

## DID I DANCE ON THE TABLES? DID I SHOOT OUT THE LIGHTS? EUROPEAN ELECTRICITY POLICY AS A GUIDE TO AMERICA'S ENERGY FUTURE

Europe already has experienced many of the same growing pains in its electricity industry that the United States is beginning to encounter today. Both the European and the American utility markets were heavily regulated until recently; however, Europe began to restructure its electricity industry before any of the American states.<sup>1</sup> There are remarkable similarities between the policies implemented in Europe and those promoted by the Bush Administration,<sup>2</sup> including, the interconnection of once independent utilities.<sup>3</sup> Additionally, there are commonalities between European market restructuring legislation<sup>4</sup> and efforts to deregulate in the United States.<sup>5</sup> The United States<sup>6</sup> should learn

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1. In 1990, England and Wales became the first European nations to deregulate their electric utilities. See DEP'T OF ENERGY: ENERGY INFO. ADMIN., *ELECTRICITY REFORM ABROAD AND U.S. INVESTMENT 17* (Sept. 1997) [hereinafter EIA REPORT], available at <http://www.eia.doe.gov/emeu/pgem/electric/061697.pdf> (last visited Mar. 27, 2005). California began to deregulate its electric utilities in 1996. A.B. 1890 § 854, 1996 Cal. Stat. 854, codified, in relevant part, at CAL. PUB. UTIL. CODE §§ 330–398.5 (Deering 2003) [hereinafter CA's deregulation statute].

2. See, e.g., Remedying Undue Discrimination through Open Access Transmission Service and Standard Electricity Market Design, 67 Fed. Reg. 55,451 (proposed Aug. 29, 2002) (codified at 18 C.F.R. pt. 35) [hereinafter SMD NPRM]. This proposed rule has not been finalized, but many of the issues discussed in it overlap with elements of the Energy Bill currently before Congress. *Id.*

3. See Common Position No. 5/2003, 2003 O.J. (C50) 15; Council Directive 96/92 1997 O.J. (L027) 20.

4. Compare The Electricity Act, 1989, c. 29 (Eng.), and Energy Act of 1990 (Norway). See also Sverre Aam & Ivar Wangensteen, *Deregulation of the Norwegian Electricity Supply Industry: Expectations and Experiences*, available at [http://www.worldenergy.org/wec-geis/publications/default/tech\\_papers/17th\\_congress/1\\_4\\_04.asp](http://www.worldenergy.org/wec-geis/publications/default/tech_papers/17th_congress/1_4_04.asp) (last visited Aug. 22, 2005).

5. Pat Wood, III, Chairman of the Federal Energy Regulatory Commission, Testimony before the House Committee on Energy and Commerce (Sept. 3, 2003), available at <http://www.ferc.gov/press-room/ct-archives/2003/09-03-03-wood.pdf> [hereinafter Wood 9/3/03 testimony] (last visited Aug. 22, 2005). "The grid was built originally to interconnect neighboring utilities and to allow them to share resources when necessary but is now used as a 'superhighway' for broader, regional trading." Reliability was primarily the responsibility of the vertically integrated local utility. Depending on state law, utilities may be accountable to state utility commissions or other local regulators for reliable service. *Id.*

6. For this paper, the United States includes the continental United States, excluding Texas. The engineering of the United States electricity grid is such that Texas is independent of the rest of the continental United States. As a result, unlike other states, the Public Utility Commission of Texas oversees transmission in Texas. See 2003 PUB. UTIL. COMM. OF TEX., SCOPE OF COMPETITION IN ELECTRIC MARKETS IN TEXAS 18 (2003), available at [http://www.puc.state.tx.us/electric/reports/scope/2003/2003scope\\_elec.pdf](http://www.puc.state.tx.us/electric/reports/scope/2003/2003scope_elec.pdf) (last visited Aug. 22, 2005). See also SMD NPRM, *supra* note 2, ¶ 23. Therefore, it is not subject to federal regulation because it fails to constitute interstate commerce. See generally U.S. CONST. art. 1, § 8, cl. 3.

from the successes and the failures of Europe. Given the high priority placed on energy issues since the August 14, 2003, blackout,<sup>7</sup> lessons gleaned from the European experience can be valuable in reshaping the antiquated American electricity system.

This Note examines the European Union's goal of homogenization of electricity markets and European market restructuring methods over the past fifteen years, to design a coherent and efficient method of creating a national electricity policy in the United States. Part I focuses on the European policies of homogenization<sup>8</sup> and seamless electricity markets as an analogy to the Standard Market Design (SMD) advocated by the Bush Administration.<sup>9</sup> Part II compares the restructuring legislation and regulations of England and Norway to those in California<sup>10</sup> and Pennsylvania<sup>11</sup> to find new ideas for American restructuring. Europe has

7. See Jeff Nesmith, *Power Grid Needs Update, Panelists Told; Norwood Slams Plan Being Touted*, ATLANTA JOURNAL-CONSTITUTION, Sept. 4, 2003, at 7A. The House of Representatives Committee on Energy and Commerce began hearings immediately upon beginning of the fall Congressional term. *Id.* Bruce Humphrey, *Mixed Signals Cloud Reliability Picture*, PLATT'S ENERGY & BUSINESS TECHNOLOGY 49 (2002) (noting failures in electric service cost the American economy about \$100 billion per year). Pat Wood, 9/3/03 testimony, *supra* note 5, § IV (finding that "electrical problems that start in one state (or country) can profoundly affect people elsewhere. Preventing region-wide disruptions of electrical service requires regional coordination and planning, as to both the system's day-to-day operation and its longer-term infrastructure needs."). Additionally, computers and the Internet account for fifteen percent of America's electricity consumption today, and it has been forecasted that this number could reach fifty percent. See NYISO 2000: ANNUAL REPORT OF THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC. 15 (2001), available at <http://www.nyiso.com>. Utilities constitute five percent of the European Gross Domestic Product. See Coen & Doyle, *infra* note 14, at 22.

8. There have been some instances where homogeneity has occurred. For example, product liability laws regarding electricity are nearly identical Denmark, Germany, Greece, Italy, and Luxembourg. See *Belgium: Law Regarding Liability For Defective Products, Feb. 25, 1991*, 32 INT'L LEGAL MATERIALS 1357 (1993); *Denmark: Products Liability Act, June 7, 1989*, 32 INT'L LEGAL MATERIALS 1363 (1993); *Germany: Law Concerning Liability For Defective Products, Dec. 15, 1989*, 32 INT'L LEGAL MATERIALS 1369 (1993); *Greece: Ministerial Decision on Producer's Responsibility Concerning Defective Products, Mar. 31, 1988*, 32 INT'L LEGAL MATERIALS 1376 (1993); *Italy: Presidential Decree on Liability For Defective Products, May 24, 1988*, 32 INT'L LEGAL MATERIALS 1382 (1993); *Luxembourg: Law Concerning Public Liability Due to Defective Products, Mar. 9, 1989*, 32 INT'L LEGAL MATERIALS 1390 (1993).

9. See *Inquiries into Blackout Expected to Bring Close Scrutiny to RTO Policy, FERC's Role*, PLATT'S GLOBAL POWER REPORT, Aug. 28, 2003, at 1. "FERC Chairman Pat Wood said . . . that the standard market design plan is the best way to install thoughtful long-term solutions to transmission problems." *Id.*

10. The rationale for choosing to focus on California is rather obvious. In addition to being the first American state to deregulate its electricity markets, its failure has received worldwide attention. See Thomas A. Fogarty & Edward Iwata, *Energy Deregulation: Is it Friend or Enemy?*, USA TODAY, May 15, 2003, available at <http://www.usatoday.com/money/covers/2002-05-16-enron-california-hearings.htm> (last visited Aug. 22, 2005).

11. Pennsylvania is an especially interesting state for study because one of the current FERC Commissioners was a Commissioner at the Pennsylvania Public Utility Commission before accepting a federal appointment. See Biography of Commissioner Nora Mead Brownell, at <http://www.ferc.gov/>

tried to create a seamless market, but encountered problems. Both American and European markets would benefit greatly from market homogenization and the removal of barriers to markets. As America creates a more seamless market, it can learn from the deregulation of markets both domestic and abroad. This Note proposes that the United States and Europe unify their respective markets and open their wholesale electricity markets to greater competition.

I. THE EUROPEAN UNION'S ENERGY DIRECTIVE AND THE FEDERAL ENERGY REGULATORY COMMISSION'S SINGLE MARKET DESIGN, SEEK TO ACHIEVE THE SAME GOALS

One of the most notable similarities between the European model and the likely future of the American industry lies in the interconnection of utilities to create large multinational (or in the United States, multi-state) trading blocks. Historically, utilities in Europe acted as islands within each nation.<sup>12</sup> They were also typically state-owned,<sup>13</sup> so the level of regulation was high.<sup>14</sup> Similarly, the American system established exclusive franchise territories for utilities, which the government regulated heavily.<sup>15</sup> Since 1996,<sup>16</sup> the European Union (EU) has required the interconnection of

about/com-mem/brownell.asp (last visited Aug. 22, 2005).

