a good summary of these arrangements prior to 1999 and a description of the amount of generation divested up to that date, *see* ENERGY INFO. ADMIN., *supra*, at ch. 6. *See* BOSSELMAN ET AL., *supra*, at 953–54, for a description of the Texas and Massachusetts restructuring plans.

eliminated the problem. Even if ownership of production is less concentrated than it once was, a few wholesale buyers still have the ability to control production contractually.¹⁰⁵ Thus, access to energy remains a primary concern for the FERC and regulators in restructured states.¹⁰⁶

In Europe, the problem of access to energy for new market entrants is more acute, partly because some regional European markets are less developed and partly because of the absence of a European energy regulator with the authority to directly enforce the directives. According to the European Commission, the problem exists in both electric and gas markets:

[T]he prevalence of long-term supply contracts between gas producers and incumbent importers makes it very difficult for new entrants to access gas on the upstream markets. Similarly, electricity generation assets are in the hand of a few incumbent suppliers or are indirectly controlled by them on the basis of long-term power purchase agreements (PPAs) giving the incumbents control over the essential inputs into the wholesale markets. *Low levels of liquidity are an entry barrier to both gas and electricity markets.*¹⁰⁷

Prospective retail sellers cannot access cheap energy on the wholesale market because it is committed to other—usually large—incumbents through long-term contracts.¹⁰⁸ It is up to European Union member states to ensure the transition to competitive markets and to transpose the European Commission's restructuring directives into national law.¹⁰⁹ Nevertheless, some member states seem disinclined to undermine their domestic incumbents—so-called “national champion” energy companies¹¹⁰—out of fear that, in the new competitive marketplace, they will fall prey to some other member state's national champion. These national champions hold many of the long-term contractual rights to energy in European markets, thereby making energy scarce for new entrants.¹¹¹ This situation underscores the

¹⁰⁵ See Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Utilities, 71 Fed. Reg. 33,102, 33,109 (June 7, 2006) (“[I]f a seller has control over certain capacity such that the seller can affect the ability of the capacity to reach the relevant market, then that capacity should be attributed to the seller when performing the generation market power screens.”).

¹⁰⁶ For a discussion of how these various regulatory entities try to encourage the development of new production capacity, see *infra* Part III.C.2.

¹⁰⁷ European Comm'n, *supra* note 61, at 8 (emphasis added).

¹⁰⁸ See *id.* at 9.

¹⁰⁹ See *id.*

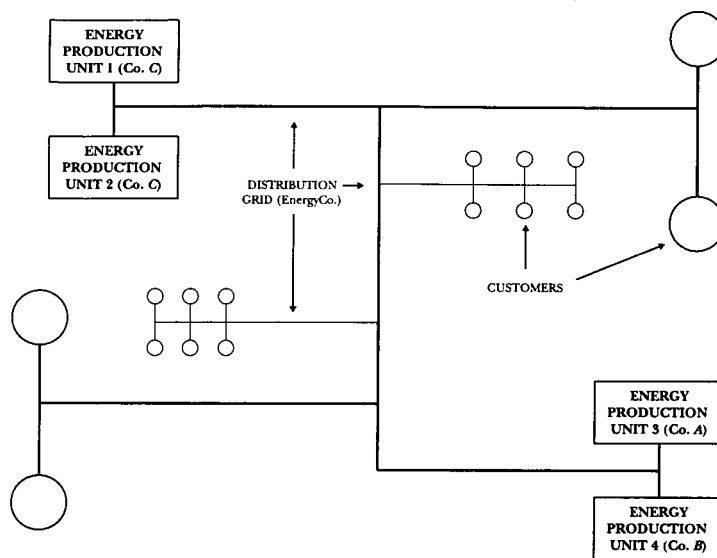
¹¹⁰ See *id.* at 207. Member states defend this kind of support in the gas industry by contending that because so much of Europe's gas is purchased from a few non-European firms, it is important for the buyers of that gas to be strong market players so as to keep import prices low.

¹¹¹ See *id.* at 8.

dominant position these companies hold in their home markets and further deters prospective entrants.¹¹²

Figure 2 depicts the EnergyCo service area depicted in Figure 1, this time after restructuring.

FIGURE 2: AFTER RESTRUCTURING



Assume that EnergyCo continues to own the delivery network and provide transmission services at regulated rates.¹¹³ However, it now sells energy through an affiliate in a competitive market at market-based rates. After unbundling, EnergyCo spun off two of its energy production units to that affiliate (Company C). To comply with rules prohibiting any single company from exerting unacceptable market power by controlling too much energy within a market, EnergyCo sold its two remaining production units to unaffiliated companies: Company A and Company B. Even though EnergyCo no longer owns Units 3 and 4, its sales affiliate (Company C) probably serves a very large load and will need to procure energy contractually. If it uses long-term contracts to do so, and purchases this energy from Companies A and B, the energy produced by Units 3 and 4 may not be available to prospective entrants to the market.

¹¹² This support takes various forms, from subsidies to reluctance to enforce the anti-trust portions of the 2003 directives against national champion firms. During the European Commission's sector inquiry, commenters complained about the adverse effects of such "political benevolence" on competition. *See id.* at 207.

¹¹³ Consistent with restructuring rules everywhere, assume further that it provides transmission services on an open-access, nondiscriminatory basis, perhaps through an ISO of which EnergyCo is but one member. *See supra* note 41 and accompanying text.

2. Access to the Network

Even if prospective market entrants have energy to sell, they must nevertheless be able to deliver their product to their customers via the existing delivery network. Both American and European market rules require transparency and nondiscrimination in the sale of network services,¹¹⁴ yet regulators in both places worry about the slow formation of independent transmission-system operators to manage the delivery network fairly.¹¹⁵ Claims of discrimination—claims that transmission network owners favor their energy sales affiliates by granting them preferential access to the network—are commonplace, particularly in Europe.¹¹⁶ In Figure 2, EnergyCo could operate the delivery network in a variety of ways that favor its own production facilities or its energy sales affiliate. For example, EnergyCo could provide its affiliates with better terms or other advantages in the contest for scarce capacity in the network. Even in the absence of such favoritism, if there are no secondary markets for the sale of unused firm capacity,¹¹⁷ the use of firm-transmission-service contracts can act as a further barrier to entry by reserving capacity on the network that remains unused and unavailable for use by others. Therefore, unbundling rules in Europe and the United States aim to prevent just these sorts of problems.

¹¹⁴ Articles 9 and 10 of the Commission's 2003 Directives, *see supra* note 53, mandate functional unbundling of transmission from energy sales and specify that transmission services be offered on a nondiscriminatory basis. The FERC based the legal authority for its Order 888 on its power, granted in Federal Power Act sections 205 and 206, to remedy "any rate, charge, or classification, demanded . . . by any public utility . . . [that] is unjust, unreasonable, unduly discriminatory or preferential." 16 U.S.C. § 824e(a) (Supp. V 2005). Order 888 required unbundling precisely because network owners were discriminating against unaffiliated users of the network. *See* FERC Order No. 888, *supra* note 41, at 21,551 (to be codified at 18 C.F.R. pts. 35, 385). The FERC based its Order 636 on analogous provisions of the Natural Gas Act. *See* FERC Order No. 636-B, 57 Fed. Reg. 57,911, 57,912 (Apr. 8, 1992) (to be codified at 18 C.F.R. pt. 284).

¹¹⁵ *See* FERC Order No. 2000, *supra* note 43 at 810, 816 (Dec. 20, 1999) (to be codified at 18 C.F.R. pt. 35) (lamenting the slow progress of forming ISOs in the United States and speculating as to reasons for the "difficulty in forming a voluntary, multi-state ISO"); European Comm'n, *supra* note 61, at 10 (explaining reasons for limited choice among gas and electricity customers).

¹¹⁶ *See* Neelie Kroes, European Comm'r for Competition Policy, Speech at Fordham Corporate Law Institute's Annual Seminar 2007: Improving Competition in European Energy Markets Through Effective Unbundling 3 (Sept. 27, 2007), available at <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/07/574&format=PDF&aged=1&language=EN&guiLanguage=EN> ("[T]here is real discrimination by network companies in favour of their affiliated supply companies in terms of access to their pipes and cables . . .").

¹¹⁷ When a network user has contracted for firm rights to transmission capacity but does not use those rights, secondary markets would permit the user to sell those rights. Those markets can develop only with the (voluntary or forced) cooperation of the transmission owner. If the transmission owner's sales affiliate would benefit from the lack of availability of secondary markets (because scarce transmission capacity would keep energy sales competitors out of the market), such cooperation may not be forthcoming.

In the United States, the FERC has overseen the resolution of a steady stream of complaints alleging favoritism by gas pipelines¹¹⁸ and, to a lesser degree, by electric-transmission-line owners.¹¹⁹ Rules requiring that network access be scheduled using nondiscriminatory, transparent, real-time methods,¹²⁰ coupled with the FERC's ability to enforce such requirements directly, have overcome much of the resistance to unbundling by transmission-network owners in the United States,¹²¹ though the problem apparently has not gone away completely.¹²² In Europe, the problem is more serious. While the 2003 directives mandate functional unbundling, the European Commission has not been able to persuade national and regional market regulators to force transparent, nondiscriminatory procedures for selling transmission services on energy markets. To the contrary, in many parts of Europe, the process of allocating access to energy-transmis-

¹¹⁸ See, e.g., *Nat'l Fuel Gas Supply Corp. v. FERC*, 468 F.3d 831 (D.C. Cir. 2006) (reviewing and overturning portions of the FERC's revised standards governing relationships between pipelines and their marketing affiliates); *Amoco Prod. Co.*, 82 F.E.R.C. 61,038 (1998) (pipeline company showed favoritism to its market affiliate by allowing them extra firm capacity); *Transcon. Gas Pipe Line Corp.*, 55 F.E.R.C. 61,318 (1991) (loaning of gas from one company to another resulted in varying prices for similarly situated consumers).

¹¹⁹ See, e.g., *Cal. Dep't of Water Res. v. FERC*, 489 F.3d 1029 (9th Cir. 2007) (electric company required to allow anyone to transmit power over its lines but could charge tariffs to cover the cost).

¹²⁰ See *Open Access Same-Time Information System and Standards of Conduct*, Order No. 889, 61 Fed. Reg. 21,737, 21,737 (Apr. 24, 1996) (to be codified at 18 C.F.R. pt. 37) (requiring the establishment of an "Open Access Same-time Information System," or "OASIS," for selling electric transmission services); *Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol*, Order No. 636-B, 57 Fed. Reg. 57,911, 57,911 (Apr. 8, 1992) (to be codified at 18 C.F.R. pt. 284) (requiring pipelines to establish public, nondiscriminatory tariffs governing gas transportation services and "electronic bulletin boards" for selling and scheduling gas transportation services in real time). These systems forced transparency in the process of selling access to networks and made discrimination in favor of affiliates more difficult. Furthermore, Orders 636, 888, and 889 have been implemented in ways that have promoted the development of secondary capacity markets. See generally U.S. GEN. ACCOUNTING OFFICE, REPORT TO CONGRESSIONAL REQUESTERS: CONCERTED ACTIONS NEEDED BY FERC TO CONFRONT CHALLENGES THAT IMPEDE EFFECTIVE OVERSIGHT, GAO-02-656, at 20-24 (2002), available at <http://www.gao.gov/new.items/d02656.pdf> ("Order 636 . . . allowed shippers to release to other shippers unneeded pipeline transportation capacity . . . leading to the creation of a secondary capacity market designed to compete with the primary pipeline market."). Despite their relative efficiency, the FERC proposed changes in pipeline rules in November 2007 designed to increase the efficiency of secondary markets. See *Promotion of a More Efficient Capacity Release Market*, 72 Fed. Reg. 65,916 (Nov. 26, 2007) (to be codified at 18 C.F.R. pt. 284).

¹²¹ See, e.g., *Nat'l Fuel Gas Supply Corp.*, 468 F.3d at 835-40 (summarizing the FERC's efforts to overcome resistance to unbundling).

