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# The Past and Future of Electricity Regulation

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# THE PAST AND FUTURE OF ELECTRICITY REGULATION

BY  
JOSEPH P. TOMAIN\*

*Electric industry restructuring has been an activity not free from difficulties. The California energy crisis of the summer of 2000, the world crisis after September 11, as well as the implosion of Enron have raised questions about the future of electricity restructuring. As a policy matter, the move to reduce command-and-control regulation of the electric industry and to promote competition enjoys widespread support. The industry, however, is not one that can be totally deregulated. This Article argues that the California and Enron crises may slow restructuring, but restructuring should continue as a matter of sound industrial policy. In addition, the crisis of September 11, while raising questions about the future of our energy policy, should have no bearing on the continuation of restructuring. The central problem with restructuring is the fact that transmission networks continue to have natural monopoly characteristics. Consequently, as transmission networks continue to be privately owned and controlled, problems of transmission price discrimination, fairness, and reasonableness must be addressed before restructuring can succeed.*

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By 2006-2011, electricity will be purchased and sold in both wholesale and eligible retail markets by any willing creditworthy participant. Markets will clear with competitive prices. Competitive prices will function so as to ration existing supplies efficiently in the short run and to elicit adequate technology and infrastructure in the long run, so that there will be no involuntary curtailment of service at market prices. Electricity markets will be both transparent and liquid, and market participants will have opportunities to hedge risks. Although regulation of monopoly service providers will continue, even these monopolies will feel some pressure of competitive market forces.<sup>1</sup>

## I. INTRODUCTION

The goal of the Federal Energy Regulatory Commission (FERC) staff to achieve competitive electricity markets by 2011 is overly ambitious, but nonetheless worthy. There is much to note in the quotation. First, both wholesale and eligible retail markets will be competitive, transparent, and liquid. Second, the markets will be so efficient that consumers will not experience involuntary curtailments. Third, market actors will be able to hedge risks, which is necessary for supply reliability. Finally, regulation of monopoly service will continue. This Article concentrates on the continuing regulation of the electricity industry by looking at the past and speculating about the future. Like Heisenberg's Uncertainty Principle, which held that an observer cannot know both the speed and position of an electron, the present state of electricity regulation is too dynamic to pin down.

The last eighteen months have been remarkable for the electricity industry. The California crisis of the summer of 2000, the war against Afghanistan, and most recently, the Enron debacle, called attention to industry restructuring and the future of national energy policy. While each of these events have been catastrophic for California, Enron, and the world (in the case of Afghanistan), none of them should change the direction of electric energy policy. At bottom, the California crisis was about poor

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<sup>1</sup> FED. ENERGY REGULATORY COMM'N, CONCEPT DISCUSSION PAPER FOR AN ELECTRIC INDUSTRY TRANSMISSION AND MARKET RULE 1 (Dec. 17, 2001), available at [http://www.ferc.gov/calendar/commissionmeetings/discussion\\_papers.htm](http://www.ferc.gov/calendar/commissionmeetings/discussion_papers.htm).

economic predictions and poor regulatory design. The Enron debacle was about poor financial hedge management along the lines of the Long Term Capital Management collapse in 1998.<sup>2</sup> And the Bush administration's energy policy was set in place before September 11, 2001 and the following Afghan war. In short, none of these events should affect restructuring because none of them addresses what is most significant, the ability to construct and maintain an efficient reliable transmission system.

Continued regulation is warranted because the transmission segment of the electric industry maintains natural monopoly characteristics. Further, until there are significant technological advances, for example in distributed generation or fuel cells, regulation is justified. The discussion of electricity transmission will be placed in context by briefly discussing the California crisis and Enron in Part II. Part III examines the remaining aspects of natural monopoly in the electricity industry. Part IV discusses the role of electricity in national energy policy. The Article concludes by identifying five challenges facing the industry and its regulators.

## II. THE CURRENT SITUATION OF ELECTRIC INDUSTRY RESTRUCTURING

The language we use in policy analysis is almost as important as the language we use in legal analysis. The popular perception is that the Reagan Revolution was the beginning of deregulation during the last quarter of the twentieth century. That perception is inaccurate. The Carter administration engaged in the deregulation of airlines, trucking, energy, and other industries.<sup>3</sup> Still, the Reagan years stressed the importance of deregulation across a broad range of industries including electricity. Deregulation was and is driven by politics and economics. Economically, the country's infrastructure of roads, pipes, and wires has been built, thus the traditional regulatory scheme has accomplished its goals. Politically, markets and competition were and continue to be attractive on both sides of the congressional aisle. Consequently, deregulation continues.

The electric industry was not immune from the deregulatory bug. However, the electric industry—and here is where language is important—never caught the worst strain of the bug. While policymakers sought to “deregulate” the industry, the laws and regulations they used were intended and designed to “restructure,” not deregulate, electricity.

To understand why the industry is restructuring rather than deregulating, it is necessary to recognize fundamental principles about the electricity market, such as:

- Electricity cannot be stored effectively—think batteries.
- Electricity must be ready for use on demand—think cold beer and the Web.
- Traditional regulation passed through costs to consumers—think inelasticity.

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<sup>2</sup> Carol J. Loomis, *A House Built on Sand*, FORTUNE, Oct. 26, 1998, at 110.

<sup>3</sup> See, e.g., SIDNEY A. SHAPIRO & JOSEPH P. TOMAIN, REGULATORY LAW AND POLICY 319–55 (2d ed. 1998).

- Traditional regulation encouraged capital expansion—think nuclear power plants.
- Traditional utilities were immune from competition in their monopoly protected service areas—think local public utility.
- Traditional utilities controlled the wires that delivered the electrons—think telephone pole.
- New entrants were waiting in the wings—think Enron.

All of these elements combined during the twentieth century to construct an expensive electricity infrastructure.<sup>4</sup> Because electricity cannot be stored effectively and because it must be available on demand, the electricity system or grid must operate very reliably. Blackouts are not good. So the traditional rate formula, sometimes known as the regulatory compact, helped assure the construction of that infrastructure by rewarding capital investment. This reward system was both good and bad. The infrastructure was built—that was good. However, because these costs were passed through to customers, utilities were rewarded for building, had a virtually guaranteed rate of return, and were immune from competition. As a result, utilities overbuilt.<sup>5</sup>

Once utility-generated electricity became too expensive, new entrants were ready to produce electricity at lower cost than the incumbent utilities. However, two significant problems arose. First, traditional public utilities controlled access and, naturally, were not favorably disposed to charge competitors friendly prices to transport electricity. Second, while consumers were anxious to purchase lower priced electricity, they also were concerned about the reliability of supply. With the stimulus of Congress, most notably through the Public Utility Regulatory Policies Act of 1978 (PURPA),<sup>6</sup> the electricity industry began easing transmission access to nonutility electricity producers and, thus, the window to competition opened.

It is at this point in the developing history of the electricity industry and its regulation that two new words enter our vocabulary—California and Enron. For the last year and a half, the California electricity crisis and the Enron debacle appear to demonstrate the failure of electricity restructuring. That appearance is false even though the restructuring movement has been slowed. As of January 2002, seven states have delayed restructuring activities, California has suspended action, and twenty five states are listed as not active.<sup>7</sup> Both the California restructuring effort and Enron's energy

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<sup>4</sup> See Joseph P. Tomain, *Electricity Restructuring: A Case Study in Government Regulation*, 33 TULSA L.J. 827, 827 (1998); ENERGY LAW GROUP, *ENERGY LAW AND POLICY FOR THE 21ST CENTURY* 12-1 to 12-39 (2000) (describing and analyzing the history of the energy market in the United States).

<sup>5</sup> The classic article about this phenomenon is Harvey Averch & Leland L. Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962).

<sup>6</sup> Pub. L. No. 95-617, 92 Stat. 3117 (codified as amended in scattered sections of 16 U.S.C. The key provisions are at 16 U.S.C. § 824a-3 (2000)); see Thomas E. Mack, *PURPA and the Regulation of Alternative Energy Sources*, in 5 ENERGY LAW & TRANSACTIONS ch. 130 (David J. Muchow & William A. Mogel eds., 1991).

<sup>7</sup> Dept' of Energy, *Status of State Electricity Restructuring Activity*, at

trading *modus operandi* were the products of design failure, not faulty theoretical assumptions. Indeed, although both were failed attempts, California's electricity restructuring and Enron's energy trading point to the future of a restructured electric industry.

### A. California

There is no shortage of analyses of the California electricity crisis.<sup>8</sup> Fundamentally, the crisis was a matter of supply and demand, resulting in prices beyond any previously recognized level and a bankruptcy filing by Pacific Gas & Electric, one of California's Big Three utilities. The market distortions were created by poor predictions about demand, a hot summer, a dry Northwest, high natural gas prices, miscalculations about supply, no new generation, and most significantly, a poor regulatory design.

Although the crisis has passed, and prices have lowered and blackouts, rolling or otherwise, are not on the horizon, there are lessons to be learned from the California experience.<sup>9</sup> Chief among these lessons involves regulatory design, the crux of which was an inflexible market for buying, selling, and pricing electricity. There are three notable aspects to this design, one of which was fatal. First, the major public utilities in California divested their generating units while maintaining an obligation to serve their customers. As long as costs are passed through to consumers, the obligation to serve does not present a severe problem because the utilities earn money to pay their bills. Second, two new regulatory entities were established, the California Power Exchange (PX), which set prices, and the California Independent System Operator (ISO), which directed the movement of electricity through the system. The PX was the market mechanism intended

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[http://www.eia.doe.gov/cneaf/electricity/chg\\_str/regmap.html](http://www.eia.doe.gov/cneaf/electricity/chg_str/regmap.html) (last visited Jan. 10, 2002).

<sup>8</sup> See, e.g., Severin Borenstein, *The Trouble with Electricity Markets (and Some Solutions)*, PROGRAM ON WORKABLE ENERGY WORKING PAPER SERIES, PWP-081 (Jan. 2001) (arguing that California's electricity supply problems in 2000 are an example of how deregulated wholesale electricity markets do not function properly as currently implemented), available at <http://www.ucei.berkeley.edu/ucei/PDF/pwp081.pdf>; Symposium, *The California Crisis*, 24 REGULATION 57 (Fall 2001); AM. BAR ASS'N, SECTION OF PUBLIC UTILITY, COMMUNICATIONS, AND TRANSPORTATION LAW, 2001 ANNUAL REPORT 15-19 (2001); AM. BAR ASS'N, SECTION OF ENV'T, ENERGY, AND RES. & NAT'L ENERGY-ENVTL L. & POL'Y INST., ENVIRONMENT, ENERGY AND RESOURCES LAW: 2000 - THE YEAR IN REVIEW 1-13 (2001) (calling the year 2000 a deregulation meltdown); FED. ENERGY REGULATORY COMM'N, WESTERN MARKETS AND THE CAUSES OF THE SUMMER 2000 PRICE ABNORMALITIES (Nov. 1, 2000), at <http://cips.ferc.fed.us/electric/el/el00-95.00h.txt>; Michael A. Yuffee, *California's Electricity Crisis: How Best to Respond to the "Perfect Storm"*, 22 ENERGY L.J. 65 (2001) (citing weather, gas prices, and economics as causes of the California electricity crisis); Nicholas W. Fels & Frank R. Lindth, *Lessons from the California "Apocalypse": Jurisdiction Over Electric Utilities*, 22 ENERGY L.J. 1 (2001); ERIC HIRST, THE CALIFORNIA ELECTRICITY CRISIS: LESSONS FOR OTHER STATES (2001), at [http://www.eei.org/issues/comp\\_reg/Calessons\\_hirst.pdf](http://www.eei.org/issues/comp_reg/Calessons_hirst.pdf); Richard Green, *Failing Electricity Markets: Should We Shoot the Pools?*, CENTER FOR ECON. POLICY RESEARCH, DISCUSSION PAPER 2406 (2001) (electricity markets in California, England, and Wales).

<sup>9</sup> Laura M. Holson, *Government Acts to Calm California's Energy Market*, N.Y. TIMES, Dec. 16, 2000, at A14; Neela Banerjee, *A Dwindling Faith in Deregulation*, N.Y. TIMES, Sept. 15, 2000, at C1; Gregory Palast, *States Deregulate Energy at their Peril*, N.Y. TIMES, Aug. 25, 2000, at A25.

to make the industry competitive.<sup>10</sup> The PX and the ISO are perfectly appropriate entities, again if properly designed.

The fatal flaw was the price restrictions. They were the medicine intended to help the consumers, but that killed the restructuring. Utilities had to buy wholesale energy at market price from the PX in no more than day-ahead or hour-ahead markets, which meant they could not enter long-term contracts. These spot-market purchases were subject to a great deal of volatility and the highest bid set the price. At the same time, retail prices to consumers were capped until the utility recovered its stranded costs.<sup>11</sup> The problem was that the utilities bought in the spot-market at extraordinarily high prices and sold in a capped retail market, thus putting themselves in a credit crunch with high profits for other producers, high prices to some consumers,<sup>12</sup> and a political crisis for the Governor.

The market distortion was aggravated by the fact that the retail cap sent consumers the wrong price signals. They had little incentive to conserve and, to aggravate matters, California stopped bringing power plants on line.<sup>13</sup> Indeed, demand had risen twenty-five percent in the past eight years while in-state power generation rose only six percent.<sup>14</sup>

There are several culprits to blame for the California energy crisis of 2000. Governor Gray Davis blames the owners of power production as "out-of-state profiteers" for allegedly withholding power from California companies in an attempt to drive up prices.<sup>15</sup> Consumer groups blame the same energy companies as well as California politicians willing to bail out the California power retailers, such as SoCal Edison, Pacific Gas and Electric (PG&E), and San Diego Gas and Electric (SDG&E).<sup>16</sup> The out-of-state owners of energy production, Dynegy, Duke Energy, and Enron criticized the California politicians and bureaucrats that crafted a system that allowed them to capitalize on the circumstances that led to the

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<sup>10</sup> Becky Kilbourne & George Sladoje, *The Role of Power Exchanges in Restructured Electric Markets*, PUB. UTIL. FORT., Oct. 1, 1999, at 28, 31.