12. See Jens T. Werner, *U.S. Telecommunication Companies in Europe—The Application of E.C. Competition Law in the Telecommunications Sector*, 12 ALB. L.J. SCI. & TECH. 409, 411 (2002). This was the case for other infrastructure intensive industries as well. Now, there is a trend for these industries, including electricity, to move toward more competitive systems. *Id.*

13. See *Regulatory Reform in Norway: The Role of Competition Policy in Regulatory Reform*, OECD, 2003, at 29 [hereinafter OECD]. The Norwegian transmission and distribution system (Statnett) remains owned by the government as does the nation's largest energy supplier (Statkraft). *Id.* In spite of the fact that Statnett and Statkraft ownership overlaps, there have been no indications of impropriety or collusion. This is probably, at least in part, due to the strict oversight by regulators. See Glachant & Finon, *infra* note 18, at 6.

14. See generally David Coen & Chris Doyle, *Liberalisation of Utilities and Evolving European Regulation*, EUR. REG., Apr. 2000, at 18, available at <http://www.cdoyle.com/papers/utilitiescoen.pdf> (last visited Aug. 22, 2005).

15. Richard D. Cudahy, *Whither Deregulation: A Look at the Portents*, 58 N.Y.U. ANN. SURV. AM. L. 155, 157–58 (2001). See M. Bruce Harper, *Trust But Verify: Innovation in Compliance Monitoring as a Response to the Privatization of Utilities in Developed Nations*, 48 ADMIN. L. REV. 593, 599–605 (1996) (describing the belief that because electricity is critical to a nation's economic health it should be regulated and monitored by the government to protect against potential market flaws). The United States also has many government-owned utilities. Most of them are municipally owned, but there are also federally owned generators as a result of rural electrification polices and New Deal jobs programs. *Id.* See also 16 U.S.C. § 831 (1933); 16 U.S.C. § 832 (1937); 6 TEX. WATER CODE ANN. § 222 (1934) (creating the Tennessee Valley Authority, Bonneville Power Authority, and Lower Colorado River Authority respectively).

16. See Rachel A. Mitchell, *The Electricity Directive of the European Union: What can the Member States Learn from the Experiences of Privatized England and Wales?*, 14 AM. U. INT'L L.

electricity grids, which is consistent with its overarching goal of unfettered international trade among its members.<sup>17</sup> However, implementation has been slow.<sup>18</sup> The first Directive permitted nations to phase-in liberalization at a pace that they deemed appropriate, and there was no definitive date for the complete liberalization of all the EU markets.<sup>19</sup> In June 2003, the EU passed a new directive, Directive 2003/54/EC (the “new Directive”),<sup>20</sup> which repealed its predecessor, Directive 96/92/EC (the “old Directive”).<sup>21</sup> The new Directive affirms the EU’s desire for an integrated utility market and recognizes the shortcomings of the old Directive.<sup>22</sup> But, given its recent enactment, it is uncertain how much the new Directive will affect the European markets.

#### A. *Unifying the European Electricity Market*

The European Union’s Common Position No. 5/2003<sup>23</sup> explains that the EU believes that its electricity markets can benefit from intra-Union free trade, just as its other industries. “The main obstacles in arriving at a fully operational and competitive internal market relate amongst other things to issues of access to the network, tariffication issues and different degrees of market opening between Member States.”<sup>24</sup> Open access and successful markets benefit from homogenous rules and market structures.<sup>25</sup>

But the EU’s old Directive provided many exemptions for small utilities and gave Member States the discretion to impact the reach of the overarching policies on their nations.<sup>26</sup> Consequently, the goals of

REV. 761, 775–76 (1999). Before 1996, there were indications that a single European electricity market would be established. The Council to the European Parliament made its initial proposal that set forth common rules for a single electricity market in 1992. *Id.*

17. See Council Directive 96/92/EC, *supra* note 3.

18. See generally Jean-Michel Glachant & Dominique Finon, *Why Do the European Union’s Electricity Industries Continue to Differ? A New Institutional Analysis*, in *Institutions, Contracts & Organizations* 313 (Claude Menard ed., 2000).

19. See Michael Albers, *European Union Law: Energy Liberalization and EC Competition Law*, 25 *FORDHAM INT’L L.J.* 909, 913 (2002).

20. Council Directive 2003/54/EC, 2003 O.J. (L 176) 37.

21. See *supra* note 3.

22. See *supra* note 20, ¶ 5. Additionally, Directive 2003/54/EC includes completion deadlines unlike the old Directive. *Id.* art. 30.

23. Common Position No. 5/2003, 2003 O.J. This Position is the successor to Council Directive 96/92/EC which initiated the EU’s model of large-scale interconnection to promote intra-Union trade of electricity. *Id.*

24. Common Position No. 5/2003, *supra* note 23, ¶ 5.

25. Common Position No. 5/2003, *supra* note 23, ¶ 14. “[N]ational regulatory authorities should work towards more homogenous conditions and the whole of the internal market.” *Id.* There have been some instances where homogeneity has occurred. See *supra* note 8.

26. See, e.g., Common Position No. 5/2003, *supra* note 23, ¶ 11. “To avoid imposing a

homogeneity and seamless borders were not absolute. Rather, regional interests can ignore Union-wide goals.<sup>27</sup> European countries lack similar electric industry institutional arrangements or institutional environments in reforming electricity, it will be difficult for them to converge toward the same model of electricity-system reform.<sup>28</sup> Many suggest that current European attempts to introduce competition have not succeeded in overcoming transactional difficulties, namely, the inability to store electricity and the geographic problems associated with inadequate interconnections. These geographic elements of interconnection are essential for competitive wholesale and retail electricity markets.<sup>29</sup> However, concerns that electricity policy coordination will lead Member States down the slippery slope—losing national sovereignty—have slowed integration significantly.<sup>30</sup>

Additionally, logistical limitations have hampered the liberalization process. Especially in the early years of intra-Union competition, policymakers assumed that competition would come from the import of electricity from neighboring Member States.<sup>31</sup> Investment in new power plants in neighboring Member States would come later.<sup>32</sup> However, the infrastructure to haul the electricity from one nation to another has proven grossly inadequate, thereby impairing imports of competitive electricity.<sup>33</sup>

In the summer of 2003, the EU passed a successor to Directive 96/92/EC called Directive 2003/54/EC. Directive 2003/54/EC (the “new Directive”) takes steps very similar to those advocated in the Chairman of the Federal Energy Regulatory Commission (FERC), Pat Wood’s, SMD

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disproportionate financial and administrative burden on small distribution companies, Member States should be able, where necessary, to exempt such companies from the legal distribution requirements.” *Id.* National regulators can approve tariffs and their underlying methodologies. *Id.* ¶ 17.

27. See Mitchell, *supra* note 16, at 785. Council Directive 96/92/EC lacks its own enforcement provisions and, instead, attempts to use the enforcement provisions of other treaties, i.e., treaties regarding anticompetitive behavior.

28. Glachant & Finon, *supra* note 18.

29. *Id.* at 3–4.

30. See Mitchell, *supra* note 16, at 767.

31. Albers, *supra* note 19, at 919.

32. *Id.*

33. See, e.g., Commission of the European Communities, European, Energy Infrastructure: Green Paper on the implementation of the guidelines for Trans-European Energy Networks in the period 1996–2001, COM (2001) 775 Final (Dec. 2001), available at [http://www.seerecon.org/infrastructure/sectors/energy/documents/energy-infrastructure/2001\\_communication.pdf](http://www.seerecon.org/infrastructure/sectors/energy/documents/energy-infrastructure/2001_communication.pdf) [hereinafter Green Paper]. The interconnection between France and Spain can handle only two percent of the installed electric capacity of the Iberian Peninsula and is nearly always congested. *Id.* at 7; see also PAUL L. JOSKOW & RICHARD SCHMALENSEE, MARKETS FOR POWER: AN ANALYSIS OF ELECTRIC UTILITY DEREGULATION 63 (1983) (noting the practice of ignoring the critical functions played by the transmission system in many discussions of deregulation almost certainly leads to incorrect conclusions about the optimal structure of an electric power system).

proposal<sup>34</sup> in America's pending Energy Bill. And perhaps most important to market success, the new Directive provides clear deadlines for the completion of market liberalization.<sup>35</sup>

But even the new Directive retains the opt-out clauses for Member States that consider utilities in their markets too small to join the Union-wide system. The EU does not make these decisions, but the local governments that may or may not have interests in the utility can shape the Union-wide market. This could produce a European market full of gaps. Occupying these gaps are old school monopolies where competition does not exist. Additionally, if the Member State has an ownership interest in a monopoly utility in its country, then it may have an incentive to block the free trade of electricity.<sup>36</sup> Finally, it adds to uncertainty as to whether certain regions will ever be integrated at all. This added risk could thwart investment in those regions.<sup>37</sup>

The new Directive emphasizes cooperation and coordination among the national regulators of each country, rather than implementing a Union-wide mandate for uniformity.<sup>38</sup> This maintains policies similar to those of the old Directive<sup>39</sup> and suggests an unwillingness of Member States to transfer power to the EU.<sup>40</sup>

34. See Directive 2003/54/EC, *supra* note 20, ¶ 2. "Experience in implementing this Directive shows the benefits that may result from the internal market in electricity, in terms of efficiency gains, price reductions, higher standards of service and increased competitiveness." *Id.* But see Wood 5/15/02 Testimony, *infra* note 42 (noting "SMD will help enhance competition in wholesale electric markets and broaden the benefits and cost savings to all customers").

35. Directive 2003/54 *supra* note 20, art. 30 §§ 1, 2. Section 1 requires implementation of the Directive to be complete by July 1, 2004. Section 2 requires the functional unbundling of transmission and distribution sections of utilities from the generation and other sections of the utility by July 1, 2007. *Id.*

36. See Coen & Doyle, *supra* note 14, at 24. It is important to note that the European Union does not have an agency comparable to FERC. Electricity regulation occurs at the national level and/or through the EU Directive process, but there is not a common regulatory body. *Id.*

37. See ROGER A. MORIN, REGULATORY FINANCE: UTILITIES' COST OF CAPITAL 270 (1994). Higher risk requires higher returns in order for investors to find the investment rational. *Id.* See generally JEFF MADURA, INTERNATIONAL FINANCIAL MANAGEMENT (2003).