¹²² The FERC believed the problem of discrimination to be sufficiently persistent that it issued its Order 890 earlier this year, which further circumscribes the discretion of electric transmission line owners so as to minimize opportunities for discrimination. See *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 72 Fed. Reg. 12,266, 12,266 (Feb. 16, 2007) (to be codified at 18 C.F.R. pts. 35 & 37).

sion networks remains opaque,¹²³ discrimination by network owners in favor of their affiliated energy-sales companies is not uncommon,¹²⁴ and secondary-transmission-capacity markets have been slow to develop.¹²⁵ In a recent report on this issue, the Commission concluded that “[n]ew entrants often lack effective access to networks (in gas, also to storage and to liquefied natural gas terminals) despite the existing unbundling provisions. The operators of the network/infrastructure are suspected of favouring their own affiliates (discrimination).”¹²⁶

Since there is no single European energy regulator to enforce the directives directly,¹²⁷ the European Commission must rely on: (i) its Directorate on Energy and Transport’s ongoing process of enforcing the directives against member states to induce national governments to enforce the directives in their energy markets; and (ii) its Directorate on Competition enforcing European competition rules against energy firms.

This latter option—use of competition law to push restructuring forward—represents a departure from past practice in Europe, but one that the European Commission’s Competition Directorate ap-

¹²³ See European Comm’n, *supra* note 61, at 10 (“[B]alancing charges, clearing costs and penalty charges are not transparent and often contain unjustified penalty charges, favouring incumbents. Effective unbundling is necessary to create a level playing field in the balancing markets and to reduce barriers to entry.”).

¹²⁴ On the gas side, one TSO granted its sales affiliate rebates on transmission charges not granted to unaffiliated users of the system so as to give the affiliate a competitive advantage. See *id.* at 58. On the electric side, some TSOs procure needed generation to balance loads by paying their affiliates for excessive reserve capacity, possibly at above market rates. See *id.* at 10.

¹²⁵ See, e.g., European Fed’n of Energy Traders, EFET Response to Francois Lamoureux, DG TREN, on Questions About Progress in EU Gas Liberalisation and the State of the Mkts. 2 (June 30, 2005), available at http://ec.europa.eu/energy/electricity/report_2005/doc/market_operators/08a_efet_gas.pdf (“In general, and particularly in the presence of long-term capacity ownership, secondary markets are currently not very well developed or facilitated.”).

¹²⁶ European Comm’n, *supra* note 61, at 7. The problem is apparently most acute in the gas industry:

Allegations have been made in a number of shippers’ replies to the questionnaires that network operators offer preferential treatment to their supply companies and that this leads to discrimination to their competitors’ detriment, which maintains or even increases market entry barriers. This concerns a number of different aspects of network access and occurs in various Member States.

Id. at 60.

¹²⁷ In early 2007, the member states of the European Union ruled out the creation of a European energy regulator with direct authority to enforce the 2003 directives. However, in July 2007, the European Parliament called for enhanced “‘cooperation between national regulators at EU level, through an EU entity, as a way to promote a more European approach to regulation on cross-border issues.’” EUR. PARL. DOC. (COD/2007/0198) (2007), available at <http://www.europarl.europa.eu/oeil/resume.jsp?id=5533292&eventId=1008501&backToCaller=NO&language=en> (citation omitted).

pears ready to use. Recently, it has indicated its willingness to step up enforcement of competition law in the energy sector.¹²⁸ It is the only direct instrument the Commission has at its disposal to enforce market competition, since it cannot enforce competition *ex ante*. By contrast, the American energy industry is exempt from most antitrust regulation, but that is because a regulator, the FERC, exists to enforce competition directly.¹²⁹ Thus, the European Commission reasons that if there is no effective *ex ante* regulation to prevent powerful energy firms from committing antitrust violations (such as discriminating in granting access to delivery networks), then European competition

¹²⁸ See European Comm'n, *supra* note 61, at 12 ("The Commission is forcefully pursuing infringements of Community competition law (antitrust) in the sector wherever the Community interest so requires . . .").

¹²⁹ The courts have created these partial exemptions. Courts defer to the FERC's primary jurisdiction over wholesale energy transactions and to state utility commissions' pervasive regulatory jurisdiction over retail energy transactions under the "regulated industries exception" to antitrust rules. Reasoning that the terms of competition are regulated by the FERC, antitrust regulators and courts do not bring antitrust enforcement actions relating to activities regulated by the FERC. This is an offshoot of the "state action" exemption—one that exempts private actions from antitrust enforcement if a state has evidenced the intent to displace competition with regulation in that context. See *Cal. Retail Liquor Dealers Ass'n v. Midcal Aluminum, Inc.*, 445 U.S. 97, 102 (1980). The *Midcal* court established a two-pronged test for determining when the doctrine applies. "First, the challenged restraint must be 'one clearly articulated and affirmatively expressed as state policy'; second, the policy must be 'actively supervised' by the State itself." *Id.* at 105 (quoting *City of Lafayette v. La. Power & Light Co.*, 435 U.S. 389, 410 (1978)). Prior to restructuring, both prongs of the test were easy to satisfy in connection with sales of gas and electricity. See, e.g., *N. Star Steel Co. v. MidAmerican Energy Holdings Co.*, 184 F.3d 732, 738 (8th Cir. 1999) (finding that Iowa's regulation of electric utility sales clearly satisfies the *Midcal* test); *TEC Cogeneration Inc. v. Fla. Power & Light Co.*, 76 F.3d 1560 (11th Cir. 1996), *modified*, 86 F.3d 1028, 1029 (11th Cir. 1996) (*per curiam*) (finding that Florida's regulation of electric utilities satisfies the *Midcal* test). *But cf.* *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973) (explaining that antitrust law applies to anticompetitive behavior where the Federal Power Commission lacks the authority to order a remedy).

The so-called "filed rate doctrine" further supports the notion that antitrust enforcers will leave the regulation of wholesale competition in the American energy sector to the FERC. Historically, courts have used the doctrine, which insulates rates charged pursuant to a FERC-approved tariff (filed rates) from collateral attack, to reject claims that such rates violate antitrust laws. See, e.g., *Miss. Power & Light Co. v. Mississippi ex rel. Moore*, 487 U.S. 354, 375 (1988) (the reasonableness of FERC-approved rates may only be challenged before the FERC or a court reviewing a FERC order). It appears that the "filed rate doctrine" survives restructuring and can apply to FERC-approved "market based" rates. See *Pub. Util. Dist. No. 1 v. IDACORP Inc.*, 379 F.3d 641 (9th Cir. 2004) (applying the "filed rate doctrine" to reject a challenge to market-based wholesale electric rates under the Federal Power Act). This does not mean that the FERC is free to permit, or turn a blind eye to, anticompetitive behavior. To the contrary, the FERC's obligations under the Natural Gas Act and the Federal Power Act to protect the public interest and assure just and reasonable rates require it to protect consumers against anticompetitive behavior and monopoly power. See, e.g., *Fed. Power Comm'n v. Conway Corp.*, 426 U.S. 271 (1976) (requiring the Federal Power Commission to consider the potentially anticompetitive effects of rates that effect a price squeeze on certain classes of customers).

laws¹³⁰ can and should be used to ensure fair competition in the energy sector. Accordingly, in September 2007 the European Commission proposed the creation of an independent body modeled after the European Central Bank to coordinate the efforts of national energy regulators.¹³¹

Thus, regulators on both sides of the Atlantic seem inclined to address concerns about market power and barriers to entry through a combination of tinkering with market rules and *ex post* enforcement when those rules are broken. While that approach makes it more difficult for incumbents to control the existing energy infrastructure (access to energy and access to the network) to their advantage, it may not be sufficient to yield a competitive market and lower prices. Why? The answer lies in the strange interplay between politics and economics in the restructuring of energy markets.

III

WHAT DO WE WANT FROM RESTRUCTURING?

A. Politics vs. Economics

Politically, the restructuring of energy markets has been a top-down affair, in both Europe and the United States. In both locations, restructuring has been driven by elites—primarily, regulators convinced of the benefits of markets and industrial users who stood to benefit from competition. For their part, industrial retail customers with large, stable loads pushed for restructuring to free themselves from the subsidy they paid to residential (and to a lesser extent, commercial) customers under traditional rate structures.¹³² Indeed, even

¹³⁰ The European Union's competition laws are found in Articles 81 and 82 of the European Commission Treaty. Article 81 prohibits practices that distort competition, including price fixing and other anticompetitive acts; Article 82 prohibits the "abuse of a dominant position" within a market. See Treaty Establishing the European Community (consolidated version), Dec. 29, 2006, 2006 O.J. (C 321) E/37, E/74. A large body of case law further develops the implications of these general prohibitions.

¹³¹ See Explanatory Memorandum from the Comm'n of the European Communities on Common Rules for the Internal Mkt. in Elec. 10 COM (2007) draft, available at http://ec.europa.eu/energy/electricity/package_2007/doc/2007_09_19_explanatory_memorandum_en.pdf.

¹³² In most states, industrial customers paid a considerably lower per-unit rate for energy than did residential customers, but the rate differential was smaller (by regulatory practice) than what the market would bear. In that sense, then, industrial customers subsidized residential customers. As Judge Richard Cudahy described the deregulatory impulse in the power sector, the "strong push, primarily of large industrial customers (and these were the real force behind deregulation), was for *retail* competition (competition for end users). To large industrial users, cheaper power was worth fighting for." Cudahy, *supra* note 27, at 170. In the context of bundled wholesale gas rates, a portion of this subsidy came from FERC's practice of requiring industrial customers taking interruptible gas service to pay rates covering a portion of the pipeline's fixed costs. See *United Distribution Cos. v. FERC*, 88 F.3d 1105, 1167 (D.C. Cir. 1996). When the FERC unbundled transportation services from gas sales in its Order 636, it ended this practice. See *id.* at 1129–30. For a

before restructuring, the industrial customers and the least-cost producers of energy were becoming adept at finding ways around regulatory barriers so that they could do business with each other directly rather than buying and selling only through the monopoly provider.¹³³ This process of “cherry picking” the monopoly provider’s best customers from the system left its remaining customers to pay ever-higher rates. This trend helped motivate regulators and policymakers to restructure the energy market. Thus, in Europe, most of restructuring’s legal initiatives have all come from the unelected European Commission;¹³⁴ in the United States, the unelected FERC has driven the process at the wholesale level,¹³⁵ authorizing market-based rather than regulated rates (even in the absence of any express statutory authorization to do so).¹³⁶ While elected politicians have helped the process along at times,¹³⁷ there has been no general popular groundswell for or against competition in either Europe or the United States.

Nevertheless, in democratic societies, elected politicians can overrule the decisions of unelected bureaucrats, which means that restruc-

succinct description of this change, see, for example, *United Distribution Cos.*, 88 F.3d at 1167–69, which upheld the change.

¹³³ Traditionally, both American and European systems allowed industrial customers to self-generate electric power. Whenever new technologies could provide power less expensively than the monopoly provider, industrial customers could stop taking power from that provider, leaving fewer customers (and fewer sales units) over which to spread the fixed costs of providing power over the network. In the United States, most states permitted municipal governments to form their own utilities and to condemn the former public utility’s network facilities in so doing. Where prices are high and other less expensive sources of energy are physically available but not legally available (because of the public utility’s monopoly right to provide retail service), industrial customers lobby for the creation of new municipal utilities whose power will come from these new less expensive sources. This process, called “municipalization,” can also leave the public utility’s remaining customers to pay the system’s fixed costs. For a description of municipalization in American electricity markets, see Suedeem G. Kelly, *Municipalization of Electricity: The Allure of Lower Rates for Bright Lights in Big Cities*, 37 NAT. RESOURCES J. 43, 44, 48 (1997).

¹³⁴ See *supra* notes 51–56 and accompanying text (describing the European Commission’s directives restructuring European gas and electric markets).

