

## A TIME TO ACT ANEW: A HISTORICAL PERSPECTIVE ON THE ENERGY POLICY ACT OF 2005 AND THE CHANGING ELECTRICAL ENERGY MARKET

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The dogmas of the quiet past, are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so we must think anew, and act anew.

—Abraham Lincoln<sup>1</sup>

Mr. Speaker, this is an energy bill for 1950, not 2050. It would have been difficult to support this outmoded policy decades ago, and I certainly cannot vote for it today.

—Congresswoman Betty McCollum<sup>2</sup>

On August 8, 2005, President Bush noted that, “[f]or more than a decade, America has gone without a national energy policy.”<sup>3</sup> President Bush made this statement at the signing of the Energy Policy Act of 2005, an Act that in the President’s words “promotes dependable, affordable, and environmentally sound production and distribution of energy for America’s future.”<sup>4</sup> Why then, after more than a decade without such a policy, did Congress and the President decide that 2005 was the time to enact the Energy Policy Act? In his speech President Bush explained that, “electricity bills are going up. We had a massive blackout two summers ago that cost this country billions of dollars and disrupted millions of

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<sup>1</sup> Abraham Lincoln, Annual Message to Congress (Dec. 1, 1862), in 5 THE COLLECTED WORKS OF ABRAHAM LINCOLN 518, 537 (Roy P. Basler ed., 1953).

<sup>2</sup> 151 CONG. REC. E1759 (daily ed. Sept. 6, 2005) (statement of Rep. McCollum).

<sup>3</sup> President George W. Bush, Address at the Signing of the Energy Policy Act of 2005 (Aug. 8, 2005), <http://www.whitehouse.gov/news/releases/2005/08/20050808-6.html>.

<sup>4</sup> Press Release, President George W. Bush, President’s Statement on Energy Policy Act of 2005 (Aug. 8, 2005), <http://www.whitehouse.gov/news/releases/2005/08/20050808-9.html>.

lives.”<sup>5</sup> Other reasons include the fact that the United States recently “had an attack on [its] homeland”<sup>6</sup> and has a growing need “to keep the lights running while protecting the environment. . . .”<sup>7</sup> More precisely, we need an energy policy at the beginning of the twenty-first century because “contemporary energy policy discussions involve fundamental concerns of a different kind from those that occupied most of the twentieth century. . . . By way of shorthand, energy policy today must address energy, the environment, and security.”<sup>8</sup>

The remaining question is whether the Energy Policy Act of 2005 effectively deals with the energy concerns of the twenty-first century. The answer to this question lies in a historical understanding of energy use in the United States; only from this historical basis can a true understanding of the United States’ future energy needs emerge. This Note suggests that the United States has historically followed a policy of depending primarily on fossil fuels for energy production.<sup>9</sup> In the past, this policy made sense for the United States, but given changing economic, environmental, and security concerns, this no longer holds true.<sup>10</sup> Unfortunately, the Energy Policy Act of 2005 remains trapped in the twentieth century approaches to energy policy and does not adequately address the energy concerns of the twenty-first century.<sup>11</sup>

## I. HISTORICAL ENERGY USE IN THE UNITED STATES

Since the Industrial Revolution, the United States has depended heavily on the use of fossil fuels to meet its energy needs.<sup>12</sup> However, which fossil fuel the United States has focused on at any particular time has varied over the years.<sup>13</sup> The variations have depended on “shifts in their availability, movements in their comparative prices, advances in technology, changes in the structure of the nation’s output of goods and

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<sup>5</sup> Bush, *supra* note 3.

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

<sup>8</sup> See Sidney A. Shapiro & Joseph P. Tomain, *Rethinking Reform of Electricity Markets*, 40 WAKE FOREST L. REV. 497, 516 (2005).

<sup>9</sup> See *infra* Part I.

<sup>10</sup> See *infra* Parts II-III.

<sup>11</sup> See *infra* Parts IV-V.

<sup>12</sup> See SAM H. SCHURR ET AL., ENERGY IN THE AMERICAN ECONOMY, 1850-1975: AN ECONOMIC STUDY OF ITS HISTORY AND PROSPECTS 28 (1977).

<sup>13</sup> *Id.* at 31-34.

services, and shifts in consumer preference.”<sup>14</sup> As a result of these forces, the United States has used either coal, oil, or gas as its primary energy source at different times during the last 140 years.<sup>15</sup>

During the years from 1850 to 1910, the percentage of energy production from coal increased from nine percent to seventy-seven percent.<sup>16</sup> This dramatic increase in the use of coal occurred for a number of reasons.<sup>17</sup> In particular, coal use grew due to a large increase in the production of iron and steel, its developing use as fuel for the railroads, a growing economy with increased manufacturing, the advent of electric power production, and its natural abundance.<sup>18</sup> However, after World War I the use of coal relative to the use of oil and gas declined greatly.<sup>19</sup> By 1955 oil and gas accounted for nearly two-thirds of the total energy supply.<sup>20</sup> This relative rise in the importance of gas and oil stemmed from an increased demand for petroleum as a source of artificial light, a need for lubricants in factories and railroads, the huge increase in the use of automobiles, the minimal processing natural gas requires, and the abundance of natural gas as a cheap source of energy.<sup>21</sup> Oil and gas, along with coal, would retain this dominant position for many years.<sup>22</sup> Other than some development of nuclear power under President Eisenhower (more for military than energy reasons), the domestic energy market would not look far beyond fossil fuels until the 1970s.<sup>23</sup> Vito Stagliano, former Deputy Assistant Secretary of Energy for Policy Analysis in the first Bush Administration, explains:

There was in fact no obvious reason to embark upon energy policy initiatives during the early 1960s. Composite fuel oil prices had been in decline since 1953, domestic oil reserve estimates were up, as was production, and natural gas proven reserves were increasing even in the face of counterproductive regulation.<sup>24</sup>

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<sup>14</sup> *Id.* at 34.

<sup>15</sup> *Id.* at 33-42.

<sup>16</sup> *Id.* at 38.

<sup>17</sup> *Id.* at 66-70.

<sup>18</sup> *Id.*

<sup>19</sup> *Id.* at 35.

<sup>20</sup> *Id.*

<sup>21</sup> *Id.* at 85-118, 132-33.

<sup>22</sup> *Id.* at 237.

<sup>23</sup> *See infra* Part II.

<sup>24</sup> VITO STAGLIANO, A POLICY OF DISCONTENT: THE MAKING OF A NATIONAL ENERGY STRATEGY 17 (2001).

Not until the first energy crisis in 1973 would policymakers have a reason to rethink the United States' heavy dependence on fossil fuels.<sup>25</sup>

Several factors led to the first United States energy crisis, including a rise in energy consumption, over-dependence on oil and natural gas, a decline in domestic production of natural gas and oil, nationalization of Middle Eastern oil fields, the emergence of OPEC, environmental regulations that made some technologies uncompetitive, and uncertainty about the future of nuclear energy.<sup>26</sup> When the Organization of Arab Petroleum Exporting Countries placed an embargo on the United States in retaliation for its support of Israel in the second Arab-Israeli war,<sup>27</sup> these changes in the energy market resulted in an energy crisis.<sup>28</sup> Oil prices quadrupled and President Nixon began to question the United States' lack of energy independence.<sup>29</sup> To alleviate the crisis, President Nixon initiated the first of what would be many policies meant to address our energy needs.<sup>30</sup>

Unfortunately, after many attempts at change, little optimism existed about the U.S. energy market at the beginning of the twenty-first Century.<sup>31</sup> *The Economist* summarized the situation accurately when it stated: "[U]nlike other countries that are modernising their power industries successfully, America is muddling along with an approach to electricity reform that is deeply flawed."<sup>32</sup> In the last thirty years, new economic, environmental, and security concerns have fundamentally

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<sup>25</sup> James L. Sweeney, *Four More Years: An Energy Policy for The Twenty-First Century*, HOOVER DIG. No. 1, 2005, <http://www.hoover.org/publications/digest/2993911.html>.

<sup>26</sup> CHARLES E. BROWN, WORLD ENERGY RESOURCES 225 (2002).

<sup>27</sup> See STAGLIANO, *supra* note 24, at 23.

<sup>28</sup> See BROWN, *supra* note 26, at 225.

<sup>29</sup> See STAGLIANO, *supra* note 24, at 24.

<sup>30</sup> *Id.* at 20. President Nixon attempted to increase supplies and curb demand without regard for the environmental impacts of his actions. *Id.* President Ford tried to increase government control of the energy market while President Carter created the Department of Energy to oversee the markets and ensure increased efficiency, more domestic energy production (from coal), and the use of some renewable energies (namely solar power). *Id.* at 27-30, 38-39. President Reagan took the opposite approach and determined to leave our energy markets under the control of market forces, not regulation, in order to secure a workable energy policy. *Id.* at 43-46. However, the domestic oil market crash of 1986 brought these plans to an end. *Id.* at 58. To all the traditional steps of increased domestic production, improved efficiency, and regulation of the market, George H. W. Bush added legislation that allowed competition to the existing electric utilities in the hopes of restructuring the electric markets. *Id.* at 339. The Clinton Administration undertook no significant energy policy actions. See *id.* at 429-30.

<sup>31</sup> *Bring Me Your Powerless Masses*, ECONOMIST, Aug. 21, 2003, available at [http://www.economist.com/printedition/displayStory.cfm?Story\\_ID=2003548](http://www.economist.com/printedition/displayStory.cfm?Story_ID=2003548).

<sup>32</sup> *Id.*

changed the energy market.<sup>33</sup> The United States has been unable or unwilling to adapt its policy approach to electricity reform to address these new concerns.

## II. CHANGES IN THE ENERGY MARKET

At the beginning of the twenty-first century new energy challenges have made the energy policies of the twentieth century ineffective.<sup>34</sup> For the United States to effectively deal with these new concerns, a historical understanding of their causes is imperative.

### A. *Traditional Economic Theories About the Energy Market*

Three ideas dominated economic thinking about energy markets in the twentieth century: economies of scale, natural monopolies, and government regulation. Economists define economies of scale as a decline in the average cost of production as more units are produced.<sup>35</sup> Thus, in the energy market, “economies of scale made it cost-effective to install larger central power plants” because the generation of large amounts of electricity reduced its average cost per unit.<sup>36</sup> The early years of the electric power industry were marked by many small electricity producers merging together to take advantage of the lower costs offered by economies of scale.<sup>37</sup> As the number of electric utilities decreased, the remaining utilities began to operate as natural monopolies.<sup>38</sup> The theory of a natural monopoly states that a single producer can more effectively realize economies of scale by avoiding the duplicate costs of infrastructure that are inherent with competing firms.<sup>39</sup> The United States Supreme Court recognized the theory of a natural monopoly in the case of *Munn v. Illinois*,<sup>40</sup> and created the proposition that a monopoly that affects the public good can be regulated by the government.<sup>41</sup> Regulation, along with economy

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<sup>33</sup> See *infra* at Part II.B-D.

<sup>34</sup> See Sweeney, *supra* note 25, at 1.

<sup>35</sup> RAPHAEL EDINGER & SANJAY KAUL, RENEWABLE RESOURCES FOR ELECTRIC POWER: PROSPECTS AND CHALLENGES 10 (2000).

<sup>36</sup> *Id.* at 10.

<sup>37</sup> *Id.* at 11.

<sup>38</sup> *Id.* at 12.

<sup>39</sup> See Shapiro & Tomain, *supra* note 8, at 505.

<sup>40</sup> 94 U.S. 113 (1876).

<sup>41</sup> Shapiro & Tomain, *supra* note 8, at 507.

of scale and the natural monopoly, became a pillar of the United States' energy market.

Historically, using economies of scale as a theoretical underpinning of the U.S. energy market made sense. From the inception of the electricity market until the 1980s, average costs decreased as the number of customers and the size of plants grew.<sup>42</sup> From 1902 to 1932, electric companies increased the size of their turbines to reduce heat costs by approximately eighty percent.<sup>43</sup> "The number of electric customers quadrupled between 1925 and 1970, while plant capacity increased thirteenfold and electric sales multiplied by a factor of 25."<sup>44</sup> As a result, prices dropped from ten cents per kilowatt-hour ("kWh") to 2.6 cents per kWh from 1906 to 1970.<sup>45</sup> Given the advantages offered by economies of scale, many power companies merged early in the twentieth century.<sup>46</sup> As competing companies merged, the efficiency provided by economies of scale and the high cost of entering the market discouraged competition and made the remaining companies natural monopolies.<sup>47</sup> Governments usually regulate natural monopolies to protect customers from price abuse,<sup>48</sup> and companies that generated electric power exhibited monopolistic tendencies and affected the public good.<sup>49</sup> As a result, the United States government regulated the industry to avoid monopolistic abuse of consumers.<sup>50</sup>

In the words of Sidney A. Shapiro and Joseph P. Tomain:

The regulatory response was to impose a government-sanctioned monopoly on that single provider through what has come to be known as the regulatory compact. The terms of the compact are fairly simple. An electric utility is given an exclusive franchise area and is obligated to provide

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<sup>42</sup> See EDINGER & KAUL, *supra* note 35, at 10.