38. Directive 2003/54 *supra* note 20, ¶ 16.

39. See Directive 96/92 *supra* note 3, ¶ 1.

40. See Directive 2003/54, *supra* note 20; EU Common Position 5/2003; *supra* note 3; Directive 96/92/EC; SMD NPRM, *supra* note 2, ¶ 9. "The fundamental goal of the Standard Market Design requirements, in conjunction with the standardized transmission service, is to create 'seamless' wholesale power markets that allow sellers to transact easily across transmission grid boundaries and that allow customers to receive the benefits of lower-cost and more reliable electric supply." *Id.* In addition to mirroring the general philosophy of competition, the SMD NPRM also includes an out clause for small utilities. However, unlike the EU model where the decision to grant waiver rests with local officials, the SMD NPRM would require waiver from FERC itself. *Id.* ¶ 115.

### B. Current Efforts at American Single Market Design

American policymakers are confronting the issue of national interconnection.<sup>41</sup> America's Standard Market Design<sup>42</sup> (SMD) mirrors the general philosophy of unfettered free trade through homogenous rules found in the new Directive,<sup>43</sup> the EU Common Position 5/2003, and in their predecessor Directive 96/92.<sup>44</sup> However, pegging what SMD in the United States would actually include, has proven difficult. Whereas FERC once advocated a strong national policy,<sup>45</sup> it seems that they have acquiesced to those seeking to retain more localized control.<sup>46</sup>

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41. See generally SMD NPRM, *supra* note 2. The SMD NPRM came to an impasse in early 2003. Several utilities and a few state utility commissions vociferously opposed SMD. This opposition squelched efforts to finalize this rule, and it still has not been finalized. But since the August 14 Blackout, there has been a resurgence of interest in SMD. In fact, FERC Chairman Wood suggests that SMD will aid efforts to improve reliability. See *Inquiries into Blackout Expected to Bring Close Scrutiny to RTO Policy, FERC's Role*, PLATT'S GLOBAL POWER REPORT, *supra* note 9, at 1. "FERC Chairman Pat Wood said . . . that the standard market design plan is the best way to install thoughtful long-term solutions to transmission problems." *Id.* See also Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities and Recovery of Stranded Costs by Public Utilities and Transmitting Utilities and Recovery of Stranded Costs by Stranded Costs Public Utilities, 61 Fed. Reg. 21,540 (Apr. 24, 1996) (codified at 18 C.F.R. pts. 35 & 385) (noting that preceding the SMD NPRM, Independent System Operators (ISOs) began to appear in response to FERC's Order No. 888, but the regulation of them included each of the relevant states' regulatory agencies as well as FERC. ISOs are private, non-profit enterprises that coordinate the scheduling of electricity flows within a region). See Gerald Norlander, *May the FERC Rely on Markets to Set Electric Rates?*, 24 ENERGY L.J. 65, 67 (2003). After the development of ISOs, FERC called for the creation of Regional Transmission Operators (RTOs). RTOs are larger, more sophisticated organizations than ISOs. Membership in RTOs was encouraged but not required and the major goal was the interconnection of larger markets than those established in ISOs. See SMD NPRM, *supra* note 2, ¶¶ 24–29.

42. See, e.g., Pat Wood, III, Chairman of the Federal Energy Regulatory Commission, Testimony before the Committee on Commerce, Science and Transportation Subcommittee on Consumer Affairs, Foreign Commerce and Tourism (May 15, 2002) at 15, available at <http://commerce.senate.gov/hearings/051502wood.pdf> [hereinafter Wood 5/15/02 testimony]. See also Wood Ready to Defend SMD Rulemaking in Court Against State Challenge, PLATT'S POWER MARKETS WEEK, Aug. 5, 2002, at 5 (noting one state utility commissioner described SMD as a "massive takeover" of state power). See Wood 9/3/03 testimony, *supra* note 5. "The grid was built originally to interconnect neighboring utilities and to allow them to share resources when necessary but is now used as a 'superhighway' for broader, regional trading." *Id.* Reliability was primarily the responsibility of the vertically integrated local utility. Depending on state law, utilities may be accountable to state utility commissions or other local regulators for reliable service. *Id.*

43. See generally Directive 2003/54, *supra* note 1. "The fundamental goal of the Standard Market Design requirements, in conjunction with the standardized transmission service, is to create 'seamless' wholesale power markets that allow sellers to transact easily across transmission grid boundaries and that allow customers to receive the benefits of lower-cost and more reliable electric supply." *Id.*

44. See generally Directive 96/92, *supra* note 3.

45. See SMD NPRM, *supra* note 2, ¶¶ 6, 9.

46. See Press Release, Fed. Energy Reg. Comm'n, Chairman Wood Outlines FERC Plans for 2003, SMD White Paper Planned, available at [http://www.wpuda.org/PDF\\_files/FERC01-13-03.pdf](http://www.wpuda.org/PDF_files/FERC01-13-03.pdf)

Congress and FERC already have established requirements for regional coordination.<sup>47</sup> This began when Congress passed the Energy Policy Act of 1992.<sup>48</sup> FERC's implementation of the Energy Policy Act led to the creation of Independent System Operators (ISOs), and later FERC initiatives promoted the creation of larger coordination bodies dubbed Regional Transmission Operators (RTOs).<sup>49</sup> But the size and strength of regional organizations continued to grow.<sup>50</sup> Now, SMD suggests the creation of a very limited number of organizations for the entire continental U.S.<sup>51</sup>

FERC introduced the SMD idea in a Notice of Proposed Rulemaking (NPRM) in 2002.<sup>52</sup> The NPRM proposes the creation of a single *pro forma* tariff that would proscribe rules for the continental U.S.<sup>53</sup> and create six different price zones that would use the tariff rules.<sup>54</sup> Moreover, the

(suggesting that he would endorse a plan with regional flexibility and that led to staggered implementation of homogenization). *But see* SMD NPRM, *supra* note 2, ¶¶ 335–39 (proposing regional stakeholder groups to advise federal policymakers on issues that might be unique to a specific part of the nation).

47. See 16 U.S.C. § 824(b)(1) (2000). “The Commission shall have jurisdiction over all facilities for such transmission or sale of electric energy, but shall not have jurisdiction . . . over facilities used for the generation of electric energy or over facilities used in local distribution . . .” *Id.* See, e.g., Umatilla Electric Cooperative Assoc., 97 FERC ¶ 61,235 (2001) (utilizing the option for quasi-governmental and cooperative utilities to enter the competitive market by creating an acceptable reciprocity tariff). *But see* Emerald Util. Dist. v. Bonneville Power Admin., 100 FERC ¶ 61,138 (2002). This system is not absolute. For example, quasi-governmental utilities such as Bonneville Power Authority and the Tennessee Valley Authority do not have to join ISOs or RTOs. *Id.*

48. Energy Policy Act of 1992, Pub. L. No. 102-486, 106 Stat. 2776.

49. See generally Regional Transmission Organizations, 64 Fed. Reg. 31,389 (May 13, 1999) (codified at 18 C.F.R. pt. 35). The Commission's objective was “for all transmission owning entities in the Nation, including non-public utility entities, to place their transmission facilities under the control of appropriate regional transmission institutions [RTOs] in a timely manner.” *Id.* See also SMD NPRM, *supra* note 2, ¶ 26. FERC has noted that willingness by utilities to join RTOs is a function of certainty about regulatory requirements associated with RTO membership. *Id.*

50. See F.E.R.C. Docket No. EL02-65-000, Implementation Progress Report, filed Oct. 1, 2003. There has been some interest by the industry in merging RTOs so that a single RTO would coordinate activity and market transactions for huge geographic areas. For example, the Midwest Independent System Operator (MISO) and the PJM RTO are currently seeking to merge their markets. MISO is now working with PJM to create a robust, non-discriminatory single energy market covering their collective regions. *Id.* *But see* *SeTrans Fallen Apart, Southeast Grid Picture Clouds Up and Entergy Mulls Its Next Steps*, ELECTRIC UTILITY WEEK, Dec. 8, 2003, at 1 (noting that “the Southeastern utilities seeking to create the SeTrans regional transmission organization pulled the plug on the project last week, explaining that jurisdictional battles between state and federal regulators would be too hard to overcome to make the process worthwhile”).

51. See H.R. 1644, 108th Cong. (2001) (enacted); SMD NPRM, *supra* note 2, ¶¶ 125–31.

52. See generally SMD NPRM *supra* note 2. The original NPRM proposal sought to complete the implementation of SMD by September 30, 2004.