<sup>11</sup> Stranded costs are "[c]osts incurred by a utility which may not be recoverable under market-based retail competition. Examples include undepreciated generating facilities, deferred costs, and long-term contract costs." Energy Info. Admin., *EIA Energy Definitions Glossary*, at [http://www.eia.doe.gov/glossary/glossary\\_st.htm](http://www.eia.doe.gov/glossary/glossary_st.htm) (last visited Mar. 17, 2001). The assumption was that competitive electricity prices would drop below the cap so that stranded costs could be recovered.

<sup>12</sup> Once San Diego Gas & Electric recovered its stranded costs, it was able to remove the price cap causing the typical household electricity bill to rise from \$55 to \$105. William P. Kucewicz, *Too Much Regulation Keeps California in the Dark*, WALL ST. J., Aug. 7, 2000, at A14; James Sterngold, *In Reverse, California Acts to Cap Some Electric Bills*, N.Y. TIMES, Aug. 22, 2000, at A14.

<sup>13</sup> Peter Coy & Christopher Palmeri, *Gridlock on the Power Grid*, BUS. WK., Aug. 28, 2000, at 48.

<sup>14</sup> Kucewicz, *supra* note 12, at A14.

<sup>15</sup> Nancy Vogel & Chris Kraul, *U.S. Threat to Out-of-State Power Firms Arests Blackouts*, L.A. TIMES, Dec. 14, 2000, at A1.

<sup>16</sup> Anthony York, *The Deregulation Debacle*, at <http://www.salon.com/news/feature/2001/01/30/deregulation-miss/index.html> (last visited Mar. 2, 2002).

problems in California.<sup>17</sup>

By December 2000, the crisis had not eased. Early that month, the ISO declared Stage 2 power alerts. At this point, federal intervention was needed. The ISO needed FERC to lift the limit on wholesale energy rates,<sup>18</sup> and Energy Secretary Bill Richardson ordered out-of-state suppliers to send their electricity to California under threat of federal intervention by way of price setting.<sup>19</sup> Additionally, the utilities' credit was threatened. Chase Manhattan Bank led a consortium to oppose a \$5 billion credit line extended to SoCal Edison based on fears that the loan would not be repaid,<sup>20</sup> and Standard and Poor's lowered SoCal Edison's and PG&E's credit ratings.<sup>21</sup>

Events were so problematic that drastic steps, including state ownership, were openly discussed. Governor Davis and others called for a regional price cap,<sup>22</sup> long-term contracts for purchasing power, the creation of a state power authority that would issue bonds to help the utilities to pay their bills, and to take over the transmission system owned by the Big Three utilities.<sup>23</sup> The leading consumer group in California, the Foundation for Taxpayer and Consumer Rights, proposed to end deregulation immediately, fearing that long-term contracts would lead to higher prices.<sup>24</sup> Consumers were opposed to a bailout of privately owned utilities with no chance of recovering the money through other means.<sup>25</sup>

Governor Davis asked the California Legislature for more authority to finance power plant construction, take over ownership, borrow money for investigators to determine whether power plants that are shutting down for "unscheduled maintenance" actually need to be fixed,<sup>26</sup> and repeal the law requiring the Big Three utilities to sell their remaining plants, thus keeping out-of-state generators from buying the plants.<sup>27</sup>

By January, bankruptcy threatened as utilities had difficulty meeting their bills to purchase power<sup>28</sup> and out-of-state suppliers had become hesitant to supply power because bills were not being paid. On January 17,

<sup>17</sup> Anthony York, *Energy Vultures*, at <http://www.salon.com/tech/feature/2001/02/14/generators> (last visited Mar. 2, 2002).

<sup>18</sup> Christian Berthelsen, *Power Stays On, But State's Darkest Days May Lie Ahead*, S.F. CHRON., Dec. 9, 2000, at A1.

<sup>19</sup> Vogel & Kraul, *supra* note 15, at A1.

<sup>20</sup> Rebecca Smith, *State's Electricity Is in Chaos*, WALL ST. J., Dec. 14, 2000, at A2.

<sup>21</sup> *Id.*

<sup>22</sup> Associated Press, *California Scrambles for Power—Again—And Seeks More Federal Help*, CNN WEBSITE, Dec. 14, 2000, at <http://www.cnn.com/2000/US/12/14/west.coast.power.ap/index.html>.

<sup>23</sup> Ed Mendel & Dean Calbreath, *State Considers Takeover Option*, SAN DIEGO UNION-TRIB., Jan. 6, 2001, at A1.

<sup>24</sup> Harvey Rosenfield & Douglas Heller, *Averting Disaster with State Utilities*, SAN DIEGO UNION-TRIB., Dec. 19, 2000, at B11.

<sup>25</sup> Jonathan Curiel & David Lazarus, *Consumer Groups, Utilities Butt Heads on Electric Rates*, S.F. CHRON., Dec. 28, 2000, at A1.

<sup>26</sup> Nancy Vogel, *Davis' Tough Talk Faces Even Tougher Obstacles*, L.A. TIMES, Jan. 9, 2001, at A1.

<sup>27</sup> David Lazarus, *Davis Offers Energy Plan*, S.F. CHRON., Jan. 9, 2001, at A1.

<sup>28</sup> Associated Press, *Houston Power Supplier Threatens to Bankrupt California Utilities*, CNN WEBSITE, Jan. 16, 2001, at [www.cnn.com/2001/US/01/16/power.woes.ap/index.html](http://www.cnn.com/2001/US/01/16/power.woes.ap/index.html).



California imposed statewide rolling blackouts for the first time.<sup>29</sup> The next day, Governor Davis declared a State of Emergency over the power crisis and asked the legislature to authorize emergency funds to keep electricity on for the next seven to ten days. The utilities agreed not to go into court if the Legislature passed a bill allowing the utilities to enter into long-term contracts with suppliers, which would then be resold to consumers at a cost set by the state plus a modest charge.<sup>30</sup> On January 18, the legislature approved spending hundreds of millions of dollars to keep power flowing in California, and Governor Davis signed legislation making the Department of Water Resources the main buyer of power.<sup>31</sup>

By the middle of February, Governor Davis announced that the state would buy the transmission system from the three utilities, the utilities' parent companies would provide them with cash to pay off their debts, the utilities would keep the power they produce at their own plants for ten years, and the utilities would drop all lawsuits against the state.<sup>32</sup> The winners in deregulation were out-of-state owners of generating plants who were able to take advantage of a poorly crafted law for their own benefit.

Although the failure of California's deregulation effort frightened many other states considering similar ideas,<sup>33</sup> other states have enjoyed success. Pennsylvania, for example, has been more successful in its efforts to deregulate the electric industry. Utilities are allowed to keep their generating plants, and the phasing in of market prices is over a ten-year period. Utilities that could buy power for less would make a profit; those that could not make a profit would have to absorb the loss.<sup>34</sup> Any utilities that sold their generating plants were forced to enter long-term contracts with suppliers.

### B. Enron

Enron's role as power marketer and energy trader is exactly what a deregulated electricity market needs. Unfortunately, its bankruptcy and ensuing civil and criminal investigations prevent Enron from fulfilling that role. Because demand requires instantaneous supply (*i.e.*, reliability), there must be some mechanism to assure that supply. In the traditional regulated environment, the local utility maintained adequate reserves to satisfy demand. In unregulated or deregulated markets, consumers protect themselves either with contracts for futures or with backup power. Enron bought and sold futures contracts and helped make a market in electricity,

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<sup>29</sup> Nancy Vogel & Nancy Rivera Brooks, *Rolling Blackouts Push Energy Crisis from Threat to Reality*, L.A. TIMES, Jan. 18, 2001, at A1.

<sup>30</sup> Greg Lefevre, *California Governor Declares State of Emergency in Electricity Crisis*, CNN WEBSITE, Jan. 18, 2001, at <http://www.cnn.com/2001/US/01/18/power.woes01/index.html>.

<sup>31</sup> Miguel Bustillo, et al., *Lawmakers Vote to Use Reserve Fund as Bush Rejects Power Price Caps*, L.A. TIMES, Jan. 19, 2001, at A1.

<sup>32</sup> Ed Mendel, *Davis Outlines Plan to Rescue Ailing Utilities*, SAN DIEGO UNION-TRIB., Feb. 17, 2001, at A1.

<sup>33</sup> John Greenwald, *The New Energy Crunch*, TIME.COM, Jan. 22, 2001, at <http://www.time.com/t...zine/printout/0,8816,96190,00.html>.

<sup>34</sup> Peter Schrag, *Blackout*, AM. PROSPECT., Feb. 26, 2001, at 29, 30-31.

among other commodities. Enron was the industry leader in taking advantage of deregulation and restructuring. It was estimated that Enron controlled about one-quarter of the country's energy trading.<sup>35</sup>

Enron was a small traditional natural gas pipeline firm that went on to become a huge company with market capitalization of about \$60 to \$70 billion. It also transformed its business from a stodgy enterprise to a high-flying trader that traded in electricity futures, bandwidth, advertising space, and even weather features.<sup>36</sup> In the end, Enron became less an energy company than a hedge fund. It had a difficult enough time explaining its business even to its CEO, ultimately collapsing into bankruptcy.<sup>37</sup> Nevertheless, energy futures can be an effective way to provide reliable sources of electricity, supplement reserve margins held by traditional utilities, and control price uncertainty. Futures, then, can work with either power exchanges or ISOs to stabilize electricity markets.

The collapse, however, has little to say about energy markets in general or even hedge funds in particular.<sup>38</sup> Nor should its collapse have anything to do with a change in direction for energy deregulation.<sup>39</sup> While Congress, the Justice Department, and the Securities Exchange Commission continue to investigate Enron, the deregulation of the energy industry continues<sup>40</sup> as Enron sells off assets and settles lawsuits and other companies take up futures trading where Enron left off.

### III. ELECTRICITY TRANSMISSION AND NATURAL MONOPOLY

The electricity industry provides an excellent case study of government regulation. Like other network industries such as natural gas, telephone, and railroad, the regulation of electricity was based on the central political economic idea that the industry had natural monopoly characteristics and that electricity served the public interest.<sup>41</sup> As a fundamental matter of political economy, markets and the property exchanged and valued in them exist only because of government protection. Still, it is the degree of protection that distinguishes government treatment of some industries from the treatment of others. It is also the case that the degree of government intervention changes over time.

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<sup>35</sup> Kurt Eichenwald, *Enron's Collapse: Audacious Climb to Success Ended in a Dizzying Plunge*, N.Y. TIMES, Jan. 13, 2002, at A1.

<sup>36</sup> Bethany McLean, *Why Enron Went Bust*, FORTUNE, Dec. 24, 2001, at 58.

<sup>37</sup> *Id.*

<sup>38</sup> Nelson D. Schwartz, *Enron Fallout: Wide, But Not Deep*, FORTUNE, Dec. 24, 2001, at 71.

<sup>39</sup> Vijay Vaitheeswaran, *Electricity Deregulation is Still Sound Policy*, N.Y. TIMES, Dec. 15, 2001, at A31; Joseph Kahn & Jeff Gerth, *Collapse May Reshape the Battlefield of Deregulation*, N.Y. TIMES, Dec. 4, 2001, at C1; Oman W. Jenkins, Jr., *Enron = Deregulation?*, WALL ST. J., Dec. 19, 2001, at A19; Mark Mills & Peter Huber, *Deregulation Will Survive Enron*, WALL ST. J., Dec. 6, 2001, at A20.

<sup>40</sup> See, e.g., Elizabeth Bumiller, *Enron Contacted 2 Cabinet Officials Before Collapsing*, N.Y. TIMES, Jan. 11, 2002, at A1; Don Van Natta, Jr., *Circling the Wagons*, N.Y. TIMES, Jan. 11, 2002, at A1.

<sup>41</sup> Joseph P. Tomain, *Toward a Sustainable Energy-Environmental Policy*, in ENERGY LAW GROUP, *supra* note 4, at 6-1, 6-5 to 6-35.

In its beginning at the end of the nineteenth century, electricity was an unregulated competitive industry. The industry, for the most part, consisted of investor owned utilities (IOUs) that owned and operated generation, transmission, and distribution. Later, as the industry consolidated, government regulation was justified as a way to stem the abuses of market power exercised by these vertically integrated utilities.<sup>42</sup> The particular market imperfection in the electric industry was natural monopoly and government responded with command-and-control regulations setting the prices that could be charged by utilities and limiting the profits that utilities could earn.<sup>43</sup> Price and profit controls are a form of heavy-handed economic regulation that comes with costs of its own. Starting in the mid-1960s, traditional utility regulation appeared to have run its course as market distortions arose and as policymakers began to look at regulatory reform and deregulation.<sup>44</sup> While it is true that the heavy hand of command-and-control price regulation is being lifted and market-based price mechanisms are preferred, government still has a large and continuing regulatory role to play.

#### A. Theories of Regulation

Theories of, or justifications for, government regulation can be characterized in two basic ways. The first characterization is called the public interest theory, in which natural monopoly, or other market imperfection, is controlled for the delivery of a reliable service or good in the public interest. The second characterization of government regulation is private interest group or public choice theory, which holds that government regulates at the behest of, and for the benefit of, the regulated industry rather than for the public. In the case of electricity, public choice theory holds that government regulation enabled industry expansion and growth for the direct economic benefit of privately owned utilities.

Neither theory alone explains the government regulation of network industries. Indeed, it is not difficult to find examples and counter-examples of both concepts. One example of public interest regulation is the Public Utility Holding Company Act (PUHCA),<sup>45</sup> which was intended to control stock manipulation and other forms of consumer and shareholder fraud. A counter example of public interest legislation is the Telecommunications Act of 1996,<sup>46</sup> which was enacted purportedly in the public interest, but in reality is a classic set of private industry interest group deals. A good example of regulation for the benefit of a private interest group is trucking regulation; a

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<sup>42</sup> Jeffrey W. Meyers & Robert M. Lamkin, *Electricity*, in 2 ENERGY LAW AND TRANSACTIONS § 52.01-.04 (David J. Muchow & William A. Mogel eds., 2001).

<sup>43</sup> *Munn v. Illinois*, 94 U.S. 113 (1876). In *Munn*, the Illinois state legislature set grain elevator prices. The United States Supreme Court upheld the statute on the basis that the regulation of "virtual" or natural monopolies of goods, affecting the public interest, was constitutional. *Id.*

<sup>44</sup> Tomain, *supra* note 4 at, 834-35.

<sup>45</sup> Public Utility Holding Company Act of 1935, 15 U.S.C. § 79 (2000).