<sup>43</sup> *Id.* at 11.

<sup>44</sup> *Id.* at 12.

<sup>45</sup> *Id.*

<sup>46</sup> *Id.* at 11 ("In the late 1920s, the 16 largest electric power holding companies controlled over 75 percent of all U.S. electric power generation.")

<sup>47</sup> Heather N. Jarvis, *Keeping the Lights On—At All Costs? Implying Consistent Prudence Review and a Prudence Standard That Includes Demand Response and Responsible Portfolio Management*, 29 VT. L. REV. 1037, 1038-1039 (2005).

<sup>48</sup> *Id.* at 1039.

<sup>49</sup> See *id.* at 1037. The Supreme Court, in *Munn v Illinois*, held that an industry is subject to price regulation when it exhibits monopolistic tendencies and affects the public good. Shapiro & Tomain, *supra* note 8, at 507.

<sup>50</sup> Shapiro & Tomain, *supra* note 8, at 507.

service within that franchise area. The government, to counteract monopolistic pricing, is then given ratemaking authority over the electric utility. Ratemaking is a shorthand way of saying that the government controls utility prices and profits.<sup>51</sup>

This system works well for providing inexpensive power as long as the market is growing and thus economies of scale are still available for new centralized power plants.<sup>52</sup> The United States effectively regulated natural monopolies in the electric power industry, created when companies took advantage of economies of scale, until the 1970s.<sup>53</sup>

*B. Economic Changes in the Traditional Energy Market*

Two factors began to change the energy market starting in the 1960s.<sup>54</sup> First, the growth of the U.S. energy market slowed during the 1960s.<sup>55</sup> Second, improvements in the efficiency of small gas turbines (and increasingly, renewable energy sources) made smaller generators more cost efficient.<sup>56</sup> The slow growing energy market meant that new large power plants could not recover their construction costs quickly because there was no immediate demand for the excess electricity they produced.<sup>57</sup> This fact, coupled with the increased efficiency of smaller

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<sup>51</sup> *Id.* at 507-08.

<sup>52</sup> *Id.* at 513.

<sup>53</sup> *Id.*

<sup>54</sup> *See id.* at 513; *see also* EDINGER & KAUL, *supra* note 35, at 75.

<sup>55</sup> Shapiro & Tomain, *supra* note 8, at 513.

<sup>56</sup> *See* EDINGER & KAUL, *supra* note 35, at 75; *see also* ELECTRIC MKT. ASSESSMENT TEAM, ENERGY INFO. ADMIN., THE CHANGING STRUCTURE OF THE ELECTRIC POWER INDUSTRY 2000: AN UPDATE, at ch. 5 (2000), [http://www.eia.doe.gov/cneaf/electricity/chg\\_stru\\_update/chapter5.html](http://www.eia.doe.gov/cneaf/electricity/chg_stru_update/chapter5.html) [hereinafter THE CHANGING STRUCTURE OF THE ELECTRIC POWER INDUSTRY].

Restructuring has been sustained primarily by technological improvements in gas turbines. "In areas with cheap . . . natural gas—most notably the United States—gas turbines [are] the least cost option [for new electricity generating capacity]." These improvements also have recast economies of scale in electric power generation technologies. No longer is it necessary to build a 1,000-megawatt generating plant to exploit economies of scale. Combined-cycle gas turbines reach maximum efficiency at 400 megawatts, while aero-derivative gas turbines can be efficient at scales as small as 10 megawatts.

*Id.* (quoting H.R. Linden, *The Revolution Continues*, ELECTRICITY J., Dec. 1995, at 54).

<sup>57</sup> EDINGER & KAUL, *supra* note 35, at 78.

generators, meant that smaller power plants began to make more economic sense for power companies than larger plants.<sup>58</sup> In short, economies of scale ceased to apply to producers of energy in the United States.

When economies of scale no longer apply, the average cost of each unit of electricity begins to rise.<sup>59</sup> During the 1970s, the energy crisis, high inflation, increasing capital costs, and environmental regulations also added to the costs of producing electricity.<sup>60</sup> "Between 1974 and 1984, the average price of electricity in the United States increased by approximately 250 percent."<sup>61</sup> As costs to the electric industry grew, electric producers passed these costs on to consumers in the form of higher rates.<sup>62</sup> As electric rates increased, so did the political pressure to address the problem.<sup>63</sup> In response to these political pressures, state and federal governments have taken tentative steps toward deregulating the electricity market.<sup>64</sup>

In 1978, Congress passed the Public Utilities Regulatory Policies Act ("PURPA") which brought a small measure of competition into the electricity market.<sup>65</sup> PURPA allows certain nonutility producers of electricity to enter the wholesale market<sup>66</sup> by selling power to utility companies.<sup>67</sup> Congress took this a step further in 1992 by enacting the Energy Policy Act of 1992, which allowed non-regulated electricity producers to enter

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<sup>58</sup> *Id.* at 75-79.

<sup>59</sup> *Id.* at 11.

<sup>60</sup> Shapiro & Tomain, *supra* note 8, at 513.

<sup>61</sup> Richard J. Pierce, Jr., *Completing the Process of Restructuring the Electricity Market*, 40 WAKE FOREST L. REV. 451, 454 (2005).

<sup>62</sup> Shapiro & Tomain, *supra* note 8, at 513.

<sup>63</sup> *Id.*

As noted, the electric industry, as traditionally structured and regulated, works well as long as the industry is expanding. Once, however, costs rise because of either reaching a technological plateau or reaching capacity, then the market can become distorted and inefficient. Consumers can consequently suffer because they are paying higher than efficient rates for electricity. The electricity industry experienced exactly this confluence of events. In brief, utilities had accumulated excess capacity, had built expensive plants, and . . . were charging consumers for those additional costs. These events combined to put significant pressures on politicians and regulators to address rising electricity rates.

*Id.*

<sup>64</sup> *Like a Candle in the Wind*, ECONOMIST, Oct. 4-10, 2003, at 58-59.

<sup>65</sup> THE CHANGING STRUCTURE OF THE ELECTRIC POWER INDUSTRY, *supra* note 56, at ch. 4.

<sup>66</sup> In the wholesale electricity market producers of electricity sell their power to the electric companies who then provide that power to the end consumer. *See id.*

<sup>67</sup> *Id.*

the wholesale market and sell their power at market prices.<sup>68</sup> With new competitors in the market, generation of electricity no longer qualifies as a natural monopoly.<sup>69</sup> Instead, only transmission and distribution remain natural monopolies, since they would have duplicate and unnecessary components if they competed.<sup>70</sup> The wholesale market has grown quickly under these acts, and now “over half the electricity generated is exchanged first on the wholesale market.”<sup>71</sup> The years since 1992 have seen mixed efforts to bring more competition into the electricity market as both the Federal Energy Regulatory Commission and many of the states have enacted varied and even contradictory laws designed to bring about deregulation.<sup>72</sup>

Slowing growth in the energy market, greater efficiencies of small generators, and tentative steps towards the introduction of market forces have changed traditional economic thought about the energy market. As the three economic pillars of the historical energy market—economies of scale, natural monopolies, and regulation—begin to crumble, other factors are also changing the energy market. Chief among these are worries about securing the energy market from terrorist threats and growing concerns about the environmental costs of fossil fuels.<sup>73</sup>

### C. Security Changes

As Professor Steven Ferrey observes, “[c]entralized infrastructure is vulnerable. Whether by supply shortage, transmission system fault or terrorist attack, our current centralized electric supply and distribution system is remarkably fragile and vulnerable.”<sup>74</sup> Currently, the United States operates a very centralized grid system.<sup>75</sup> Only three major networks, composed of connections between individual utilities, cover the

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<sup>68</sup> *Id.*

<sup>69</sup> David B. Spence, *The Politics of Electricity Restructuring: Theory vs. Practice*, 40 WAKE FOREST L. REV. 417, 422 (2005).

<sup>70</sup> *Id.*

<sup>71</sup> Joel B. Eisen, *Regulatory Linearity, Commerce Clause Brinkmanship, and Retrenchment in Electric Utility Deregulation*, 40 WAKE FOREST L. REV. 545, 550 (2005).

<sup>72</sup> *Id.* at 545-59.

<sup>73</sup> Steven Ferrey, *Power Future*, 15 DUKE ENVTL. L. & POL'Y F. 261, 272-78 (2005).

<sup>74</sup> *Id.* at 275.

<sup>75</sup> *See id.*; EDINGER & KAUL, *supra* note 35, at 124-25.

entire United States.<sup>76</sup> Recent events have shown both the fragility and the vulnerability of the highly centralized United States grid.

The New York blackout of summer 2003 showed both the reality of severe transmission problems and the high costs that result from transmission difficulties.<sup>77</sup> Problems transmitting electricity in Ohio caused fifty million people to lose power as over two hundred power plants went off-line.<sup>78</sup> This power outage only lasted for a single day, but still cost American businesses approximately \$6 billion.<sup>79</sup> Other recent blackouts in California have also cost its economy billions of dollars.<sup>80</sup> As these blackouts have shown the ease with which the United States' centralized grid can be disrupted, fears have grown that terrorists or other states may attack our power grid or the plants connected to it.<sup>81</sup> In fact, a report from the Institute for Energy and Environmental Research found that the threat of an attack against our energy infrastructure has been recognized by FEMA since 1980.<sup>82</sup> An attack resulting in a permanent physical disruption of the grid would create a much more serious economic impact than the blackouts in New York and California because electricity cannot be stored and few substitutes for generation exist.<sup>83</sup> Given the realistic possibility of an attack against our centralized grid and the huge economic losses that would result from such an attack, this threat has also played a role in changing the energy market.

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<sup>76</sup> EDINGER & KAUL, *supra* note 35, at 124.

The Eastern Interconnected System covers the eastern two-thirds of the United States. The Western Interconnected System consists of the Southwest and areas west of the Rocky Mountains. While these first two networks are interconnected, the third electricity network, the Texas Interconnected System, is not connected to them except by certain direct current lines.

*Id.*

<sup>77</sup> Ferrey, *supra* note 73, at 276-77.

<sup>78</sup> *Id.* at 277.

<sup>79</sup> *Id.*

<sup>80</sup> *Id.*

<sup>81</sup> *Id.* at 275.

<sup>82</sup> ARJUN MAKHLJANI, INST. FOR ENERGY AND ENVTL. RESEARCH, SECURING THE ENERGY FUTURE OF THE UNITED STATES: OIL, NUCLEAR, AND ELECTRICITY VULNERABILITIES AND A POST-SEPTEMBER 11, 2001 ROADMAP FOR ACTION, at ch. 2 (2001), <http://www.ieer.org/reports/energy/bushch2.html>.

<sup>83</sup> *Id.*

*D. Environmental Changes*

Finally, concerns about the rising environmental costs of using fossil fuels have also played a role in changing the traditional energy market of the United States.<sup>84</sup> Over the last century average global surface temperatures have increased by up to one degree Fahrenheit.<sup>85</sup> At nearly the same time greenhouse gas emissions, which trap heat within the Earth's atmosphere, have increased due to the combustion of fossil fuels.<sup>86</sup> Concentrations of carbon dioxide have grown by almost thirty percent, concentrations of methane have almost doubled, and nitrous oxide concentrations have grown by approximately fifteen percent since the beginning of the industrial revolution.<sup>87</sup> Scientists agree that these changes have taken place in the atmosphere.<sup>88</sup> Many scientists also think these rising levels of greenhouse gases have contributed to global warming.<sup>89</sup> Scientific uncertainty exists as to what extent increased greenhouse gas emissions have caused global warming and what future threats global warming may pose.<sup>90</sup> Many scientists also fear that global warming will result in large environmental and social costs.<sup>91</sup>

Some of these costs include glacial and sea ice retreat, thawing of permafrost, and a general shifting of patterns among the weather, oceans,

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<sup>84</sup> See Ferrey, *supra* note 73, at 272; see also INT'L CLIMATE CHANGE TASKFORCE, MEETING THE CLIMATE CHALLENGE (2005), <http://www.americanprogress.org/kf/climatechallenge.pdf> [hereinafter MEETING THE CLIMATE CHALLENGE]; Shapiro & Tomain, *supra* note 8, at 513.

<sup>85</sup> Environmental Protection Agency, Global Warming: Climate, <http://yosemite.epa.gov/oar/globalwarming.nsf/content/climate.html> (last visited Dec. 1, 2006).

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> MEETING THE CLIMATE CHALLENGE, *supra* note 84, at 1.