53. See *supra* note 6 and accompanying text.

54. Norlander, *supra* note 41, at 67; SMD NPRM, *supra* note 2, ¶ 170. Additionally, the NPRM includes a provision that would ban “pancaking”—the addition of new charges by each region of the grid for use of the wires in long hauls of power. The removal of pancaking promotes the seamlessness



NPRM includes a plan for the creation of Independent Transmission Providers (ITPs) that would, among other things, run spot and day-ahead energy markets.<sup>55</sup> ITPs would be the next evolutionary step in the ISO to RTO progression. However, this proposal encountered significant opposition.<sup>56</sup>

The future of SMD is in flux. Some suggest that SMD usurps state authority over issues that have historically been regulated at the state and local levels.<sup>57</sup> Since the issuance of the NPRM, FERC has softened its position regarding large organizations to replace RTOs and ISOs.<sup>58</sup> It shifted to allow already existing RTOs and ISOs to serve an increasing role by requiring utilities to join one of these organizations to promote homogeneity in the American market.<sup>59</sup> But the original proposal for a more nationally coordinated market was resurrected by legislation.<sup>60</sup> SMD was part of the Bush Administration's energy bill that Congress rejected in fall 2003.<sup>61</sup> Additionally, the energy bill would require that incumbent

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of the market, which is central to the whole SMD concept. *Id.*

55. SMD NPRM, *supra* note 2, ¶¶ 256–325.

56. *See, e.g.*, Rulemaking Comment of Ariz. Corp. Comm., F.E.R.C. Docket No. RM01-12-000, Feb. 28, 2003; Reply Rulemaking Comment of Ky. Pub. Service Comm., Remediating Undue Discrimination through Open Access Transmission Service & Standard Electricity Market Design under RM01-12, 10. Some state utility regulators vehemently oppose SMD because they assert that local control better provides for any unique qualities within that state. *Id.*

57. *Id.* *See generally* Norlander, *supra* note 41 (noting that it has also been suggested that the NPRM goes beyond the delegated power of FERC and that new legislation would be needed to implement this plan). *See also* New York v. Fed. Energy Reg. Comm., 535 U.S. 1, 9–10 (2002). However, the Supreme Court has inched the FERC's authority closer to an integrated, federal market design. It recently held that FERC has control over transmission lines that had heretofore been bundled into each state's regulatory authority. *Id.*

58. The NPRM included the creation of a new entity called an Independent Transmission Provider (ITP). They would be larger in geographic scope and scale than either an ISO or a RTO. ITPs must be independent and file network access tariffs to cover all the functions within FERC's jurisdiction.

59. *See generally* Federal Energy Regulatory Commission, White Paper: Wholesale Power Market Platform (Apr. 28, 2003), available at [http://www.ferc.gov/industries/electric/indus-act/smd/white\\_paper.pdf](http://www.ferc.gov/industries/electric/indus-act/smd/white_paper.pdf) [hereinafter FERC White Paper]. Interestingly, as FERC reduced the scope of the SMD proposal, it also recognized the problems associated with "seams" between markets "where differences in design between regions create artificial barriers to trade which raise costs, limit customer supply choices, and create opportunities for exploitation." *Id.* at 3. But, at the same time, FERC stated that it would not change the existing authority of state governments. *Id.* at 5.

60. H.R. 1644, *supra* note 51.

61. H.R. 1644 is sponsored by Joe Barton of Texas and includes many policies strongly advocated by the White House, including drilling for oil and gas in the Alaska National Wildlife Refuge, subsidies for nuclear and coal power plants, and research into fuel cell technologies. *See Southern Governors Complain that FERC is Using the Back Door to Implement SMD; Energy Bill's Fate in Limbo as Tauzin's Resignation Adds Interesting Wrinkle*, FOSTER ELECTRIC REPORT, Feb. 11, 2004, at 3.

For a general overview of the SMD components of the Energy Bill, see FERC White Paper, *supra* note 59.

utilities get preferential access to the wires in their historic territories.<sup>62</sup> And, like in Europe, the energy bill allows small utilities to “opt-out.”<sup>63</sup> The bill will likely be reconsidered and the SMD debate continues.<sup>64</sup> It is abundantly clear that the details of any potential final version of SMD remain unknown, making planning by market participants difficult.

## II. SHAPING EFFECTIVE RESTRUCTURING POLICY

Technology has evolved so that generation of electricity no longer necessitates natural monopolies.<sup>65</sup> Additionally, competition can succeed in the retailing of electricity.<sup>66</sup> However, this is not the case for the transmission and distribution of electricity; these functions remain a natural monopoly that should be regulated.<sup>67</sup> Therefore, no state or nation has deregulated transmission and distribution despite opening its retail and generation markets. Yet, robust transmission and distribution systems are critical to a successful electricity market, as well as, essential for reliable service.

The Energy Bill includes a provision that would create “Electric Reliability Organizations” (EROs). See H.R. 1644 § 7031. EROs would serve as a unifying organization for the sake of a reliable electricity grid and would answer to FERC. *Id.* Though SMD by definition includes unification and homogeneity in the economic aspects of the industry, the ERO proposal acknowledges the interconnected nature of the whole system and the need for federal oversight. See also *FERC Chairman Pat Wood Stresses Electric System Reliability in Discussion of Agency’s 2004 Priorities*, FOSTER ELECTRIC REPORT, Jan. 14, 2004, at 2. Interestingly, Chairman Wood has stated that FERC could go forward with SMD plans even without the explicit blessing of Congress in the Energy Bill. *Id.*

62. H.R. 1644, *supra* note 51, § 7023(a).

63. Unlike the EU, the Energy Bill makes the decision to carve out small utilities where the EU provides Member States the option to exclude the small utilities from the market. See H.R. 1644, *supra* note 51, § 7021(b)(1). Cf. Directive 2003/54, *supra* note 20, ¶ 11.

64. Demetri Sevastopulo, *FERC Chief Intent on Preventing the Lights Going Out Again*, FIN. TIMES (London, England), Dec. 12, 2003, USA Edition at 2. Congress generally supports the electricity elements of the Energy Bill but opposes other sections of it. Oddly, the Energy Bill allows implementation of SMD to begin no sooner than 2007. See *supra* text accompanying note 55. In the interim, FERC is pursuing new options for national oversight of reliability that might be allowed under current statutes. *Id.*

65. See Joskow & Schmalensee, *supra* note 33, at 113. See Severin Borenstein, *The Trouble With Electricity Markets: Understanding California’s Restructuring Disaster*, 16 J. ECON. PERSP. 191, 195 n.4 (2002). The New York Mercantile has made several attempts to create an electricity futures market but has found that illiquidity and storability issues make electricity fundamentally different from commodities like oil. Thus, the market has not succeeded. *Id.*

66. See, e.g., *Latest RED Index has Texas on Top, with UK Leading All Competitive Markets*, PLATT’S RETAIL ENERGY, May 10, 2002, at 1 [hereinafter PLATT’S RETAIL ENERGY]. Pennsylvania ranked second in the United States behind Texas. *Id.*

67. See Andrew J. Roman, *Electricity Deregulation in Canada: An Idea Which has Yet to be Tried?*, 40 ALBERTA L. REV. 97, 107 (2002). “[T]ransmission and distribution are seen as natural monopolies because they are the classical ‘wires’ businesses.” *Id.*

### A. *English Restructuring*

England and Wales were the first electricity markets to restructure.<sup>68</sup> English and Welsh electricity markets began with a flourish of international investment, but in recent years have seen a dramatic decline in financial viability and foreign interest.<sup>69</sup> The old, regulated model used state-owned utilities, unlike the United States. As part of the move to competition, the United Kingdom sold its power plants and privatized the incumbent retail utilities.<sup>70</sup> Though overall the English experience can be considered successful,<sup>71</sup> like any market, it has not been perfect.

The English market also uses a single market coordinator, rather than one for each region.<sup>72</sup> The National Grid Coordinator (NGC) estimates the daily supply and demand of electricity for the whole market.<sup>73</sup> Then NGC runs an auction in which generators bid to provide electricity; the bids are stacked lowest to highest, using the least expensive power. The English market puts a heavy emphasis on real-time electricity trading, akin to the spot market trading of other commodities.<sup>74</sup> However, the use of daily auctions often leads to volatility and is vulnerable to manipulative gaming.<sup>75</sup> Because utilities seek to minimize their exposure to risk, a hedging market quickly developed and resolved much of this problem.<sup>76</sup>

In England there is a single market coordinator; market design and oversight are maintained by the national government.<sup>77</sup> The English model

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68. See generally *The Electricity Act, 1989, c.29, (U.K.) reprinted in 15 HALSBURY'S STATUTES OF ENGLAND & WALES 1607-1771* (4th ed. 1997). Reform in Scotland and Northern Ireland was much more modest than in England and Wales. See also EIA Report, *supra* note 1 and accompanying text. The initial divestiture included specific requirements for would-be buyers. In 1995, the requirements ended and there was a significant increase in American investment in the U.K. market. *Id.* at 26.

69. See DEP'T OF ENERGY: ENERGY INFO. ADMIN., UNITED KINGDOM COUNTRY ANALYSIS BRIEF, available at <http://www.eia.doe.gov/emeu/cabs/uk.html> (last modified April 2004) (last visited Aug. 23, 2005).

70. See EIA REPORT, *supra* note 1, at 24.

71. See, e.g., Platt's Retail Energy, *supra* note 66, at 1 (ranking the UK as the best competitive electricity market in the world).

72. EIA REPORT, *supra* note 1, at 18.

73. See *id.*

74. See OECD, REGULATORY REFORM IN THE UNITED KINGDOM: REGULATORY REFORM IN GAS AND ELECTRICITY AND THE PROFESSIONS (Nov. 22, 2002).

75. EIA REPORT, *supra* note 1, at 21. Some have asserted that the bids into the pool systematically have not matched marginal cost, suggesting market power problems due to the transition from government-controlled monopolies. *Id.*

76. *Id.* The hedging market depends on contractual relationships between suppliers and retailers. Ironically, its roots are derived from the last vestiges of contracts under the regulated model. *Id.*

77. EIA REPORT, *supra* note 1, at 18.

never delegated regulatory authority to local governments, so deregulation occurred at the national level.