<sup>46</sup> 47 U.S.C. §§ 251-276 (2000).

counter-example of interest group regulation is airline deregulation. And the list goes on.

Regulation thus is comprised of mixed political and economic motives.<sup>47</sup> Traditional utility rate regulation, for example, can be seen as consumer protection against monopoly power because prices are set at competitive rather than supracompetitive levels. Rate regulation can also be seen as a reward to the regulated privately owned utility through nearly guaranteed rates of return for its capital investment. Traditional utility regulation also establishes guaranteed service areas that benefit utilities by protecting them from competition and benefit consumers by providing universal service.

The transition<sup>48</sup> of the electric industry involves a lessening of command-and-control price and profit regulation, deregulation of electricity generation, a promotion of consumer choice, an increase in competition, and active discussion of retail price competition. The barrier to retail price competition is the fact that the transmission system is privately owned and operated. Over the last two decades, transmission has been opening to competition, but only partially, because the system retains its natural monopoly characteristics. Although the regulatory state has abandoned the idea that the *entire* electricity industry is a natural monopoly, it retains the idea that the transmission segment requires continued regulation because of that natural monopoly.

### *B. The Growth and Regulation of the Electricity Industry*

As noted, natural monopoly has been the justification for electricity regulation. A simple definition of natural monopoly is that product costs for some time "will be lower if they consist in a single supplier."<sup>49</sup> While more technical definitions exist, the central idea is that one firm can realize economies of scale throughout a range of production, thus continually lowering cost.<sup>50</sup> A supporting justification is the idea that any capital investment made by a competing firm is duplicative and therefore wasteful. A specific service area needs only one set of electric or telephone wires; the investment in any other set of wires is wasteful. Economically, the one-firm model makes sense because that single firm can supply the market at the

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<sup>47</sup> See generally Stephen P. Croley, *Theories of Regulation: Incorporating the Administrative Process*, 98 COLUM. L. REV. 1, 3-7 (1998); JERRY L. MASHAW, *GREED, CHAOS & GOVERNANCE: USING PUBLIC CHOICE TO IMPROVE PUBLIC LAW* (1997); George Priest, *The Origins of Utility Regulation and the "Theories of Regulation Debate"*, 36 J.L. & ECON. 289 (1993); Joseph P. Tomain & Sidney A. Shapiro, *Analyzing Government Regulation*, 49 ADMIN. L. REV. 377 (1997); CHARLES E. LINDBLOM, *POLITICS AND MARKETS: THE WORLD'S POLITICAL ECONOMIC SYSTEM* (1977).

<sup>48</sup> Joseph D. Kearney & Thomas W. Merrill, *The Great Transformation of Regulated Industries Law*, 98 COLUM. L. REV. 1323, 1383 (1998).

<sup>49</sup> ALFRED E. KAHN, 1 *THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS* 11 (1991).

<sup>50</sup> See generally WILLIAM W. SHARKEY, *THE THEORY OF NATURAL MONOPOLY* (1982); ROGER SHERMAN, *THE REGULATION OF MONOPOLY* 81 (1989); SANFORD V. BERG & JOHN TSCHIRHART, *NATURAL MONOPOLY REGULATION: PRINCIPLES AND PRACTICE* (1988); W. KIP VISCUSI ET AL., *ECONOMICS OF REGULATION AND ANTITRUST* 79-81 (2d ed. 1995).

cheapest cost. However, what follows is that a single firm in a protected service area is a monopoly and, therefore, can exercise monopoly power, which means that the firm can increase price, decrease supply, and reduce consumer surplus all at once.<sup>51</sup> Politically, it was socially desirable to distribute electricity as a public good. Thus, the economic definition of, and the public policy arguments for, natural monopoly coalesced into a political justification for the regulation of public utilities, including electricity.<sup>52</sup>

Natural monopoly theory puts policy makers in something of a bind. On the one hand, the utility's product is seen as desirable and is most cheaply delivered by one provider. On the other hand, a lone provider is a monopolist. Because state ownership was not likely, the regulatory solution, ironically, was a state controlled monopoly—the regulatory compact—as described in the following quotation from Judge Kenneth Starr:

The utility business represents a compact of sorts; a monopoly on service in a particular geographical area (coupled with state-conferred rights of eminent domain or condemnation) is granted to the utility in exchange for a regime of intensive regulation, including price regulation, quite alien to the free market . . . . Each party to the compact gets something in the bargain. As a general rule, utility investors are provided a level of stability in earnings and value less likely to be attained in the unregulated or moderately regulated sector; in turn, ratepayers are afforded universal, non-discriminatory service and protection from monopolistic profits through political control over an economic enterprise.<sup>53</sup>

Monopoly regulation was able to preserve scale economies while avoiding competitors' economically wasteful investments for a period of time. The regulatory compact imposes significant obligations on both the government and on the regulated firm. In exchange for a government-protected monopoly, the utility lets government set its prices through ratemaking. The utility is given the power of eminent domain to lower its transaction costs in constructing its network; is given an exclusive franchise or service area thus preventing competition; and is, therefore, the only firm

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<sup>51</sup> SIDNEY A. SHAPIRO & JOSEPH P. TOMAIN, *REGULATORY LAW AND POLICY* 190 (2d ed. 1998).

<sup>52</sup> JAMES C. BONBRIGHT ET AL., *PRINCIPLES OF PUBLIC UTILITY RATES* CH. 2 (2D ED. 1988); CHARLES F. PHILLIPS, JR., *THE REGULATION OF PUBLIC UTILITIES* 72-73 (3d ed. 1993).

<sup>53</sup> *Jersey Central Power & Light Co. v. FERC*, 810 F.2d 1168, 1189 (D.C. Cir. 1987). The concept of the "regulatory compact" is best understood as a shorthanded way of describing the relationship between the regulated utility and government regulators. Recently, this relationship has been described as a "regulatory contract." This description is unfortunate for two reasons. First, it is wrong as a matter of law. There are few, if any, examples of actual bargained-for contracts between governments and utilities. J. GREGORY SIDAK & DANIEL F. SPULBER, *DEREGULATORY TAKINGS AND THE REGULATORY CONTRACT: THE COMPETITIVE TRANSFORMATION OF NETWORK INDUSTRIES IN THE UNITED STATES* 109-10 (1997). Second, the label "regulatory contract" is a makeweight argument for a particular policy position favoring an expansive definition of stranded cost reimbursement for industry. See Jim Rossi, *The Irony of Deregulatory Takings*, 77 *TEX. L. REV.* 297 (1998) (criticizing Sidak and Spulber's use of the "regulatory contract" as a construct to create a takings claim for stranded costs resulting from deregulation).

authorized to sell its product in that area under an obligation to serve.<sup>54</sup> The government, through ratemaking, sets the price of its service at rates that allow a prudently managed utility to cover its operating expenses and earn a reasonable return on its capital investment, thus yielding a profit.<sup>55</sup> The regulatory control of natural monopoly, then, occurs by 1) limiting entry, 2) setting prices, 3) controlling profits, and 4) imposing a service obligation.

The traditional formula accomplished its public interest purpose by enabling the capital expansion of the industry and the construction of the country's utility infrastructure. The formula also kept rates reasonable for most of the last century. However, with the traditional formula, a utility had no economic incentive to reduce expenses and had an economic incentive to make capital investments because the more a firm invested, the more it earned for its shareholders.<sup>56</sup>

### C. Critique of Natural Monopoly

The earliest reference to natural monopoly appears to be from England's Lord Chief Justice Matthew Hale in his 1670 treatise *De Portibus Maris*, which justified the government regulation of seaports because they were affected with a public interest.<sup>57</sup> The concept was also applied to public utilities in 1848 by John Stuart Mill in *The Principles of Political Economy*.<sup>58</sup> Since then, political economists continued to advance the idea.<sup>59</sup> The general acceptance of the idea does not, of course, mean that natural monopoly theory is without critics.<sup>60</sup>

There are two basic critiques. The first is a critique of economic theory, and the most notable criticism comes from Harold Demsetz in his article, *Why Regulate Utilities*,<sup>61</sup> in which he argued that even if only one firm survives, it need not set a monopoly price because even that market can be subject to competition through contracting.<sup>62</sup> Demsetz's argument attacks economic theory: "[W]e have no theory that allows us to deduce from the observable degree of concentration in a particular market whether or not price and output are competitive."<sup>63</sup> The second criticism of utility regulation

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<sup>54</sup> Jim Rossi, *Universal Service in Competitive Retail Electric Power Markets: Whither the Duty to Serve?*, 21 ENERGY L.J. 27, 27 (2000).

<sup>55</sup> See, e.g., CHARLES F. PHILLIPS, JR., *THE REGULATION OF PUBLIC UTILITIES: THEORY AND PRACTICE* 171-82 (3d ed. 1993).

<sup>56</sup> Averch & Johnson, *supra* note 5, at 4.

<sup>57</sup> See *Munn v. Illinois*, 94 U.S. 113, 126-29 (1876).

<sup>58</sup> JOHN STUART MILL, *PRINCIPLES OF POLITICAL ECONOMY* 143-44 (1884).

<sup>59</sup> See generally Herbert Hovenkamp, *Technology, Politics, and Regulated Monopoly: An American Historical Perspective*, 62 TEXAS L. REV. 1263 (1984); STEPHEN BREYER, *REGULATION AND ITS REFORM* (1992); Thomas Hazlett, *The Curious Evolution of Natural Monopoly Theory, in UNNATURAL MONOPOLIES: THE CASE FOR DEREGULATING PUBLIC UTILITIES* 1 (Robert W. Poole, Jr. ed., 1985).

<sup>60</sup> See, e.g., Richard L. Gordon, *Don't Restructure Electricity: Deregulate*, 20 CATO J. 327 (2001).

<sup>61</sup> Harold Demsetz, *Why Regulate Utilities*, 11 J.L. & ECON. 55 (1968).

<sup>62</sup> *Id.* at 58-59.

<sup>63</sup> *Id.* at 59-60 (emphasis in original).

is more pointedly political: industry loves regulation because it protects firms from competition.<sup>64</sup> This is the so-called capture theory.<sup>65</sup>

Demsetz states that, while a bidding model may result in only one producer, economic theory does not require even that provider to sell at a monopoly price because there are other competitors waiting in the wings. In effect, Demsetz is arguing that, while there may be no competition *within* an identified market, such as electricity, there is competition *for* the market. He goes on to write: "There are only two important assumptions: (1) The inputs to enter production must be available to many potential bidders at prices determined in open markets. . . . (2) The cost of colluding by bidding rivals must be prohibitively high."<sup>66</sup>

Demsetz is both wrong and right. He is wrong as an empirically observable matter on both assumptions for a given historical period. For most of the first half of the twentieth century, the utility market was not competitive. Instead, as technologies developed and utilities felt the need for growth, they consolidated, exercised market power, and engaged in customer and shareholder abuses. Because utilities require large front-end capital investments, these investments form entry barriers and they do exercise market power.<sup>67</sup> In other words, his first assumption about inputs did not come to pass in the formative decades of the industry. Also, because there are high entry costs, there is nothing to prevent the successful bidder from exercising monopoly power. Further, the transaction costs for buyers to organize and drive down prices is also high, thus preventing full competition. High entry costs, available economies of scale, and the presence of monopolies in service areas, prevented the development of a competitive electric industry. Again, these facts pertain to a particular historical period until approximately 1965.<sup>68</sup>

After that date, Demsetz's theory is partially correct. Over time, vertically integrated utilities under the traditional rate formula overbuilt, and generation became more costly. Rival producers could produce electricity more cheaply, and certain customers, particularly large industrial customers, brought pressure to bear on utilities to get access to cheaper electricity. In short, the generation end of the fuel cycle showed signs of competition. It did not, and does not, follow that the current transmission system operates other than as a monopoly bottleneck.<sup>69</sup>

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<sup>64</sup> RICHARD F. HIRSCH, *POWER LOSS: THE ORIGINS OF DEREGULATION AND RESTRUCTURING IN THE AMERICAN ELECTRIC UTILITY SYSTEM* 23-24 (1999).

<sup>65</sup> George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. OF ECON. & MGMT. SCI. 3, 3 (1971); Richard Posner, *Theories of Regulation*, 5 BELL J. OF ECON. & MGMT. SCI. 335, 336-39 (1974); George Priest, *The Origins of Utility Regulation and the "Theories of Regulation" Debate*, 36 J. OF LAW & ECON. 289, 290 (1993).

<sup>66</sup> Demsetz, *supra* note 61, at 58.

<sup>67</sup> John J. Fialka, *Energy Secretary Says He Has Evidence Some Utilities Use Monopoly Tactics*, WALL ST. J., Mar. 8, 2000, at A4; WERNER TROESKEN, *WHY REGULATE UTILITIES? THE NEW INSTITUTIONAL ECONOMICS AND THE CHICAGO GAS INDUSTRY 1849-1924*, at 9-13 (1996).

<sup>68</sup> See, e.g., LEONARD S. HYMAN ET AL., *AMERICA'S ELECTRIC UTILITIES: PAST, PRESENT AND FUTURE* 151-61 (7th ed. 2000).

<sup>69</sup> "Bottleneck" is used two ways in discussing the transmission system. The narrower meaning is that there are regions within the system that become increasingly constrained.

#### D. Precursors to Electric Industry Restructuring

For most of the twentieth century, producers, consumers, and regulators believed in the wisdom of the traditional regulation of the utility industry based on the natural monopoly assumptions. There were good reasons for that belief, as it was supported by the economy and by the effects on shareholders' and ratepayers' pocketbooks.

The U.S. economy was expanding throughout most of the century with, of course, the exception of the Great Depression. The political-economic response to the Great Depression, in the form of the New Deal, was quite favorable to the electric industry.<sup>70</sup> As part of the New Deal program to stabilize the economy, the government pushed forward a plan to stabilize the country's energy infrastructure, particularly in the electric<sup>71</sup> and natural gas<sup>72</sup> industries. These legislative schemes proved particularly fruitful after the Second World War, as both the economy and energy production expanded at predictable rates.<sup>73</sup> As a consequence of traditional rate regulation and a friendly economy, shareholders were happy because producers expanded plants at little or no financial risk, thus earning reliable returns and receiving reliable service. Ratepayers were happy because utilities were continuing to realize economies of scale and, therefore, rates were either relatively flat or declining. Regulators were happy because neither producers nor consumers were complaining, rate hearings were relatively uncomplicated, and public utility commissions were largely nonpolitical agencies.<sup>74</sup>

Understandably, traditional utility regulation could not last forever. Just as there are natural business cycles for industry, so there are cycles of regulation.<sup>75</sup> A business, for example, may start competitively then consolidate to reduce competition, resulting in competitive market failure. In such a case, government regulation can attempt to correct that failure until regulation experiences failure itself.<sup>76</sup> The regulation of the electric

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These regions themselves are also known as bottlenecks. See ROGER W. GALE & MARY O'DRISCOLL, *THE CASE FOR NEW ELECTRICITY TRANSMISSION AND SITING NEW TRANSMISSION LINES* 8 (2001), available at <http://eei.org/issues/news/transmission-case.pdf>. "Bottleneck" can also be applied to the system as a whole. Bottleneck is used here in its broader sense.