The cost of failing to mobilise in the face of this threat is likely to be extremely high. The economic costs alone will be very large: as extreme weather events such as droughts and floods become more destructive and frequent; communities, cities, and island nations are damaged or inundated as sea level rises; and agricultural output is disrupted. The social and human costs are likely to be even greater, encompassing mass loss of life, the spread or exacerbation of diseases, dislocation of populations, geopolitical instability, and a pronounced decrease in the quality of life. Impacts on ecosystems and biodiversity are also likely to be devastating. *Id.* (citation omitted).

and atmosphere.<sup>92</sup> Depending on how these damages are measured and the amount of future emissions, the economic costs of global warming could total 2.5 percent of the global Gross Domestic Product.<sup>93</sup> In terms of how these costs would affect the United States, the Environmental Protection Agency has estimated that:

Around a quarter of the total economic damage would fall on farmers, who could no longer use some lands. Around a sixth of the total cost would come in the form of increased cooling costs for homes and offices (net of the reduced costs of heating). Rising sea levels, damage to drinking-water supplies and heatwaves would each account for 10%. Deforestation and rising ozone pollution together would add another 10%. And the economic estimates exclude the “amenity value”—the price people would be willing to pay to avoid rising temperatures for reasons of convenience.<sup>94</sup>

Such estimates do not include costs that are difficult or impossible to measure in terms of dollars.<sup>95</sup> These costs include the loss of cultural and archaeological resources and natural environments that cannot be replaced.<sup>96</sup> To combat this growing problem, the International Climate Change Taskforce recommends developing and deploying “cleaner energy and transportation technologies” that “use energy more efficiently and generate it from renewable resources.”<sup>97</sup>

### *E. Summary*

The use of more efficient and renewable technologies to combat global warming will require a move away from fossil fuels<sup>98</sup> and thus

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<sup>92</sup> Andrew C. Revkin, *Big Arctic Perils Seen in Warming*, N.Y. TIMES, Oct. 30, 2004, at A1.

<sup>93</sup> *Degrees of Difference*, ECONOMIST, May 1-7, 2004, at 80.

<sup>94</sup> *Id.*

<sup>95</sup> RICHARD L. OTTINGER ET AL., ENVIRONMENTAL COSTS OF ELECTRICITY 90 (1990).

Some environmental risks seem to defy economic valuation, either because the risk itself defies measurement or because the risk has no economic counterpart. Or, an economic assessment may be deemed inappropriate for reasons including ethical considerations, political sensitivity, or lack of adequate time and resources to conduct a study.

*Id.*

<sup>96</sup> *Id.*

<sup>97</sup> MEETING THE CLIMATE CHALLENGE, *supra* note 84, at 1.

<sup>98</sup> *Id.*

away from the United States' traditional energy sources. This environmental imperative, along with changing economic assumptions about the energy market change and new threats to our energy security, underlies the changes taking place in the energy market. An energy policy for the 21st century must provide solutions to these problems.

### III. AN ENERGY POLICY FOR THE EMERGING ENERGY MARKET

Recent years have seen new challenges arise in America's energy market. These challenges have come from a number of sources, but can generally be classified as either economic, environmental, or security concerns. Overcoming these challenges will not be easy. The National Energy Policy Development Group, which is composed of high government officials such as Vice President Cheney, the Secretary of State and the Secretary of Energy, has stated: "[The energy challenge] will call forth innovations in science, research, and engineering. It will require time and the best efforts of leaders in both political parties. It will require also that we deal with the facts as they are, meeting serious problems in a serious way."<sup>99</sup> Fortunately, solutions exist if the political will can be found to implement them. Deregulation of the electric generation market and the use of smaller, more efficient generators can create a more economically efficient energy market.<sup>100</sup> At the same time, removing the barriers faced by renewable energies while also promoting efficiency can help mitigate the environmental damages caused by fossil fuels.<sup>101</sup> Finally, distributed generation and smart grid technology can alleviate any threats to the security of the electricity infrastructure.<sup>102</sup> Making these solutions come to fruition will require a great deal of effort from many people, but they can be accomplished. In the words of Vice President Cheney, "[t]he tasks ahead are great but achievable."<sup>103</sup>

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<sup>99</sup> NAT'L ENERGY POL'Y DEV. GROUP, NATIONAL ENERGY POLICY: RELIABLE, AFFORDABLE, AND ENVIRONMENTALLY SOUND ENERGY FOR AMERICA'S FUTURE, at xv (2001), <http://www.whitehouse.gov/energy/National-Energy-Policy.pdf> [hereinafter NATIONAL ENERGY POLICY].

<sup>100</sup> See *infra* Part III.A.

<sup>101</sup> See *infra* Part III.B.

<sup>102</sup> See *infra* Part III.C.

<sup>103</sup> Dick Cheney, *Cover Letter* to NATIONAL ENERGY POLICY, *supra* note 99.

A. *The New Energy Market Economics*

To form an effective market in the twenty-first century, the United States government needs to accomplish three tasks. The government must encourage smaller energy plants to take advantage of their higher efficiency, require a uniform system of deregulation, and create an accurate pricing system.<sup>104</sup> Slowing growth in the energy market and the higher efficiency of small scale generators have made large, centralized electric plants less profitable than smaller generators.<sup>105</sup> The use of smaller power plants allows utilities to generate power closer to consumers.<sup>106</sup> This concept is known as distributed generation,<sup>107</sup> and it offers many economic advantages over a centralized grid.<sup>108</sup>

First, distributed generation allow utilities to add generators only when demand for the power actually exists.<sup>109</sup> As a result, by adding generators piecemeal, utility companies can avoid the expensive overcapacity that comes with building a large centralized plant in anticipation of future demand.<sup>110</sup> Second, avoiding overcapacity helps reduce the costs of electricity generation by reducing the amount of fixed costs utilities must pay to satisfy the same demand.<sup>111</sup> This creates lower variable costs for the utilities.<sup>112</sup> Distributed generation provides another economic benefit: because small generators reach their maximum production sooner than centralized plants, they pay for themselves much sooner than larger plants.<sup>113</sup> Finally, distributed generation gives utilities the ability to add new transmission and distribution capabilities only when they are needed.<sup>114</sup> This

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<sup>104</sup> See *supra* notes 54-73 and accompanying text.

<sup>105</sup> See *supra* notes 54-58 and accompanying text.

<sup>106</sup> Shapiro & Tomain, *supra* note 8, at 518.

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

Distributed generation ("DG") is an alternative source of electricity generation that focuses on small-scale power production. The core concept behind DG is that power will be produced locally, instead of relying on large regional grids for transmission and distribution. DG power producers will be much smaller and will rely on a variety of energy sources and technologies such as solar cells and wind turbines.

*Id.* at 505 (citation omitted).

<sup>108</sup> EDINGER & KAUL, *supra* note 35, at 77-79.

<sup>109</sup> *Id.* at 78.

<sup>110</sup> *Id.*

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

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

<sup>113</sup> *Id.*

<sup>114</sup> *Id.* at 77.

allows utilities to avoid the expensive overcapacity in transmission and distribution that accompany an overcapacity in generation.<sup>115</sup> All of these factors combine to make distributed generation more economically efficient for utilities than large, centralized power plants.

The new economics of energy will also require a uniform system of deregulation to make the energy market more efficient.<sup>116</sup> Deregulation of the energy market occurred recently for two reasons: “the sale of electricity is not a ‘natural monopoly’” and “markets can set electricity prices better.”<sup>117</sup> The electricity market is no longer a natural monopoly because economies of scale have disappeared from the market.<sup>118</sup> As utilities lost economies of scale, prices rose and governments began to take tentative steps towards deregulation to control them.<sup>119</sup> At the same time, the market became a more effective price setter for electricity once the efficiency of small-scale generators allowed many producers to compete in the market.<sup>120</sup> With an increased number of producers available in the market, real competition can exist and prices should drop.<sup>121</sup> Though state and federal efforts towards deregulation take steps in the right direction, a uniform approach is required in order to maximize efficiency.<sup>122</sup>

The Federal Energy Regulatory Commission (“FERC”) put forth a plan to bring about such a uniform system of deregulation.<sup>123</sup> FERC’s plan focused on the creation of Regional Transmission Organizations (“RTO”s) that would acquire the power generated by individual utilities and transmit and distribute it independently.<sup>124</sup> FERC identified seven fundamental components of such a system:

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<sup>115</sup> *Id.*

<sup>116</sup> Eisen, *supra* note 71, at 587.

<sup>117</sup> *Realizing the Promise of Electricity Deregulation*, 40 WAKE FOREST L. REV. 411, 418 (2005).

<sup>118</sup> See *supra* notes 54-73 and accompanying text.

<sup>119</sup> See *supra* notes 59-73 and accompanying text.

<sup>120</sup> Pierce, *supra* note 61, at 461.

<sup>121</sup> Spence, *supra* note 69, at 422.

<sup>122</sup> Eisen, *supra* note 71, at 587 (explaining that “muddling through the application of difficult competition schemes has led to an unclear and incoherent regulatory structure, a great deal of uncertainty in the industry, a lack of uniformity in governing mechanisms, and a haphazard and incomplete transition to a fair and competitive marketplace”).

<sup>123</sup> FED. ENERGY REGULATORY COMM’N, WHITE PAPER: WHOLESale POWER MARKET PLATFORM (2003), available at [http://www.ferc.gov/press-room/press-releases/2003/2003-2/White\\_paper.pdf](http://www.ferc.gov/press-room/press-releases/2003/2003-2/White_paper.pdf) [hereinafter WHOLESale POWER MARKET PLATFORM]. See also Eisen, *supra* note 71, at 566-69.

<sup>124</sup> Charles H. Koch, Jr., *Collaborative Governance in the Restructured Electricity Industry*, 40 WAKE FOREST L. REV. 589 (2005).

- Independent operation of the transmission grid by the RTO to ensure that all suppliers have access to the market;
- Individual transmission plans for each region to best address regional needs and capabilities;
- A fair system of cost allocation for electricity transmission and upgrades to the grid;
- The authority for FERC to monitor and mitigate market power to ensure that the prices are only responsive to supply and demand, not market power;
- The existence of spot markets (short term emergency markets) to guard against shortages;
- An effective system to resolve transmission congestion to protect consumers from manipulation and ensure low costs; and
- Firm transmission rights to ensure customers get service on the transmission paths specified in their agreements so that congestion charges can be avoided.<sup>125</sup>

For such a plan to work, FERC would need the power to divest the generation capacity owners of the natural monopolies of transmission and distribution lines.<sup>126</sup> The Federal Power Act does not give FERC this authority, and thus states who do not wish to deregulate have been able to halt efforts to establish a uniform system of deregulation.<sup>127</sup>

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<sup>125</sup> WHOLESale POWER MARKET PLATFORM, *supra* note 123, at 6-10.

<sup>126</sup> Pierce, *supra* note 61, at 464-65.

<sup>127</sup> *Id.*

The main legal problems that have halted the restructuring process, and that threaten to render ineffective even the regional markets that have been restructured, fall under the general heading of federalism. States have far too much power, and FERC has far too little power. FERC's admonitions and entreaties have been sufficient to induce market participants to cooperate with FERC's restructuring initiatives in regions in which state authorities are generally supportive of restructuring—the Northeast and Mid-Atlantic States. In regions in which states are opposed to restructuring, however, FERC's limited powers are not up to the task.

*Id.* at 484.

Given FERC's inability to effectively deregulate the electricity market, many states have made attempts at deregulation.<sup>128</sup> Unfortunately, few of these steps have been coordinated.<sup>129</sup> As a result, the energy market has become disorganized and uncompetitive as different laws control different markets.<sup>130</sup> As Professor Eisen states, "muddling through the application of different competition schemes has led to an unclear and incoherent regulatory structure, a great deal of uncertainty in the industry, a lack of uniformity in governing mechanisms, and a haphazard and incomplete transition to a fair and competitive marketplace."<sup>131</sup> A uniform, federal deregulation scheme is needed to overcome this problem because both regulation as traditionally practiced and partial deregulation have proven to be economically inefficient.

Slowing growth in the demand for electricity coupled with increased efficiencies of small generators will change energy economics in the 21st century. In short, economic forces in the new energy market will create a need for smaller scale electricity generation and uniform deregulation in the market.

#### B. *The New Energy Market Environmentalism*

As global warming has increased, with its detrimental environmental and economic impacts,<sup>132</sup> there has been growing speculation that human use of fossil fuels has directly contributed to the problem.<sup>133</sup> Burning fossil fuels adds greenhouse gases to the atmosphere and has likely played a role in causing global warming.<sup>134</sup> In response to the environmental threat posed by global warming, pressure has increased on governments to reduce

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<sup>128</sup> See *supra* notes 116-27 and accompanying text.

<sup>129</sup> *Id.*

<sup>130</sup> Eisen, *supra* note 71, at 587.

<sup>131</sup> *Id.*

<sup>132</sup> See *supra* notes 91-97 and accompanying text.

<sup>133</sup> See Sweeney, *supra* note 25.

<sup>134</sup> Global Warming: Climate, *supra* note 85.

According to the National Academy of Sciences, the Earth's surface temperature has risen by about 1 degree Fahrenheit in the past century, with accelerated warming during the past two decades. There is new and stronger evidence that most of the warming over the last 50 years is attributable to human activities. Human activities have altered the chemical composition of the atmosphere through the buildup of greenhouse gases—primarily carbon dioxide, methane, and nitrous oxide.