¹³⁵ See *supra* notes 38–39 and accompanying text (describing the FERC’s restructuring of gas markets); *supra* notes 40–44 and accompanying text (describing the FERC’s restructuring of electricity markets with congressional help).

¹³⁶ As noted above, since the 1930s, both the Natural Gas Act and the Federal Power Act have mandated that wholesale rates be just and reasonable. See *supra* note 129. That mandate has remained unchanged since the FERC began routinely authorizing market-based rates over the last decade.

¹³⁷ The Thatcher government imposed a deregulatory mandate upon itself, and the Parliament accomplished much of its restructuring work. See Yergin, *supra* note 35. Likewise, it has been state legislatures that have restructured retail markets in the United States, except in New York. See Sherwin, *supra* note 44, at 268; *Deregulation of Utilities Gains Steam*, BALT. SUN, Feb. 3, 1999, at 1C; Janice Francis-Smith, *Powering Ahead: Legislature Considers Forming Task Force to Examine Electric Utility Restructuring*, THE J. REC. (Okla. City, Okla.), Mar. 12, 2007, at 1A; Mark Tatge, *Senate Passes Electric Bill Giving Consumers Choices*, PLAIN DEALER (Cleveland, Ohio), June 23, 1999, at 1A.

turing programs ultimately depend on the support of those politicians. Assuming that elected politicians seek reelection, their sense of how policy choices effect electoral politics will motivate their decisions on those choices.¹³⁸ How do politicians calculate the electoral consequences of deciding whether to support the restructuring of energy markets? Politicians know that constituents make voting decisions based, in part, on evaluations of candidates' (or parties') policy choices.¹³⁹ However, some constituents may know substantially more than others about the relevant policy choice.¹⁴⁰ Similarly, different constituents have different preference intensities over the same policy choice; that is, knowledge aside, some care much more about the issue than others. Both of these variables—voters' knowledge and intensity of their preferences—not only affect how voters vote, but they also change over time. Legislators know all this. They recognize that voters who know or care little about an issue now may know or care a lot more about the issue later.¹⁴¹ Thus, for legislators, the task of calculating the eventual electoral consequences of today's policy choice can be very difficult. For each voting decision legislators face, they must try to anticipate the consequences of their action alternatives; or, in other words, the legislators must try to gauge how voters will feel about each choice in the future.¹⁴²

We can infer that in the case of energy restructuring in both the United States and Europe, the great mass of constituents knew and cared relatively little about restructuring policies when they were enacted. However, a small minority of constituents—industrial users, merchant producers, investors, and some regulators—understood the

¹³⁸ In the American context, political scientist Richard Fenno distinguishes between the representative's "geographical constituency" and his or her "reelection constituency." RICHARD F. FENNO, JR., *HOME STYLE: HOUSE MEMBERS IN THEIR DISTRICTS* 8 (1978). Of course, the legislator must attend to the latter to keep her job, and the legislator's relationship with this group is the subject of much political science literature. *See id.*; *see also* GARY C. JACOBSON, *THE POLITICS OF CONGRESSIONAL ELECTIONS* 60–61 (2d ed. 1987) (explaining that the central task of congressional candidates is to decide which parts of a heterogeneous constituency to write off and which to court, and how to reach the latter group). In proportional representation electoral systems common to many European parliamentary democracies, this same calculation is made at the party, rather than individual legislator, level.

¹³⁹ *See* R. DOUGLAS ARNOLD, *THE LOGIC OF CONGRESSIONAL ACTION* 14 (1990); WILLIAM T. BIANCO, *TRUST: REPRESENTATIVES AND CONSTITUENTS* 14–15 (John E. Jackson & Christopher H. Acher eds., 1994); MORRIS P. FIORINA, *RETROSPECTIVE VOTING IN AMERICAN NATIONAL ELECTIONS* 10–11 (1981).

¹⁴⁰ *See* ANTHONY DOWNS, *AN ECONOMIC THEORY OF DEMOCRACY* 207–19, 237 (1957) (noting that busy voters are rationally ignorant about many issues).

¹⁴¹ *See* ARNOLD, *supra* note 139, at 60–63 (noting that legislators must constantly attend to the risk that a vote can rouse the "activated public").

¹⁴² For a fuller analysis of the interplay between constituent knowledge and preference intensity on legislative choices, see David B. Spence, *A Public Choice Progressivism, Continued*, 87 CORNELL L. REV. 397, 421–32 (2002).

issue and cared deeply about it, and that minority overwhelmingly favored restructuring.¹⁴³ For legislators or parties concerned with reelection, the immediate calculation of likely electoral consequences of the decision seemed, therefore, fairly straightforward: by favoring (or not opposing) restructuring, legislators could please the interested minority without displeasing the indifferent majority if that majority remained indifferent or became supportive of restructuring—as long as restructuring did not result in price increases. Many elected officials appeared to qualify their support for (or lack of opposition to) restructuring with the expectation that restructuring would bring lower rates to their constituents.¹⁴⁴ That expectation was widely shared. In the United States, the National Council on Electricity Policy's 2003 Report on Restructuring bluntly declared, "Most lawmakers who voted to allow retail competition were convinced that electric rates would fall in restructured markets."¹⁴⁵ Emerging doubt about the promise of lower prices for all may explain why some American states have opted not to restructure their retail markets.¹⁴⁶

Note that as restructuring limps forward on both sides of the Atlantic, mostly at the behest of the FERC and the European Commission, a clear tension remains between the economic and political

¹⁴³ Cf. James Dao, *Plan Approved to Let Power Users Pick Suppliers of Their Electricity*, N.Y. TIMES, May 17, 1996, at B1 (stating that restructuring in the United States has occurred "mainly at the insistence of large manufacturers").

¹⁴⁴ For examples of these expectations in the American debate, see, for example, Michael Davis, *Sibley Throws Switch on Deregulation Bill: Co-ops, Municipal Electricity Firms Back Plan*, HOUS. CHRON., Jan. 21, 1999, at 1C. One Texas legislator promised that competition would bring "not only lower rates but improved service." Bruce Hight, *Senate Passes Utility Measure: Legislators Work Out Details of Electric Deregulation Bill*, AUSTIN AM.-STATESMAN, Mar. 18, 1999, at A1; see also Michael Davis, *Electricity Vote Put Off by Senate: Debates on Other Bills Prompt Move*, HOUSTON CHRON., May 27, 1999, at 1C [hereinafter Davis, *Electricity Vote Put Off by Senate*] (quoting then-Governor George W. Bush saying that the restructuring bill would "reduce rates"); Chris Kraul, *Radical Changes in Power Industry Pass Legislature*, L.A. TIMES, Sept. 1, 1996, at A1 (explaining that the California legislature passed an electricity deregulation bill aimed to secure for Californians the cheapest energy in the country); Dan Morain, *Assembly OKs Bill to Deregulate Electricity*, L.A. TIMES, Aug. 31, 1996, at A24 (noting that California's electricity deregulation bill faced "surprisingly little opposition" after it passed the state assembly). In New York, Public Service Commission Chairman John F. O'Mara promised that competition would "lower prices." Dao, *supra* note 143, at B1; see also Julie Carr Smyth, *State Breaks Power Monopolies*, THE TIMES UNION (Albany, N.Y.), May 17, 1996, at A1 (describing the New York State Public Service Commission's unanimous approval of a plan to deregulate the state's power industry by 1998).

¹⁴⁵ Matthew H. Brown & Richard P. Sedano, Nat'l Council on Elec. Policy, *A Comprehensive View of U.S. Elec. Restructuring with Policy Options for the Future 2* (June 2003), available at <http://www.ncouncil.org/pdfs/restruc.pdf>.

¹⁴⁶ The COMPETE Coalition, an interest group working to promote competitive energy markets in the United States, commissioned a poll purporting to show widespread public support for competitive electricity markets. See Press Release, COMPETE Coal., *Multiple Surveys Show Consumers Support Competitive Elec. Mkts. Choice & "Green" Power* (Aug. 6, 2007), available at <http://www.competecoalition.com/Polling%20Event%20Release%20FINAL.pdf>.

rationales for restructuring energy markets. The economic rationale for restructuring takes a long view, arguing that regardless of their distributional and short-term impacts, markets will bring Kaldor-Hicks improvements in the long run. The political rationale, by contrast, demands Pareto improvements and focuses on the very distributional and short-term impacts that the economic rationale shoves aside. This tension between political and economic imperatives manifests in energy markets in identifiable ways. Energy markets cannot survive politically if their benefits accrue to a minority at the expense of the majority; nor can they survive if their long-term net benefits entail unacceptably high short-term costs. On the other hand, for energy markets to work as intended, the distribution of benefits and costs must necessarily be uneven across buyers and sellers and over time. It is over these two dimensions of restructuring—distribution of impacts across customer classes and distribution of impacts over time—that we must reconcile the tension between restructuring’s economic and political rationales.

B. Politics, Economics, and Prices

This tension underlies several of the problems we see in new energy markets. In Figure 2, assume (plausibly) that when EnergyCo sheds some of its production facilities to comply with market-power rules, it spins off its most competitive production units (those that can produce energy at least cost) to its affiliate (Company *C*), selling its less competitive units to the unaffiliated buyers (Companies *A* and *B*). Assume further that the cost of providing energy from the four units, operating at full capacity, is as follows:

Production Unit (Owner)	Capacity (units of energy)	Cost of energy delivered (per unit)
1 (Co. <i>C</i>)	1,000	x
2 (Co. <i>C</i>)	500	x
3 (Co. <i>A</i>)	1,000	$2x$
4 (Co. <i>B</i>)	500	$3x$

1. *Short-Term Distributional Effects*

Having moved from regulation to competition, each production unit must now compete for customers. Companies *A* through *C* must now pay for their production assets by selling energy on the market since they are no longer guaranteed a return on their investments. Generally, they will prefer to serve customers whose demand is both

large and predictable: that is, industrial customers,¹⁴⁷ represented by the large circles in Figure 2. To see why this is so, assume that a residential customer's average instantaneous demand is 1 unit of energy,¹⁴⁸ but that it varies over time¹⁴⁹ between 0.5 and 1.5 units. Assume further that the average industrial customer's instantaneous demand is 1,000 units, varying between 950 and 1,050. Almost all of the industrial customer's demand can be served by a single production unit—Unit 1 or Unit 3—running at or near full capacity,¹⁵⁰ plus one or more small peaking plants serving the industrial customer's load above 1,000 units. By contrast, serving the average 1,000-unit load represented by 1,000 residential customers is a much more costly endeavor.¹⁵¹ Only half of that load (500 units) can be served by an appropriately sized plant—Unit 2 or Unit 4—operating at a 100-percent capacity factor. The remaining demand, which will sometimes reach as high as 1,000 units (for a total of 1,500 units of demand), will have to be served by plants operating at less than full capacity,¹⁵² perhaps much less.¹⁵³

This creates three serious problems for residential customers in an unregulated market. First, if there are economies of scale in energy production, energy from the type of smaller plants needed to serve the peaks of variable loads will cost more than energy from larger plants.¹⁵⁴ Second, because the capital and fixed costs of producing energy must be recovered through energy sales, sellers serving

¹⁴⁷ See Davis, *Electricity Vote Put Off by Senate*, *supra* note 144, at 1C (explaining that after California restructured, small customers were "shunned by electric retailers pursuing more lucrative commercial and industrial customers").

¹⁴⁸ In the electricity context, instantaneous demand would be expressed in kilowatts (kw), and demand over time would be expressed in kilowatt-hours (kwh).

¹⁴⁹ While this is a hypothetical example using stylized facts, residential load does indeed vary much more dramatically than industrial loads, both daily and seasonally. See JOSKOW & SCHMALENSEE, *supra* note 16, at 37–38. A predictable industrial process running three shifts (24 hours a day) has nearly constant, flat demand. Households, by contrast, have (i) needs that vary in predictable ways but vary nevertheless, as well as (ii) unpredictable variations in demand based on weather, etc. Thus, for example, a household's average instantaneous demand might be 2 kw, ranging between 1 and 4 kws; an industrial user might have an average instantaneous demand of several megawatts (mw).