<sup>70</sup> JOHN GARRETSON CLARK, *ENERGY AND THE FEDERAL GOVERNMENT: FOSSIL FUEL POLICIES, 1900-1946* (1987); Joseph P. Tomain, *The Dominant Model of United States Energy Policy*, 61 U. COLO. L. REV., 355, 358-63 (1990).

<sup>71</sup> Federal Power Act, 16 U.S.C. §§ 792-823. (2000).

<sup>72</sup> Natural Gas Act, 15 U.S.C. § 717 (2000).

<sup>73</sup> HYMAN ET AL., *supra* note 68, at 151-52.

<sup>74</sup> WILLIAM T. GORMLEY, JR., *THE POLITICS OF PUBLIC UTILITY REGULATION* 7, 212 (1983).

<sup>75</sup> MARVER H. BERNSTEIN, *REGULATING BUSINESS BY INDEPENDENT COMMISSION* 74 (1955); CLAUDIA GOLDIN AND GARY D. LIBECAP, *THE REGULATED ECONOMY: A HISTORICAL APPROACH TO POLITICAL ECONOMY* 2 (1994); SHAPIRO & TOMAIN, *supra* note 51, ch. 5.

<sup>76</sup> See generally Robert L. Rabin, *Federal Regulation in Historical Perspective*, 38 STAN. L. REV. 1189 (1986) (examining in depth the legal and political history of federal regulation and providing extensive analysis and criticism of the results of these years of regulatory development); HERBERT HOVENKAMP, *ENTERPRISE AND AMERICAN LAW 1836-1937* (1991) (exploring the rise of federal regulation and the changes in the relationship between the federal government and private enterprise that resulted); THOMAS K. MCCRAW, *PROPHETS OF REGULATION* (1984) (explaining the development of federal regulation through an examination



industry has gone through that cycle, from an unregulated competitive market, to market failure and attendant regulation, then to regulatory failure.<sup>77</sup> Now politicians, regulators, and other interested actors are responding to the regulatory failure in the electric industry for political and economic reasons.

### 1. *Economic and Political Justifications*

Starting roughly in 1965, the industry reached technological and financial plateaus at which industry expansion slowed considerably; economies of scale were not being realized, costs were increasing, generation was overbuilt, and alternative providers were coming into the market. Economic indicators were such that utilities could no longer rely on the annual seven percent growth rate they had enjoyed since the end of World War II. The traditional rate formula which encouraged capital expansion put utilities in the position of continuing to dump money into the rate base, thus increasing costs. Inflation and other economic indicators caused marginal costs to exceed average costs as utilities ran into trouble with cost overruns, plant cancellations, and the like. In short, competition was peeking from behind regulatory blankets.<sup>78</sup>

Politically, things also changed dramatically in the mid-1960s. Production costs began to increase and rates began to rise for a number of reasons. General economic inflation, increased concern about the environment and an attendant increase in regulatory costs, Vietnam War expenditures, an unstable world economy, the 1965 Northeast blackout, and the failure of nuclear power all contributed to unsettling the electric industry and its customers.<sup>79</sup> The Organization of Petroleum Exporting Countries (OPEC) added to this state of affairs by flexing its cartel muscles and closing the oil spigot, which pushed inflation to double digits, and increased energy prices generally. Also, the price elasticity of demand for electricity was more elastic than anticipated, and consumers both reduced their electricity consumption and sought energy from alternative sources, further reducing their dependence on traditional utilities. Large consumers, for example, became self-generators, and small consumers installed solar panels. The reduction in consumption also caused rates to increase for remaining customers. All of these events made the formerly staid public utility commissions politically charged agencies, as critics attacked the basis of traditional rate regulation from both sides. Producers wanted rates to be more market sensitive and ratepayers wanted to avoid rate shock.

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of four major early proponents of regulation in the United States); ARTHUR M. SCHLESINGER, JR., *THE CYCLES OF AMERICAN HISTORY* 219-255 (1986).

<sup>77</sup> Tomain, *supra* note 4, at 829.

<sup>78</sup> *Id.* at 833-43; see also HYMAN ET AL., *supra* note 68, at 164-65.

<sup>79</sup> See JOSEPH P. TOMAIN, *NUCLEAR POWER TRANSFORMATION* 82-86 (1987) (discussing changes in nuclear power regulation).

## 2. PURPA's Surprise: Increased Competition<sup>80</sup>

The combined effects of the political and economic events in the late 1960s and early 1970s raised public concern about the country's energy future and raised particular concern in the Carter White House, which viewed the Energy Crisis as the "moral equivalent of war."<sup>81</sup> Jimmy Carter addressed the Energy Crisis through two major legislative initiatives. The first was the massive and ambitious National Energy Act,<sup>82</sup> which addressed conventional fuels. The National Energy Act had several purposes, including moving the country away from dependence on foreign oil, promoting the use of coal, increasing energy efficiency, modernizing utility ratemaking, stimulating conservation, encouraging the creation of a new market in electricity, and restructuring a distorted market in natural gas. Carter's second initiative, the Energy Security Act of 1980,<sup>83</sup> addressed conservation and alternative fuels from biomass, wind and solar to tar sands and oil shale. The surprising part of the National Energy Act was the Public Utility Regulatory Policies Act (PURPA),<sup>84</sup> which was aimed at securing reasonably priced energy for the nation through conservation, increasing use of alternative sources, and moving toward market-based rates.

PURPA encouraged states to move away from declining block ratemaking because it promoted consumption, and to move toward marginal cost pricing because it was more efficient; it also encouraged independent power production through cogeneration and small power generation as energy source alternatives to large public utilities. What surprised everyone was how much new nonutility generated electricity was available and how

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<sup>80</sup> See ENERGY LAW GROUP, *supra* note 4, at 12-20 to 12-21.

<sup>81</sup> President's Address to the Nation, PUB. PAPERS 656 (Apr. 18, 1977).

<sup>82</sup> The National Energy Act consists of five pieces of major legislation: the National Energy Conservation Policy Act, Pub. L. No. 95-619, 29 Stat. 3206 (codified as amended in scattered sections of 12, 15, 26, 31, and 42 U.S.C.); the Powerplant and Industrial Fuel Use Act of 1978, Pub. L. No. 95-620, 92 Stat. 3289 (codified as amended in scattered sections of 15, 42, and 45 U.S.C.); the Natural Gas Policy Act of 1978, Pub. L. No. 95-621, 92 Stat. 3350 (codified at 15 U.S.C. §§ 3301-3432 & 42 U.S.C. § 7255 (2000)); the Public Utilities Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117 (codified as amended in scattered sections of 15, 16, 26, 42, and 43 U.S.C.); and the Energy Tax Act of 1978, Pub. L. No. 95-618, 92 Stat. 3174 (codified as amended in scattered sections of 26 and 42 U.S.C.).

<sup>83</sup> The Energy Security Act, Pub. L. No. 96-294, 94 Stat. 611 (codified as amended in scattered sections of 12 and 42 U.S.C.). The Act also consists of several pieces of legislation including: the Defense Production Act Amendments of 1980, Pub. L. No. 96-294, 94 Stat. 617 (codified in 50 U.S.C. §§ 2061-2166 (2000)); the United States Synthetic Fuels Corporation Act of 1980, Pub. L. No. 96-294, 94 Stat. 633 (codified as amended in scattered sections of 42 U.S.C.); the Biomass Energy and Alcohol Fuels Act of 1980, Pub. L. No. 96-294, 94 Stat. 683 (codified as amended in scattered sections of 7, 15, 16, and 42 U.S.C.); the Renewable Energy Resources Act of 1980, Pub. L. No. 96-294, 94 Stat. 715 (codified as amended in scattered sections of 16 and 42 U.S.C.); the Solar Energy and Energy Conservation Act of 1980, Pub. L. No. 96-294, 94 Stat. 719 (codified as amended in scattered sections of 12 and 42 U.S.C.); the Geothermal Energy Act of 1980, Pub. L. No. 96-294, 94 Stat. 763 (codified in scattered sections of 16 U.S.C.); and the Acid Precipitation Act of 1980, Pub. L. No. 96-294, 94 Stat. 770 (codified at 42 U.S.C. §§ 8901-8905, 8911-8912 (2000)).

<sup>84</sup> Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117 (codified in scattered sections of 15, 16, and 30 U.S.C.).

eager independent power producers (IPPs) were to enter the market. The success of PURPA revealed that traditional regulation had run its course. Generating units, with then existing technologies, could not continue to get bigger and commercial nuclear power was not "too cheap to meter." In microeconomic terms, the traditional, regulated electric industry had reached the end of its scale economies. In other words, unregulated producers existed that were willing to supply the market with electricity priced lower than the electricity being supplied by incumbent regulated utilities, and the new entrants profited by doing so with a little help from government. This situation was a free marketer's dream.

Congress passed PURPA in small part to encourage the growth of generation not owned by utility companies as a conservation measure. PURPA required local electric utilities to buy the power produced by two types of nonutility generators (NUGs), which PURPA calls "qualifying small power production facilit[ies]" (QFs)<sup>85</sup>—small electric generators (eighty megawatts or less) and cogenerators.<sup>86</sup> Utilities were required to purchase excess QF power at that utility's "avoided cost," that is, the price the utility would have paid for that power had it generated or bought the power itself. Because QFs could produce electricity more cheaply than the local public utility, they would produce as much as they could under the statute, use as little as they could for their business, and sell as much as they could to the local utility, which was obligated to buy at the higher price.

It is at this point in the regulatory story that transmission became noticeably important and that regulators began to rethink their regulation. While QFs could sell their power to the local utility, they did not have access to the utility's transmission lines to "wheel"<sup>87</sup> their power to any other utility or end user. Consequently, the creation of QFs had two dramatic effects. First, their existence marked the formal introduction of competition into generation. Second, the purchase requirement began to force open the access door. The program was notably successful. From 1989 through 1993, both the number of QFs and installed QF capacity doubled.<sup>88</sup>

PURPA stimulated a deeper rethinking of the concept of natural monopoly. Under the traditional regulatory scheme, investor owned utilities (IOUs) owned and operated generation, transmission, and distribution as state-protected monopolies. However, cheaper electricity was available because the generation segment of IOUs became too big and costly to maintain. In microeconomic terms, marginal cost exceeded average cost signaling the failure of traditional rate regulation because the traditional formula set rates on average, historic costs rather than market sensitive marginal costs. In other words, traditional utilities found it more costly to do business because they could not charge market rates and had overbuilt. As a result, smaller units and newer technologies became increasingly

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<sup>85</sup> Public Utility Regulatory Policies Act of 1978, 16 U.S.C. § 796(17)(C) (2000).

<sup>86</sup> *Id.* § 824a-3.

<sup>87</sup> "Wheeling" is the use of one utility's transmission system by a generator to sell power to another distributor or end user.

<sup>88</sup> ENERGY LAW GROUP, *supra* note 4, at 12-21.

attractive.<sup>89</sup>

PURPA thus caused a rethinking of regulation at both ends of the fuel cycle. At the generation end, the existence of NUGs indicated that the market was competitive. At the buyers' end, consumers wanted to purchase the cheaper electricity. Unfortunately, a full-scale move to market rates was problematic not only because of the transmission problem, but also because market rates had uneven effects on consumers. All consumers are not similarly situated. Large consumers have more leverage to bargain for discounts because they buy larger quantities of electricity and they can switch fuels more easily. Further, small users are often cross-subsidized and market prices may not be favorable to them.

### *E. The Current Status of Electricity Regulation*

#### *1. The Energy Policy Act of 1992*

By the early 1990s, PURPA made two things clear. First, alternative power producers wanted to get into the market. Second, the market was not as robust as it could be because transmission access was not open due to two limiting factors. Nonutility generators, other than QFs, found it difficult to enter the market because they had to follow the PUHCA. These generators were particularly desirable because they could provide new generation at a lower cost. The second constraint was FERC's lack of authority to mandate wheeling over transmission lines.

In 1992, Congress passed the Energy Policy Act (EPAcT)<sup>90</sup> and partially eliminated both constraints. EPAcT advanced restructuring by authorizing firms exclusively in the business of selling electric energy at wholesale (exempt wholesale generators (EWGs)) to be exempt from PUHCA's ownership restrictions.<sup>91</sup> This exemption set the stage for the development of a more competitive and unregulated wholesale market. Second, EPAcT authorized FERC to order utilities that owned transmission facilities to transmit wholesale power over their systems.<sup>92</sup> The Act gave FERC broad authority, subject to a public interest standard, to order "virtually any transmission owning entity in the U.S. to wheel power for wholesale transactions at the request of a broad range of potential applicants involved in wholesale power transactions."<sup>93</sup> However, EPAcT prohibited FERC from ordering access to transmission for retail power.<sup>94</sup> EPAcT advanced the restructuring ball by promoting EWGs and by opening transmission access. All that remained was for FERC to implement the Act.

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<sup>89</sup> See, e.g., Richard Stavros, *Distributed Generation: Last Big Battle for State Regulators?*, PUB. UTIL. FORT., Oct. 15, 1999, at 34 (discussing California's difficulty in regulating distributed generators).

<sup>90</sup> Pub. L. No. 102-486, 106 Stat. 2776 (1992).

<sup>91</sup> Energy Policy Act, 15 U.S.C. § 79z-5a (2000).

<sup>92</sup> *Id.*

<sup>93</sup> Reinier H.J.H. Lock & Marlene L. Stein, *Electricity Transmission*, in 4 ENERGY LAW AND TRANSACTIONS § 81.01[4][a] (David J. Muchow & William A. Mogel eds., 1994).