*Id.*

greenhouse gas emissions.<sup>135</sup> Some of the fundamental steps include a significantly increased investment in renewable energy and other highly efficient technologies while also reducing the barriers that help keep these technologies out of the market.<sup>136</sup> As pressure grows to bring these steps to fruition, the energy market should also change accordingly.

According to the International Climate Change Taskforce, a strategy to stop the man-made causes of global warming should focus on “developing low-carbon or no-carbon energy sources, including renewable energy, and increasing energy efficiency.”<sup>137</sup> More specifically, G8 countries, including the United States, should establish renewable portfolio standards of twenty-five percent by 2025, increase research and development spending on clean technologies, and reduce the many barriers that stand in the way of these technologies effectively competing in the energy market.<sup>138</sup> Each of these steps would reduce the amount of greenhouse gases emitted and help eliminate the human contribution to global warming.<sup>139</sup>

First, renewable portfolio standards, also known as renewable electricity standards, “require[] electric utilities to gradually increase their use of renewable energy resources.”<sup>140</sup> Renewable portfolio standards have shown success on the state level in reducing harmful greenhouse gas emissions.<sup>141</sup> In all, twenty states have enacted renewable portfolio standards.<sup>142</sup> By 2017 these standards should reduce CO<sub>2</sub> emissions by almost 75 million metric tons, an amount equivalent to the emissions produced by 11.1 million cars.<sup>143</sup> Enacted on a national level, renewable portfolio standards could greatly reduce the amount of greenhouse gases emitted in the United States in the relatively near future.<sup>144</sup>

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<sup>135</sup> *Id.*

<sup>136</sup> MEETING THE CLIMATE CHALLENGE, *supra* note 84, at 10.

<sup>137</sup> *Id.* at 7.

<sup>138</sup> *Id.* at ix.

<sup>139</sup> *See id.*

<sup>140</sup> Union of Concerned Scientists, Experts Agree: Renewable Electricity Standards are a Key Driver of New Renewable Energy Development, [http://www.ucsusa.org/clean\\_energy/clean\\_energy\\_policies/experts-agree-renewable-electricity-standards-are-a-key-driver-of-new-renewable-energy.html](http://www.ucsusa.org/clean_energy/clean_energy_policies/experts-agree-renewable-electricity-standards-are-a-key-driver-of-new-renewable-energy.html) (last visited Dec. 1, 2006).

<sup>141</sup> Union of Concerned Scientists, Renewable Energy—Mitigating Global Warming, [http://www.ucsusa.org/clean\\_energy/clean\\_energy\\_policies/RES-climate-strategy.html](http://www.ucsusa.org/clean_energy/clean_energy_policies/RES-climate-strategy.html) (last visited Dec. 1, 2006).

<sup>142</sup> *Id.*

<sup>143</sup> *Id.*

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

Second, along with requiring the increased use of renewable energy, the International Climate Change Taskforce also recommends increasing research and development for renewables and removing the barriers that keep them out of the market.<sup>145</sup> The main barriers fall into two categories: commercialization barriers and price barriers.<sup>146</sup> Commercialization barriers include a lack of infrastructure in all aspects of the renewable energy industry and the need for manufacturers of renewable generators to reach economies of scale for their own assembly lines.<sup>147</sup> Without an infrastructure or economies of scale, renewables will not be able to compete with other, more established technologies.<sup>148</sup> Developing infrastructure will require large sources of capital early on in the process.<sup>149</sup> Developing economies of scale will require an expanded market so producers can expand their operations.<sup>150</sup> Enacting a national renewable portfolio standard presents the easiest means of creating an expanded market.<sup>151</sup>

Price distortions include the unequal subsidies for research and development between fossil fuels and renewable energy, the lower tax burden for conventional power generators, and the failure of the market to take into account the environmental costs of fossil fuels.<sup>152</sup> First, nuclear and conventional power generators, including coal, oil, and natural gas, received \$2.8 billion in Federal subsidies in 1999.<sup>153</sup> During the same year, all renewable energies, which need large subsidies for infrastructure development, just over \$1 billion.<sup>154</sup> Secondly, conventional energy generators also benefit from a much lower tax burden because they can deduct their fuel expenses from income and their property taxes are generally lower as well.<sup>155</sup> Finally, the impact of fossil fuels on both the

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<sup>145</sup> MEETING THE CLIMATE CHALLENGE, *supra* note 84, at ix.

<sup>146</sup> See Union of Concerned Scientists, Barriers to the Use of Renewable Energy Technologies, [http://www.ucsusa.org/clean\\_energy/renewable\\_energy\\_basics/barriers-to-renewable-energy-technologies.html](http://www.ucsusa.org/clean_energy/renewable_energy_basics/barriers-to-renewable-energy-technologies.html) (last visited Dec. 1, 2006).

<sup>147</sup> *Id.*

<sup>148</sup> *Id.*

<sup>149</sup> *Id.*

<sup>150</sup> *Id.*

<sup>151</sup> *Id.*

<sup>152</sup> *Id.*

<sup>153</sup> ENERGY INFO. ADMIN., U.S. DEP'T OF ENERGY, FEDERAL FINANCIAL INTERVENTIONS AND SUBSIDIES IN ENERGY MARKETS 1999: PRIMARY ENERGY, at tbl.ES1, [http://www.eia.doe.gov/oiaf/servicerpt/subsidy/table\\_es1.html](http://www.eia.doe.gov/oiaf/servicerpt/subsidy/table_es1.html) (last visited Dec. 1, 2006).

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

<sup>155</sup> Barriers to the Use of Renewable Energy Technologies, *supra* note 146.

In addition to receiving subsidies for research and development, conventional generating technologies have a lower tax burden. Fuel expen-

environment and human health<sup>156</sup> are not taken into account in the pricing of conventional power.<sup>157</sup> Instead, conventional energy generators pass on the environmental and social costs to the government who in turn pass that cost onto electric consumers in the form of taxes.<sup>158</sup> Before renewable energy technology can become truly competitive in the marketplace the United States will have to remove these price distortions, along with the commercialization barriers.<sup>159</sup> Once these barriers are removed renewable portfolio standards along with market forces could expand the use of renewable energy to help alleviate the detrimental environmental effects of global warming.

### C. *Security in the New Energy Market*

Security concerns are also shaping the new energy market.<sup>160</sup> In light of the September 11 terrorist attacks and the recent blackouts in California and New York, the vulnerability of the centralized infrastructure and the potential problems caused by its destruction have become

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ditures can be deducted from taxable income, but few renewables benefit from this deduction, since most do not use market-supplied fuels. Income and property taxes are higher for renewables, which require large capital investments but have low fuel and operating expenses. A 1996 study by Resources for the Future found that the total tax burden of natural gas facilities is only 0.507¢/kWh (in 1993 dollars), compared with 1.521¢/kWh for biomass generators. Even if the renewable energy production tax credit were counted (no biomass plants had qualified as of 1998), the tax burden would be over 50 percent higher than for a natural gas plant. The tax burden for wind energy is approximately as high as for biomass.

*Id.* (citation omitted).

<sup>156</sup> See *supra* notes 91-97 and accompanying text.

<sup>157</sup> EDINGER & KAUL, *supra* note 35, at 101-105.

[C]urrent government taxation practices do not add environmental and social costs to the price of energy. This leads to prices lower than the real cost of processing energy and thus increases demand over the level that would occur in a world of internalized environmental and social costs.

*Id.* at 105.

<sup>158</sup> *Id.* at 106.

<sup>159</sup> Lakshman D. Guruswamy, *A New Framework: Post-Kyoto Energy and Environmental Security*, 16 COLO. J. INT'L ENVTL. L. & POL'Y 333, 344 (2005) ("The technical and economic barriers to the deployment of renewable energy technologies are influenced by governmental decision making. Government regulations, which deal with economic incentives, taxes, charges, subsidies, licensing, R&D, conservation, and environmental regulations, could encourage or discourage renewable energy and therefore should be explored.")

<sup>160</sup> Shapiro & Tomain, *supra* note 8, at 516.

obvious.<sup>161</sup> Two main options exist to help alleviate the threat to the centralized grid: creation of a system of distributed generation that is less vulnerable to attack, and the use of smart grid technology that can effectively deal with the loss any generating capability.<sup>162</sup>

Due to the vulnerability of a centralized electric infrastructure, distributed generation reduces the exposure of the electric system by using many small scale generators to produce power locally.<sup>163</sup> With electric generators spread out and producing smaller amounts of energy, any attack against the infrastructure would have a smaller impact on the overall functioning of electricity generation and transmission systems.<sup>164</sup> However, the security provided by distributed generation depends in large part upon on a reliable distribution system.<sup>165</sup>

The Energy Future Coalition has determined that, “[i]t is vitally important that the electricity grid be capable of real-time management and instant correction in order to minimize the risk of disruption and the time for recovery, if a terrorist attack on the system does occur.”<sup>166</sup> For such management to occur, large technological upgrades, referred to collectively as “smart grid” technology, will need to be implemented.<sup>167</sup> “Smart grid” technology will incorporate improved sensing and monitoring capabilities, improved communications, and new information technology.<sup>168</sup> As a result, the smart grid will self-heal to avoid outages, be more responsive to physical and cyber threats, and allow use of distributed generation.<sup>169</sup> With these technologies in place any disruption can be limited in its scope and compensated for with electricity from other facilities.<sup>170</sup> For this reason smart grid technology, along with distributed generation, will be necessary components of the new energy market to ensure its protection from any potential attack.

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<sup>161</sup> See *supra* notes 77-83 and accompanying text.

<sup>162</sup> Shapiro & Tomain, *supra* note 8, at 516.

<sup>163</sup> Joseph P. Tomain, *Nuclear Futures*, 15 DUKE ENVTL. L. & POL'Y F. 221, 247 (2005).

<sup>164</sup> Shapiro & Tomain, *supra* note 8, at 519; Ferrey, *supra* note 73, at 281 (“Analysts argue that a distributed energy system . . . is much less subject to disruption, whether from weather, terrorism, or other factors, than the centralized generation and distribution system employed in the United States.”).

<sup>165</sup> Shapiro & Tomain, *supra* note 8, at 525.

<sup>166</sup> ENERGY FUTURE COAL., CHALLENGE AND OPPORTUNITY: CHARTING A NEW ENERGY FUTURE 77 (2003), <http://www.energyfuturecoalition.org/pubs/EFC%20Report.pdf>.

<sup>167</sup> *Id.* at 75.

<sup>168</sup> *Id.*

<sup>169</sup> *Id.* at 76.

<sup>170</sup> *Id.* at 29.

*D. Summary*

In short, the new energy market will need to produce energy with small scale gas generators and efficient renewables distributed throughout a decentralized smart grid in a deregulated electricity generation market.<sup>171</sup> The market must also be able to hold conventional producers responsible for environmental costs.<sup>172</sup> The federal government must also remove the subsidy advantage enjoyed by conventional producers and give renewable technologies the means to break into the market on an equal footing.<sup>173</sup> This combination of new technology and revamped economic thinking will ensure affordable electricity while protecting our infrastructure and environment in the 21st century.

However, the new energy market will be slow in emerging as the United States is still firmly rooted in the old system.<sup>174</sup> To further the creation of the new energy market the United States needs strong legislation to kick-start the process. Does the Energy Policy Act of 2005 fulfill this need? At the signing of the Energy Policy Act of 2005, President Bush claimed it did by saying, “[t]his bill will strengthen our economy and it will improve our environment, and it’s going to make this country more secure.”<sup>175</sup> Representative Sam Farr of California voiced a more skeptical opinion:

Frankly, this bill is an embarrassment—after six years of discussion and negotiation, the best we have to offer is a bill that in effect preserves the status quo? Instead of providing forward-looking policy ideas for a sound energy future, [the Energy Policy Act] is content to drive us into the future by looking through the rearview mirror with its heavily weighted dependence on fossil fuels.<sup>176</sup>

To determine whose opinion is correct, a study of the Act from both a historical and contemporary perspective is essential.

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<sup>171</sup> See *supra* notes 99-127 and accompanying text.

<sup>172</sup> Shapiro & Tomain, *supra* note 8, at 518-19, 525-28.

<sup>173</sup> *Id.*

<sup>174</sup> *Id.*

<sup>175</sup> Bush, *supra* note 3.

<sup>176</sup> 151 CONG. REC. E1736-02 (daily ed. July 29, 2005) (statement of Rep. Farr).