Consistent with the single, national market coordinator, the English consider the transmission system to be a natural monopoly.<sup>78</sup> In fact, NGC owns all transmission assets.<sup>79</sup> The smaller distribution lines are owned by twelve different utilities, but they are regulated by the government.<sup>80</sup>

The RECs serve as incumbent retail utilities and compete with new retailers. New retail competitors have enjoyed success, especially in acquiring large industrial and commercial customers.<sup>81</sup>

England's competitive wholesale market has enjoyed success.<sup>82</sup> However, there have been allegations of market power abuses because state-owned generators were split into only three companies.<sup>83</sup> This consolidation of market power may have contributed to volatile swings in prices on the spot market.<sup>84</sup>

Like the United States, England recently suffered a significant blackout.<sup>85</sup> But unlike the United States, the blackout in England can be attributed to human error in line repair—a problem independent from the system operators.<sup>86</sup> However, England and other industrialized nations fear additional blackouts because of inadequate infrastructure.<sup>87</sup> The laws of physics do not change with electricity policy; so, regardless of the structure of the industry, a concerted effort to maintain and enhance the transmission and distribution infrastructure is essential for reliability.

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78. *Id.*

79. *Id.*

80. *Id.* at 8–19. The distribution utilities, also called Regional Electric Companies (RECs), serve as incumbent retail utilities in addition to maintaining distribution lines. *Id.* at 19–20.

81. *Id.*

82. See Mitchell, *supra* note 16, at 790–91.

83. *Id.* at 789–90. One of these companies controlled the nuclear power plants. Because of the cost structure of nuclear plants vis-à-vis other power plants, they do not typically affect the pricing of electricity—leaving the two remaining generation companies with even more market power. Fortunately, the introduction of new competitors allays market power. *Id.* There have been concerns that market power may worsen in time because government review of mergers by RECs ceased in 1995. *Id.* at 798.

84. EIA REPORT, *supra* note 1, at 21.

85. Julia Finch, *Transco to Escape Blackout Penalty*, THE GUARDIAN, Oct. 1, 2003, at 20.

86. Dan Roberts, *Separate Faults in Blackout May Be Related*, FIN. TIMES, Aug. 30, 2003, at 4.

87. Dan Roberts, *Like a Candle in the Wind*, THE ECONOMIST, Oct. 4, 2003, at 59.

### B. Norwegian Restructuring

In 1990, Norway<sup>88</sup> passed deregulation legislation opening its electricity market to multiple competitors.<sup>89</sup> Five years later, the Norwegians supplemented their deregulation legislation with laws establishing a joint and open wholesale electricity market with Sweden.<sup>90</sup> Generally, the Norwegian deregulation experience has been considered a success.

The Norwegian electricity market has many participants. There are about seventy electricity producers and 230 distribution companies in Norway's competitive market.<sup>91</sup> Yet, there is only one primary transmission owner, Statnett SF, because the Norwegian government maintained transmission as a natural monopoly.<sup>92</sup>

Norway depends heavily on hydroelectric dams for power. Amazingly, over ninety-nine percent of Norway's electricity generation comes from hydroelectric sources.<sup>93</sup> Because hydroelectricity production depends on rainfall, in wet years Norway exports power to Sweden and Finland,<sup>94</sup> but in dry years it must import electricity from those nations.<sup>95</sup> However, few new power plants have been constructed in Scandinavia, and there has been a string of cold, dry winters. This has led to an increase in demand for electricity while the ability of the dams to produce has diminished.<sup>96</sup>

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88. Though Norway is not a member of the EU, it provides a useful history of new markets in Europe.

89. See Aam & Wangensteen, *supra* note 4.

90. *Id.*

91. *Id.*

92. Helle Grønli, Tomás Gómez San Román & Chris Marnay, Transmission Grid Access and Pricing in Norway, Spain and California—A Comparative Study, Presented at Power Delivery Europe '99, Madrid, Spain (Sept. 28–30, 1999). Statnett owns about seventy-six percent of Norway's transmission lines. *Id.*

93. See Common Position No. 5/2003, *supra* note 23.

94. Kaisa Kinnunen, *Electricity Network Regulation—Practical Implementation in the Nordic Countries*, available at [http://wip.tv-berlin.de/workshop/2002/papers/tv-berlin-wip-workshop-2002.paper\\_kinnunen-ELECTRICITY-NETWORK-REGULATION.pdf](http://wip.tv-berlin.de/workshop/2002/papers/tv-berlin-wip-workshop-2002.paper_kinnunen-ELECTRICITY-NETWORK-REGULATION.pdf) (last visited Feb. 21, 2005). “The Finnish, Norwegian and Swedish markets (and in an increasing amount also the Danish) are very much integrated through the Scandinavian transmission network organisation, NORDEL, and the Nordic Power Exchange, the Nordpool.” *Id.*

95. See Aam & Wangensteen, *supra* note 4.

96. See Charles P. Wallace, *Power of the Market: Consumers in the Nordic Region are Furious Over Soaring Electricity Prices—and They Blame Deregulation*, TIME, Mar. 3, 2003, at 36. From 1999 to 2001, electricity production in Norway dropped while it increased in Sweden and Finland. See European Commission, *Competition Indicators in the Electricity Market EU, Norway and Candidate Countries* 13 (2003), available at <http://www.eu-datashop.de/download/EN/inhaltsv/thema8/compind.pdf> (last visited Mar. 27, 2005). From 2000 to 2001, only a one year span, imports of electricity into Norway grew 628.9%. *Id.* at 18.

Norway and Sweden jointly-own a market operator (Nord Pool) that coordinates electricity schedules and assures infrastructural integrity.<sup>97</sup> Nord Pool provides a spot market and financial trading (i.e., futures, forwards, and options).<sup>98</sup> Additionally, Nord Pool serves as the clearing service for bilateral contracts between market participants.<sup>99</sup> Nord Pool's comprehensive structure produces a central system for all power trades, schedules, and reliability issues. This minimizes the potential for communication failures and promotes a sound system.

### C. Restructuring in California

When California passed its deregulation legislation in 1996, it was the first American state to do so.<sup>100</sup> Five years later, California suspended competition and ended deregulation.<sup>101</sup> The first few years of deregulation worked well, with only minor glitches.<sup>102</sup> However, as was demonstrated by highly publicized blackouts, California's market suffered from fatal flaws.<sup>103</sup> Many problems contributed to the collapse of the market, including generation shortages,<sup>104</sup> transmission failures, and market manipulation.<sup>105</sup>

When the market was restructured, the California Independent System Operator (CAISO) was established.<sup>106</sup> In order to assure that the state government, instead of FERC, oversaw CAISO, the California Assembly

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97. Aam & Wangensteen, *supra* note 4, at 1. Nord Pool ASA is the only multinational power exchange in the world. See Nord Pool's Legal Status at <http://www.nordpool.com> (last visited Feb. 20, 2005). Though Nord Pool is international, regulation of it tends to be dominated by the Norwegian government. James Barker, Jr. et al., *Regulation of Power Pools and System Operators: An International Comparison*, 18 ENERGY L.J. 261, 283 (1997).

98. Aam & Wangensteen, *supra* note 4, at 4.

99. *Id.*

100. Grønli, *supra* note 92, at 1. The law opened the markets to competition on Apr. 1, 1998. *Id.*

101. On September 20, 2001, the California Public Utility Commission ordered the end of electricity competition in the state. Decision 01-09-060, Sept. 20, 2001.

102. Cudahy, *supra* note 15, at 175.

103. California Governor Gray Davis, State of the State address (Jan. 8, 2001), available at <http://www.video.dot.ca.gov/state/transcript.html> (last visited Aug. 23, 2005). "California's deregulation scheme is a colossal and dangerous failure. It has not lowered consumer prices; it has not increased supply. In fact, it has resulted in skyrocketing prices, price-gouging, and an unreliable supply of electricity. In short, an energy nightmare." Amusingly, Governor Davis pointed the finger of blame at "out of state profiteers," instead of errant policymaking. *Id.*

104. See Timothy J. Considine & Andrew N. Kleit, *Comparing Electricity Deregulation in California and Pennsylvania: Implications for the Appalachian Region*, Jan. 15, 2002, at 59, at <http://www.personal.psu.edu/faculty/c/p/cpw/resume/ARCFinalReportJanuaryRevision.pdf> (last visited Aug. 23, 2003).

105. Timothy P. Duane, *Regulations Rationale: Learning from the California Energy Crisis*, 19 YALE J. REG. 471, 511 (2002).