<sup>94</sup> 15 U.S.C. § 792-5b (2000).

To best understand the importance and the current status of transmission regulation, it is appropriate to understand a little physics. First, electrons travel through the network virtually instantaneously. At the speed of light, one might say. Second, electricity cannot be stored effectively.

The first principle of physics is a good thing for consumers, but a headache for regulators. As long as the network is open, consumers can draw down electricity. The regulatory headache is that no one knows the point of origin of any electricity. They simply know how much is in the system and how much generators are willing to charge. Nor does anyone know the direction that electricity is flowing. In other words, unlike every other product, buyers and sellers are not purchasing a specified product from each other. Instead, the industry has created the myth of the "contract path."<sup>95</sup>

The second principle of physics is good for producers and a headache for consumers and regulators. Producers have a steady demand and a need for their supply. Consumers and regulators must worry about reliability.

What all this means for transmission can be summarized in one word—bottleneck. Consumers want the product, producers want to supply it, and transmission owners want to make a profit by controlling access. However, because the transmission segment has both monopolistic and monopsonistic attributes, profits can become supracompetitive.

Transmission is pivotal for the operation of the electric industry. In the simplest terms, the transmission segment moves electricity from producers to consumers. Transmission must also maintain an adequate and reliable flow of electricity through the system. Consequently, the transmission segment must have adequate *capacity*, maintain *reliability*, avoid *congestion*, and do so at *reasonable* prices with *no discrimination*. Neither monopolists, nor monopsonists think this way—they would rather maximize profits.

## 2. FERC Initiatives<sup>96</sup>

FERC implemented the EPAct with Order Nos. 888<sup>97</sup> and 889.<sup>98</sup> Order No. 888 "require[ed] all public utilities that own, control, or operate facilities used for transmitting electric energy in interstate commerce to have on file open access non-discriminatory transmission tariffs that contain minimum terms and conditions for non-discriminatory service."<sup>99</sup> Order No. 888 also

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<sup>95</sup> Charles H. Koch, Jr., *Control and Governance of Transmission Organizations in the Restructured Electricity Industry*, 27 FLA. ST. U.L. REV. 569, 573 (2000).

<sup>96</sup> This discussion draws on Suede G. Kelly, *Electricity*, in ENERGY LAW GROUP, *supra* note 4, at 12-23 to 12-32.

<sup>97</sup> Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities and Transmitting Utilities, 61 Fed. Reg. 21,540, 21,544 (May 10, 1996) (codified at 18 C.F.R. pts. 35, 385).

<sup>98</sup> Open Access Same-Time Information System and Standards of Conduct, 61 Fed. Reg. 21,737, 21,737 (May 10, 1996) (codified at 18 C.F.R. pt. 37); Floyd L. Norton, IV & Gregory W. Camet, *Electricity: Open Access, Transmission and Comparability*, in 4 ENERGY LAW AND TRANSACTIONS § 82.01, § 82.04(1) (David J. Muchow & William A. Mogel eds., 2001).

<sup>99</sup> Norton & Camet, *supra* note 98 § 82.04.

required utilities to “functionally unbundle” their transmission service from their generation and power marketing functions, and to provide unbundled ancillary transmission services.<sup>100</sup> The unbundling was intended to reduce or eliminate opportunities for self-dealing by utilities owning both generation and transmission facilities. Functional unbundling means that the activities are treated separately within the corporation without necessarily being put into separate corporate entities.

Utilities were required to file separate tariffs with separate rates, terms, and conditions for wholesale generation service, transmission service, and any ancillary services.<sup>101</sup> Ancillary services include actions taken to effect the transmission, such as scheduling and dispatching, and services necessary to maintain the integrity of the transmission system.<sup>102</sup> To ensure that a utility does not favor itself with its own transmission facilities, the order required that a utility must take transmission service and ancillary services for all of its new wholesale sales and purchases of electricity under the same tariff that applies to outside users of its transmission.<sup>103</sup>

Open transmission on a nondiscriminatory basis is needed to create a more robust competitive market in wholesale power by allowing generation access to more customers. FERC estimated that open access transmission would save U.S. electric consumers between \$3.8 and \$5.4 billion a year and encourage more technical innovation in the industry.<sup>104</sup> To help assure reliability, the order provided utilities with a fair opportunity to recover prudently incurred regulatory costs as well as the costs of making the transition to a competitive wholesale market.

Order No. 889 established an electronic information system to promote competition.<sup>105</sup> This system, called OASIS (open access same-time information system), provides existing and potential transmission users the same access to transmission information that the transmission owner enjoys.<sup>106</sup> Order No. 889 also requires public utilities to comply with standards of conduct intended to preclude anticompetitive behavior by transmission owners, such as favoring affiliated generators or power marketers with transmission services.<sup>107</sup>

At the wholesale level, Order Nos. 888 and 889 had a dramatic impact on the industry. Since their inception, the industry has experienced significant changes including the development of retail competition in the states, the divestiture of generating units by traditional utilities, an increase in energy company mergers, a notable increase in the number of power marketers and independent generators, and the establishment of

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<sup>100</sup> 61 Fed. Reg. at 21,552.

<sup>101</sup> *Id.*

<sup>102</sup> *Id.* at 21,580–81.

<sup>103</sup> *Id.* at 21,552.

<sup>104</sup> Norton & Camet, *supra* note 98, § 82.04(1); 61 Fed. Reg. at 21,675.

<sup>105</sup> Open Access Same-Time Information System and Standards of Conduct, 61 Fed. Reg. 21,737, 21,737 (May 10, 1996) (codified at 18 C.F.R. pt. 37).

<sup>106</sup> *Id.*

<sup>107</sup> *Id.*

independent system operators to manage transmission.<sup>108</sup> Those Orders, however, did not address either retail wheeling or the appropriate form for a transmission facility.

The difficult question was how to structure the relationship between the transmission and generation portions of a utility's business. Clearly, FERC envisioned some sort of regional transmission organization, but the exact form it should take was and is unsettled. Nevertheless, FERC addressed this issue with Order No. 2000.<sup>109</sup>

### 3. FERC order 2000—Regional Transmission Organizations

As a result of information learned from PURPA and from the market, natural monopoly attention turned to transmission. Also, because the electricity industry was dually regulated, restructuring had to proceed on both federal and state levels. While a regulatory bright line could be drawn between interstate wholesale of electricity and retail sales, that bright line is one of political convenience only, not physical reality. Historically, the federal government limited its reach to interstate wholesale and left retail regulation to the states. Regulatory restructuring has continued to follow this division between state and federal regulation. Though this continued allegiance to dual regulation may have made political sense, it does not make good economic sense.

To further industry restructuring, FERC proposed and adopted a rule designed to formalize the formation of independent transmission organizations under the name Regional Transmission Organizations (RTOs).<sup>110</sup> RTOs are entities that are independent of the owners of generation facilities and manage the transmission systems either as owners or as operators.<sup>111</sup>

In FERC's opinion, Order No. 2000 was necessary because the market was insufficiently competitive due to engineering and economic inefficiencies and because of continued opportunities for discrimination.<sup>112</sup>

Regarding engineering and economic inefficiencies, FERC found that:

- The reliability of the bulk power system was being stressed;
- There were increasing difficulties in computing transmission capacity;
- Regional coordination was desirable for congestion management; There was increased uncertainty with transmission planning and expansion; and
- Pancaked rates hindered market development.<sup>113</sup>

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<sup>108</sup> Regional Transmission Organizations, Order 2000, 65 Fed. Reg. 810, 813–15 (Jan. 6, 2000) (codified at 18 C.F.R. pt. 35.34).

<sup>109</sup> *Id.* at 810; see also Order No. 2000-A, 65 Fed. Reg. 12,088 (Mar. 8, 2000) (codified at 18 C.F.R. Pt. 35) (clarifying key terms in Order No. 2000).

<sup>110</sup> 65 Fed. Reg. at 811.

<sup>111</sup> *Id.*

<sup>112</sup> *Id.* at 817.

<sup>113</sup> Transmission rates are "pancaked" when an access charge is made for transmission in every jurisdiction the transmission crosses. *Id.* at 817.

Regarding undue discrimination, FERC was concerned with both self-dealing and the appearance of self-dealing<sup>114</sup> because both retard the development of competitive markets. Overt self-dealing occurs when a utility owning transmission and generation charges itself a transmission charge lower than that charged to other customers, giving it a competitive edge. The appearance of self-dealing raises the transaction costs of doing business because the market is not seen as reliable, thus reducing efficiency gains from competition.

Transmission owners had no obligation to serve all customers. Even though transmission is an essential facility, historically it has not had common carrier status.<sup>115</sup> The key impediment to an open and competitive market is that for the most part the transmission segment is privately owned and private owners have a fiduciary duty to their shareholders to maximize value. In other words, private owners will raise prices to what the market can bear. There is little incentive to give up either ownership or operation.

To this point, interregional coordination has proceeded on a voluntary basis. Historically, the transmission network developed as one might expect. At first there was a direct link between Edison's Pearl Street generator and its consumers at low voltage direct current. Alternating current allowed for longer distance transmission and encouraged consolidation among generators, resulting in voluntary interconnections. The first major power pool was the Pennsylvania, New Jersey, Maryland Interconnection (PJM); established to balance load, realize operating economies, save capital investment, and enhance system reliability.<sup>116</sup> These interconnections have extended throughout the country to form three power pools: east and west of the Rocky Mountains, and in Texas. These three pools, together with the Hydro-Quebec System, form the North American Electric Reliability Council (NERC), another voluntary organization, to coordinate operations, planning, and transmission.<sup>117</sup>

FERC believes that the voluntary coordination that previously existed is no longer effective because the volunteer groups are not vested with the broad decision-making authority needed to address larger issues that affect an entire region including managing congestion, planning and investing in new transmission facilities, pancaking transmission access charges, the absence of secondary markets in transmission services, and the possible disincentives created by the level and structure of transmission rates.<sup>118</sup>

While policy makers might readily agree on the necessary goals for the competitive performance of the transmission segment, there is little consensus on the means of getting there. Into this fray steps FERC with

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<sup>114</sup> *Id.* at 817-18.

<sup>115</sup> Common carrier is defined as the situation in which the government has the authority to order a firm to submit to entry and exit regulation. In other words, common carriers must serve all customers without price discrimination. See DANIEL L. BRENNER, *LAW AND REGULATION OF COMMON CARRIERS IN THE COMMUNICATIONS INDUSTRY* 35 (1992).

<sup>116</sup> Lock & Stein, *supra* note 93, at § 81.01.

<sup>117</sup> See NERC, at <http://www.nerc.com> (last visited Mar. 17, 2002) (describing the structure of NERC).

<sup>118</sup> Regional Transmission Organization, 1999 FERC Lexis 2692, at 34 (Dec. 20, 1999).



Order No. 2000, which set the parameters for establishing RTOs. Order No. 2000 describes two fundamental approaches to creating RTOs—the non-profit independent system operator (ISO), and the for-profit independent transmission company (Transco).<sup>119</sup> Although both forms of organization would have independent boards, the ISO is a non-profit organization committed to non-discriminatory service and the Transco is driven by profit. Both forms present complications, and there are arguments pro and con, as will be described below.

#### 4. *Organizational Form: ISO vs. Transco*

FERC Order No. 2000 establishes the parameters for any RTO, which may take the form of the non-profit ISO or the for-profit Transco.<sup>120</sup> FERC set four minimum standards for any RTO. An RTO must have:

- Independence
- Scope and Regional Configuration
- Operational Authority
- Short-Term Reliability

The Order also sets out the minimum functions an RTO must perform:

- Tariff administration and design
- Congestion management
- OASIS participation
- Market monitoring
- Planning and expansion
- Interregional coordination

Each of these characteristics and functions is explained in great detail in the Order.<sup>121</sup> The listing is sufficient to raise questions about the form of organization the RTO should take. To date, Order Nos. 2000 and 2000-A have been interpreted so that the RTO can be an ISO or a Transco.<sup>122</sup> Yet so far FERC has authorized only ISOs. Curiously, the arguments in favor and against each form are simply arguments with little or no data and limited rhetorical power.<sup>123</sup> Finally, FERC Order No. 2000 explicitly says that no simple form is preferred and, complicating matters a bit, the Order has been interpreted by various commentators as “preferring” one method over the other.<sup>124</sup>

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<sup>119</sup> Region Transmission Organizations, Order 2000, 65 Fed. Reg. 810, 835 (Jan. 6, 2000) (codified at 18 C.F.R. pt. 35.34).

<sup>120</sup> *Id.* at 811. The rule required transmission-owning utilities to file an RTO proposal with FERC by October 15, 2000, or file an explanation as to why they cannot. The order further required that the RTO must commence operations by December 15, 2001. *Id.* This date has been postponed. *Electricity Market Design and Structure*, 97 F.E.R.C. ¶ 61,146 (2001).

<sup>121</sup> See also LEONARD S. HYMAN, WHAT'S INSIDE FERC'S TRANSMISSION POLICY: A GUIDE TO ORDER 2000 (2000) (discussing the functions of RTO).

<sup>122</sup> Jeremiah D. Lambert, *Order 2000: A Subtle But Clear Preference for ISOs*, PUB. UTIL. FORT., Mar. 1, 2000, at 36.

<sup>123</sup> *Id.*; Curt L. Hebert Jr. & Joshua Z. Rokach, *Order 2000: Exposing Myths on What FERC Really Wants*, PUB. UTIL. FORT., Mar. 1, 2000, at 42, 47.

<sup>124</sup> Compare Lambert, *supra* note 122, at 36 with Hebert & Rokach, *supra* note 123 at 47.

## 5. ISO

The central force behind the ISO is that it is a non-profit operator of the transmission system. As such, the ISO owns no facilities. Rather, it operates transmission facilities that are made available to it by generating units. The ISO exists to serve the public interest in having reasonably priced, reliable electricity available for consumers.

The situation of a non-profit as a non-owner operator of transmission units presents certain complications. The first complication is its relationship with the generators. The ISO must be "independent" of a generator, specifically to avoid self-dealing.<sup>125</sup> Consequently, its Board of Directors must have no conflicts of interest with the generators. How far can this go? At what point does an independent board have adequate understanding of the industry and sufficient incentive relative to the generators such that it can exercise influence over the generators or the owners of the transmission company to invest in maintenance and expansion of those facilities?