## IV. THE ENERGY POLICY ACT OF 2005 IN A HISTORICAL PERSPECTIVE

Traditionally, the United States has focused on using fossil fuels (domestic if possible) to generate its energy.<sup>177</sup> At different times this focus has centered around coal, oil, or gas.<sup>178</sup> In 2004, coal accounted for fifty percent of electricity production while nuclear power and natural gas followed at twenty and eighteen percent respectively.<sup>179</sup> Hydroelectric power and a host of minor sources accounted for the remaining thirteen percent.<sup>180</sup> The previous twenty years followed much the same pattern.<sup>181</sup> During this same time period other policy trends have emerged as well, mainly to combat the problems caused by fossil fuels.<sup>182</sup> In response to these problems the United States has also focused on efficiency and nuclear power along with the limited use of renewable energy sources.<sup>183</sup> Recent energy policy in the United States has incorporated these four bases: fossil fuels, efficiency, nuclear power, and renewable energy.<sup>184</sup> The Energy Policy Act of 2005 also incorporates these elements.

A. *Fossil Fuels*

As Part I detailed, fossil fuels have historically dominated the generation of power in the United States.<sup>185</sup> More recently, coal and natural gas combined to produce sixty-nine percent of America's electricity.<sup>186</sup> The Energy Policy Act of 2005 follows in this tradition by massively subsidizing the use of fossil fuels. Specifically, the Act provides incentives for the production of oil and gas, the expansion of facilities for importing natural gas, the construction of new storage facilities for natural gas, and the use of clean coal technology.<sup>187</sup>

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<sup>177</sup> See SCHURR ET AL., *supra* note 12, at 35.

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

<sup>179</sup> ELECTRICITY NET GENERATION, REP. NO. DOE/EIA-0384 (2005), ANNUAL ENERGY REVIEW 2005, at tbl.8.2(a) (2006), [http://www.eia.doe.gov/emeu/aer/pdf/pages/sec8\\_6.pdf](http://www.eia.doe.gov/emeu/aer/pdf/pages/sec8_6.pdf).

<sup>180</sup> *Id.*

<sup>181</sup> *Id.*

<sup>182</sup> See STAGLIANO, *supra* note 24, at 20-58.

<sup>183</sup> *Id.*

<sup>184</sup> *Id.*

<sup>185</sup> See *supra* Part I.

<sup>186</sup> See STAGLIANO, *supra* note 24, at 20-58.

<sup>187</sup> Energy Policy Act of 2005, Pub. L. No. 109-58, §§ 311, 313, 341-57, 361-74, 401-404, 119 Stat. 594, 685-88, 697-737, 749-54 (2005).

First, the Federal government gave oil and gas companies domestic production incentives by reducing their royalty rates (money paid back to the government in return for access to federal land).<sup>188</sup> The Act also streamlines the process for siting liquefied natural gas terminals and for approving new refinery facilities.<sup>189</sup> Congress also appropriated \$4.8 billion towards coal programs meant to develop next generation coal technologies and bring current technologies in line with the Clean Air Act.<sup>190</sup> At the same time, the Energy Policy Act gave \$2.5 billion towards conservation efforts in fossil fuel use.<sup>191</sup> Finally, the Act funded numerous research and development programs for fossil fuels.<sup>192</sup> Nothing in these giant subsidies for fossil fuel technology suggests that the Federal government plans on moving away from a fossil fuel dependent energy market anytime soon.

### *B. Efficiency*

In the past, Presidents Nixon, Ford, Carter, and Bush all emphasized increasing energy efficiency to help offset the problems caused by using fossil fuels.<sup>193</sup> In 1971, President Nixon advocated increased efficiency even before the 1973 oil crisis.<sup>194</sup> When Congress finally addressed the oil crisis with legislation in 1975, its Energy Policy and Conservation Act implemented fuel efficiency standards for automobiles.<sup>195</sup> President Carter expanded efficiency beyond automobiles by advocating more energy-efficient homes as well.<sup>196</sup> Finally, President George H.W. Bush, in the United States' last energy act in 1992, included efficiency standards for appliances and lighting fixtures.<sup>197</sup> The Energy Policy Act of 2005 follows in these footsteps.

First, the Act uses tax incentives to promote energy efficiency by giving breaks to businesses and consumers who use efficient appliances

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<sup>188</sup> *Id.* §§ 342, 345-46.

<sup>189</sup> *Id.* § 312.

<sup>190</sup> U.S. HOUSE COMM. ON ENERGY AND COM., ENERGY POLICY ACT OF 2005 HIGHLIGHTS 3 (2005), [http://energycommerce.house.gov/108/energy\\_pdfs\\_2.htm](http://energycommerce.house.gov/108/energy_pdfs_2.htm) (follow "Energy Policy Act of 2005 Highlights" hyperlink).

<sup>191</sup> *Id.*

<sup>192</sup> Energy Policy Act of 2005 §§ 961-68.

<sup>193</sup> See STAGLIANO, *supra* note 24, at 20-43.

<sup>194</sup> *Id.* at 21.

<sup>195</sup> *Id.* at 30.

<sup>196</sup> *Id.* at 35.

<sup>197</sup> *Id.* at 325.

or construct efficient properties.<sup>198</sup> Specifically, among other credits, home-builders can receive a \$2,000 credit for building “homes that use 50 percent less energy for space heating and cooling than homes built according to the 2003 International Energy Conservation Code.”<sup>199</sup> Tax credits of up to \$1.80 or \$.60 per square foot also exist for new and upgraded commercial buildings respectively.<sup>200</sup> Producers of energy-efficient appliances, such as refrigerators, clothes washers, and dishwashers, receive a credit for the sale of these appliances for the amount beyond the average number they had sold in the previous three years.<sup>201</sup> Finally, tax credits exist for the use of air conditioners, heat pumps, furnaces, and water heaters that meet certain efficiency requirements and are used in non-business applications.<sup>202</sup>

In addition to these tax credits for energy efficiency, the Energy Policy Act also sets new efficiency standards for certain residential and commercial products.<sup>203</sup> These efficiency standards apply to products which run for long periods of time such as ceiling fans, de-humidifiers, refrigerators, and traffic lights.<sup>204</sup> The Act also instructs the Department of Energy to make standards in the near future for other products that are not currently regulated, such as battery chargers and beverage vending machines.<sup>205</sup> Finally, the Energy Policy Act establishes a number of smaller programs meant to promote efficiency in the United States.<sup>206</sup> Most notably, the Act authorizes rebates for Energy Star appliances, sets new efficiency standards for federal and public buildings, and extends daylight savings time for one month.<sup>207</sup> Through programs such as these, the Energy Policy Act of 2005 follows the recent pattern of promoting efficiency in the United States’ energy market.

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<sup>198</sup> See Energy Policy Act of 2005 §§ 1331-37.

<sup>199</sup> *Id.* § 1332; STEVEN NADEL, AM. COUNC. FOR AN ENERGY EFFICIENT ECON., REP. NO. E053, THE FEDERAL ENERGY POLICY ACT OF 2005 AND ITS IMPLICATIONS FOR ENERGY EFFICIENCY PROGRAM EFFORTS 7 (2005), available at <http://aceee.org/pubs/e053.pdf?CFID=2432571&CFTOKEN=57391724>.

<sup>200</sup> Energy Policy Act of 2005 § 1331; NADEL, *supra* note 199, at 3.

<sup>201</sup> Energy Policy Act of 2005 § 1334; NADEL, *supra* note 199, at 4.

<sup>202</sup> Energy Policy Act of 2005 § 1333; NADEL, *supra* note 199, at 5-6.

<sup>203</sup> Energy Policy Act of 2005 § 135; NADEL, *supra* note 199, at 9-11.

<sup>204</sup> Energy Policy Act of 2005 § 135; NADEL, *supra* note 199, at 9-11.

<sup>205</sup> Energy Policy Act of 2005 § 135; NADEL, *supra* note 199, at 9-11.

<sup>206</sup> Energy Policy Act of 2005 §§ 101-151.

<sup>207</sup> *Id.* §§ 109-10, 124.

C. *Nuclear Power*

The Energy Policy Act also places a heavy emphasis on the use of nuclear power.<sup>208</sup> This emphasis on nuclear power does not completely follow precedent but it does have some historical basis. The use of commercial nuclear power increased dramatically between 1966 and 1974 as the technology became more accepted and America's dependence upon foreign oil increased.<sup>209</sup> However, orders for new reactors decreased soon thereafter and no new nuclear reactor has been built in the United States since 1978.<sup>210</sup> The United States began to move away from nuclear power due, in part, to safety concerns after the Three Mile Island accident in 1979.<sup>211</sup> Higher than expected start-up and design costs for nuclear power, caused by a lack of experience with the technology, also played a role in limiting its use.<sup>212</sup> These factors, along with cheaper competition from coal or natural gas power plants, caused policymakers to abandon any plans for expanding nuclear power.<sup>213</sup> However, despite the lack of new reactors built, nuclear power has remained a staple of energy production in the United States since the late 1960s.<sup>214</sup> In 2003, nuclear power accounted for twenty percent of the electricity generated in the United States.<sup>215</sup>

The Energy Policy Act of 2005 seeks to increase the use of nuclear power in the United States by adding new nuclear power plants and supporting research of new nuclear technologies.<sup>216</sup> To achieve these goals the Act allocates hundreds of millions of dollars in subsidies, with a maximum of nearly \$500,000,000 in the fiscal year 2009.<sup>217</sup> The Act also provides a subsidy of \$1,250,000,000 for the creation of a Generation IV reactor.<sup>218</sup>

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<sup>208</sup> See Bush, *supra* note 3.

<sup>209</sup> Energy Information Administration, Energy in the United States: 1635-2000: Nuclear Energy, <http://www.eia.doe.gov/emeu/aer/eh/nuclear.html> (last visited Dec. 1, 2006) [hereinafter Nuclear Energy in the United States].

<sup>210</sup> *Id.*

<sup>211</sup> *Id.*

<sup>212</sup> *Id.*

<sup>213</sup> *Id.*

<sup>214</sup> *Id.*

<sup>215</sup> Energy Information Administration, Country Analysis Brief: United States, <http://www.eia.doe.gov/emeu/cabs/usa.html> (last visited Dec. 1, 2006).

<sup>216</sup> Energy Policy Act of 2005 §§ 951-52.

<sup>217</sup> *Id.* § 951.

<sup>218</sup> *Id.* For a description of Generation IV reactors, see Nuclear Energy Institute, Four Generations of Reactors, <http://www.nei.org/index.asp?catnum=3&catid=706> (last visited Dec. 1, 2006). "These reactors will probably be deployed by 2030 and are expected to be

Nuclear energy has become popular again recently for many of the same reasons it became popular in the 1970s: fear of a dependence on foreign oil and a belief that the technology can be used safely.<sup>219</sup> A growing awareness of the environmental problems caused by fossil fuels adds another factor to these traditional justifications.<sup>220</sup> With that understanding, the Energy Policy Act of 2005 can be seen as an extension of the policies that originally endorsed the use of nuclear power over thirty years ago.

*D. Renewable Energy*

The Energy Policy Act also follows the recent policy tradition due to its growing but still small focus on renewable energy. Renewable energy first entered the U.S. national energy policy in the wake of the first energy crisis in 1973.<sup>221</sup> Presidents Nixon and Ford advocated Project Independence which eventually resulted in Congress passing legislation that established the Solar Energy Research Institute.<sup>222</sup> Congress also allocated “\$75 million for research on commercial utilization of solar energy.”<sup>223</sup> This legislation represented a minor investment in renewable energy, but when President Carter took office, he made renewable energy

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highly economical, incorporate enhanced safety, produce minimal waste, and be impervious to proliferation.” *Id.*

<sup>219</sup> Bush, *supra* note 3; Nuclear Energy in the United States, *supra* note 209.

<sup>220</sup> Economist.com, Nuclear Power: Making a Comeback? (May 1, 2001), [http://www.economist.com/agenda/displaystory.cfm?story\\_id=E1\\_GTDVNQ](http://www.economist.com/agenda/displaystory.cfm?story_id=E1_GTDVNQ). See also Bush, *supra* note 3. President Bush described these justifications for nuclear power in his speech at the signing of the Energy Policy Act:

[T]his bill will allow America to make cleaner and more productive use of our domestic energy resources, including coal, and nuclear power, and oil and natural gas. By using these reliable sources to supply more of our energy, we'll reduce our reliance on energy from foreign countries . . . Nuclear power is another of America's most important sources of electricity. Of all our nation's energy sources, only nuclear power plants can generate massive amounts of electricity without emitting an ounce of air pollution or greenhouse gases. And thanks to the advances in science and technology, nuclear plants are far safer than ever before. Yet America has not ordered a nuclear plant since the 1970s. To coordinate the ordering of new plants, the bill I sign today continues the Nuclear Power 2010 Partnership between government and industry.

*Id.*

<sup>221</sup> See STAGLIANO, *supra* note 24, at 32.

<sup>222</sup> See BROWN, *supra* note 26, at 228.