¹⁵⁰ A 100 percent "capacity factor" represents constant operation over time.

¹⁵¹ See JOSKOW & SCHMALENSEE, *supra* note 16, at 40 ("A system with widely varying loads will have higher costs than one with a stable load, all else equal.")

¹⁵² This hypothetical assumes that these customers' loads vary together so that their demand peaks and valleys coincide. While an exaggeration, this is generally true, since residential load within a market varies primarily with weather conditions and relatively uniform usage patterns.

¹⁵³ How often these peaking plants will serve this load depends on the shape of these customers' load curves. There are quite possibly only a few hours per year when their collective demand reaches 1500 units of energy.

¹⁵⁴ Cf. Brown & Sedano, *supra* note 145, at 7 (discussing the trend from the 1960s until the 1980s where available technology and economies of scale made building larger power plants "less expensive on a per MegaWatt basis").

highly variable loads, like residential loads, have lower capacity factors and therefore must spread those costs over fewer units of energy sold. This means that each unit of energy sold will be relatively more costly, all other costs equal,¹⁵⁵ than that energy sold to customers with stable loads.¹⁵⁶ Third, irrespective of these other issues, as the most desirable customers, industrial customers¹⁵⁷ will have their pick of suppliers¹⁵⁸ and will command the lowest-cost energy irrespective of plant size or capacity factors.¹⁵⁹ In Figure 2, industrial customers are likely to get their power from Units 1 and 2, leaving the remaining residential demand to higher-cost units and making the per-unit cost of supplying that demand that much more expensive.¹⁶⁰ Finally, restructuring eliminates any cross-subsidies of residential customers by industrial customers hidden in regulated rate structures,¹⁶¹ thereby exposing residential customers to prices reflecting the full cost of serving their needs. In all of these ways, residential customers will feel the effects of unbundling in a more adverse way than industrial customers will.¹⁶²

Perhaps it is not surprising, then, that: (i) attractive wholesale and retail customers of energy can command long-term contracts that lock up the most inexpensive energy; and (ii) residential rates have not decreased under competition, at least not so far. However, all else

¹⁵⁵ There are constraints on the kinds of plants that can serve peak loads. Peaking plants have to be small so as to be able to handle finer gradations of changes in demand. Among electricity generation technologies, most coal and nuclear plants have very large capacities (in the high hundreds and thousands of megawatts), while natural gas fired plants are often considerably smaller, making them more appropriate choices to serve variable loads. Peaking plants must also be able to dispatch easily and quickly to serve rapidly changing demand, and gas plants can "ramp up" (prepare to send power to the grid) much more quickly than coal and nuclear plants. On the other hand, fuel prices for coal and nuclear facilities are much more stable than gas prices. Since most electricity generating peaking plants are gas fired, this exposes residential customers to additional price volatility.

¹⁵⁶ See JOSKOW & SCHMALENSSEE, *supra* note 16, at 20, 40.

¹⁵⁷ See Davis, *Electricity Vote Put Off by Senate*, *supra* note 144.

¹⁵⁸ See Brown & Sedano, *supra* note 145, at 25–26.

¹⁵⁹ See JOSKOW & SCHMALENSSEE, *supra* note 16, at 20.

¹⁶⁰ As noted *supra* notes 132–135 and accompanying text, under traditional regulation, industrial rates subsidized residential rates, mitigating the effects of this cost differential.

¹⁶¹ FERC Commissioner Suedeen Kelly described these hidden subsidies this way in 1999:

[R]egulators almost universally have tried to keep residential rate increases to a minimum by raising industrial rates a bit more than a politically blind cost analysis would peg them. In economic terms, in today's regulated world, the larger consumers more often than not subsidize the smaller ones. When generation becomes competitive (i.e., when the market sets electricity rates) this will change. Smaller consumers will feel the burden of the shifting costs from the larger consumers to them.

Suedeen G. Kelly, *The New Electric Powerhouses: Will They Transform Your Life?*, 29 ENVTL. L. 285, 300 (1999) (citation omitted).

¹⁶² See *id.*

equal, over the long run, new entrants, or the threat of new entrants, should lower the costs of producing and supplying energy. The economic rationale for restructuring tells us that even if these efficiency effects do not completely cancel out distributional effects, they ought to mitigate them. Is that sort of mitigation happening? If not, why not?

2. *Prices and Market Entry in the Long Run*

In Figure 2, assume that all consumers' minimum base-load demands are satisfied through bilateral contracts with the lowest-price producers and that demand above that minimum (to the peak) is satisfied by acquiring power on short-term or spot markets. Company C's units 1 and 2 are dedicated to serving base-load needs under such contracts and will have very high capacity factors; Company A's unit and Company B's unit (units 3 and 4, respectively) serve peak demand via short-term and spot markets, which serve to balance variations in load. Presumably, as the provider of the highest-priced power, Unit 4 will have the lowest capacity factor of the four units, and Unit 3 will have the second-lowest. Consider, then, Company D, a potential entrant to the supply market in Figure 2. The factors influencing Company D's decision whether to enter the market include whether it can: (i) sell cost-competitive energy; (ii) gain access to potential customers; and (iii) capture sufficient revenues from those customers to earn a sufficient return on investment. In Figure 2, all of the energy is owned by companies A through C. If Company D cannot buy an existing facility or power from one of those companies, it will have to build its own production unit or purchase energy from outside the former EnergyCo service area for resale within the area. If Company D can produce or acquire energy more cheaply than that produced by Company C, Company D should eventually supplant Company C serving the most attractive customers' base-load needs, at least until an even lower-cost supplier comes along. However, this scenario is unlikely.¹⁶³ Incumbents often have access to the lowest-cost production

¹⁶³ Certainly there have been situations in which formerly protected incumbent monopolies were saddled with inefficient plants. The post-Three Mile Island generation of nuclear plants in the United States were built at exorbitant costs. However, during restructuring, the inefficiency of those investments have not penalized incumbents because regulators have treated inefficient plants as "stranded costs" to be allocated not to the incumbent's shareholders but to ratepayers and taxpayers. Regulators made this choice in the face of arguments that to do otherwise would (i) breach the "regulatory compact" between licensed utilities, under which the government guaranteed the firm a fair return on its investment; and (ii) amount to a "regulatory taking" requiring just compensation under the Fifth Amendment of the U.S. Constitution. For a good discussion of these arguments in connection with restructuring energy markets in the United States, see Susan Rose-Ackerman & Jim Rossi, *Disentangling Regulatory Takings*, 86 VA. L. REV. 1435 (2000). In any case, stranded cost coverage freed incumbents from the burden of these invest-

because existing production units may have fully depreciated their capital costs and may face less stringent environmental regulation than even their relatively efficient but newer competitors.¹⁶⁴

Rather, assume that Company *D*'s energy costs 1.5x to produce, more than Company *C*'s costs but less than the energy produced by the units owned by Company *A* and Company *B*. Company *D* is cost-competitive with Companies *A* and *B*, but Company *C* will continue to provide base-load service, and Company *D* must recover its costs from peak sales on short-term markets. Therefore, Company *D* must be confident that during those times when its energy is needed to serve demand, rates will be sufficiently high to allow it to recover its costs and earn the desired return. Without a sense that it can sell its energy at rates sufficient to cover its capital and operational costs, Company *D* will not enter the market. Do existing energy markets offer Company *D* that assurance? Not necessarily. Future market prices are notoriously difficult to predict. Company *D* will have to project not only its own costs but also the costs of competing energy from different sources, including other new entrants. For example, the competitiveness of electricity from a new plant, such as a coal-fired plant, a nuclear plant, or a wind farm, will depend on the price of natural gas, since gas fuels many peaking plants and gas-fired generators are cheap and easy to build. Natural gas prices are notoriously volatile, complicating the projection of revenues for sellers on energy markets. Furthermore, the relative cost of Company *D*'s energy will be a function of future delivery constraints. Even if Company *D* has access to the delivery network now, demand and supply may change in the future so as to cause congestion in parts of the network Company *D* uses, causing Company *D* to lose sales to customers it cannot reach due to congestion.¹⁶⁵

ments and made their rates more competitive and their customers less attractive targets for new market entrants.

¹⁶⁴ This is true of coal-fired power plants and oil refineries in both Europe and the United States, where air pollution regulation exempts older facilities from the most stringent air pollution standards. For a discussion of how the Clean Air Act grandfathers old plants, see David B. Spence, *Coal-Fired Power in a Restructured Electricity Market*, 15 DUKE ENVTL. L. & POL'Y F. 187 (2005). The European Commission's Large Combustion Plants Directive imposes less stringent emissions limits on pre-1987 plants than post-1987 plants. Directive 2001/80/EC of the European Parliament and of the Council, 2001 O.J. (L 309) 1. In Europe, the standards according to which nuclear plants were licensed varied widely because there were no European standards until recently, resulting in clear cost-advantages for older plants. Just the opposite is true in the United States, where regulatory scrutiny greatly increased the cost of construction after the Three Mile Island incident in 1978. See U.S. NUCLEAR REGULATORY COMM'N, FACT SHEET: THREE MILE ISLAND ACCIDENT 3-4 (2004), available at <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.pdf>.

¹⁶⁵ For a discussion of the use of congestion pricing to address this problem, see *infra* part III.C.2.

The uncertainty does not end there. How will customers respond to these price pressures? The price elasticity¹⁶⁶ of natural-gas demand may be high in places where gas is not needed for heating or cooling but low in cold climates where natural gas is the home-heating fuel of choice, particularly in the short term. Over the long term, customers do have alternatives, making long-run elasticities higher everywhere. The actual and threatened interruption of gas supply from Russia into Europe in the winters of 2005–2006¹⁶⁷ and 2006–2007¹⁶⁸ raised the spectre of severe harm because end users had no reasonable short-term alternative; however, those same supply interruptions have inspired Europeans to develop alternative sources of gas¹⁶⁹ and to reduce their overall consumption of gas.¹⁷⁰ Likewise, during the gas crisis of the 1970s in the United States, high prices eventually caused fuel switching, not only by businesses, but by residential customers as well.¹⁷¹ Demand for electricity is different. To the extent that it is used for heating, customers may have long-term alternatives. However, where it is used for cooling, demand may be less responsive to price. Moreover, electricity is the lifeblood of the information economy. Thus, for all of these reasons, above a certain floor, demand should respond to price over the long term but may be less price elastic in short-term situations.

Regardless of the price elasticities of demand for energy, there is another reason why prospective entrants like Company *D* may be reluctant to enter energy markets: producers are skeptical about the willingness of politicians and regulators to allow owners of peaking units to capture scarcity rents when energy is scarce. Naturally, politicians and regulators prefer to protect customers (particularly vulnerable customers) from high rates and do so in a number of ways. In both the United States and Europe, many jurisdictions have imposed

¹⁶⁶ Price elasticity of demand is the measure of the amount by which changes in price produce changes in demand. It is usually expressed as a fraction, the numerator of which is the percentage change in demand and the denominator of which is the percentage change in price. HAL R. VARIAN, *INTERMEDIATE MICROECONOMICS* 276 (5th ed. 1999). For studies estimating the price elasticity of energy demand, see STEVEN H. WADE, *ENERGY INFO. ADMIN., PRICE RESPONSIVENESS IN THE AEO2003 NEMS RESIDENTIAL AND COMMERCIAL BUILDINGS SECTOR MODELS*, available at <http://www.eia.doe.gov/oiaf/analysispaper/elasticity/>.

¹⁶⁷ See *Power Games*, *ECONOMIST*, Jan. 7, 2006, at 12, 12.

¹⁶⁸ See *Russia and Belarus: Loveless Brothers*, *ECONOMIST*, Jan. 13, 2007, at 44, 44–45.