These questions present difficult problems for the ISO. The Board of Directors of the ISO will have a fiduciary duty running either to the state or to the federal government, whichever gives the ISO its charter. Consequently, the Board has some motivation to act independently, and they have some motivation to keep the ISO in business, which is to say to keep electricity running through the system. Although at least two commentators argue that FERC's principles for the ISO apply equally to Transcos, most commentators make assertions about which form is the superior form of organization.<sup>126</sup> Not surprisingly, most industry arguments are made in favor of the for-profit Transco. The arguments against the ISO generally focus on insufficient incentives. The insufficient incentives come from hypotheses about profit motivation. Critics argue, for example, that while an ISO may have an incentive to maintain the short-term reliability of the system, its distance from ownership of facilities gives it little incentive or control over long-term reliability. Following this analysis, critics argue that the ISO has little ability or incentive to make capital investments in plants, innovate through the use of new technologies, or engage in cost-setting for management efficiencies.<sup>127</sup>

## 6. Transco

The arguments critical of ISOs mirror the arguments in favor of Transcos. Again, the central variable for the Transco is that it is a for-profit company that both owns and operates transmission assets. Its for-profit

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<sup>125</sup> Hebert & Rokach, *supra* note 123, at 48.

<sup>126</sup> Stephen Angle & George Cannon, Jr., *Independent Transmission Companies: The For-Profit Alternative in Competitive Electric Markets*, 19 ENERGY L.J. 229, 239-40 (1998).

<sup>127</sup> SHIMON AWERBUCH ET AL., UNLOCKING THE BENEFITS OF RESTRUCTURING: A BLUEPRINT FOR TRANSMISSION 11-55 (1999); Angle & Cannon, *supra* note 126, at 238-39; Robert J. Michaels, *The Governance of Transmission Operators*, 20 ENERGY L.J. 233, 258-59 (1999).

motivation is designed to maximize the value of the company and to return income and value to shareholders. Shareholders, of course, elect the Board of Directors and, presumably, conflict of interest rules will prevent unfair advantages to generators. Similarly, the incentives for the Transco mirror the disincentives for the ISO. Because the Transco is profit-motivated, it must necessarily invest in plant maintenance and innovation. It must also maintain short-term and long-term reliability. The arguments in favor of the Transco, given its profit motivation, however, should not be taken too far. It is also the case that a profit-driven Transco may pay more attention to short-term gains, may cut costs in a way that affects reliability, and may price discriminate where it is economically beneficial to do so.<sup>128</sup>

The non-profit nature of the ISO presents problems, as does the for-profit nature of the Transco. However, alternatives are available. One alternative is to engage in a transitional movement starting with an ISO then moving to the Transco. The other alternative is to create an ISO or a Transco and regulate the rates with performance-based ratemaking that allows a sharing of profits between ratepayers and shareholders.<sup>129</sup>

The difficult question for state and federal regulators and for industry actors is which form of RTO to choose. Not surprisingly, industry actors favor Transcos. Regardless of form, however, Transcos and ISOs must achieve five goals. Every RTO must 1) have sufficient capacity, 2) provide reliable service, 3) manage congestion, 4) not discriminate, and 5) offer reasonable prices. The chart below compares ISO and Transcos by first listing their characteristics and then listing the incentives driving each form of organization. To be sure, at this early date, the checkmarks in each column are guesses. The guesses are based upon arguments made in the literature. It may very well be that either form performs well or poorly because of the strange nature of the organization.

One can argue vociferously, as many have, that the Transco is better situated to build transmission lines because of its for-profit motive. It is not obviously the case that Transco has sufficient assets or economic leverage to do so. Similarly, while one might argue that the ISO should be in the position to offer reliable service at reasonable prices because of its stated mission under government charter, it is equally unclear that it has the economic leverage to force generators to sell to it in sufficient quantities to keep prices low while providing reliable service.

We may very well have worked ourselves into a situation in this country in which there is a significant lag between the construction of new generation and transmission systems and the full and reliable operation of an RTO. This lag is due in part to the problem of stranded costs. Stranded costs, privately owned utilities argue, must be recouped before they can participate as full market actors, largely because they are saddled with costs as incumbents with which new entrants are not burdened. This argument

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<sup>128</sup> Koch, *supra* note 95, at 590-97.

<sup>129</sup> AWERBACH ET AL., *supra* note 127, at 148; Curt L. Hebert Jr., *The Quest for an Inventive Utility Regulatory Agenda*, 19 ENERGY L.J. 1, 13-22 (1998); Angle & Cannon, *supra* note 126, at 249-63.

means that until stranded costs are recouped and the playing field is leveled between incumbents and new entrants, there will be a lag between investment in new generation and construction of new transmission. The experience in California in 2000 demonstrates that this problem can become dramatic as demand surges ahead of supply and as price spikes ensue. Consequently, caution must be used when comparing ISOs to Transcos this early in the restructuring of the electric industry.<sup>130</sup>

ISO vs. Transco		
	ISO	Transco
<b>CHARACTERISTICS</b>	<ul style="list-style-type: none"> <li>• Non-profit</li> <li>• Non-owner operator</li> <li>• Independent "stakeholder" board</li> <li>• Fiduciary duty to charter</li> </ul>	<ul style="list-style-type: none"> <li>• For-profit</li> <li>• Owner operator</li> <li>• Independent "shareholder" board</li> <li>• Fiduciary duty to shareholder</li> </ul>
<b>INCENTIVES</b>		
Short-term reliability	✓	
Long-term reliability		✓
Capital investment		✓
Innovation		✓
Planning		✓
Reasonable prices	✓	
Maintenance		✓

Recapitulating arguments in the literature, it would seem that the ISO may have an edge on short-term reliability, given the mandate of its charter, and the ISO may have more of an incentive to keep prices reasonable. Likewise, because of its for-profit status, the Transco, assuming that it has some economic leverage over investments, may promise long-term reliability, innovation, and planning, as well as have an incentive to maintain the system as would anyone owning plant and equipment, unlike the ISO.

Nevertheless, two points should be emphasized regarding the corporate form of the transmission company. First, it is extremely unlikely that this part of the industry will become competitive or even contestably so within the short or mid-terms. Neither new technologies nor distributed generation threaten the monopoly position of electric transmission. Second, the corporate forms alone are largely irrelevant to achieving the goals of reliability, reasonable pricing, congestion management, and nondiscrimination. Rules and incentives can be fashioned to achieve each of these goals. In short, the real fight is political in nature and takes place on two fronts.

<sup>130</sup> Koch, *supra* note 95, at 581.

The first front involves federalism. What is the politically appropriate sharing of power between the federal and state governments? Does the old “bright line” hold?<sup>131</sup> Even though we are in an era of devolution, it is odd that state Public Utility Commissions (PUCs) should exercise controlling authority over transmission when regional grids are necessary. Unfortunately, FERC Order No. 2000 does not mandate RTOs and has no real enforcement teeth. The allocation of political authority is an open issue.

The second political front is between industry and regulators as they negotiate both the acceptable corporate form for the Transco and the governing rules. Central to either choice of governance form is economic leverage. Which form has sufficient economic leverage to encourage investment, innovation, and maintenance in facilities? Also, which form can ensure capacity and “regulate” prices?

### 7. *Is Transmission a Natural Monopoly?*

Regardless of the natural monopoly skeptics, electric utilities were regulated under the political-economic concept of natural monopoly with the regulatory belief that one utility in a given area could provide cheaper service than multiple providers. At the end of the twentieth century, policymakers have witnessed the erosion of the natural monopoly idea as the electricity infrastructure was built and the traditional rate formula began to have perverse economic effects. Consequently, industry and regulators noted competition at the generation end and are now focusing on transmission. The question is fairly raised whether the transmission segment is a natural monopoly or whether it is subject to competitive forces. The simple answer is that for the foreseeable future transmission is a natural monopoly.

Certainly, transmission looks like a typical bottleneck in a network industry. But there are two complementary ways to test whether it functions as a natural monopoly. First, does the transmission firm exercise market power? In other words, can it set supracompetitive prices? Second, is the transmission market competitive or contestable?

Recently, critics have argued that transmission is not a natural monopoly because these firms do not exercise market power and are increasingly subject to competition.<sup>132</sup> Regarding market power, the authors argue that the transmission line owner does not necessarily have the monopoly power to charge whatever it wants.<sup>133</sup>

Maybe, but this argument overdescribes monopoly power and underassesses the role of the transmission price. First, monopoly power is not “whatever” anyone wants to charge. Instead—and the literature is clear—it is a supracompetitive price. Clearly, a firm can set a price higher than a competitive price and lower than “whatever” it might like and still be

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<sup>131</sup> See *New York v. FERC*, 122 S. Ct 1012 (2002) (addressing the continuing validity of the bright line test and FERC authority over transmission).

<sup>132</sup> AWERBUCH, ET AL., *supra* note 127, at 15.

<sup>133</sup> *Id.*

exercising monopoly power. Also, the cost of transportation represents roughly seven percent of a utility bill.<sup>134</sup> Consequently, at the margin it may very well be that the transmission rate can be a deal breaker. But this is not a frequent occurrence. In this regard, the transmission charge functions much like a real estate broker's commission. In some instances, that commission is bargained down or shared, but rarely. For transmission operators, however, the price contains their profits.

Natural monopoly opponents also argue that the transmission market itself is competitive or contestable due to new technologies that would enable generators who are dissatisfied with transmission charges to move closer to their end users through "distributed generation,"<sup>135</sup> or end users themselves would become self-generators.<sup>136</sup> Thus, they argue, the transmission market is contestable. There are two responses to this argument. First, such moves simply have not happened in significant numbers because the transaction costs are high. Second, contestable market theory has proven to be less powerful than promised, particularly in the airline industry where it started.<sup>137</sup> The general consensus is that for now, and for the foreseeable future, transmission is a bottleneck and operates as a natural monopoly. This is a position adopted by these same critics elsewhere in their writings.<sup>138</sup>

#### IV. ENERGY POLICY

The United States's energy economy can be characterized as one-half oil and one-half electricity. The oil and electricity industries share common features. Both are large, capital-intensive industries, and both provide products that consumers treat as indispensable for their daily lives.<sup>139</sup> Small consumers heat their homes with natural gas and drive cars with gasoline. Larger industrial consumers use oil and natural gas fuel stocks in the production process. For small consumers, electricity has perhaps an even more significant impact because they need electricity to turn on the lights, open the refrigerator, or switch on a computer.

As a matter of the regulatory state, the oil industry is largely

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<sup>134</sup> *Id.* at 2, 42.

<sup>135</sup> *Id.* at 15, 47-52.

<sup>136</sup> *Id.* at 15, 27.

<sup>137</sup> Compare Elizabeth E. Bailey & W. Baumol, *Deregulation and the theory of Contestable Markets*, 1 YALE J. REG. 111 (1984) (supporting the theory of controllable markets as an alternative to deregulation) with BRIAN HAVEL, IN SEARCH OF OPEN SKIES: LAW AND POLICY FOR A NEW ERA OF INTERNATIONAL AVIATION 199-225 (1997) and Peter C. Carstensen, *Evaluating "Deregulation" of Commercial Air Travel: False Dichotomization, Untenable Theories and Unimplemented Premises*, 46 WASH. & LEE L. REV. 109 (1989) (analyzing the problems airline deregulation has caused).

<sup>138</sup> AWERBACH, ET AL., *supra* note 127, at 19 ("Transmission bottlenecks that prevent the import of competitively priced electricity allow local generators to exercise monopoly power and to overcharge consumers.").

<sup>139</sup> To some small extent, oil and electricity are interrelated because oil is used to generate 3% of the country's electricity. NAT. ENERGY POLICY DEV. GROUP, NATIONAL ENERGY POLICY 1-9 (May 2001) [hereinafter NATIONAL ENERGY POLICY] available at <http://whitehouse.gov.energy>.

unregulated at the retail level while electricity is heavily regulated throughout its production, distribution, and end use. Consumers recognize the distinction because as they drive to any gas station they fill their cars up at unregulated prices, whereas their monthly electricity bill has gone through a price-setting process. Why is it that the retail price of gasoline is unregulated and society sees it as an indispensable part of life where electricity is not? There are two explanations. The first is that, while we are in the midst of electricity restructuring, we have not deregulated prices at the retail level, although plans to do so seem appropriate if not in the immediate future. The other is that electricity is a unique product because it cannot be stored—it must always be available.

It may be fair to say that electricity is even more indispensable than gasoline, particularly in today's wired economy. Certainly, electricity's importance has grown. In the past, an electric outage meant that the TV and refrigerator were off. Rarely, however, did food spoil and the second half of the game was yet to be played when the electricity was turned back on. Computers are different entities. Without proper backup, down time can mean significant data losses, not only in our homes, but in banks, work places, and in the national defense system, for example. There is no doubt that the economy will become more wired before it becomes less so, thus maintaining, if not increasing, the significance of electricity.

It is odd then that, as the demand for electricity increases, additions to generation may lag behind or remain level, yet transmission lags further behind both. This situation is understandable because investors find it risky to invest in an uncertain transmission market. Thus the problem: there is no workable competitive market in electricity, and it is the movement from large-scale, heavy-handed government regulation to such a competitive market that is the object of restructuring. The best guess is that the transition will take considerable time beyond the conception of the FERC staff quotation that opened this Article.

#### A. *Dominant Energy Policy*

For most of the twentieth century, the United States developed and followed a dominant energy policy.<sup>140</sup> That policy is not to be found in any one document nor is it a consciously coordinated whole.<sup>141</sup> Yet the policy consists of large scale, capital intensive energy projects, significantly favoring fossil fuels such as oil, coal, and natural gas. Although there have been attempts throughout the twentieth century to coordinate and develop a

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<sup>140</sup> Joseph P. Tomain, *The Dominant Model of United States Energy Policy*, 61 U. COLO. L. REV. 355, 369-76 (1990); Joseph P. Tomain, *Energy Policy Advice for the New Administration*, 46 WASH. & LEE L. REV. 63 (1989); Joseph P. Tomain, *Toward a Sustainable Energy-Environmental Policy*, in ENERGY LAW GROUP, *supra* note 4, at 6-2 to 6-3; see also JOHN CLARK, *ENERGY AND THE FEDERAL GOVERNMENT: FOSSIL FUEL POLICIES 1900-1946* (1987); RICHARD H. K. VIETOR, *ENERGY POLICY IN AMERICA SINCE 1945: A STUDY OF BUSINESS-GOVERNMENT RELATIONS* (1984).