106. *Id.* at 498.

created the Electricity Oversight Board.<sup>107</sup> But neither CAISO nor the Electricity Oversight Board could require transmission projects.<sup>108</sup> “The utilities would still own and maintain the transmission systems under [CAISO] oversight and be responsible to assure that electricity was distributed to businesses and homes, however, in order to receive their [stranded costs] they had to submit control of their transmission systems to [CAISO].”<sup>109</sup>

Trading of electricity occurred outside of CAISO in the California Power Exchange (Cal PX). California deregulation law required that all electricity trades occur in a spot market in what is called a pool system.<sup>110</sup> No futures or options contracts were permitted, meaning that the price of electricity in California could not be hedged, even if the parties involved in the trade wanted the added security.<sup>111</sup> In the early years of the market, the repercussions of this design were minimal as there was little volatility in supply or in prices.<sup>112</sup> However, this peacefulness ended in the late nineties.<sup>113</sup>

107. Cudahy, *supra* note 15, at 176–77. This did not solve the problem of multiple regulators going down divergent policy paths. In the early stages of the energy crisis, FERC (under pressure from the White House) refused to cap the price of wholesale electricity in California. Presumably, this was with the belief that supply and demand would eventually find equilibrium without the aid of government. On the flip side, the Californian regulators would not allow utilities to flow the added costs to consumers’ bills. This blocked the price signals that would have led to equilibrium. The counteracting federal and state policies led to the financial collapse of the Californian electricity industry. *Id.*

108. CAISO can, however, propose transmission projects and encourage transmission owners to build new needed power lines. *Id.* See Nicholas W. Fels & Frank R. Lindh, *Lessons from the California “Apocalypse”: Jurisdiction Over Electric Utilities*, 22 ENERGY L.J. 1, 38 (2001). Jurisdiction over different elements of the market proved to be quite a source of question. For example, in December 1998 a major transmission line in northern California failed. It caused two power plants in California to trip offline and a blackout that affected the majority of the San Francisco Bay area for about six hours. The California Public Utility Commission (CPUC) initiated an investigation, which it never finished. But in actuality, the CPUC had no jurisdiction over the issue; it was federal. The CPUC did not realize this jurisdictional problem. *Id.*

109. Alan Ramo, *California’s Energy Crisis—The Perils of Crisis Management and a Challenge to Environmental Justice*, 7 ALB. L. ENVTL. OUTLOOK 1, 4 (2002).

110. See Fels & Lindh, *supra* note 108, at 1 (“California encouraged investor-owned utilities to sell off their generation plants and compelled them to buy all of the power needed to supply their customers in a newly created spot market.”). “In an electricity pool, all producers sell their power into a centrally operated electricity pool, and all customers (or their retail providers) purchase from the pool. The pool market is run by an independent system operator that also controls the physical structure of the electricity grid and thus moves power to where it is demanded and adjusts prices to reflect the supply/demand balance at each point on the grid.” Borenstein, *supra* note 65, at 194.

111. See Cudahy, *supra* note 15, at 174. Eventually, toward the end of the crisis, the Californian market began to allow bilateral contracts. Many assert that this simple change was one of the most important remedies to the gaming and manipulation of the market. *Id.* at 179. In fact, some economists assert that the most efficient market would include the option for market participants to enter a mixture of long term contracts and short-term/spot markets. See, e.g., Borenstein, *supra* note 65, at 192.

112. William H. Hieronymus, J. Stephen Henderson & Carolyn A. Berry, *Market Power Analysis*

Because of limited energy generation in California and the inability to import adequate energy, market power became a severe problem in 2000–2001.<sup>114</sup> California had grown dependent on electricity imports from the Northwest.<sup>115</sup> During 2000–2001, Californian’s demand continued to increase while hydroelectric production in the Northwest dropped due to drought.<sup>116</sup> California’s transmission infrastructure proved inadequate during this time as well. Moreover, the demand for electricity in neighboring states grew, causing any excess supply that had once gone to California to remain in places like Nevada.<sup>117</sup>

Many believe that market power was severely concentrated in the California market and that this led to higher prices as well as scarcer supplies. Paul Joskow, an economist at the Massachusetts Institute of Technology, argues that the number of power plants taken off-line in California when demand for electricity was high, suggests a failure of the competitive market.<sup>118</sup> This contention coincides with the California Public Utility Commission’s finding that fourteen of the sixteen hours of blackout that occurred in southern California during the energy crisis could have been avoided if five companies (Reliant, AES/Williams, Dynegy, Duke, and Mirant) had utilized available capacity on a timely basis.<sup>119</sup> “[I]t is increasingly clear that there was at least some illegal withholding of power from the market to drive up price.”<sup>120</sup> In fact, localized market power resulted from failures in grid management and the inability of many users to utilize their open access rights to the grid.<sup>121</sup>

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*of the Electricity Generation Sector*, 23 ENERGY L.J. 1, 6 (2002).

113. See Jonathan Peterson, *Energy Remains a Litmus Test on Davis as Manager; The Governor’s Actions as the Electricity Debacle Unfolded Come Under Scrutiny Again as He Fights for Political Survival*, L.A. TIMES, Oct. 5, 2003, at C1. Most utilities had fixed retail prices while the wholesale prices of electricity surged. This led to the financial devastation of many companies and the bankruptcy of the largest utility in the San Francisco Bay area, Pacific Gas & Electric. *Id.* The wholesale price of electricity increased ten-fold from December 1999 to December 2000. Hieronymus, *supra* note 112, at 1.

114. Duane, *supra* note 105, at 509–15.

115. *Id.* at 508. The Northwest experienced several rainy years in the late 1990s, so there was an abundance of cheap hydroelectric electricity available to California. *Id.*

116. *Id.* at 509.

117. William A. Mogel, *U.S. Electric Restructuring: A Lesson for Canada*, 28 CAN.-U.S. L.J. 339, 341 (2002).

118. See CALIFORNIA PUBLIC UTILITIES COMMISSION, REPORT ON WHOLESALE ELECTRIC GENERATION INVESTIGATION 45 (Sept. 2002), available at <http://www.cpuc.ca.gov/Published/Report/19417.htm> (citing Joskow’s findings that strategic withholding of plant capacity at least partially fueled the California Energy crisis) (last visited Aug. 23, 2005).

119. Peter Navarro & Michael Shames, *Electricity Deregulation: Lessons Learned from California*, 24 ENERGY L.J. 33, 37 (2003).

120. *Id.* at 59.

121. *Id.* at 39.



Geographic proximity of power plants to consumers became essential as confidence in the opportunity to utilize the grid diminished.<sup>122</sup>

#### *D. Restructuring in Pennsylvania*

Shortly after California passed its deregulation law; Pennsylvania followed suit.<sup>123</sup> Like California, Pennsylvania allowed customers to choose which retail company provided their electricity.<sup>124</sup> Pennsylvania's legislation also included a guaranteed eight percent discount for the incumbents' residential customers.<sup>125</sup> Unlike California, the Pennsylvania market has succeeded.<sup>126</sup>

However, competition has been more successful in eastern Pennsylvania than in western parts of the state.<sup>127</sup> Some attribute this regional disparity to the existence of an established ISO in the east but not in the west.<sup>128</sup> Substantial infrastructure and established market rules promote competition.

The Pennsylvania model allows the use of bilateral contracts, similar to those that evolved in the English market, while maintaining a spot market for real-time transactions.<sup>129</sup> The schedules that result from the bilateral contracts are submitted directly to PJM to assure that there is adequate capacity on the power lines and to assure reliable delivery of the power.<sup>130</sup>

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122. *Id.*

123. 66 PA. CONS. STAT. ANN. § 2802(13) (West 1979 & Supp. 1998).

124. *Id.* See also ENERGY INFORMATION ADMINISTRATION, TRENDS IN PENNSYLVANIA'S ELECTRICITY RETAIL PRICES FACT SHEET, at [http://www.eia.doe.gov/cneaf/electricity/page/fact\\_sheets/pennsylvania.html](http://www.eia.doe.gov/cneaf/electricity/page/fact_sheets/pennsylvania.html) (last visited Aug. 23, 2005).

125. *Id.* For comparison, California included a ten percent residential discount in its deregulation legislation. *Id.* See also Duane, *supra* note 114, at 501.

126. See, e.g., *Latest RED Index has Texas on Top, with UK Leading All Competitive Markets*, PLATTS' RETAIL ENERGY, May 10, 2002, at 1 (ranking Pennsylvania the second best competitive retail electricity market in the United States). See also Lynne Kiesling, *Keep California Energy Crisis in Perspective: The Feds Understand that Energy Deregulation Works Well If Done Right*, ORANGE COUNTY REGISTER, Dec. 6, 2002 (as of the end of 2002, Pennsylvania residential customers saved about four billion dollars with six years of competition instead of regulation).

127. CITIZENS ACTION COALITION EDUCATION FUND, ELECTRIC RESTRUCTURING FOR A COMPETITIVE TOMORROW: HOW THE PENDING CHANGES IN THE ELECTRIC UTILITY INDUSTRY WILL AFFECT INDIANA'S RESIDENTIAL CUSTOMERS (1999), at <http://www.citact.org/ctomorr.html> (last visited Aug. 23, 2005).

128. *Id.* Only a small part of western Pennsylvania is outside of PJM. See PJM Control Area Map, at <http://www.pjm.com/about/territory-served.html> (last visited Aug. 23, 2005). There may be other factors affecting the level of competition, such as urbanization and potential for profits.

129. Considine & Kleit *supra* note 104, at 58.

130. The Pennsylvania system has an integrated transmission system and energy market, unlike the old California model. This aids in communication (and thus reliability), plus it reduces opportunities for market manipulation. See Michael A. Yuffee, *California's Electricity Crisis: How Best to Respond to the "Perfect Storm,"* 22 ENERGY L.J. 65, 87 (citing William Hogan's

Additionally, PJM provides a spot market, thus giving market participants a choice in the creation of their energy portfolios.<sup>131</sup>

Pennsylvania's ISO and PJM have been actively seeking to create a single market with the Midwest Independent System Operator (MISO).<sup>132</sup> The combined PJM/MISO entity would cover much of the American Midwest and would, coincidentally, move closer to the design proposed in SMD.