¹⁶⁹ Specifically, Europe is investigating importation of natural gas from the Middle East through Turkey and development of liquefied natural gas imports. See, e.g., *Turkey and Iran: Too Energetic a Friendship*, *ECONOMIST*, Aug. 25, 2007, at 49, 49 (describing the planned pipeline for importing Iranian gas into Europe); see also *European Energy Security: A Bear at the Throat*, *ECONOMIST*, Apr. 14, 2007, at 58, 58–60 (detailing a number of possible new sources of gas supply for Europe, including LNG).

¹⁷⁰ See, e.g., *Turkey and Iran: Too Energetic a Friendship*, *supra* note 169, at 49; see also *European Energy Security: A Bear at the Throat*, *supra* note 169, at 58–60.

¹⁷¹ For a summary of these developments, see Pierce, *supra* note 38.

price caps during the transition to competition¹⁷² and beyond.¹⁷³ During the California crisis, for example, the FERC imposed wholesale price caps based on “reference prices,” estimates of prices that regulators might expect to see charged during particular market conditions. Additionally, ISOs¹⁷⁴ in Europe and the United States sometimes employ reference prices as a means of identifying potential abuses of market power.¹⁷⁵ Some American states also employ price caps as a means of stabilizing their markets.¹⁷⁶ As an alternative or complement to these caps, some jurisdictions offer some form of “default” service or “provider of last resort service” (POLR service) for customers who either do not switch providers or cannot attract a provider in the competitive market.¹⁷⁷ Often, POLR service is offered at

¹⁷² See, e.g., PA. PUB. UTIL. COMM’N, *ELECTRIC RESTRUCTURING: THE TRANSITION FROM RATE CAPS TO MARKET-BASED PRICING* (2007), available at http://www.puc.state.pa.us/general/consumer_ed/pdf/Rate_Caps.pdf (offering a simple description of Pennsylvania’s transitional caps).

¹⁷³ FERC Commissioner Joseph Kelliher blames the persistence of retail price caps in some states for poorly performing wholesale markets. See *FERC’s Mission Is Improving Competition*, *RESTRUCTURING TODAY* (Apr. 17, 2007), at 1.

¹⁷⁴ See *supra* note 43.

¹⁷⁵ The PJM employs wholesale price caps, albeit very high ones. PJM’s price cap, found in its filed tariff, operates as a limit on offer-to-sell prices and is set at \$1000/mwh. Craig Glazer, Vice President, PJM Interconnection, L.L.C., *PJM Open Access: Transmission Tariff 401* (Oct. 10, 2007) (on file with PJM Interconnection, L.L.C.). The New York ISO cap operates the same way and is set at \$100/mwh. William J. Museler, President, N.Y. Indep. Sys. Operator, Inc., *Mkt. Admin. & Control Area Tariff, Attachment B, Part III, § 3.5* (Feb. 1, 2005) (on file with the FERC, Docket No. ER99-4235-002, originally issued Dec. 18, 2000).

¹⁷⁶ In some American states, retail rates of incumbent utilities were capped until those utilities had recovered all their stranded costs. Such was the case in California, where caps forced Pacific Gas and Electric and Southern California Edison to charge retail prices that were lower than the wholesale prices they paid for power during the electricity crisis of 2000–2001. See Cudahy, *supra* note 27, at 174–75. San Diego Gas and Electric, which had recovered all of its stranded costs by the winter of 2000–2001, was permitted to pass through its high wholesale power costs to customers. Consequently, its retail demand dropped with the wholesale price increases while that of Pacific Gas and Electric and Southern California Edison remained high. See Spence, *supra* note 1, at 436–37 n.69.

¹⁷⁷ In Europe, the 2003 Directives authorize member states to impose POLR service. Council Directive 2003/54, *supra* note 54, art. 3, para. 3, at 42. Both Europe and the United States offer a variety of approaches to the provision of POLR service. For instance, in the Scandinavian Nord Pool market, household customers may choose to take service under a “price cap contract.” See, e.g., Nord Pool ASA, *The Nordic Power Mkt.: Elec. Exch. Across Nat’l Borders 14* (Apr. 1, 2004), available at <http://www.nordpool.com/information/reports/Report-Nordic%20Market.pdf> (describing the various options available to “small-scale end-users”); see also Jim Rossi, *The Common Law “Duty To Serve” and Protection of Consumers in an Age of Competitive Retail Public Utility Restructuring*, 51 *VAND. L. REV.* 1233, 1288–1319 (1998) (noting the difficulty that energy providers face when trying to create competitive markets while honoring the common-law duty to provide energy and how that tensions plays out).

a regulated or subsidized rate.¹⁷⁸ If POLR service is available to anyone, it can put downward pressure on retail rates.¹⁷⁹

It is not difficult to see how price caps and generally available low-cost default service deter entry into the market by companies like Company *D*. These market-distorting interventions remain in place in some jurisdictions, and their persistence serves as a warning to potential market entrants about the unwillingness of lawmakers to expose residential customers to high prices. Even in places where retail rates are not capped, might they be if they rise too high? As proponents of markets, European and American regulators recognize that market efficiencies can be realized only if price signals are allowed to work—only if potential entrants like Company *D* see prices that truly reflect scarcity. For that reason, regulators pledge to intervene only in response to price increases caused by the exercise of market power by one or more sellers.¹⁸⁰ However, distinguishing between price spikes caused by the exercise of market power and price spikes caused by the capture of scarcity rents is no easy feat. If demand grows and reserve margins fall, wholesale prices will rise; conversely, if wholesale price increases pass through to retail customers, demand may fall. On the other hand, if retail price caps are in place, or retail rates otherwise do not move with wholesale rates, demand will remain high. Since energy cannot be stored, scarcity (and the higher prices it brings) will persist unless providers develop newer, cheaper sources of energy. Sellers, keenly aware of this fact, know that these situations create opportunities to demand very high prices in short-term markets.¹⁸¹ Is

¹⁷⁸ See, e.g., Elizabeth Drews, *Takings in the Context of Telecommunications and Electric Utility Restructuring in Texas*, 7 TEX. TECH ADMIN. L.J. 241, 261–62 (2006) (noting that in Texas, POLR service must be offered at a rate approved by the Texas Public Utility Commission); see also Gaye White, *Energy Regulation*, 57 SMU L. REV. 923, 943–46 (2004) (describing the interaction between a POLR and a PUC).

¹⁷⁹ According to the European Commission:

In a number of Member States, regulated retail prices co-exist with free market prices for some or all customers. A majority of Member States regulate prices to households and small businesses, while at least six Member States set a regulated price that is available to all customers. However, the proportion of end-users that have stayed with the regulated tariff varies between Member States. Regulated tariffs will have a negative effect on competition, particularly if they are set too low, so as to make cost-based competitive prices unattractive.

European Comm'n, *supra* note 61, at 109.

¹⁸⁰ See, e.g., STATE OF N.Y. PUB. SERV. COMM'N, STATEMENT OF POLICY REGARDING VERTICAL MARKET POWER 2–3 (1998), available at <http://www.dps.state.ny.us/> (follow “File Room Document Requests,” then follow “Guidance Documents”; the document is located on the following page) (discussing a proposed rule to control the ability of New York’s utilities to exercise vertical market power).

¹⁸¹ This is essentially what went wrong with the California market, though the problem was badly exacerbated by the fact that essentially *all* of California’s electricity was purchased through short-term markets in the winter of 2000–2001. Spence, *supra* note 1, at 425–26 n.34. Retail rate caps left retail sellers like Pacific Gas and Electric and Southern

such a demand an unfair exercise of market power or merely the capture of scarcity rents? Neither European nor American regulators have articulated a clear distinction between these two notions; indeed, there may not be one.¹⁸²

Meanwhile, elected politicians, and possibly regulators, have the authority to cap rates at any time. The European Commission's 2003 directives specify that prices must be "fair,"¹⁸³ and the major American energy statutes require wholesale prices to remain "just and reasonable."¹⁸⁴ Despite the commitment to markets in both Europe and the United States, politicians or regulators conceivably would intervene to cap prices if and when scarcity drives prices to extraordinary heights.¹⁸⁵ Even if regulators are committed to the economic theory of restructuring, politicians may not be. It is easy to see how unnerving this state of affairs is for a prospective market entrant like Company *D*. Company *D* knows that regulators are overseen by politi-

California Edison selling electricity at a loss for extended periods, damaging their credit ratings and sending Pacific Gas and Electric into bankruptcy. *Id.* at 427–28, 440. If short-term markets are supplemental (i.e., they are additional to bilateral, fixed-price, wholesale energy transactions), the effects of price spikes are somewhat mitigated. *Id.* at 436 (noting that California had forced wholesale buyers to conduct business solely through spot markets, thus maximizing their exposure to price fluctuations). Nevertheless, in the presence of rate caps and delays associated with developing new energy sources, price spikes on short-term markets can be severe enough to affect providers. *Id.* at 437 (noting that because the price caps sustained high levels of demand, they afforded opportunities to manipulate the market).

¹⁸² The District of Columbia Court of Appeals struggled with this distinction while overturning the FERC's approval of the New York ISO's plans for controlling—"mitigating," in FERC parlance—the exercise of market power in setting market-based rates. *Edison Mission Energy, Inc. v. FERC*, 394 F.3d 964, 965 (D.C. Cir. 2005). The New York ISO's automated mitigation procedure would compare prices charged with a reference price, or a price we might expect sellers to charge based on the cost of inputs and other market conditions (called the "conduct-impact test"). *Id.* at 966. The court stated:

[T]he presence of workable competition [in the New York market] would suggest that many, perhaps most, of the bids triggering mitigation will be due not to market power but to temporary scarcity. At least this would be so unless the conduct-impact tests somehow differentiated between bid increments due to scarcity and ones due to market power—which the Commission doesn't claim.

Id. at 968. For a discussion of the how some regulators and courts have addressed this issue, see *infra* notes 183–87, 216 and accompanying text.

¹⁸³ The 2003 Directives include "customer protection" provisions, which authorize member states to "impose . . . public service obligations . . . which may relate to . . . price." Council Directive 2003/54, *supra* note 54, art. 3, para. 2, 2003 O.J. (L 176) at 42. The preamble to both directives also declares that "household customers . . . enjoy the right to . . . reasonable prices." *Id.* pmb. para. 24, at 39.

¹⁸⁴ See *Atl. Ref. Co. v. Pub. Serv. Comm'n*, 360 U.S. 378, 388 (1959) (noting that the purpose of the Natural Gas Act was "to underwrite just and reasonable rates to the consumers of natural gas" (citation omitted)).

¹⁸⁵ In such situations, neither American nor European law has yet clarified the line between impermissible abuse of market power and the permissible capture of scarcity rents. For a discussion of this issue in the American context and the question of when market-based rates are "just and reasonable," see Spence, *supra* note 1, at 429–36.

cians elected by ratepayers. Assuming Company *D* serves peak rather than base loads, its success in the market will depend on its ability to sell energy (and earn revenues) only when prices are relatively high; price caps (or the threat of other regulatory intervention to prevent sales at high prices) therefore may be sufficient to deter it from entering the market. And yet if companies like Company *D* choose not to enter the market, energy remains scarce, thus putting continuing upward pressure on price.

Thus, regulators face a conundrum, one summarized in a recent D.C. Circuit Court of Appeals opinion. The court noted that regulatory action to suppress prices pushed upward by *market-power* abuse protects consumers, but suppressing prices pushed upward by *scarcity* harms consumers; for price controls that do both, the “‘crucial question . . . is whether [such controls] do more good than harm.’”¹⁸⁶

C. Fine-Tuning the Market

This dynamic—energy scarcity without market entry—is an inherently dangerous and volatile one, which can put both buyers and sellers at risk. The California energy crisis involved exactly this sort of problem, although over-reliance on short-term markets exacerbated that particular problem.¹⁸⁷ Regulators recognize this and are working to create rules that both protect consumers from price volatility and encourage entry by sellers. Many of their efforts seek to facilitate market solutions to these problems by fine-tuning existing market rules.