<sup>141</sup> See Joseph P. Tomain, *Institutionalized Conflicts Between Law and Policy*, 22 HOUS. L. REV. 661 (1985) (discussing inter-branch, interstate, and state-federal conflicts in energy policy).

comprehensive national energy plan, none has materialized even after the creation of the Department of Energy, which is required to report a comprehensive national energy plan to Congress annually.<sup>142</sup> The Bush administration, under the guidance of Vice President Dick Cheney, has adhered to the dominant model with its recent *National Energy Policy*.<sup>143</sup> Bush's *National Energy Policy* starts with the premise that America faces the most serious energy shortage since the oil embargos of the 1970s. Those shortages were dramatized by the California electricity crisis of the summer of 2000. The plan projects growing shortfalls over the next twenty years and then recognizes the fact that energy is both a necessary staple of a healthy economy and necessary for national security and our standard of living.<sup>144</sup> The National Energy Plan adopts modern language stating that energy policies must promote conservation and be environmentally sensitive. However, the Plan is firmly within the dominant model. It adds a new dimension to contemporary energy policy by requiring further maintenance and development of our infrastructure as well as an expansion of energy supplies.<sup>145</sup>

Not surprisingly, the Plan calls for a development of oil resources, something dear to both President Bush and Vice President Cheney.<sup>146</sup> The issue that drew the most press and criticism involves drilling in the Arctic National Wildlife Refuge. Depending upon whose statistics you use, this development of domestic oil resources would increase available oil from 3.2 to 16 billion barrels of oil.<sup>147</sup>

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<sup>142</sup> Department of Energy Organization Act, 42 U.S.C. §§ 7101-7382f (2000).

<sup>143</sup> NATIONAL ENERGY POLICY, *supra* note 139.

<sup>144</sup> *Id.* at viii.

<sup>145</sup> *Id.* at 7-1 to 7-18.

<sup>146</sup> *Id.* at 1-10 to 1-13.

<sup>147</sup> Even statistics from the same source are susceptible to political spin. Compare the quotations from President Bush's National Energy Plan with a report from the Natural Resources Defense Council (NRDC), which both use USGS data:

The total quantity of recoverable oil within the entire assessment area is estimated to be between 5.7 and 16 billion barrels (95 percent and 5 percent probability range) with a mean value of 10.4 billion barrels. The mean estimate of 10.4 billion barrels is just below the amount produced to date from North America's largest field, Prudhoe Bay, since production began 23 years ago. Peak production from ANWR could be between 1 and 1.3 million barrels a day and account for more than 20 percent of all U.S. oil production. ANWR production could equal 46 years of current oil imports from Iraq.

*Id.* at 5-9. Compare with:

Proponents of drilling maintain that 16 billion barrels of oil would be pumped from the Arctic Refuge coastal plain. The claim is a gross exaggeration. . . . In fact, the USGS calculated only a 5 percent chance that 16 billion barrels of oil are in the coastal plain and its surrounding area. Second, only a portion of that oil could be recovered economically. . . . The 3.2 billion barrels that the USGS estimates would be economically recoverable from the Arctic Refuge is less than half a year's supply of oil for the United States, even at current rates of consumption. Over the projected 50-year life of the oil field, the refuge would contribute less than 1 percent of the oil Americans will consume. Production of oil there would peak in 2027 at 150 million barrels a year, providing less than 2 percent of projected U.S. consumption that year. . . .



The dominant policy has not been without its critics, particularly over the last forty years. While the twentieth century can point to major conservation efforts, including the creation of the National Park Service under such personages as Teddy Roosevelt and Gifford Pinchot, the real challenges to the dominant policy came from environmentalists such as Rachel Carson<sup>148</sup> and Aldo Leopold.<sup>149</sup> In addition to these calls for environmental sensitivity, the passage of the National Environmental Policy Act (NEPA)<sup>150</sup> in 1970, and the creation of advocacy groups such as the Natural Resources Defense Council and the Environmental Defense Fund drew significant attention to the negative externalities (*i.e.* pollution) of the dominant energy policy.

The task remained, however, to link energy and environmental policies in some way. The process of bringing the two fields together began in the early 1970s, most notably with the report from the Club of Rome warning about dangers to the human environment from continued use of fossil fuels.<sup>151</sup> The links between energy and the environment were also made by Amory Lovins in *Soft Energy Paths*.<sup>152</sup> Finally, one of the most important and enduring documents linking energy and the environment came with the concept of sustainable development made most visible with the publication, *Our Common Future*.<sup>153</sup>

Under the direction of the Secretary General of the United Nations, Norway's Prime Minister, Gro Brundtland, undertook a major study on the connection between the need for energy growth and the protection of the environment. He pioneered the idea of sustainable development defined as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs."<sup>154</sup> Sustainable development not only bridges economic and environmental issues, it also bridges the challenges faced by developed, developing, and underdeveloped countries, in terms of both social and economic advancement. During the Clinton administration, the concept of sustainable development appeared in his National Energy Policy reports.<sup>155</sup> Sustainable development even makes

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NAT'L RESOURCES DEF. COUNCIL, A RESPONSIBLE ENERGY POLICY FOR THE 21ST CENTURY 7 (2001). See also, Paul Krugman, *Not a Fuels Errand*, N.Y. TIMES, Sept. 26, 2001, at A19 ("Drilling in Alaska would make no difference worth mentioning.").

<sup>148</sup> RACHEL CARSON, *SILENT SPRING* (1962).

<sup>149</sup> ALDO LEOPOLD, *SAND COUNTY ALMANAC* (1949).

<sup>150</sup> National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4370e (2000).

<sup>151</sup> DONELLA H. MEADOWS ET AL., *THE LIMITS TO GROWTH: A REPORT OF THE CLUB OF ROME'S PROJECT ON THE PREDICAMENT OF MANKIND* (1972).

<sup>152</sup> AMORY B. LOVINS, *SOFT ENERGY PATHS: TOWARDS A DURABLE PEACE* (1977).

<sup>153</sup> WORLD COMM'N ON THE ENV'T AND DEV., *OUR COMMON FUTURE* (1987).

<sup>154</sup> *Id.* at 43.

<sup>155</sup> See, e.g., U.S. DEP'T OF ENERGY, *NATIONAL ENERGY POLICY PLAN* (1995) (outlining the Clinton administration's sustainable energy policy); U.S. DEP'T OF ENERGY, *COMPREHENSIVE NATIONAL ENERGY STRATEGY* (1998) (describing goals and objectives for implementing a sustainable energy policy); PRESIDENT'S COUNCIL ON SUSTAINABLE DEV., *SUSTAINABLE AMERICA: A NEW CONSENSUS FOR THE FUTURE* (1996) (advising President Clinton on sustainable development).

an appearance in President Bush's National Energy Plan, which opens: "America must have an energy policy that plans for the future, but meets the needs of today. I believe that we can develop our natural resources and protect our environment."<sup>156</sup> Nevertheless, the administration's National Energy Policy is well within the dominant model.

The Natural Resources Defense Council (NRDC) offers a distinctly different picture of our energy future.<sup>157</sup> NRDC emphasizes conservation over exploration and increased fuel efficiency over increased energy production.<sup>158</sup> NRDC's approach, however, does use concepts and language that bring energy and environmental policies closer together by looking at economic regulatory tools, from tax incentives to market-based justifications for using conservation measures. NRDC also argues that environmental protection is paramount, and energy policy should not consider drilling in the Arctic National Wildlife Refuge or in sensitive offshore areas that protect sensitive onshore public lands.<sup>159</sup> Additionally, increases in energy efficiency and conservation promise significant energy savings.<sup>160</sup>

Much of the current energy legislation in Congress is remarkably comprehensive, covering the full range of the energy spectrum. However, most of these proposals are unlikely to see the light of day.

The 107th Congress has been actively involved with the introduction of energy legislation for a number of reasons. The California crisis was certainly a stimulant as is the fact of a new Presidential administration. All these bills were introduced prior to the terrorist attacks on September 11, 2001. They remain under discussion, and the issue of national security is ever present. The bills take two basic forms. Most of the bills are comprehensive and mirror existing discussions over energy policy. The second type are much more narrowly tailored to specific concerns about the restructuring of the electricity industry.

In the Senate, Senator Frank Murkowski introduced the National Energy Security Act of 2001.<sup>161</sup> The purpose of the bill is to protect the energy and security of the United States by decreasing dependence on foreign oil to fifty percent by the year 2011. In 2000, the United States produced 9.4 million barrels per day and imported 11.1 million barrels per day.<sup>162</sup> The bill also seeks to enhance the use of renewable resources, conserve energy, and improve energy efficiency by increasing domestic energy supplies while improving environmental quality.<sup>163</sup> While the bill does

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<sup>156</sup> NATIONAL ENERGY POLICY, *supra* note 138, at title page.

<sup>157</sup> NAT'L RESOURCES DEF. COUNCIL, *supra* note 146, at iv-ix.

<sup>158</sup> *Id.* at iv.

<sup>159</sup> *Id.* at v-vi.

<sup>160</sup> See, e.g., Amory B. Lovins & L. Hunter Lovins, AM. PROSPECT, Jan. 28, 2002, at 18, 19 ("By 2000, reduced 'energy intensity' (compared with 1975) was providing 40 percent of all U.S. energy services . . . . Since 1996, saved energy has been the nation's fastest-growing major 'source.'").

<sup>161</sup> S. 389, 107th Cong. (2001).

<sup>162</sup> ENERGY INFO. ADMIN., ANNUAL ENERGY REVIEW 122 (Aug. 2001).

<sup>163</sup> S. 389, 107th Cong. § 2 (2001).

address issues concerning conservation and the environment, this is an administration bill that focuses on oil production on the outer continental shelf, the continental United States, and the Arctic National Wildlife Refuge. It also extends the Price-Anderson Act<sup>164</sup> for nuclear power, while loosening hydroelectric licensing proceedings.<sup>165</sup> In short, Senate Bill 389 is an example of the dominant model of energy policy.

The counterweight to S. 389 is the Comprehensive and Balanced Energy Policy Act of 2001,<sup>166</sup> introduced by Senator Jeff Bingaman. The Democratic energy bill proposes the establishment of the National Commission on Energy and Climate Change as well as an interagency working group on clean energy technology transfer.<sup>167</sup> While it addresses many of the same areas as the Republican bill, it emphasizes the need to pay more attention to renewables and distributed generation, energy efficiency, and the improvement of environmental quality.

In the House, key legislation includes the Comprehensive Energy Research and Technology Act of 2001,<sup>168</sup> the Energy Security Act of 2001,<sup>169</sup> and the Securing America's Future Energy Act of 2001 (SAFE Act of 2001).<sup>170</sup> The House proposals are also very comprehensive. The Comprehensive Energy Research and Technology Act sets goals for research, development, demonstration, and commercial application in the areas of: 1) conservation and efficiency in regard to buildings, industry, and transportation, 2) renewable energy in such areas as hydrogen, geothermal, hydropower, power, and photovoltaic, as well as solar, wind, and other renewables, 3) nuclear energy, 4) fossil energy, and 5) science.<sup>171</sup> The Energy Security Act attempts to address oil and gas development as well as the improvement of federal management, including development on the Arctic National Wildlife Refuge.<sup>172</sup> In Addition, the SAFE Act of 2001 encompasses the comprehensive Energy Research and Technology Act of 2001, as well as the Energy Security Act, and engages in a broad range of traditional and non-traditional fuels development.<sup>173</sup> Nevertheless, like the Republican Senate legislation, this bill tends to follow the dominant model.

The more specific legislation is exemplified by the National Electricity Reliability Act.<sup>174</sup> While this specific legislation also appears in the more comprehensive legislation, its purpose is narrowed to the creation of an entity known as the Electric Reliability Organization, discussed below.

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<sup>164</sup> Price-Anderson Amendments Act of 2001, S. 389, 107th Cong. §§ 40-409 (2001).

<sup>165</sup> Hydroelectric Licensing Process Improvement Act of 2001, S.389, 107th Cong. §§ 721-726 (2001).

<sup>166</sup> S. 597, 107th Cong. (2001).

<sup>167</sup> *Id.* at §§ 101-107, 111.

<sup>168</sup> H.R. 2460, 107th Cong. (2001).

<sup>169</sup> H.R. 2436, 107th Cong. (2001).

<sup>170</sup> H.R. 4, 107th Cong. (2001).

<sup>171</sup> H.R. 2460, 107th Cong. (2001).

<sup>172</sup> H.R. 2436, 107th Cong. (2001).

<sup>173</sup> H.R. 4, 107th Cong. (2001).

<sup>174</sup> H.R., 312, 107th Cong. (2001).

### B. Electricity Policy

As noted earlier, electricity constitutes about half of our energy economy. Most of the country's electricity is generated by coal, which of course, involves the most significant environmental issues.<sup>175</sup> Nuclear power, with its uncertain future, produces about twenty percent of our electricity, with natural gas and hydropower producing approximately sixteen percent respectively.<sup>176</sup> Alternatives such as solar, wind, geothermal, and biomass account for about two percent.<sup>177</sup> Another fact worth noting is the growing contribution to the electric power sector by non-utility generators. At the end of last year, non-utilities accounted for thirty percent of the generation.<sup>178</sup> Non-utility generators are made up of new entrants into the generation market as well as the unbundled generation assets of traditional utilities. In addition, as the electricity industry develops there will be changes in how electricity is generated and by which fuels.<sup>179</sup>

Restructuring the electric industry is a synonym for more competition and this involves two major activities. On the regulatory side, there must be less price setting at wholesale and retail levels and more reliance on competitive markets for setting electricity prices. On the industry side, there is an unbundling through corporate restructuring. Under the traditional regulatory scheme, IOUs generated, transmitted, and distributed electricity through state-protected monopolies. Today, IOUs spin off assets, often generation assets, while retaining distribution operations with continued uncertainty about the future of transmission. Since monopoly or market power is anathema to competition, the IOUs must become competitive actors, and markets must be created to allow competition in spot and futures prices in order to send correct price signals so that they can properly anticipate demand and plan investments for the development of reliable, fairly priced electricity.

If our electricity economy is going to move to more competitive markets, restructuring must address and conquer two major issues. The first involves pricing in terms of spot and futures markets so that proper price signals can be given to producers and consumers, so that investments can be made to every segment of the industry.<sup>180</sup> The second is that the current transmission bottleneck is addressed so that electricity can move to consumers.