### III. ANALYSIS

#### A. *Comparing European Electricity Homogenization Efforts to America's Current Proposals*

European attempts to create a homogenous market have been inadequate because the EU has been either unwilling or unable to create strong Union-wide mandates for common policy.<sup>133</sup> The ongoing freedom of the Member States to create their own tariffs and to use their own methodologies,<sup>134</sup> inevitably means that heterogeneous markets will prevail. Moreover, the exemptions for small utilities exacerbate the lack of uniformity across Europe. The biggest threat to a seamless electricity market in Europe rests in the Member States themselves.<sup>135</sup> A seamless,

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recommendation that California's market would benefit from the implementation of policies adopted in Pennsylvania).

131. See Norlander, *supra* note 41, at 67. This is an identical system to that FERC's NPRM proposes to implement throughout the United States. *Id.*

132. F.E.R.C. Docket No. EL02-65-000, Implementation Progress Report, filed Oct. 1, 2003. MISO is now working with PJM to create a robust, non-discriminatory single energy market covering their collective regions. *Id.*

133. See Council Directive *supra* note 3; Common Position, *supra* note 3; Council Directive 2003/54/EC, *supra* note 20. Each of these Directives allows Member States to exclude local utilities from the larger market based on their own internal assessment. This is not a problem in either the English or the Norwegian systems. A single market has been established that includes all of the reasonably connected parties in both nations, i.e., it would be impractical to try to connect England to Belgium with an underwater transmission system. However the infrastructure between nations that could be part of a common system cannot support the market. See "Green Paper," *supra* note 33, at 15. The larger nations in the European Union have recognized the need for stronger centralized EU policymaking power to steer various industries. Nick Antonovics, "Big 3" Want EU Commission Revamp, REUTERS UK, Feb. 16, 2003.

134. See *supra* note 15.

135. See generally Mitchell, *supra* note 16. Some suggest that the Europeans should promote regional cooperation as a second-best option because of the loggerheads created by infighting on the Union-wide market. See Coen & Doyle, *supra* note 14, at 25. This has an uncanny resemblance to the current environment in the United States. SMD has shifted from a policy placing the highest priority on a national system to increasingly becoming a policy of regionalism. See *supra* notes 37-41 and accompanying text.

homogeneous market is best achieved by consolidation of rule creation and enforcement under a single European regulator.<sup>136</sup>

The United States should learn from the EU's continued failure to create a seamless market and take a much stronger stance in favor of a unified market than the EU.<sup>137</sup> Though, like the EU, the United States has a long tradition of state regulation and local oversight, the evolution to competitive, intra-state markets diminishes the relevance of state scrutiny and, therefore, should diminish their authority.<sup>138</sup> All power lines capable of carrying interstate electricity or affecting the interstate transmission of electricity should be strictly within the domain of FERC.<sup>139</sup>

136. See OECD, *supra* note 13, at 16 (suggesting that the EU's lack of authority to compel a unified market and its dependence upon the wishes of the local governments from whom it seeks to gain permission explain the lack of homogeneity and a strict set of measures for a unified market). *Id.* The United States should not face the same problem. The delegation of regulatory power to the states comes from the federal government in the Federal Power Act. "The Commission [FERC] shall have jurisdiction over all facilities for such transmission or sale of electric energy, but shall not have jurisdiction . . . over facilities used for the generation of electric energy or over facilities used in local distribution . . ." 16 U.S.C. § 824(b)(1). There is no compelling reason that Congress could not reverse the delegation of power that it provided. In fact, before the Federal Power Act was enacted, the Supreme Court treated electricity like other goods and used the "touch and concern" analysis of the Commerce Clause of the Constitution. See, e.g., *Pub. Util. Comm'n of R.I. v. Attleboro Steam & Elec. Co.*, 273 U.S. 83, 89–90 (1927).

137. Even more than the European Union, the United States has a tradition of unified federal decision-making on issues of interstate commerce. See U.S. CONST. art. I, § 8, cl. 3. In this vein, FERC's jurisdiction over quasi-governmental entities (i.e., Tennessee Valley Authority, Bonneville Power Authority, etc.) is limited in comparison to its oversight of other market participants. See, e.g., *Umatilla Electric Cooperative Assoc.*, 97 FERC 61, 235 (2001) (utilizing the option for quasi-governmental and cooperative utilities to enter the competitive market by creating an acceptable reciprocity tariff). This is in stark contrast to the Norwegian system where government ownership does not preclude regulatory oversight. See OECD, *supra* note 13, at 30.

138. The United States has a clear advantage over the European Union in this respect. FERC has been a common, federal regulator of certain elements of the industry for quite some time, while the European Union does not have a comparable regulator. See *supra* note 35, art. 23 (Member States in the EU still designate their own registry authorities; no "federal" FERC equivalent).

139. State utility commissions could retain customer protection and retail market oversight functions, but there should be no wholesale market oversight or infrastructure reliability duties for the state utility commissions. This should easily survive Constitutional concerns as well. Justice Douglas, dissenting in a case adding to FERC authority under old federal energy statutes, claimed that he had "no doubt that Congress has constitutional power to regulate under the Commerce Clause the interstate 'commingling' of electric power." *Fed. Power Comm. v. Florida Power & Light Co.*, 404 U.S. 453, 469–70 (1972) (Douglas, J., dissenting).

Application of the Commerce Clause supports a single federal regulator because the U.S. electricity grid connects forty-seven states as well as large sections of Canada (Alaska, Hawaii, and Texas have their own grids). Clearly, the intrastate activity in any of the forty-seven interconnected states "touches and concerns" each other as well as Canada.

An analogy also can be made to Madison's *Federalist* No. 10. Madison contended that a strong federal government instead of strong state governments would reduce the power of the few at the expense of the many. "[T]he most common and durable source of factions has been the various and unequal distribution of property. . . . The smaller the society, the fewer probably will be the distinct parties and interests composing it; the fewer the distinct parties and interests, the more frequently will

Uncertainty feeds risk, which reduces the likelihood that utilities will invest in electricity infrastructure. This poses an especially disconcerting problem when investment in transmission and distribution lines drops as a result. Without the ability to ship power there could be a ripple effect of discouraging investment in power plants; plus, the obvious inability to get sufficient electricity to consumers. The opt-out provisions of the EU Directives<sup>140</sup> create uncertainty making utility investment plans more difficult than they need be. American uncertainty about SMD could pose the same problem.<sup>141</sup> There is both the uncertainty of whether it will come to fruition<sup>142</sup> in any form, as well as uncertainty of what the final design will include.<sup>143</sup> Moreover, there is uncertainty about the treatment of quasi-governmental utilities.<sup>144</sup> American policymakers should learn from the European experience of the past ten years and make a well-defined and cohesive decision on the issue.<sup>145</sup>

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a majority be found of the same party; and the smaller the number of individuals composing a majority, and the smaller the compass within which they are placed, the more easily will they concert and execute their plans of oppression.” THE FEDERALIST NO. 10 (James Madison). Here, the concern would be that the strong incumbent utilities would have the power to oppress newer, smaller market entrants both economically and politically. A larger, more interstate market should mitigate the market power harms that have harmed markets like California.

140. See *supra* notes 27, 36 and accompanying text.

141. Hopefully, the opt-out clause in the NPRM will not pose a problem. In addition to the uncertainty regarding SMD generally and the impasse on the NPRM, the opt-out clause in the NPRM would require permission from FERC itself—not a local regulator. See SMD NPRM, *supra* note 2, ¶ 115.

142. Many have concerns about a single market, even in philosophy. See, e.g., Rulemaking Comment of Ariz. Corp. Comm. et al., *supra* note 56.

143. There are significant differences between the SMD NPRM and the version currently pending in Congress. See *supra* notes 51–64 and accompanying text.

144. Current regulations and law allow quasi-governmental utilities to choose whether to participate in the competitive market, and this choice can be changed by the utility at anytime. See *Emerald Util. Dist. v. Bonneville Power Admin.*, *supra* note 47. It seems peculiar to continue to allow this option in a single market setting because it would in essence mean that the “single market” could become multiple markets if a quasi-governmental utility so chose. This could lead to the same uncertainty that resulted from the European opt-out provisions.

Though in a more general context, FERC has made the same finding that “[h]aving two or more different sets of rules governing the operation of a transmission system makes it difficult—if not at times impossible—for that system to support an efficient regional electric power market.” SMD NPRM, *supra* note 2, ¶ 62.

145. While the evidence and basic economic theory suggest that larger markets would promote efficiency, a choice to simply revert to isolated state utilities would be better than lingering uncertainty because it would allow market participants to adjust their investments and strategies to something concrete. Cf. SMD NPRM, *supra* note 2, ¶ 26 (saying that uncertainty about policy details harmed the growth of RTOs).

## B. *Comparing English and Norwegian Restructuring to American Restructuring*

Because England and Norway developed their competitive electricity markets before any American state, some aspects of those markets were borrowed by America. However, none of these markets exactly mimic each other and the results differ dramatically as well. The reluctance of nations to deregulate has put the electricity market in a state of limbo, in that uncertainty deters investment in infrastructure, thus harming reliability and the ability to ship cleaner and less expensive electricity on demand.<sup>146</sup> This poses an even greater concern in the United States than in England because American utilities already spend less on transmission lines than their English counterparts.<sup>147</sup>

### 1. *Comparing California to Europe*

California's deregulation fiasco made many aware of electricity restructuring for the first time—perhaps not the best way to start the education process. Oddly, the California experiment consciously borrowed market design elements from the already existing and successful English system. Specifically, California implemented a spot market in which nearly all electricity was to be traded.<sup>148</sup> However, unlike England, California mandated the use of the spot market, limiting potential development of bilateral relationships.<sup>149</sup> Many have suggested that the wild price volatility of the California market would have quelled—or never occurred—had a contract system using bilateral relationships been

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146. Roberts, *supra* note 87, at 59.