1. *Hedging Price Risk*

Since the price spikes of the late 1990s and early 2000s, wholesale buyers and sellers have begun to use a wide variety of financial techniques to hedge price risk. One simple way for sellers to hedge risk is to acquire the bulk of their energy from somewhere other than short-term energy markets. If sellers own their production units or acquire energy via fixed-price long-term contracts, they can protect themselves and their customers from price volatility on the short-term markets. That said, retail sellers serving variable loads have to acquire some of their energy on short-term markets; when that situation arises, energy derivatives can serve to insure against price risk. The last decade has

¹⁸⁶ *Edison Mission Energy*, 394 F.3d at 969 (quoting *Md. People's Counsel v. FERC*, 761 F.2d 780, 788–89 (D.C. Cir. 1985)).

¹⁸⁷ For a description of how over-reliance on spot markets worsened the California energy crisis, see Spence, *supra* note 1, at 427–29.

seen explosive growth in such derivatives—futures¹⁸⁸ and forward¹⁸⁹ contracts, options,¹⁹⁰ and swaps¹⁹¹— which enable retailers to secure the right to energy in the future at a specified price. The added protection offered by this tactic may be why trading volume for energy derivatives has grown significantly in the last five years in both the United States and Europe.¹⁹²

These hedging devices, when used by retail sellers buying on wholesale markets, can go a long way toward protecting retail customers from price volatility. However, each entails its own costs to customers and so represents a payment for price certainty: the same as when one pays for certainty when choosing a fixed-rate over an adjustable-rate mortgage. Perhaps this is not surprising, since experimental evidence shows that many people are risk averse in this way—they are willing to pay now to reduce future downside risk.¹⁹³ If the market price right now is y , many people would choose a fixed price long-term contract at a price $> y$ over a market-price contract with a starting price at y . Derivatives and long-term contracts can provide that type of

¹⁸⁸ An energy futures contract is a contract in which one party agrees to provide the other party energy on a future date at a specified price. Futures contracts are traded on commodities exchanges so that the exchange assumes some of the credit risk. Such contracts are cleared daily and settled financially—that is, no physical delivery of energy takes place. For a good description of energy futures contracts, see N.Y. Mercantile Exch., Inc., *A Guide to Energy Hedging* 6 (Dec. 1999), available at www.nymex.com/media/energyhedge.pdf.

¹⁸⁹ Forward contracts are like futures contracts in that they too represent an agreement to deliver and take energy in the future at an agreed-upon price. However, forward contracts are not traded on commodities exchanges and leave the parties with more credit risk. For a good description of forward contracts, see Thomas G. Kelch and Howard J. Weg, *Forward Contracts, Bankruptcy Safe Harbors and the Electricity Industry*, 51 WAYNE L. REV. 49, 63–79 (2005).

¹⁹⁰ An option contract is a contract in which one party purchases the right to make a future purchase or sale at an agreed-upon price. BLACK'S LAW DICTIONARY 1127 (8th ed. 2004). The purchaser of the option pays for it regardless of whether the option is ever exercised. *Id.* For an account of the use of options in energy markets, see Steven Ferrey, *Inverting Choice of Law in the Wired Universe: Thermodynamics, Mass, and Energy*, 45 WM. & MARY L. REV. 1839, 1937–38 (2004).

¹⁹¹ Swaps represent a bet on future market prices whereby the contracting parties agree to exchange their interest-payment obligations. BLACK'S LAW DICTIONARY, *supra* note 190, at 1488. For an explanation of the use of swaps, see Carolyn H. Jackson, Note, *Have You Hedged Today? The Inevitable Advent of Consumer Derivatives*, 67 FORDHAM L. REV. 3205, 3208–14 (1999).

¹⁹² For a good description of European energy derivatives markets, see European Fed'n of Energy Traders, *The Past and Future of European Energy Trading* (June 22, 2005) (on file with EFET). For a description of the American energy derivatives market in the post-Enron era, see Alexia Brunet & Meredith Shafe, *Beyond Enron: Regulation in Energy Derivatives Trading*, 27 NW. J. INT'L L. & BUS. 665 (2007), which details the impact of the Enron collapse on, among other things, consumer confidence in deregulated energy derivatives markets and how the energy market environment has been shaped since that time.

¹⁹³ For an in-depth analysis of risk-adverse behavior, see Seth J. Chandler, *Visualizing Adverse Selection: An Economic Approach to the Law of Insurance Underwriting*, 8 CONN. INS. L.J. 435 (2002).

certainty at a cost: those selling derivatives function as insurers who (assuming they do it well) make a profit insuring others against the risk of loss. That profit represents a transfer to those insurers from energy firms, a part of which will be borne by consumers.

2. *Capacity Assurance*

Regulators and system operators have tried a variety of different approaches to the problem of ensuring that there is a sufficient supply of energy and network capacity to serve demand. With respect to energy capacity, regulators in the United States and Europe employ a mixture of mandates and incentives to try to ensure that energy is not too scarce. Because of the limited ability to store gas and electricity,¹⁹⁴ regulators mandate that retail sellers of energy in competitive markets maintain adequate reserves to satisfy peak demand. However, this is easier to mandate than to do. This is particularly difficult in European gas markets, where the supply of gas entering Europe is limited and mostly committed to a few incumbent gas firms under long-term contracts.¹⁹⁵ As mentioned previously, the European Commission and national regulators approach this problem in two ways: by encouraging the development of new supply routes into Europe (pipelines and LNG facilities)¹⁹⁶ and by forcing long-term contracts open.¹⁹⁷ In both American and European electricity markets, however, regulators are working hard to create incentives for construction of new capacity. For example, the New England Independent System Operator, a network management organization serving the northeastern United States electricity grid, uses a "locational installed capacity" pricing system to encourage investment in new capacity.¹⁹⁸ The New York Independent System Operator specifies that retail sellers acquire their reserve margin capacity at above-market prices that decline as the amount of capacity purchased approaches the target of 118 percent of projected needs.¹⁹⁹ The European Commission is also trying to encourage the use of such reserve margin acquisition programs,

¹⁹⁴ See *supra* note 28.

¹⁹⁵ See *supra* notes 108–12 and accompanying text.

¹⁹⁶ See *supra* note 126 and accompanying text.

¹⁹⁷ See *supra* Part II.C.

¹⁹⁸ Associated Indus. of Mass. Found., Inc., *New England's Locational Installed Capacity (LICAP) Mkt.: A Primer* (Apr. 2005), available at <http://www.aimnet.org/AM/Template.cfm?Section=home&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=6367>. The Midwest ISO also uses capacity auctions. See ICF Int'l, Inc., *Indep. Assessment of Midwest ISO Operational Benefits* 31 (Feb. 28, 2007), available at http://www.icfi.com/markets/energy/doc_files/midwest-iso-report.pdf.

¹⁹⁹ This process is described well in *Electricity Consumers Resource Council v. FERC*, 407 F.3d 1232, 1233–35 (D.C. Cir. 2005). For a description of the use of a similar technique for ensuring that sellers provide adequate reserve margins in New England, see *Sithe New England Holdings, L.L.C. v. FERC*, 308 F.3d 71, 73–74 (1st Cir. 2002) and *Central Maine Power Co. v. FERC*, 252 F.3d 34, 37–39 (1st Cir. 2001).

particularly capacity auctions, to promote investment in energy production.²⁰⁰ This is essentially the approach used by the PJM system, where market concentration continues to worry regulators.²⁰¹

Proper pricing of transmission services helps to encourage the development of new capacity, and the United States seems to be ahead of Europe in the use of congestion pricing. In Figure 2, recall that Company *D* could lose potential sales because of its inability to get energy through congested portions of the network. Typically, well-managed grids address this situation using congestion charges.²⁰² The sales price of Company *D*'s power will increase costs associated with its delivery, assuming the existence of some sort of congestion pricing system on the delivery network.²⁰³ However, while congestion charges can offer strong incentives to build lines or production units, they cannot ensure the siting of either. The problem of encouraging development of transmission capacity is complicated by the FERC's and the European Commission's lack of authority to oversee siting of network facilities. The authority to approve or veto construction of new network facilities lies with the American states and European member states—rather than the FERC or the European Commission,

²⁰⁰ See *Communication from the Commission to the Council and the European Parliament: Inquiry Pursuant to Article 17 of Regulation (EC) No. 1/2003 into the European Gas and Electricity Sectors (Final Report)*, at 14–15, COM (2006) 851 final (Oct. 1, 2007), available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0851:FIN:EN:PDF> (“For electricity, implicit day-ahead auctions or equivalent measures should be promoted as much as possible to ensure that interconnectors are used to their maximum extent.”).

²⁰¹ The PJM approach is based on its so-called “reliability pricing model.” In a report released by PJM’s market monitoring unit on August 16, 2007, PJM found that its most recent capacity auction did yield competitive prices and that, prior to the auction, generators had the potential to exert market power in all of its regions. See PJM Mkt. Monitoring Unit, *Analysis of the 2007–2008 RPM Auction* (Aug. 16, 2007), available at <http://www.pjm.com/markets/market-monitor/downloads/mmu-reports/20070820-analysis-2007-2008-rpm-auction.pdf>.

²⁰² In unbundled markets, sellers and buyers whose transactions use a congested portion of the network pay more to use the network through some sort of locational marginal pricing. Locational marginal pricing takes account of the fact that congestion can prevent demand from being served by the least-cost producer of energy if congestion prevents that producer from accessing the network. Price differences for energy on different sides of the constrained portion of the network may be used to calculate (and recover) the economic rents captured by producers who can avoid the constraint. For a good description of how locational marginal pricing works, see Karl Meeusen & R. Scot Potter, *The Nat’l Regulatory Research Inst., Comm’r Primer: Locational Marginal Pricing* (Nov. 2004) (unpublished manuscript, on file with author). Users of the network willing to cancel or postpone their transactions may avoid those higher prices and, under some systems, may earn money for helping to relieve congestions. With its relatively low price elasticity compared to other loads, residential loads are often unable to avoid those charges.

²⁰³ Historically, transmission pricing did not reflect congestion costs. Users of the system were charged either a “postage stamp rate,” a flat rate for transmission within a zone, or a “megawatt-mile rate,” a rate based on the amount of power transmitted and the distance. Neither approach reflected congestion costs. Now, most networks employ some sort of locational marginal pricing to give users of the network the incentive to avoid congested areas. See *supra* note 202.

respectively.²⁰⁴ Communities within these states that will not benefit from the presence of new network lines (because they neither sell energy into nor buy energy from the line) may choose to withhold that permission. To encourage more investment in delivery networks, regulators on both sides of the Atlantic could grant permission to some developers to dedicate the new capacity to particular users for a period of years in order to finance construction, but the capacity would remain unavailable to other entrants during that period of exclusivity.²⁰⁵ The Energy Policy Act of 2005 authorizes the FERC to employ a process, under limited circumstances, whereby it could force the siting of electric-transmission lines where the national interest demands it.²⁰⁶ As of this writing, it has not yet used this power.²⁰⁷ The FERC and the European Commission are also promoting more geographically widespread grid management structures to facilitate long-distance bulk power transfers.²⁰⁸

Each of these ideas represents an attempt to manage the market, and some are quite subtle. Nevertheless, these are experiments—unfinished ones. For now, the amount of time and resources devoted to creating these various incentives testifies to the market's own failure to provide the right incentives, at least in some places. Is this merely a symptom of the immaturity of these markets, as the term "fine-tuning" suggests? Or is this an indication of some deeper incompatibility between economic theory and energy markets? There is no consensus answer to these questions, and thus far, politicians and regulators do not seem inclined to face them squarely.

²⁰⁴ See *infra* notes 226–227.

²⁰⁵ The 2003 directives authorize this with respect to transmission facilities. See Council Directive 2003/55, *supra* note 53, at 68–70. The FERC has approved this sort of arrangement for new liquefied natural gas (LNG) import terminals to encourage their development. See Hackberry LNG Terminal, L.L.C., 101 F.E.R.C. 61,294 (2002) (prelim. determination).