<sup>223</sup> *Id.*

one of the main planks of his energy policy.<sup>224</sup> As a result of President Carter's emphasis on renewable energy and the second energy crisis in 1979, Congress passed the Energy Security Act which authorized \$20 billion for various renewable energy sources.<sup>225</sup> By 1983 the Reagan Administration had reduced the funding for many of these programs,<sup>226</sup> but the situation had changed again by the early 1990s. President George H. W. Bush had promoted legislation that "proposed federally subsidized loans to developers of electricity generation plants using solar, wind and biomass energy, increased federal R&D investments to reduce the cost of most renewable energy technologies . . . ."<sup>227</sup> The National Energy Policy enacted under the first President Bush stood as the U.S. national energy policy until the Energy Policy Act of 2005 was signed into law.<sup>228</sup>

With a strong focus on renewable energy, the Energy Policy Act of 2005 fits within the growing use of renewable energy in recent history.<sup>229</sup> Title II of the Energy Policy Act focuses on increasing the production of and demand for renewable energy, while Title IX devotes much of its attention to research and development of renewable energies.<sup>230</sup> In all, the Energy Policy Act gives nearly \$3.5 billion in subsidies to renewable energy out of a total of \$14.6 billion in the entire bill.<sup>231</sup> The subsidies for renewable energy in this Act go towards increasing conversion efficiency of renewables, decreasing cost of renewable generation, increasing the export of U.S. renewable technology, increasing the amount of renewable energy used by the Federal government, and encouraging consumers to install their own renewable energy sources.<sup>232</sup> In all, the Energy Policy Act provides the largest commitment to renewable energy in United States history.

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<sup>224</sup> *Id.* at 230 (stating that one of the President's objectives was "to develop renewable and essentially inexhaustible sources of energy for sustained growth").

<sup>225</sup> *Id.* at 232. The energy crisis in 1979, while significantly less severe than the first energy crisis in 1973, caused the United States to reconsider once again its dependence on foreign oil. *Id.* at 231.

<sup>226</sup> *Id.* at 233.

<sup>227</sup> See STAGLIANO, *supra* note 24, at 392.

<sup>228</sup> Bush, *supra* note 3.

<sup>229</sup> See BROWN, *supra* note 26, at 225-36; see also STAGLIANO, *supra* note 24 (discussing the history of national energy policy in the United States).

<sup>230</sup> Energy Policy Act of 2005 §§ 203-04, 206, 209, 931.

<sup>231</sup> *Id.*; Caspar W. Weinberger, *An Energy Bill—At Last*, FORBES, Oct. 3, 2005, at 35.

<sup>232</sup> Energy Policy Act of 2005 §§ 203-04, 206, 209, 931.

### *E. Summary*

The United States has a long history of depending on fossil fuel resources for our energy supply. For as long as the U.S. government has developed energy policies, they have been founded on the use of fossil fuels.<sup>233</sup> Only since the 1970s, due to drastic changes in the energy market, have policy makers begun to incorporate the use of alternative and renewable energy sources into their policies.<sup>234</sup> Nevertheless, these policies have still depended almost exclusively on fossil fuel energy (with the exception of nuclear power).<sup>235</sup> The Energy Policy Act of 2005, even with its comparatively large support of renewable energy, fits squarely within this broad historical trend of fossil fuel dependence. With that understanding the analysis can move onto its second question: does the Act also bring about the changes necessary for the twenty-first century?

## V. THE ENERGY POLICY ACT IN A CONTEMPORARY PERSPECTIVE

The Energy Policy Act clearly follows the United States' historical energy policy. However, these policies will prove ineffective in dealing with the energy challenges of the next century. A truly effective Act must meet these challenges, regardless of whether it also incorporates historical policies. As section III argued, some of the substantive changes needed include deregulation of electricity generation, creation of a smart grid, increased energy efficiency, building an infrastructure and market for renewables, removing price distortions, and using small-scale, distributed generation. Unfortunately, Congress proved unable or unwilling to pass an Act capable of meeting most of the twenty-first century's energy challenges.

### *A. The Energy Policy Act of 2005 and Distributed Generation*

The United States needs to create a distributed generation system of electrical production in order to take advantage of the increased efficiencies of smaller gas turbines and to protect its energy infrastructure from a crippling attack. The Energy Policy Act provides large subsidies for the research and development of "distributed energy resources."<sup>236</sup>

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<sup>233</sup> See generally SCHURR ET AL. *supra* note 12; STAGLIANO, *supra* note 24.

<sup>234</sup> See generally STAGLIANO, *supra* note 24.

<sup>235</sup> See generally *id.*

<sup>236</sup> Energy Policy Act of 2005 § 921.

However, Congress did not coordinate these subsidies with the rest of the Act as part of a larger plan to actually bring about a distributed generation system.<sup>237</sup> As a result, the United States seems unlikely to create a system of distributed generation in the near future.

To fund research and development of a distributed grid,<sup>238</sup> Congress allocated \$768 million dollars for the fiscal years 2007 through 2009.<sup>239</sup> Congress earmarked these funds for projects such as developing residential, small-scale power generation,<sup>240</sup> the development of small-scale portable power devices,<sup>241</sup> and increasing the efficiency of high density distribution systems.<sup>242</sup> However, the most important step Congress took was establishing a program “to ensure the reliability, efficiency, and environmental integrity of electrical transmission and distribution systems.”<sup>243</sup> While this program focuses largely on grid improvements, it does incorporate the “supply of electricity to the power grid by small scale, distributed and residential-based power generators” into the plan.<sup>244</sup> To guide the implementation of this plan, the Secretary of the Interior must give to Congress a five year plan within one year of the bill’s enactment.<sup>245</sup> Unfortunately, this “electric transmission and distribution program” seems unlikely to succeed because much of the Act either ignores or directly contradicts its goals.<sup>246</sup>

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<sup>237</sup> See *supra* note 195 and accompanying text.

<sup>238</sup> Energy Policy Act of 2005 § 921.

The Secretary shall carry out programs of research, development, demonstration, and commercial application on distributed energy resources and systems reliability and efficiency, to improve the reliability and efficiency of distributed energy resources and systems, integrating advanced energy technologies with grid connectivity, including activities described in this subtitle. The programs shall address advanced energy technologies and systems and advanced grid reliability technologies.

*Id.*

<sup>239</sup> *Id.*

<sup>240</sup> *Id.* § 925.

<sup>241</sup> *Id.* § 924.

<sup>242</sup> *Id.* § 922.

<sup>243</sup> *Id.*

<sup>244</sup> *Id.*

<sup>245</sup> *Id.* § 866.

<sup>246</sup> See *id.* § 865; Mark Squillace, Op.-Ed., *Time for a Real Energy Plan: Failure to Develop a Serious Energy Policy Threatens the Economy, the Environment, and America's National Security*, DENVER POST, Aug. 21, 2005, at E-01 (“However one might characterize this mammoth new legislation, it is not energy policy. To be sure, it deals largely with energy matters. But its unifying theme is not so much policy as pork.”).

For distributed generation to work, the electricity must come from small-scale plants such as natural gas turbines and renewable generators.<sup>247</sup> Congress, when dealing with natural gas and renewable energies in the Act, never referenced the distributed generation program nor made any attempt to coordinate the goals of that program and the small-scale generators it depends upon.<sup>248</sup> Without such coordination between the development of the generation systems and the distribution program, implementation of an effective distribution plan in the near future seems unlikely at best.

In a move even more detrimental to the creation of a distributed generation system, Congress appropriated large subsidies for nuclear and coal powered generation.<sup>249</sup> More specifically, the Act appropriates funds for the construction of a new, Generation IV nuclear reactor to be operational by 2021<sup>250</sup> and funds for the research and construction of clean-coal generators.<sup>251</sup> The Act also creates tax credits for both advanced nuclear power and investment in clean coal facilities.<sup>252</sup> These traditional methods of electricity generation, which seem likely to continue far into the future with these subsidies, require large scale plants that by definition cannot work within a distributed generation system.<sup>253</sup> In short, by encouraging centralized generation and not effectively coordinating a distributed generation program, the Energy Policy Act of 2005 does little to actually create a distributed generation system in the near future and ensures that much of the United States' power will continue to come from centralized plants.

*B. The Energy Policy Act of 2005 and Infrastructure and Market Creation for Renewable Energy*

Environmental concerns about fossil fuels and the greenhouse gases they emit have created a need for the large-scale use of renewable

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<sup>247</sup> See *supra* Part III.

<sup>248</sup> Energy Policy Act of 2005 §§ 201-11, 301-92.

<sup>249</sup> *Id.* §§ 401, 641-45.

<sup>250</sup> This will be the first new reactor built in the United States since 1978. See *supra* note 210 and accompanying text.

<sup>251</sup> Energy Policy Act of 2005 §§ 401-02, 421, 641-45.

<sup>252</sup> *Id.* §§ 1306-07.

<sup>253</sup> See *supra* Part III; see also Energy Policy Act of 2005 §§ 401-02, 421, 645. In total, the Act gives \$1,385,000,000 to clean coal generation and a minimum of \$1.25 billion for construction of the Generation IV reactor. *Id.*

energy sources in the emerging energy market.<sup>254</sup> For renewables to succeed in reducing greenhouse gases, Congress needs to help build both an infrastructure for the renewable industry and a market for its goods.<sup>255</sup> To accomplish this goal, the International Climate Change Taskforce recommends the use of both mandatory renewable portfolio standards, which some states have successfully employed,<sup>256</sup> and increased subsidies for the industry.<sup>257</sup> The Energy Policy Act enacted half of these recommendations.<sup>258</sup> The Act gives significant subsidies and tax credits to renewable energies but does not enact a renewable portfolio standard.<sup>259</sup> As a result, renewable manufacturers will have capital available to build infrastructure but not a nationwide market in which to sell their products.

Congress provided large subsidies for renewable energy research and development in the Energy Policy Act of 2005 through the Renewable Energy Production Incentive.<sup>260</sup> Specifically, Congress allocated \$2.2 billion towards programs meant to lower their costs, increase exports, and increase efficiency (which will make them more suitable for a distributed generation system).<sup>261</sup> The research and development will focus largely on solar energy,<sup>262</sup> wind energy,<sup>263</sup> geothermal,<sup>264</sup> hydro-power,<sup>265</sup> and

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<sup>254</sup> See *supra* notes 132-39 and accompanying text.

<sup>255</sup> See MEETING THE CLIMATE CHALLENGE, *supra* note 84.

<sup>256</sup> James W. Moeller, *Of Credits and Quotas: Federal Tax Incentives for Renewable Resources, State Renewable Portfolio Standards, and the Evolution of Proposals for a Federal Renewable Portfolio Standard*, 51 FORDHAM ENVTL. L. REV. 69, 97 (2004) ("Consistent with the observation that the fifty states have often act[ed] as laboratories for testing what will later become federal policies, several states have pioneered the development of the RPS.").

<sup>257</sup> MEETING THE CLIMATE CHALLENGE, *supra* note 84.

<sup>258</sup> Energy Policy Act of 2005 §§ 201-11, 1301, 1303.

<sup>259</sup> *Id.* The Act authorizes "nearly \$700 million for renewable energy grants and research projects." 151 CONG. REC. S6392, S6393 (daily ed. June 13, 2005) (giving the Congressional Budget Office's cost estimate for the Energy Policy Act of 2005).

<sup>260</sup> See Energy Policy Act of 2005 §§ 931-35.

<sup>261</sup> *Id.* § 931.

<sup>262</sup> *Id.* § 931(a)(2)(A).

The Secretary shall conduct a program of research, development, demonstration, and commercial application for solar energy, including—

- (i) photovoltaics;
- (ii) solar hot water and solar space heating;
- (iii) concentrating solar power;
- (iv) lighting systems that integrate sunlight and electrical lighting in complement to each other in common lighting fixtures for the purpose of improving energy efficiency;
- (v) manufacturability of low cost, high quality solar systems; and

bio-energy.<sup>266</sup> As a result, these technologies should have capital available to build an infrastructure incorporating the latest technologies.

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(vi) development of products that can be easily integrated into new and existing buildings.

*Id.*

<sup>263</sup> *Id.* § 931(a)(2)(B).

The Secretary shall conduct a program of research, development, demonstration, and commercial application for wind energy, including—

- (i) low speed wind energy;
- (ii) offshore wind energy;
- (iii) testing and verification (including construction and operation of a research and testing facility capable of testing wind turbines); and
- (iv) distributed wind energy generation.

*Id.*

<sup>264</sup> *Id.* § 931(a)(2)(C).

The Secretary shall conduct a program of research, development, demonstration, and commercial application for geothermal energy. The program shall focus on developing improved technologies for reducing the costs of geothermal energy installations, including technologies for—

- (i) improving detection of geothermal resources;
- (ii) decreasing drilling costs;
- (iii) decreasing maintenance costs through improved materials;
- (iv) increasing the potential for other revenue sources, such as mineral production; and
- (v) increasing the understanding of reservoir life cycle and management.

*Id.*

<sup>265</sup> *Id.* § 931(a)(2)(D).

The Secretary shall conduct a program of research, development, demonstration, and commercial application for cost competitive technologies that enable the development of new and incremental hydropower capacity, adding to the diversity of the energy supply of the United States, including:

- (i) Fish-friendly large turbines.
- (ii) Advanced technologies to enhance environmental performance and yield greater energy efficiencies.