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<sup>175</sup> *Id.* § 215.

<sup>176</sup> ENERGY INFO. ADMIN., *supra* note 162, at 222.

<sup>177</sup> Energy Info. Admin., *Monthly Update*, ELECTRIC POWER MONTHLY, Dec. 2001, at 1.

<sup>178</sup> *Id.* at 1.

<sup>179</sup> New technologies such as distributed generation and fuel cells directly affect transmission. New patterns of energy use (for example, an increased use of natural gas and possible increase in nuclear power) directly affect energy policy more generally. See Suedeen Kelly, *Domestic Energy Policy in the Era of Electric Industry Deregulation*, 47 ROCKY MTN. MIN. L. INST. § 1.02(2)(a), 1-33 (2001) (describing the Bush administration's energy policy focus on encouraging new supplies of energy).

<sup>180</sup> MATTHEW J. MOREY, ENSURING SUFFICIENT GENERATION CAPACITY: DURING THE TRANSITION TO COMPETITIVE ELECTRICITY MARKETS 32-33 (Nov. 2001), at <http://www.eei.org/issues/comp-reg/ensuring.pdf>.

The restructuring movement has presented two significant challenges to the transmission segment. The first challenge involves the increased use of the existing system. The current system was designed for a very different world. That world was one in which integrated IOUs transmitted electricity to local utilities for distribution, and basically were point-to-point transfers. As the grids grew, connections were made for back-up and peaking power, but neither federal regulation nor industry design mandated wheeling over another utility's lines.<sup>181</sup> Instead, interconnections and pooling were voluntary.<sup>182</sup> As restructuring continued, it became clear that the central piece needed to solve the competitive electricity market puzzle involved access to the transmission system. With FERC Order Nos. 888, 889, and 2000, open access became the centerpiece of restructuring. However, as access opens and competition increases, the number of transactions rise, thus putting a strain on a transmission system designed roughly for point to point deliveries.

Today the transmission system faces congestion in various parts of the country as people vie for the best deals, spot markets are activated, and futures contracts gain in importance. Increased competition is highly likely for two reasons. First, as IOUs unbundle and as transmission access opens, more consumers will be looking for more deals, thus putting more pressure on the existing system. In addition, generation is increasing while transmission investment is not keeping pace. It is estimated that demand for electricity will grow twenty-five percent over the next decade,<sup>183</sup> while planned transmission facilities show only a four percent growth during the same period.<sup>184</sup> It is further estimated that \$56 billion must be invested during the present decade just to maintain the present transmission capacity.<sup>185</sup>

In one sense, a more competitive market ought to be seen as a welcome development, and to an extent it is. The problem remains regarding investment in that system. Given the unsettled nature of the structure of RTOs—whether they should be operated as non-profit or for-profit companies—investment decisions are difficult to value and to make. Once a product becomes standardized, however, investment decisions come easier. In the electricity industry, standardization comes in the form of reliability. Consumers must be able to rely on the availability of electricity.

The most promising development on the restructuring front is the creation of an electric reliability organization (ERO) to maintain transmission standards and, hopefully, improve reliability. The ERO simply extends the mission of NERC. In fact, NERC is the primary architect of the

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<sup>181</sup> Lock & Stein, *supra* note 93 at § 82.01(2).

<sup>182</sup> *Id.* § 81.02.

<sup>183</sup> GALE & O'DRISCOLL, *supra* note 69, at 13.

<sup>184</sup> ROBERT W. GEE, EXPANDING OUR ELECTRIC TRANSMISSION NETWORK: CONSUMERS HAVE AN INTEREST AT STAKE 15 (Sept. 2001), available at [http://www.eei.org/issues/news/Transmission\\_Consumers.pdf](http://www.eei.org/issues/news/Transmission_Consumers.pdf).

<sup>185</sup> ERIC HIRST & BRENDAN KIRBY, TRANSMISSION PLANNING FOR A RESTRUCTURING U.S. ELECTRIC INDUSTRY 9-10 (June 2001) available at [http://www.eei.org/issues/comp\\_reg/transmission\\_hirst.pdf](http://www.eei.org/issues/comp_reg/transmission_hirst.pdf).

ERO. As exemplified in the proposed National Electricity Reliability Act,<sup>186</sup> the ERO would report to FERC and would serve a function much like the Securities Exchange Commission (SEC). The ERO would set organization standards for the reliable operation of a bulk-power system in the public interest. The standards are to be developed through a process that is open, balances interests, and observes due process.<sup>187</sup> RTOs throughout the country would be members of the ERO. Standards that the ERO sets would be mandatory and enforceable unlike the voluntary standards of NERC. FERC would be the supervising authority of the ERO and appeals would be allowed.<sup>188</sup>

At this point, FERC is pushing for the development of four or as many as six regional RTOs, all of whom would be members of the ERO.<sup>189</sup> The reason that the standards for connection, maintenance, and operation need to be rationalized is so that the price signals would be constant, there is no discrimination in favor of affiliates or against new entrants, and the market can develop.

It is clear that restructuring from traditional rate regulation to a more competitive market involves stepped transitions. The first step is to require open access at nondiscriminatory prices. The second step is to encourage or require unbundling. The third step is to create markets for prices. The current step is to rationalize transmission standards for the operation of the system. It may very well be the case that in the future consumers will be able to make choices about electricity providers the way they stop at the gas station to fill up their cars, but that electricity economy remains in the future, despite the FERC staff's best guess.

#### V. CONCLUSION: FIVE FUTURE CHALLENGES

Over the last century, government regulation of the electricity industry has fulfilled its mission of expanding its infrastructure. Now competition promises benefits in terms of products and prices, services, and innovation. The next regulatory generation will be charged with managing the transition and monitoring the newly emerging markets.

The movement to restructure the electric industry was driven by a desire to allow consumers to reach cheaper electricity, reduce the high cost of regulation, eliminate or reduce heavy-handed price setting regulations, increase economic efficiency, and promote competitive markets. There is no question that these reforms are large and dramatic. Success can be evaluated by two criteria. First, is the market more competitive (efficient)?

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<sup>186</sup> H.R. 312, 107th Cong. (2001).

<sup>187</sup> *Id.* § 215(d)(3)(G).

<sup>188</sup> *Electricity Transmission: Hearing Before the House Subcomm. on Energy and Air Quality*, 107th Cong. (Dec. 13, 2001) (statement of Michehl R. Gent, President and CEO, North American Electric Reliability Council); *National Energy Policy: Hearing Before the S. Comm. on Energy and Natural Resources*, 107th Cong. (July 25, 2001) (statement of David N. Cook, General Counsel, North American Electricity Reliability Council).

<sup>189</sup> See Fed. Energy Regulatory Comm'n, *Regional Transmission Organization Activities* (Mar. 4, 2002), at [http://www.ferc.gov/Electric/rto/post\\_rto.htm](http://www.ferc.gov/Electric/rto/post_rto.htm).

Second, are the benefits of competition greater than the transaction costs of restructuring? There are, in addition, distributional issues fairly raising the question—who are the winners and losers in the restructuring? More specifically, while it appears that large consumers should see lower electricity bills, it is not clear that small consumers will as well.

During this immediate regulatory period there are five significant issues that must be resolved for the electric industry in general. The first is determining how stranded costs are valued and how they are to be paid. Few policy analysts seriously disagree that the investments utilities made in order to comply with and satisfy regulatory requirements should go uncompensated, even though there is little constitutional support for the claim.<sup>190</sup> The controversy over nuclear plant cancellations addressed exactly this issue with no clear guidance as to how courts and regulators should assess whether compensation is due.<sup>191</sup> Stranded costs present the same difficulty, involving estimates ranging from a low of \$10 to \$20 billion to a high of \$500 billion.<sup>192</sup> The range of estimates indicates part of the problem. Utilities, naturally, want to identify as many recoverable stranded costs as possible to protect investors. Regulators are less inclined to do so to protect consumers. Assuming that assets can be properly attributed, then a valuation must be assessed and valuation methodology, as is apparent from trying to evaluate the rate base, is not scientifically precise. The reality is that, while there is a consensus on compensating firms for stranded costs, there is no consensus on which costs should be recovered or which valuation methodology should be used. These choices are fundamentally political rather than economic.

Again assuming that an amount of stranded costs can be established, the question remains: who pays? Should exiting customers pay through an exit fee? Should current customers pay through a surcharge? Should bondholders pay through securitization? Should shareholders absorb some losses? Legislatures and regulators have and will continue to assess each strategy.

The resolution of the stranded costs issue implicates a second problem brought about by increased competition. As regulated firms are invited (or forced) to compete, they will be competing with new entrants. New entrants exist because entry costs are low enough to enter a market, and they believe they can price their product below the price of the incumbent. In other

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<sup>190</sup> Hovenkamp, *supra* note 59, at 808 n.26; see also *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 315 (1989) (holding that a state law prohibiting electric utilities from including facility construction costs in its rate base was not a “taking” under the Fifth Amendment); Susan Rose-Ackerman & Jim Rossi, *Disentangling Deregulatory Takings*, 86 VA. L. REV. 1436, 1465 (2000) (“United States takings jurisprudence has not found that regulatory actions in infrastructure industries demand compensation.”); Tomain, *supra* note 78, at 82–87; See Generally Richard J. Pierce, Jr., *The Regulatory Treatment of Mistakes in Retrospect: Canceled Plants and Excess Capacity*, 132 U. PA. L. REV. 497 (1984) (examining the regulatory and market structures surrounding stranded cost recovery for abandoned plant projects).

<sup>191</sup> Joseph P. Tomain, *networkindustries.gov.reg*, 48 U. KANS. L. REV. 829, 850–51 (2000).

<sup>192</sup> See U.S. Dep’t of Energy, *Regulatory Changes by the Federal Energy Regulatory Commission*, at [http://www.eia.doe.gov/cneaf/electricity/chg\\_str/booklet/ferc.html](http://www.eia.doe.gov/cneaf/electricity/chg_str/booklet/ferc.html) (last modified Feb. 21, 2002).

words, new entrants believe they have a competitive advantage and incumbents believe they have a competitive disadvantage because of regulatory burdens. The transition to a more competitive environment must at least attempt to level the playing field for incumbents and new entrants alike. Competition requires multiple producers, but incumbent producers should not be disadvantaged.<sup>193</sup>

The third large issue involves moving competition from the wholesale to the retail levels, and this move entails opening access so that consumer choice for electricity is maximized. The difficulty here is that private transportation network owners are not anxious to give up their competitive (monopolistic) advantage, and government is not likely to nationalize.<sup>194</sup> The trick is to design a form of transportation that opens access, compensates owners fairly, and does not allow operators to discriminate among providers, especially between affiliated and non-affiliated providers. This will only be solved once the two political problems of federalism and corporate form are adequately addressed.

Because transmission is not yet open and competitive, the fourth challenge presents itself—congestion. As competition increases, so does demand for transmission. Likewise, as new generation capacity comes on-line, more transmission is required. Transmission lines must keep pace with the increased demand and the increase in generation. While those propositions are easy to understand, the politics of land use and facility siting as well as attracting investors all pose hurdles to expansion. It may very well be the case that federal, rather than state, oversight is necessary.<sup>195</sup> The largest question, of course, remains the unsettled design of RTOs and the lingering issues of further economic regulation, including price setting for transmission service. Prices must be set with some form of incentive rate<sup>196</sup> so that investment can be made in transmission companies.

Finally, the regulatory apparatus needed to monitor and manage the restructured electricity market and to measure its competitiveness to guard against concentrations of market power is formidable. Staffs will monitor access to and operation of the transmission networks, monitor various markets for signs of competition or concentration, and will monitor markets for service quality, price, and reliability. More ambitiously, staff may also monitor futures markets and auctions as an adjunct of service issues. Regulatory staffs could well grow larger with an attendant increase in costs.

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<sup>193</sup> See *AT&T Corp. v. Iowa Utilities*, 525 U.S. 366, 388 (1999) (invalidating an FCC regulation which required incumbents to provide requesting carriers access to at least seven network elements); Anne S. Babineau et al., *The Baby and the Bathwater: What the Supreme Court Thinks About Handicapping the Incumbent to Level the Field for New Players*, PUB. UTIL. FORT., Nov. 15, 1999, at 48 (predicting that the Supreme Court's ruling would cause regulators to reconsider any conditions imposed on incumbents).

<sup>194</sup> Nicholas Economides, *The Telecommunications Act of 1996 and Its Impact*, at <http://papers.ssrn.com/sol3/DisplayAbstractSearch.cfm> (last visited Mar. 4 2002).

<sup>195</sup> Gale & O'Driscoll, *supra* note 69, at 15–21.

<sup>196</sup> See, e.g., Paul L. Joskow, *Deregulation and Regulatory Reform in the U.S. Electric Power Sector*, in *DEREGULATION OF NETWORK INDUSTRIES: WHAT'S NEXT?* 113, 175–86 (Sam Peltzman & Clifford Winston, eds., 2000).



They will also require more sophisticated economic expertise so much so that deregulation, or more accurately, restructuring may bring about full employment for economists (too bad for us lawyers). The curious paradox of a market-based regulatory reform is that we may end up with more rather than less regulation.

The lesson to be drawn from the foregoing is that the electric industry remains dynamic and in transition. The mistaken experiment in California and the gaffs of Enron notwithstanding, electricity restructuring is good policy and is one to which we should be committed for our energy future. While it is not likely that we will reach the FERC staff's goal of competitive markets by 2011, there is no reason not to aim high. The National Electricity Reliability Act or some version thereof looks promising because it will be the mechanism to nationalize transmission and operation standards for RTOs. FERC's effort to establish four, five, or six RTOs is sound.<sup>197</sup> As long as all operate under the same organization standards, electricity should flow smoothly, and competitive markets should not be much further in the future.

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<sup>197</sup> AM. BAR ASS'N, SECTION OF PUB. UTIL., COMMUNICATIONS, AND TRANSPORTATION LAW, REPORT OF THE ELECTRICITY COMMITTEE 27-34 (Fall, 2001); N. AM. ELEC. RELIABILITY COUNCIL, RELIABILITY ASSESSMENT 2001-2010: THE RELIABILITY OF BULK ELECTRIC SYSTEMS IN NORTH AMERICA 22-23 (Oct. 16, 2001).