²⁰⁶ See 16 U.S.C.A. § 824p (West 2007).

²⁰⁷ The FERC has proposed a rule establishing standards for its use. See Regulations for Filing Applications for Permits to Site Interstate Electric Transmission Facilities, 71 Fed. Reg. 69,440, 69,442–45 (Nov. 16, 2006) (codified at 18 C.F.R. pts. 50 & 380).

²⁰⁸ This was an expressly declared purpose of the FERC's Order 2000, which aimed to promote investment in transmission capacity by RTOs, whose larger geographic scope would enable them to see the benefits of investment irrespective of the interests of any local community. FERC Order No. 2000, *supra* note 43. For its part, the European Commission has promulgated two more recent directives aimed at facilitating the elimination of network bottlenecks at national borders. By increasing capacity at these bottlenecks, the Commission hopes to trigger more cross-border competition. See Council Directive 2005/89, Concerning Measures to Safeguard Security of Electricity Supply and Infrastructure Investment, 2006 O.J. (L 33) 22 (EC); REGULATION 1775/2005, CONDITIONS FOR ACCESS TO THE NATURAL GAS TRANSMISSION NETWORKS, 2005 O.J. (L 289) 1 (EC).

IV
RECONCILING THE POLITICS AND ECONOMICS
OF RESTRUCTURING

Both American and European regulators remain dedicated to the economic imperatives of letting markets work, while their political overseers remain steadfastly dedicated to the political imperative of protecting consumers from high prices. This silent conflict cannot persist forever. It feeds unrealistic expectations about energy markets and obscures the ways in which markets might bring Kaldor-Hicks improvements over regulation. If markets are to achieve efficiency benefits, they will do so through price signals spurred by market forces. That does not mean prices will simply decline monotonically; to the contrary, they will move in both directions, reflecting the forces of supply and demand. When prices are low, demand will rise and supply will fall; when prices are high, demand will fall and new sellers will enter the market, increasing supply. Economic theory tells us that in this way, the up-and-down movement of prices yields an efficient result over the long run, yet it remains unclear whether we are actually realizing any of that efficiency in energy markets. Restructuring is apparently nearing a crossroads where market skeptics and market proponents will have to confront one another more openly.

Market skeptics look at the current state of energy markets and wonder why this experiment in restructuring has gone as far as it has. They compare current energy prices to prices before restructuring and conclude that market efficiency is a chimera, at least in energy markets.²⁰⁹ They doubt that energy markets *can* work efficiently. Perhaps, they say, vertical integration is the more efficient approach in energy markets: in a market where good network management requires flexibility and speed, perhaps unbundling and arms-length transactions create *inefficiency* rather than efficiency.²¹⁰ These market skeptics see regulators' attempts to fine-tune markets as a poor substitute for regulation. All this fine-tuning, they say, seeks to do what price regulation or state ownership used to do: namely, to guarantee prospective investors in new capacity a sufficient return on investment to assure adequate capacity reserves over the long run. Furthermore, while fine-tuning markets may be able to induce investors to invest in new capacity, it does not necessarily protect consumers from all short-term price fluctuations. Some market skeptics

²⁰⁹ See *supra* notes 68–71 and accompanying text.

²¹⁰ This is, of course, the logic of Oliver Williamson's and Ronald Coase's work on the theory of the firm. For an analysis of the efficiency of vertical integration in network industries, including energy, see Robert J. Michaels, *Vertical Integration and the Restructuring of the U.S. Electricity Industry*, POL'Y ANALYSIS, July 13, 2006, at 1, available at <http://www.cato.org/pubs/pas/pa572.pdf>.

would protect consumers by making energy services a government function.²¹¹ David Freeman, former California energy czar, suggests a “hybrid” solution:

There is a serious lesson to be learned from all this. A completely free market for electricity and natural gas is too volatile for either the producer or the consumer.

Deregulation can work over time only if the price is not allowed to go so low that it does not reward new capital, and where the price is not so high that it punishes the consumer and businesses alike.

Let us put all of our ideology aside and accept the fact that we are dealing with the oxygen of life in a high-energy civilization. We need a hybrid policy of “floors and ceilings” with a market price fluctuating in between.²¹²

Proponents of markets, on the other hand, may argue that it takes time for markets to mature. To compare current prices to pre-restructuring prices is to compare apples to oranges, they say. Rather, we should compare current prices under restructuring to what current prices would have been under regulated markets. The jury is still out on that question, but in any case, energy markets are young, and regulators deserve time to set the conditions that will allow those markets to realize the promise of lower prices for average consumers. We may find that some vertical integration is efficient and that markets can accommodate that efficiency. For example, it may be efficient to permit sellers of energy to own some sources of supply (such as production facilities). On the other hand, integrating transmission and production is probably not efficient, and well-designed, independently managed transmission-service operators can probably provide network management services more efficiently than a vertically integrated firm can. If politicians can resist the temptation to distort price signals, markets can work, say their proponents. The proponents’ view, however, offers no comfort to politicians concerned about protecting consumers from high prices.

There is no reasonable way to proceed until regulators and politicians acknowledge both the economic and political imperatives of restructuring: (i) that market efficiencies cannot be realized if

²¹¹ The American Public Power Association argues that restructuring has failed and that public power is the answer. See Am. Pub. Power Ass’n, *Restructuring at the Crossroads: FERC Elec. Policy Reconsidered* 3–4 (Dec. 2004), available at <http://www.appanet.org/files/PDFs/APPWhitePaperRestructuringatCrossroads1204.pdf>. In Europe, this solution would represent a return to the days before privatization.

²¹² *Electricity Markets: California: Hearing Before the Subcomm. on Energy and Air Quality of the H. Comm. on Energy and Com.*, 107th Cong. 111 (2001) [hereinafter *Hearings*] (testimony of Sen. David Freeman, L.A. Dep’t of Water & Power), available at <http://energycommerce.house.gov/reparchives/107/action/107-6.pdf>. One might ask whether this is really a hybrid solution or a prescription for the very kind of political intervention that deters entry by companies like Company D.

politicians intervene to protect customers from price increases caused by energy scarcity (or if there is significant risk that politicians will do so); and (ii) that vulnerable customers cannot be subjected to unaffordable energy costs. Thus, politicians must find alternative ways to protect vulnerable consumers from price volatility—ways that do not distort price signals. If politicians (responding to voter preferences) cannot or will not find those alternatives, then markets will continue to struggle with shortages, seller market power, and price volatility. Such a case may indicate that voters prefer the certainty of (potentially higher) regulated prices to the risks (and potential benefits) that market prices bring.

Can markets satisfy these economic and political imperatives simultaneously? The five essential elements of any sincere attempt to bring market efficiency to energy markets seem politically risky. *First, politicians and regulators must make a credible commitment not to impose limits on the movement of energy prices in the absence of collusive or fraudulent behavior.* In other words, when scarcity drives prices high, politicians and regulators need to let the price signal work to attract new entrants into the market. This is much more easily said than done. Indeed, such a commitment may be beyond the authority of American and European regulators; the FERC is legally bound to ensure “just and reasonable” rates in wholesale markets, and European prices must be “fair.”²¹³ The U.S. Congress could amend the Federal Power Act to prohibit political intervention when scarcity drives wholesale rates upward,²¹⁴ but state legislators regulate retail rates.²¹⁵ While the interstate nature of the energy network gives Congress some regulatory jurisdiction over retail transactions that affect cross-border energy transfers,²¹⁶ a genuine commitment to let retail prices float would probably require the cooperation of state legislatures. In Europe, it is unclear whether the European Union’s jurisdiction over the single market includes the power to mandate even wholesale prices. For now,²¹⁷ the European Commission’s only option for energy price reg-

²¹³ See *supra* notes 183–184 and accompanying text.

²¹⁴ Such an amendment might read as follows: “No rate produced solely by market forces, including scarcity of supply, shall be considered unjust or unreasonable under Sections 205 and 206 of the Act.”

²¹⁵ See *supra* note 23 and accompanying text.

²¹⁶ The Supreme Court upheld the FERC’s exercise of regulatory jurisdiction over transmission associated with retail sales in states that had unbundled electricity sales from transmission, reasoning that electrons associated with intrastate transactions may nevertheless cross state lines or cause other electrons to cross state lines. See *New York v. FERC*, 535 U.S. 1, 16–17 (2002). Whether this logic applies as easily to the interstate gas network is debatable.

²¹⁷ In September 2007, the European Commission proposed the creation of an independent body to coordinate regulation within the EU, but that proposal’s prospects remain uncertain. See *Commission Proposal for a Regulation of the European Parliament and of the*

ulation is to rely on *ex post* antitrust enforcement by national governments.²¹⁸ If the European Commission, the European Council of Ministers,²¹⁹ and the European Parliament supported a regulation that confirmed the legality of scarcity-induced price spikes, it might provide the kind of reassurance prospective market entrants need. There is no evidence, however, that any of the European Union's policymaking organs is considering such a regulation.

*Second, designers of restructured markets*²²⁰ should ensure that buyers on wholesale and retail markets have every tool they need to hedge price risk. For buyers on wholesale markets (that is, retail sellers), this means that regulators should not restrict their use of the full portfolio of energy contracts, including purchasing energy through long-term contracts (to lock in energy purchases at a fixed price) and derivative contracts to protect themselves (and their customers) against price risk. After initially discouraging the use of derivatives in some markets, regulators now seem to welcome their use.²²¹ Long-term contracts are a different story. Where the use of long-term contracts has locked up supply and foreclosed entry into energy-sales markets, the solution is not to prohibit the use of long-term contracts. Rather, the appropriate solution is to develop new sources of supply (such as new electric generating units in places where supply margins are low or new LNG facilities in European gas markets) and to support the creation of transparent secondary markets in transmission capacity. The experiments that regulators and market monitors are conducting to encourage new supply²²² should be permitted to continue, even facilitated where legal barriers will allow. Secondary capacity markets, for their part, are much more common and function better in the United

Council Establishing an Agency for the Cooperation of Energy Regulators, COM (2007) 530 final (Sept. 19, 2007).

²¹⁸ See, e.g., Michelle Quinn et al., *Charges May Be Pivotal for Intel*, L.A. TIMES, July 28, 2007, at 1 (providing an example of the European Commission's *ex post* antitrust enforcement).

²¹⁹ The Council of Ministers is the European Union organ most associated with national governments since it is staffed by the ministers of member states. See DAMIAN CHALMERS ET AL., EUROPEAN UNION LAW 101 (2006). There are several instruments the EU can use to make law—each involving a slightly different process. See *id.* at 132–40. Directives, the device most commonly used in the energy field, do not have direct legal effect on citizens and are operative only if national governments implement them. See *id.* at 133. A regulation, on the other hand, does have direct effect. See *id.*

²²⁰ In practice, designers include not only the European Commission, the FERC, and legislatures, but also transmission system operators to whom regulators and legislatures have delegated market management authority. See *supra* Part I.

²²¹ See Saul Hansell, *Market Place; Group Approves Use of Derivatives*, N.Y. TIMES, July 22, 1993, at D1.

²²² See *supra* Part III.C.2.

States than in Europe, though the European Commission is working to promote such markets.²²³

Third, politicians must assist regulators' efforts to broaden the geographical scope of energy planning. Although the European Commission's efforts to enhance cross-border energy trade²²⁴ and the FERC's efforts to encourage regional transmission planning²²⁵ are good first steps, they are only first steps. Some underinvestment in energy production and transmission capacity may be the result of nothing more than local unwillingness to accept the costs associated with hosting the capacity. In such cases, we need not infer that local governments actually oppose capacity additions; rather, they oppose capacity additions in their backyards. When regulatory jurisdiction is balkanized, as it is in capacity siting in both the United States²²⁶ and Europe,²²⁷ local opposition can lead to significant underinvestment in new capacity. When politicians block the development of new capacity, they are representing their constituents' rational preference to shift the costs associated with hosting the facilities elsewhere. A national siting process in the United States and a European Union process in Europe—neither of which seems imminent—would, if they provided for the preemption of local laws, eliminate this distributional resistance to the development of new capacity.²²⁸

²²³ See *European Union Hopes to Reach Agreement on E.U. Congestion Management Guidelines in March*, GLOBAL POWER REP., Feb. 2, 2006, at 13.