*Id.*

<sup>266</sup> *Id.* § 932(b).

The Secretary shall conduct a program of research, development, demonstration, and commercial application for bioenergy, including—

- (1) biopower energy systems;
- (2) biofuels;
- (3) bioproducts;
- (4) integrated biorefineries that may produce biopower, biofuels, and bioproducts;
- (5) cross-cutting research and development in feedstocks; and
- (6) economic analysis.

*Id.*

Congress also used tax credits to increase the amount of capital available to the renewable industry for the development of infrastructure.<sup>267</sup>

The Energy Policy Act of 2005 uses tax credits to develop the renewable energy industry in two ways: extending the Renewable Electricity Production Tax Credit and giving tax credits to the holders of clean renewable energy bonds.<sup>268</sup> First, the Renewable Electricity Production Tax Credit gives electric producers a tax credit for each kilowatt hour of electricity they produce from qualifying renewable sources.<sup>269</sup> Geothermal energy, solar energy, wind energy, and closed loop biomass energy each receive a credit of 1.5 cents per kilowatt hour.<sup>270</sup> Open loop biomass and hydroelectric power receive credits of 0.75 cents per kilowatt hour.<sup>271</sup>

Secondly, the Act also uses renewable bond tax credits to encourage the investment of private capital into the renewable energy industry.<sup>272</sup> The American Public Power Association describes the process this way:

A tax credit bond is essentially a debt instrument to be issued for qualified renewable facilities under Section 45, which allows its investors to receive credits against their federal income tax liability instead of the traditional interest that is usually paid by the issuer. So the municipality or cooperative would simply be liable for the face value of the bond, and save by owing no interest on the bond. The federal government would essentially pay the "interest" in the form of tax credits.<sup>273</sup>

However, any project receiving funding from the Renewable Energy Production Incentive program does not qualify as an eligible program for renewable bond tax credits.<sup>274</sup> Through these tax credits and subsidies,

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<sup>267</sup> See *id.* §§ 1301, 1303.

<sup>268</sup> *Id.*

<sup>269</sup> *Id.*; Moeller, *supra* note 256, at 89.

<sup>270</sup> Energy Policy Act of 2005 §§ 1301; NORTHEAST REG'L BIOMASS PROGRAM, RENEWABLE ELECTRICITY PRODUCTION TAX CREDIT: ENERGY POLICY ACT OF 2005 (2005), <http://www.energy.ky.gov/2005federalenergybill.htm> (follow "Electricity Producers" hyperlink) [hereinafter RENEWABLE ENERGY PRODUCTION TAX CREDIT].

<sup>271</sup> RENEWABLE ELECTRICITY PRODUCTION TAX CREDIT, *supra* note 270.

<sup>272</sup> Energy Policy Act of 2005 § 1303.

<sup>273</sup> AM. PUB. POWER ASS'N, ISSUE BRIEF: COMPARABLE TAX INCENTIVES FOR PUBLIC POWER DEVELOPMENT OF CLEAN RESOURCES 2 (2005), <http://www.appanet.org/files/ComparableTaxIncentivesforPublicPowerDevelopmentofCleanResourcesIBjuly05.pdf>.

<sup>274</sup> *Id.*

the Energy Policy Act of 2005 does give the capital necessary for the renewable industry to build a strong infrastructure. Unfortunately, the Act does not also enact a renewable portfolios standard (“RPS”) that would create a nationwide market for renewable energy products.

The Senate included a national renewable portfolio standard of ten percent in their version of the bill, as they have with all their energy bills since 2002.<sup>275</sup> Unfortunately, the RPS was not included in the final version of the bill that passed both houses.<sup>276</sup> The Act does contain a “federal purchase requirement” that requires the Federal government to buy 7.5 percent of its power from renewable resources by 2013.<sup>277</sup> Disagreement, however, exists over the effectiveness of this requirement. Some hope that this federal purchase requirement will stimulate the growth of a national renewable market.<sup>278</sup> Others, such as Representative Mark Udall, believe that “[t]he absence of an RPS in this [Energy Policy Act] is a serious setback for forward-thinking energy policy.”<sup>279</sup> Representative Udall appears to have a stronger argument given that the United States government only consumed 1.6 percent of the energy produced in the United States in 2004.<sup>280</sup> Taking into account that renewables will only account for 7.5 percent of the 1.6 percent that the government consumes, the federal purchase requirement does not seem capable of creating the market necessary to support large-scale renewable energy production.<sup>281</sup>

Reducing global warming will require a large commitment to zero and low-emissions technologies, in particular renewable energy. For renewable energy to play a significant role in this effort, the United States government must create an infrastructure and market in which the renewable industry can grow. The Energy Policy Act of 2005 does provide

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<sup>275</sup> 151 CONG. REC. E1725-02, E1726 (daily ed. July 28, 2005) (statement of Rep. Udall). *See also* SHIRLEY NEFF, CENTER FOR ENERGY, MARINE TRANSP. AND PUB. POLY AT COLUMBIA U., REVIEW OF THE ENERGY POLICY ACT OF 2005, at 2 (Aug. 2, 2005), <http://www.cemtp.org/PDFs/EnergyBillHighlights.pdf>.

<sup>276</sup> NEFF, *supra* note 275, at 2.

<sup>277</sup> Energy Policy Act of 2005 § 203. The federal purchase requirement will work on a graduated basis by requiring the government to purchase 3 percent from renewables through 2007, 5 percent through 2010, and finally 7.5 percent in 2013 and thereafter. *Id.*

<sup>278</sup> NEFF, *supra* note 275, at 2.

<sup>279</sup> Statement of Rep. Udall, *supra* note 275, at E1726.

<sup>280</sup> ENERGY INFO. ADMIN., ANNUAL ENERGY REVIEW: ENERGY OVERVIEW, 7, 25 (2004), <http://www.eia.doe.gov/emeu/aer/overview.html> (noting that the United States produced 70.369 quadrillion btu of energy in 2004 while the United States government only consumed 1.177 quadrillion btu in the same year).

<sup>281</sup> *See supra* notes 145-51 and accompanying text.

adequate subsidies and tax credits to build infrastructure but leaves it up to the states and private industry to create a market for renewable energy products.

C. *The Energy Policy Act of 2005 and Removing Price Distortions*

Besides developing market and infrastructure, Congress will also need to remove the price distortions inherent in the energy market for renewable energies to be cost competitive in the future.<sup>282</sup> Factors such as unequal subsidies, unequal tax credits, and the market's failure to account for the environmental costs of fossil fuels all unfairly benefit traditional energy generation.<sup>283</sup> In fact, these benefits allow traditional utilities to charge a below market price for their power.<sup>284</sup> In this artificial market renewable energy does not present a cost-effective source of energy for consumers.<sup>285</sup> A policy committed to improving the environment through renewable energy source use would remove these distortions. The Energy Policy Act of 2005 leaves them in place.

First, the Act does not remove the unequal subsidies enjoyed by traditional generators. Specifically, “[o]f the bill’s total \$14.6 billion in tax incentives, \$9.3 billion (or 64 percent) is for traditional energy sources such as oil, natural gas, and nuclear power.”<sup>286</sup> The Clean Coal Power Initiative, meant to “advance [the] efficiency, environmental performance, and cost competitiveness” of clean coal, receives \$200 million per year for 2006-2014.<sup>287</sup> To promote the deployment of this technology on a large scale, Congress gave another \$2.5 billion for the years 2007-2013.<sup>288</sup> Congress also gave large subsidies to nuclear power.<sup>289</sup> Congress allocated \$1.25 billion to build a Generation IV nuclear reactor while also earmarking another \$1.18 billion towards “programs of civilian nuclear energy research, development, demonstration, and commercial application . . . .”<sup>290</sup> General fossil fuel programs meant to improve “the efficiency, effectiveness, and environmental performance of fossil energy production” also received nearly \$1.9 billion

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<sup>282</sup> See *supra* notes 152-59 and accompanying text.

<sup>283</sup> See *supra* notes 152-59 and accompanying text.

<sup>284</sup> See *supra* notes 152-59 and accompanying text.

<sup>285</sup> See *supra* notes 152-59 and accompanying text.

<sup>286</sup> Statement of Rep. Udall, *supra* note 275, at E1726.

<sup>287</sup> Energy Policy Act of 2005 §§ 401-02.

<sup>288</sup> *Id.* § 421.

<sup>289</sup> See *supra* notes 216-18 and accompanying text.

<sup>290</sup> Energy Policy Act of 2005 § 951.

in Congressional funding.<sup>291</sup> These subsidies far outpace the \$3.5 billion given to renewable energy sources.<sup>292</sup>

Second, while the Act does give tax credits to renewable energy sources,<sup>293</sup> it also grants significant credits for traditional sources.<sup>294</sup> Energy produced by advanced nuclear facilities, which must be placed in service by 2021, receives a tax credit of 1.8 cents per kilowatt hour for the first eight years of production.<sup>295</sup> The Act also creates 20 percent investment tax credits for investing in new clean coal facilities.<sup>296</sup> Both of these credits are larger than their corresponding credits for investing in renewable energies.<sup>297</sup> For example, renewables only receive production credits of up to 1.5 cents per kilowatt hour and investment tax credits of 10 percent.<sup>298</sup>

Finally, Congress also needs to create an energy market that more accurately accounts for environmental and social costs caused by traditional energy sources that are not currently reflected in market prices.<sup>299</sup> The Act requires the National Academy of Sciences to “conduct a study to define and evaluate the health, environmental, security, and infrastructure external costs and benefits associated with the production and consumption of energy that are not or may not be fully incorporated into the market price of such energy.”<sup>300</sup> The National Academy of Science does not have to complete their study until two years after the passage of the Act so its final impact remains uncertain.<sup>301</sup> However, speculation exists that the study could cause changes in the United States’ environmental policies.<sup>302</sup> What is certain is that Congress has taken a positive

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<sup>291</sup> *Id.* § 961.

<sup>292</sup> *See supra* note 231 and accompanying text.

<sup>293</sup> *See supra* note 231 and accompanying text.

<sup>294</sup> *See* Energy Policy Act of 2005 §§ 1306-07, 1325-26.

<sup>295</sup> *Id.* § 1306.

<sup>296</sup> *Id.* § 1307.

<sup>297</sup> *See supra* notes 216-19 and accompanying text; JOINT COMM. ON TAX’N, DESCRIPTION OF THE “ENERGY POLICY TAX INCENTIVES ACT OF 2005”, at 15-17 (2005), <http://www.house.gov/jet/x-44-05.pdf> [hereinafter DESCRIPTION OF TAX INCENTIVES].

<sup>298</sup> DESCRIPTION OF TAX INCENTIVES, *supra* note 297, at 15-16.

<sup>299</sup> *See supra* notes 156-58 and accompanying text.

<sup>300</sup> Energy Policy Act of 2005 § 1352.

<sup>301</sup> *Id.*

<sup>302</sup> *NAS Study of Hidden Energy Costs May Force Major Policy Changes*, CLEAN AIR REPORT, Aug. 25, 2005, available at 2005 WLNR 13311097 (“A sweeping study of the hidden costs of energy use and production required by the new energy law could lead to re-appraisals of a slew of federal environmental policies on global warming, oil spills, mercury emissions and security for protecting energy facilities, according to sources familiar with the plan.”).

first step in dealing with an issue that will be central to energy policy for the foreseeable future.<sup>303</sup>

In the end, the Energy Policy Act does little to remove price distortions from the energy market. Unequal subsidies and tax breaks still exist and no concrete steps have been taken to ensure that the energy market accounts for the hidden environmental and social costs of fossil fuels. With these price distortions still in place, renewable energy sources will struggle to compete with traditional energy sources in the energy market. As a result, the United States will struggle to address the environmental concerns of the twenty-first century, including global warming.

*D. The Energy Policy Act of 2005 and Increased Efficiency*

By using energy more efficiently, the United States could reduce the environmental harms of electricity generation by using less power. President Bush claims “the [Energy Policy Act] makes an unprecedented commitment to energy conservation and efficiency.”<sup>304</sup> The Act seeks to improve efficiency mainly through tax incentives for energy efficient products and minimum efficiency standards for many consumer products along with other smaller programs.<sup>305</sup> Unprecedented or not, these programs, which are described in Part IV,<sup>306</sup> do not seem extensive enough to meaningfully improve the energy efficiency of the United States.<sup>307</sup> The American Council for an Energy-Efficient Economy (“ACEEE”) estimates that by 2010 the Act will only reduce the estimated energy consumption by .6 percent.<sup>308</sup> By 2020 the savings will jump to approximately 2 percent of the estimated energy use.<sup>309</sup> Even with this jump in savings, the ACEEE estimates that a more comprehensive energy bill could have resulted in a four-fold increase in energy savings.<sup>310</sup> As the ACEEE

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<sup>303</sup> *See id.*

<sup>304</sup> Bush, *supra* note 3.