147. David Firm & Dan Roberts, *U.S. Spends Little More on Grid than UK*, FIN. TIMES (London), Aug. 18, 2003, at 5. The United States is fifteen times the size of England but the investments are comparable. *Id.* Some suggest that the American system does not provide sufficient profit incentives for investments in transmission. *Id.* The North American Reliability Council reports “that only 6,588 miles of new transmission” are expected to be constructed in “North America in the next 10 years.” Cassandra Burke Robertson, *Bringing the Camel into the Tent: State and Federal Power Over Electricity Transmission*, 49 CLEV. ST. L. REV. 71, 72 (2001).

148. Fels & Lindh, *supra* note 108, at 1.

149. In a bit of irony, the crisis in the California market compelled it to try to adopt one of the elements of the English market that it originally ignored—unified ownership of transmission facilities. In order to aid the local utilities as they sorted through their economic morass, the California government offered to buy the transmission lines of all the investor-owned utilities. Southern California Edison accepted the offer but Pacific Gas & Electric could not because it was barred by its bankruptcy proceeding. *See* Cudahy, *supra* note 15, at 179. The CAISO did not own any transmission facilities. *See* Alexandra I. Metzner, *Were California's Electricity Price Shocks Nothing More than a New Form of Stranded Costs?*, 52 AM. U.L. REV. 535, 554 n.101 (2002). *Cf.* EIA REPORT, *supra* note 1 (England's transmission system is owned by the NGC).

permitted to develop.<sup>150</sup> The English bilateral market naturally evolved from the market participants' desire to hedge risk, and government never intruded with obtrusive mandates. American states that are continuing to consider deregulation<sup>151</sup> should not impair the ability of secondary markets, like the English bilateral markets, to evolve naturally.

The Californian system included a morass of regulatory agencies, both at the state and the federal level.<sup>152</sup> Not only were there conflicts over jurisdiction, but there were also conflicts on direction and philosophy.<sup>153</sup> In contrast, the English system operates under one set of national regulations. The English counties do seek to impose their own regulations; markets reward those who regulate efficiently.

California grew heavily dependent upon imports of hydro-electricity and, like Norway, suffered shortages when droughts occurred.<sup>154</sup> Policymakers in California made power plant construction exceedingly difficult for environmental reasons in the late 1990s and early 2000s. Likewise, the Norwegian government strongly opposed non-hydro sources of electricity and actually closed its nuclear power plant. The combination of these factors has led to similar results in Norway and California, though admittedly of different magnitudes. Norway and California both experienced price increases as the supply of electricity available to their markets dropped, and both encountered exceedingly low supply margins that threatened reliability.<sup>155</sup> But, imports pose the key difference between the markets. California found imports from neighboring states difficult to acquire because of infrastructural limits; the wire simply could not get enough power into the state.<sup>156</sup> Norway has been able to import substantial amounts of electricity from Sweden and Finland,<sup>157</sup> which mutes the impact of domestic shortfalls.

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150. See *supra* note 111.

151. This number has dropped quite dramatically in the wake of the California disaster. See, e.g., Jean C. Moore, *Evidence-At-Issue Waiver of Attorney-Client Privilege and Public Service Co. of New Mexico v. Lyons: A Party Must Use Privileged Materials Offensively in Order to Waive the Privilege*, 31 N.M. L. REV. 623, 623 n.8 (2001) (explaining that New Mexico delayed deregulation from 2002 to 2007 after the crisis).

152. For example, the California Public Utility Commission, the Federal Energy Regulatory Commission, the California Governor's Office, the California Energy Commission, and others all tried to dictate policy for the market.

153. See, e.g., Cudahy, *supra* note 15, at 156.

154. See *supra* notes 93 and 94 and accompanying text.

155. See *supra* notes 95, 96, and 104 and accompanying text.

156. See New Release, *supra* note 120.

157. See *supra* note 95.

Lastly, unlike England and Norway, California's electricity scheduling entity, the CAISO, did not have a market place for spot, futures, or options trading. Instead, the vast majority of trading flowed through a separate entity called the California Power Exchange.<sup>158</sup>

## 2. *Comparing Pennsylvania to Europe*

Pennsylvania's market has been a shining star for proponents of electricity deregulation in the United States,<sup>159</sup> and its structure has much in common with the English and Norwegian markets. Though, like California, there is a mix of state and federal regulation, the policies produced by each do not conflict with one another. Also, Pennsylvania only has one agency (the Pennsylvania Public Utility Commission) to determine intrastate electricity policy, as compared to the California system of multiple regulatory agencies.

Pennsylvania's market is consciously seeking to reduce barriers between it and other regions of the United States. For example, PJM is currently negotiating to reduce trade barriers with MISO, the market to its west.<sup>160</sup> This process parallels the market expansion that Norway implemented with Sweden and later Finland.<sup>161</sup> Norway's interconnection with neighboring nations has proven invaluable in providing reliable electricity to its consumers.<sup>162</sup> Broad and unencumbered interconnection of

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158. Cudahy, *supra* note 15, at 174. There were a handful of smaller power exchanges that worked in competition with the Cal PX. *See, e.g.,* San Diego Gas & Elec. Co. v. Sellers of Energy and Ancillary Services into Markets Operated by the Cal. Ind. Syst. Oper. and the Cal. Power Exchange, 105 FERC ¶ 61,066, 61,159–61,172 (Oct. 16, 2003) (outlining the behavior and the responsibilities of one these smaller power exchanges called APX).

159. *See, e.g., Latest RED Index has Texas on Top, with UK Leading all Competitive Markets*, PLATT'S RETAIL ENERGY, May 10, 2002, at 1. Pennsylvania ranked as the second-best competitive market in the United States. *Id.*

160. *See* F.E.R.C. Docket No. EL02-65-000, *supra* note 132.

161. *See* Aam & Wangenstein, *supra* note 4. The consolidation of regulatory power in a single entity among the Scandinavians provides an important lesson as Pennsylvania's market becomes more integrated with other states. *See supra* note 50. While it seems unlikely that one state will acquiesce to another like the Scandinavians did, the efficiency of a single regulator makes a compelling reason for added coordination and/or SMD.

162. ENERGY INFORMATION ADMINISTRATION, NORWAY COUNTY ANALYSIS BRIEF, at <http://www.ein.doc.gov/eneu/cabs/norway.html> (last visited Aug. 23, 2005). Engineering limitations can have the same impact as political ones. For example, inadequate infrastructure can frustrate efforts to ship more efficient power from one market to another just as much as a regulatory prohibition. *See supra* note 32 (2% shipping from France to Spain). The United States also suffers from this problem. Many regions of the United States that would otherwise export electricity cannot because of structural limitations. *See* Robert T. Eynon et al., *The Electric Transmission Network: A Multi-Region Analysis*, ENERGY INFORMATION ADMINISTRATION, at <http://www.eia.doe.gov/oiaf/analysispaper/transmiss.html>. *See also supra* note 147 (comparing U.S. investment on infrastructure to the U.K.).

markets assures that those who can best provide electricity will be able to provide for those who need the electricity the most.<sup>163</sup>

### 3. *General Lessons for Deregulating Electricity Markets*

If it comes to fruition, a single market would include a single design for wholesale markets. Consequently, a national system should be shaped by the comparison of various states' experiences as well as those abroad. England, Norway, California, and Pennsylvania highlight the fundamentals essential to a functional national market. First, there must be adequate infrastructure to haul the electricity.<sup>164</sup> Second, there must be sufficient market liquidity to prevent gaming. And perhaps most importantly, third, the market should be flexible to allow participants to shape deals that can efficiently meet their needs.<sup>165</sup> All of this should be combined with the central goal of achieving a seamless national market where efficiency is rewarded with access to eager customers.

## IV. CONCLUSION

The American and European restructuring experiences have much in common, suggesting a universal maxim for electricity markets: the simpler and bigger the market, the better the market. Government policies that create peculiar "opt-out" clauses for specific market participants only complicate the market to the detriment of the whole. Moreover, successful markets need simple and efficient means by which to deliver their goods,

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163. This is not to suggest that regulators do not have a place in the transition to competition—far from it. Market monitoring is crucial to assure that market power abuse and gaming do not occur. Unencumbered, here, means that regional borders should not limit otherwise rational market decisions. This is consistent with scholarly recommendations for ongoing oversight of the European market. See Coen & Doyle, *supra* note 14, at 22 ("Although competition lies at the heart of liberalization measures, regulation is required in part to overcome obstacles standing in its path so that benefits materialize."). It is also consistent with current activity at FERC in the United States. See F.E.R.C. FY 2005 Congressional Performance Budget Request, at 6, *available at* <http://www.ferc.gov/about/strat-docs/FY05-Budg.pdf>. In August of 2002, FERC created the Office of Market Oversight and Investigations (OMOI) to:

Assess market performance, ensure conformance with Commission rules, and report on its findings to the Commission and the public. OMOI also analyzes overall energy markets to identify and remedy key issues before they become major problems, and serves as the 'cop on the beat' to ensure that individual market players play by the rules.

*Id.*

164. For California see *supra* note 120; for Spain/France see *supra* note 33.

165. California refused to allow a bilateral market to reduce risk. On the other hand, England allowed the market participants to create a needed element for the market.



and policies that impair transport and mutually agreeable transactions also impair the market.

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