²²⁴ See *id.*; *supra* Part III.C.2.

²²⁵ See *supra* Part III.C.2.

²²⁶ Though states and even local governments generally have the power to veto investment in electric generation units and transmission lines, gas lines are governed by a federal siting process under which most state regulation is preempted. See 15 U.S.C. § 717 (2006); Steven J. Eagle, *Securing a Reliable Electricity Grid: A New Era in Transmission Siting Regulation?*, 73 TENN. L. REV. 1, 6 (2005). For a comprehensive look at federal regulatory preemption in this field, see Frank R. Lindh, *Federal Preemption of State Regulation in the Field of Electricity and Natural Gas: A Supreme Court Chronicle*, 10 ENERGY L.J. 277 (1989).

²²⁷ Member states retain exclusive regulatory control over the siting of all European energy facilities except nuclear power plants. See Robert K. Temple, Note, *Regulation of Nuclear Waste and Reactor Safety Within the Commonwealth of Independent States: Toward a Workable Model*, 69 CHI.-KENT L. REV. 1071, 1076 (1994).

²²⁸ This kind of preemption is not uncommon in the energy industry. For example, hydroelectric licensing under the Federal Power Act centralizes power in the FERC's hands. While FERC considers state and local government interests, the Federal Power Act's hydroelectric licensing provisions preempt most state and local laws. See *First Iowa Hydro-Elec. Coop. v. Fed. Power Comm'n*, 328 U.S. 152, 167–68 (1946) (discussing the Federal Power Act's jurisdictional boundaries); FED. ENERGY REGULATORY COMM'N, A GUIDE TO THE FERC ELECTRIC TRANSMISSION FACILITIES PERMIT PROCESS 3–5, available at <http://www.ferc.gov/for-citizens/citizen-guides/electric/guide-transmission.pdf> (last visited Mar. 24, 2008) (explaining how the FERC takes local interests into account). One problem is that only some of the costs associated with transmission siting are typically compensated. For example, landowners on whose land the line is sited are compensated for their losses. See *Regulations for Filing Applications for Permits to Site Interstate Electric Transmission Facilities*, 71 Fed. Reg. 69,440, 69,442–45 (Nov. 16, 2006) (codified at 18 C.F.R. pts. 50 & 380) (discussing how FERC will compensate landowners whose land is condemned for sit-

If regulators are to allow price signals to work, how might politicians protect consumers without distorting those signals? Market proponents might argue that the first three elements of the prescription—credible commitments to let prices float, free use of price-hedging techniques, and regional planning—will protect consumers by making the market more responsive to the forces of supply and demand. To the extent that such efforts would protect consumers, however, they would do so only by trying to prevent the problem of price spikes. The fourth essential element of a market solution addresses the question of how to protect consumers when prices spike anyway. *Market designers need to enhance demand response by letting retail customers see, and respond to, the effects of very short-term price changes.* Things like time-of-use rates²²⁹ and real-time pricing²³⁰ communicate to customers the time-value of using energy during different times of the day and year. The more these rate structures are finely tuned to short-term changes in market demand, the more customers can adjust their demand to save money; real-time metering helps retailers to offer customers more and better opportunities to shape their demand so as to save money.²³¹ When customers voluntarily reduce consumption and shave the peaks off demand, there is less need for peaking plants, and satisfying load becomes cheaper for retailers.²³²

However, even if these tools and techniques reduce price volatility, they will not eliminate it. The price elasticity of customer demand may be higher than some market skeptics think, but it is less than one,²³³ and it approaches zero for some customers below certain floor

ing lines in so-called national interest corridors). Other less tangible costs, such as those associated with aesthetic losses or fears of electromagnetic radiation, are typically not compensated. Any proposal to preempt local laws could provide for compensating these less tangible costs. However, such a system would have to grapple with the problem of monetizing difficult-to-prove costs and the incentive of those seeking compensation to overstate their losses.

²²⁹ Time-of-use rates reflect pricing based on the cost of electricity during a specified time frame. See NORESKO, Glossary of Terms, http://www.noresco.com/site/content/info_glossary.asp?letter=T (last visited Feb. 14, 2008).

²³⁰ Real-time pricing is instantaneous pricing of electricity based on fluctuating demand. See NORESKO, Glossary of Terms, http://www.noresco.com/site/content/info_glossary.asp?letter=R (last visited Feb. 14, 2008).

²³¹ For a thorough discussion of how much capacity these sorts of demand-responsive programs could save, see U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-04-844, ELECTRICITY MARKETS: CONSUMERS COULD BENEFIT FROM DEMAND PROGRAMS, BUT CHALLENGES REMAIN 21-31 (2004). While real-time meters would pay for themselves relatively quickly, they need to be installed at every customer's connection to work efficiently. In most places, the problem of coordinating and financing the installation of meters has thus far proven insurmountable. See *id.* at 31-42.

²³² See *id.* at 27-28.

²³³ See *supra* note 166 for an explanation of how price elasticities of demand are expressed and measured.

levels of demand.²³⁴ When scarcity drives prices to unaffordable levels, customers who cannot afford those prices need help. *The fifth and final element of a market solution is to subsidize needy customers when prices exceed their ability to pay.* It would be far better to subsidize those customers' payments than to simply cap prices or to ascribe impermissible market power to sellers in such situations. Ratepayers or taxpayers could provide that subsidy, placing remaining price risk on the shoulders of all ratepayers (or taxpayers, depending on whether a rate charge or taxes fund the subsidy). This approach has several advantages. It protects only the truly needy²³⁵ and not those who can afford the higher prices (or adjust their demand to avoid unaffordable rates).²³⁶ In so doing, it forces better demand response when prices rise to very high levels. In the long run, it forces all customers to recognize the connection between price on the one hand and the supply and demand for energy on the other. This recognition ought to reduce significantly short-term variations in demand. More predictable demand, in turn, ought to reduce the number of peaking plants necessary to serve a given average load and make the investment environment for prospective market entrants (like Company *D*) much more attractive.

This portfolio of policies might seem politically ambitious, to say the least.²³⁷ If so, we ought to ask ourselves why that is. Such policies are essentially a plea for energy-market rules that confront voters (ratepayers) with the full logic of markets: that is, rules that establish energy markets that clearly demonstrate to voters the tradeoff between long-term price reductions and short-term price volatility. Without such policies, energy markets have little chance to realize the

²³⁴ This should be intuitively reasonable if we assume that gas and electricity are, for some customers at some times of year, truly essential commodities. However, that proposition assumes that customers can afford to pay for energy at the floor level of demand. If they cannot, then perhaps price elasticities are higher at lower levels of demand but for politically unacceptable reasons. See *supra* note 166 for a measure of these elasticities.

²³⁵ Identifying the "truly needy" is the kind of decision that governments make regularly, but in this context it is complicated by the fact that the class of customers who "cannot afford" energy will vary with the price of energy. Those living in poverty may not be able to afford energy at price x , while middle class customers may not be able to afford energy at the price of $50x$.

²³⁶ Most POLR or default service programs in the United States and Europe do not subsidize ratepayers in this way. Rather, they keep rates low and limit access to default service to the needy. See, e.g., White, *supra* note 178, at 943–44. Rate subsidy programs for the needy do exist in many places, but they tend to involve a binary one-time decision whether the customer qualifies for the subsidy based on a static means test.

²³⁷ On the other hand, the FERC seems to be moving in this direction with its recently published advanced notice of proposed rulemaking soliciting comment on a package of proposals designed to make wholesale markets in the United States more efficient. See Wholesale Competition in Regions with Organized Electric Markets, 72 Fed. Reg. 36,276 (proposed June 22, 2007) (to be codified at 18 C.F.R. pt. 35), available at <http://www.ferc.gov/whats-new/comm-meet/2007/062107/E-3.pdf>.

long-term efficiencies promised to voters. However, to date, neither regulators nor politicians have seen fit to confront voters with these truths. If voters' democratically elected representatives prefer to shield voters from the truth about how markets work, then those elected representatives ought to rethink their support for markets in the first place. Indeed, some are already doing so. The normally market-oriented CATO institute has reversed its former support for restructuring energy markets and now favors a return to traditional regulation because it believes that politicians cannot bring themselves to support truly free-floating energy prices.²³⁸ The state of Virginia recently reversed course on restructuring²³⁹ and is planning to return to traditional regulation; similarly, the former governor of New York recently expressed reservations about restructuring there.²⁴⁰ Elected politicians are good at estimating voters' future preferences: that is part of what makes them successful politicians. If voters are willing to pay more to avoid price risk, then isn't it better to return to traditional regulation or even government provision of energy services?

Perhaps it is, but only with two important caveats. First, some advocates of reregulation pose a false choice between full exposure to price risk (markets) and no exposure to risk (regulation). While regulation can reduce price risk for customers, properly functioning markets can reduce much of that risk, too. The policy prescription outlined here would protect the most vulnerable customers from price risk and would shield other customers from much of the risk they face now by facilitating market responses to price. Second, a return to regulation might mean higher long-term rates than some market skeptics anticipate, since reregulation would almost certainly be limited to retail markets, and industrial and municipal customers will continue to try to cherry-pick the cheapest energy away from customers of public utility systems.²⁴¹ Even the most ardent market skeptics do not advocate rebundling wholesale energy sales and delivery; rather, they advocate bundling retail services, in part so that monopoly suppliers can protect retail customers from price risk. That means that third-party producers of inexpensive energy will remain a part of

²³⁸ See Harry M. Trebing & Sarah P. Voll, *Infrastructure Deregulation and Privatization in Industrialized and Emerging Economies*, 40 J. ECON. ISSUES 307, 308 (2006).

²³⁹ *Energy Markets; Va. Governor Proposes Tougher Enviro Requirements for Deregulation Bill*, GREENWIRE, Mar. 28, 2007, <http://www.eenews.net/Greenwire/2007/03/28/3/>.

²⁴⁰ See Alex Philippidis & Bob Rozycki, *What Changes Await Albany on Day One?*, WEST-CHESTER COUNTY BUS. J., Oct. 30, 2006, at 1 (discussing Eliot Spitzer's plans to increase regulation of utilities); see also *First Virginia, Now Michigan?*, RESTRUCTURING TODAY, Mar. 30, 2007, at 1 (describing a proposed statute eliminating competition in Michigan); *New Jersey Working Group Could Spell Disaster for Market*, RESTRUCTURING TODAY, Apr. 5, 2007, at 1 (describing New Jersey's review of its electricity market).

²⁴¹ For a description of this "cherry-picking" tendency, see *supra* note 133 and accompanying text.

the market and that producers and desirable industrial customers will continue to try to do business with one another, irrespective of regulatory rules privileging the monopoly energy provider.²⁴²

Thus, regulators and policymakers face a choice between: (i) a future spent regulating to prevent or mitigate price volatility in restructured markets and to protect vulnerable consumers from that volatility; or (ii) one spent regulating a bifurcated system in which the smallest customers with the most variable demand comprise an ever-increasing percentage of the load served by regulated, monopolistic providers. Elected politicians may reasonably choose either alternative, and neither is perfect. Indeed, that is the point: perfection is not possible in energy markets, and to the extent that regulators and politicians pretend otherwise (to voters), they reduce the probability that markets will work to consumers' benefit. It may be politically painful to do so, but when voters face the difficult tradeoffs that restructuring presents, better energy policies will result.

²⁴² For a description of "municipalization" and other ways that industrial customers find their way to least-cost energy providers (and off of the monopoly provider's network) even in a regulated environment, see *supra* note 133.