<sup>305</sup> *See generally* NADEL, *supra* note 199.

<sup>306</sup> *See supra* Part IV.

<sup>307</sup> *See supra* Part IV; *Hearing on the Energy Policy Act of 2005 Before the Subcomm. On Energy and Air Quality of the H. Comm. on Energy and Commerce, 109th Cong. (2005)* (statement of David Hamilton, Director, Global Warming and Energy Programs, Sierra Club), available at <http://energycommerce.house.gov/108/Hearings/02162005hearing1437/Hamilton.pdf>.

<sup>308</sup> NADEL, *supra* note 199, at 15.

<sup>309</sup> *Id.* at 15.

<sup>310</sup> *Id.* at 17.

concludes, the Act “only takes modest steps to promote efficiency and leaves the biggest energy-saving items . . . on the table.”<sup>311</sup>

*E. The Energy Policy Act of 2005 and Smart Grid Technology*

In August of 2003, a large blackout cut power to much of the Northeast and resulted in economic losses of nearly \$6 billion.<sup>312</sup> While exact causes of the blackout are hard to pinpoint, an overburdened electric grid coupled with an inability to keep failures from spreading played a not insignificant role.<sup>313</sup> To protect against another electrical disruption, the United States needs to upgrade its electric grid.<sup>314</sup> Such an upgrade should consist of a small increase in transmission capacity along with an investment in Smart Grid technologies that would improve communications, sensor and monitoring capabilities, and information sharing.<sup>315</sup> With more transmission capacity and an improved ability to monitor and control the grid, the United States should be able to avoid another serious disruption in its electrical transmission system. The question remains, does the Energy Policy Act of 2005 carry out the necessary upgrades?

President Bush stated, “[w]ith this bill, America can start building a modern twenty-first century electricity grid . . . .”<sup>316</sup> To support that claim, the Act facilitates the expansion of the grid’s transmission capability.<sup>317</sup> If a certain geographic area suffers from transmission congestion, the Act allows the Department of Energy to authorize the construction or modification of the transmission facilities in that area.<sup>318</sup> The Department of Energy must first ascertain that certain requirements are met to exercise this authority.<sup>319</sup> However, the requirements are not too stringent and will likely be met in most cases.<sup>320</sup> In this manner the

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<sup>311</sup> *Id.* at 16.

<sup>312</sup> See *supra* notes 77-83 and accompanying text.

<sup>313</sup> TOM DUTZIK & ROB SARGENT, ENVIRONMENT COLORADO, AFTER THE BLACKOUT: ACHIEVING A CLEANER, MORE RELIABLE ELECTRIC SYSTEM 4-5 (2003), [http://www.environmentcolorado.org/reports/after\\_the\\_blackout03.pdf](http://www.environmentcolorado.org/reports/after_the_blackout03.pdf).

<sup>314</sup> Shapiro & Tomain, *supra* note 8, at 525.

<sup>315</sup> *Id.*; DUTZIK & SARGENT, *supra* note 313, at 15-16.

<sup>316</sup> Bush, *supra* note 3.

<sup>317</sup> Energy Policy Act of 2005 §§ 1221-24.

<sup>318</sup> *Id.* § 1221.

<sup>319</sup> *Id.*

<sup>320</sup> The Energy Policy Act of 2005 amends Part II of the Federal Power Act so that FERC is authorized, after notice and an opportunity for comment, to issue permits for the construction or modification of transmission facilities in a national interest electric transmission corridor if they find that:

Act addresses the need to add transmission capacity. The next question is whether the Act also addresses the need to incorporate Smart Grid technologies into the grid as well.

The Act encourages and subsidizes advanced grid technology investments by utilities, but does not require FERC or the Department of Energy to implement such technologies.<sup>321</sup> However, the Act did require a report to study “the feasibility of real-time information on functional status of transmission lines in the Eastern and Western Interconnections.”<sup>322</sup> The Department of Energy and the Federal Energy Regulatory Commission filed this report in Congress on February 3, 2006.<sup>323</sup> In this

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- (1)(A) a state in which the transmission facilities are to be constructed or modified does not have authority to:
- (i) approve the siting of the facilities; or
  - (ii) consider the interstate benefits expected to be achieved by the proposed construction or modification of transmission facilities in the State;
- (B) the applicant for a permit is a transmitting utility under this Act but does not qualify to apply for a permit or siting approval for the proposed project in a State because the applicant does not serve end-use customers in the State; or
- (C) a State commission or other entity that has authority to approve the siting of the facilities has:
- (i) withheld approval for more than 1 year after the filing of an application . . . or 1 year after the designation of the relevant national interest electric transmission corridor, whichever is later; or
  - (ii) conditioned its approval in such a manner that the proposed construction or modification will not significantly reduce transmission congestion in interstate commerce or is not economically feasible;
- (2) the facilities to be authorized by the permit will be used for the transmission of electric energy in interstate commerce;
- (3) the proposed construction or modification is consistent with the public interest;
- (4) the proposed construction or modification will significantly reduce transmission congestion in interstate commerce and protects or benefits consumers;
- (5) the proposed construction or modification is consistent with sound national energy policy and will enhance energy independence; and
- (6) the proposed modification will maximize, to the extent reasonable and economical, the transmission capacity of existing towers or structures.

*Id.* § 1221(a).

<sup>321</sup> *Id.* §§ 1223-24.

<sup>322</sup> *Id.* § 1839; EDISON ELECTRIC INST., ENERGY POLICY ACT OF 2005: SUMMARY OF TITLE XII—ELECTRICITY, TITLE XVIII—STUDIES, AND RELATED PROVISIONS 21 (2005), [www.eei.org/industry\\_issues/electricity\\_policy/federal\\_legislation/summary\\_title\\_xii.pdf](http://www.eei.org/industry_issues/electricity_policy/federal_legislation/summary_title_xii.pdf).

<sup>323</sup> U.S. DEP'T OF ENERGY & FED. ENERGY REG. COMM., STEPS TO ESTABLISH A REAL-TIME TRANSMISSION MONITORING SYSTEM FOR TRANSMISSION OWNERS AND OPERATORS WITHIN THE

report, they concluded that the “technology currently exists that could be used to establish a real-time transmission monitoring system to improve the reliability of the nation’s bulk power system; and emerging technologies hold the promise of greatly enhancing transmission system integrity and operator situational awareness, thereby reducing the possibility of regional and inter-regional blackouts.”<sup>324</sup> Given that such a real-time monitoring system is possible, the DOE and FERC also gave nine steps for determining the scope of a possible program and two steps to make its implementation possible.<sup>325</sup> Congress must now decide whether to pursue implementing a real-time monitoring system to go along with the transmission expansion it authorized. Considering the inclusion of this report, along with the expansion of transmission capacity in the Energy Policy Act, the initial signs are encouraging. However, final judgment

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EASTERN AND WESTERN INTERCONNECTIONS (2006), [http://www.oe.energy.gov/Documents andMedia/final\\_1839.pdf](http://www.oe.energy.gov/Documents andMedia/final_1839.pdf).

<sup>324</sup> *Id.* at 2.

<sup>325</sup> *Id.* at 8-9, 24.

The following nine steps should be taken if an interconnection-wide real-time monitoring system is to be pursued:

Step 1. Define what a real-time monitoring system is, what it should accomplish, and how to accomplish this goal, including an explanation of the terms “real-time information” and “functional status.”

Step 2. Evaluate existing real-time monitoring technologies and their limitations.

Step 3. Identify the communications infrastructure required and related security and operating issues.

Step 4. Define data requirements.

Step 5. Identify promising emerging technologies.

Step 6. Decide what data should be shared, with whom, and when.

Step 7. Decide who should operate, use, and maintain the system.

Step 8. Identify potential participants involved in establishing a real-time monitoring system.

Step 9. Consider cost and funding issues.

*Id.* at 8-9.

DOE and the Commission have identified two steps that could be followed if an interconnection-wide real-time monitoring system is to be implemented.

Step 1. Research and study efforts to determine feasibility, cost, and benefits of a real-time transmission monitoring system for the Eastern and Western Interconnections.

Step 2. Based on the findings from Step 1 above, possible development of real-time monitoring system reliability standards.

*Id.* at 24.

must wait until it is known whether Congress will implement the smart grid technology recommendations given to them by the DOE and FERC.

*F. The Energy Policy Act of 2005 and Uniform Deregulation*

As economists have realized that electricity generation is not a natural monopoly, a need for and a movement towards its deregulation has grown.<sup>326</sup> At the moment, however, this movement has resulted in a very disorganized energy market.<sup>327</sup> Unfortunately, a disorganized system of deregulation gives consumers no more economic advantage than did the previous, highly regulated system.<sup>328</sup> To remedy this situation, Congress needs to give FERC the authority to implement its RTO based plan of nationwide deregulation.<sup>329</sup> The Energy Policy Act of 2005 gave no such authority.

The largest step the Act takes towards implementing a uniform system of deregulation comes in the form of establishing a taskforce to study "competition within the wholesale and retail market for electric energy."<sup>330</sup> This taskforce, drawn from the Department of Justice, FERC, the Federal Trade Commission, the Department of Energy, and the Rural Utilities Service, must submit its final report within one year of the enactment of the Act, which occurred on August 8, 2006.<sup>331</sup> While a final judgment cannot be made until the taskforce submits its report, preliminary indications suggest that the taskforce will submit a pro-competition report.<sup>332</sup> According to a FERC press release, the taskforce "will analyze critical elements for effective wholesale and retail competition, the status of each element, impediments to realizing each element and suggestions for overcoming impediments."<sup>333</sup> This language has led to the assumption that the taskforce is approaching its task with a pro-competition state of

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<sup>326</sup> See *supra* notes 59-70, 116-31 and accompanying text.

<sup>327</sup> See *supra* notes 59-70, 116-31 and accompanying text.

<sup>328</sup> See *supra* notes 59-70, 116-31 and accompanying text.

<sup>329</sup> See *supra* notes 59-70, 116-31 and accompanying text.

<sup>330</sup> Energy Policy Act of 2005 § 1815.

<sup>331</sup> *Id.*

<sup>332</sup> See Press Release, Fed. Energy Reg. Comm'n, Interagency Task Force Seeks Input for Power Market Study (Oct. 19, 2005), <http://www.ferc.gov/press-room/press-releases/2005/2005-4/10-19-05.asp#skipnavsub>.

<sup>333</sup> *Id.*

mind.<sup>334</sup> If the taskforce does deliver a pro-competition report, Congress will have before it a recommendation for a policy that is needed in the emerging energy market. Whether Congress will have the political will to implement such a recommendation remains to be seen.

*G. Summary*

The Energy Policy Act of 2005 continues the United States' traditional energy policies. Unfortunately, those policies will prove ineffective in the twenty-first century. In the future the United States needs an energy policy focused upon uniform deregulation, creating a "smart grid," developing an infrastructure and market for renewable energy, removing the price distortions present in the energy market, and encouraging a system of distributed generation.<sup>335</sup> The Energy Policy Act of 2005 did not satisfy these needs. The Act instead delivered a policy that:

- Encourages centralized generation without an effective plan for implementing distributed generation;
- Gives capital to renewable energy, but gives more to traditional energy sources without creating a market for renewable energy through a renewable portfolio standard;
- Fails to remove price distortions from the energy market;
- Takes half steps towards making the United States more energy efficient;
- Provides a likely expansion of transmission capacity with the possibility of implementing smart grid technologies; and
- Studies deregulation while making no commitment to its effectuation.

In short, Congress gave the people of the United States an unfocused energy policy that does not address many of the concerns facing energy markets in the twenty-first century.

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<sup>334</sup> *Groups Worry of Pro-Competition Bias in Task Force Review of Power Markets*, INSIDE FERRE, Nov. 28, 2005, at 11, available at 2005 WLNR 19951075.

<sup>335</sup> See *supra* Part III.

## CONCLUSION

Where do the American people go from here? At present, they have an energy policy that in the words of President Bush is “a first step toward a more affordable and reliable energy future for the American citizens.”<sup>336</sup> Upon closer inspection, however, the Energy Policy Act of 2005 does more to revive the past than it does to prepare for the future. According to Congresswoman Rosa Delauro, “this bill proposes twentieth century solutions for twenty-first century energy challenges.”<sup>337</sup> Given the Act’s inability to bring about the changes necessary for the twenty-first century, the only sensible alternative seems to be to go back to the drawing board and start over.

Next time, Congress should leave the past where it belongs—in the past. Instead of a bill that protects the interests of traditional energy producers, Congress should enact a bill focused solely on preparing the United States for the energy challenges it will face in the new century. The requirements of such a policy are well known and only when Congress enacts them on a national level will the United States have an efficient, secure, and environmentally friendly energy policy. Until that time the United States’ energy policy will remain trapped in the twentieth century.

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<sup>336</sup> Bush, *supra* note 3.

<sup>337</sup> 151 Cong. Rec. e1759-04 (daily ed. Sept. 8, 2005) (statement of Rep. Delauro).