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The Shaky Political Economy Foundation of a National Renewable Electricity Requirement

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THE SHAKY POLITICAL ECONOMY FOUNDATION OF A NATIONAL RENEWABLE ELECTRICITY REQUIREMENT

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This Article argues that a national renewable portfolio standard (RPS) for electric power is not likely to advance its purported goals, nor is it likely to be adopted by Congress in its present proposed form. For one, a national RPS would have geographically disproportionate costs—those costs would be focused on a few, mostly natural resource-poor states, whereas the benefits of job growth and technological adoption in infant industries will be elsewhere. Second, the ability of firms to use operational flexibility regarding their nonrenewable fuel mix to substitute other nonrenewable energy sources for traditional fossil fuels undermines the purported climate change benefits of such a requirement, and usually raises costs and increases inefficiency of energy generation as well. Furthermore, a national RPS fails to address preexisting system-level infrastructure siting and cost allocation barriers in the electric power industry. Without broader reforms to the energy industry, significant new investment in renewable power is unlikely.

I. INTRODUCTION

Federal climate change initiatives commonly sprout from the political economy claim that national solutions better match the geographic scope of the problem at hand than do state or local approaches. Concerns that environmental law must make some effort to scale regulatory solutions to the scope of the problems presented are heavily debated in environmental law and federalism.[1] In comparison to many other envi-

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1. *See, e.g.*, Jonathan H. Adler, *Jurisdictional Mismatch in Environmental Federalism*, 14 N.Y.U. ENVTL. L.J. 130, 131–40 (2005); Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 570–74 (1996).

ronmental issues, the conventional wisdom is that climate change itself is a problem that is more national or international in scope, rather than localized, in the linkage between activities and the harms they produce.[2] It is for this reason that the predominantly suggested solution in environmental law is a national approach to addressing the problem of climate change over state and local solutions, with the federal government playing the dominant role in articulating and enforcing standards.[3]

Against the grain of this conventional wisdom, I argue in this Article that the political economy foundations for national renewable fuel requirements in the electric power industry are dubious given their geographically concentrated costs and effects on firm behavior, which calls into question any climate change benefits. For more than thirty years, federal law has been used to expand development of renewable sources of electric power. In the Public Utility Regulatory Policies Act of 1978 (PURPA), Congress required utilities to buy back the surplus power from alternative generators, subsidizing the growth of many non–fossil fuel sources of electric power.[4] Subsequent energy statutes and budget bills have contained a variety of incentives and production subsidies (many temporary) for developers of renewable power projects.[5] Despite these federal legislative efforts and similar proposals at the state level, growth of renewable power sources as a share of the overall nationwide portfolio of electric power generation has remained relatively flat, with renewable sources other than hydroelectric power representing only three to four percent of the nation's overall power generation portfolio today, a slight increase from 1990.[6]

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2. *Cf.* Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV. 1961, 1962 (2007) (maintaining that national climate change policies will be more effective than local ones).

3. *See id.* (arguing that the state-level effort to combat climate change is not the best course of action).

4. Section 210 of PURPA provided for avoided cost rates for qualifying small power production facilities, including those using wind, solar, biomass, and geothermal to produce electric power. Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, § 210, 92 Stat. 3117, 3144–47. The Energy Policy Act of 2005 gave the Federal Energy Regulatory Commission (FERC) the authority to terminate a utility's obligation to buy electricity from qualifying facilities in workably competitive regional markets. *See* Energy Policy Act of 2005, Pub. L. No. 109-58, § 1253, 119 Stat. 594, 967–98.

5. Subsidies include direct tax credits, grants, and low interest loans. In FY 2007, it is estimated that federal subsidies supporting renewable energy sources totaled $4.9 billion, more than tripling the $1.4 billion annual subsidies for renewables provided in FY 1999. Production tax credits to wind producers alone totaled $666 million in FY 2007. *See Energy in Brief: How Much Does the Federal Government Spend on Energy-Specific Subsidies and Support?*, U.S. ENERGY INFO. ADMIN., http://tonto.eia.doe.gov/energy_in_brief/energy_subsidies.cfm (last updated Sept. 8, 2008).

6. Forecasts for future growth in renewable power projects in the electric power industry remain optimistic. Historical data shows growth in new renewable projects, but the overall percentage of renewable power in the nation's electric power generation portfolio has remained relatively flat. In 2009, renewable energy constituted 8% of the nation's energy supply, with 53% of that renewable energy contributing to the generation of electricity consumed by U.S. customers. The bulk of the renewable energy used for electricity generation was hydroelectric (66%) and wind (17%). *See Energy in Brief: How Much of Our Electricity Is Generated from Renewable Sources?*, U.S. ENERGY INFO. ADMIN., http://tonto.eia.doe.gov/energy_in_brief/renewable_energy.cfm (last updated Sept. 1, 2010) [hereinafter *Energy in Brief*]. Nationwide growth of renewables has been fairly flat and overall they

Recent proposals at the national level draw on the experience of dozens of states to endorse a requirement for utilities to use renewable power in their generation portfolios, or to purchase or pay others to develop renewable resources. Industry leaders have called for a national approach to renewable energy requirements.[7] In the academic legal literature, a national renewable power mandate also has enthusiastic supporters: commentators[8] have advanced systematic arguments that a national renewable portfolio standard (RPS) can pave the way to widespread development of renewable resources, increased energy security and sustainability, and climate change mitigation. Echoing the predominant view in recent national climate change proposals in environmental law, proposals to adopt a national RPS rather than rely on state mandates claim that regulation needs to match or tailor its solutions to the scope of the geographic problem that regulators are attempting to address.[9]

The federal government has extensive experience in using a range of tools—including subsidies, grants, and technology forcing standards—as a lever to induce technological change in the energy industry. At best, the results have been mixed.[10] The reality is that developers of renewable power projects face significant economic and legal obstacles—ranging from high relative project and operational costs, to significant infrastructure siting and cost allocation barriers. Even if renewable power were required, the ability of renewable energy projects to compete on a large scale with more conventional forms of power generation will be in serious question given these barriers.[11]

This Article argues that the national RPS creates incentives for firms that undermine its political economy foundations and its climate change goals—limiting the ability of such a proposal to garner stable political support. Part II highlights how, contrary to the conventional claim

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may not have increased as an overall portion of the power industry's generation portfolio. In 1990, renewables constituted 7.4% of energy consumed. *See* U.S. ENERGY INFO. ADMIN., U.S. DEP'T OF ENERGY, PUB. NO. 0561(92), RENEWABLE RESOURCES IN THE U.S. ELECTRICITY SUPPLY 5 (1993), http://ftp.eia.doe.gov/pub/electricity/renewmas.pdf. Wind (9% of renewable resources) has experienced the most significant growth of renewable sources in recent years. *See Energy in Brief*, *supra* note 6.

7. *See, e.g.*, Daniel P. Krueger & Andre Begosso, *Mandating Federal Renewables*, PUB. UTIL. FORT., Jan. 2010, at 40, 41.

8. Lincoln L. Davies, *Power Forward: The Argument for a National RPS*, 42 CONN. L. REV. 1339, 1370–75, 1382–84 (2010); Joshua P. Fershee, *Changing Resources, Changing Market: The Impact of a National Renewable Portfolio Standard on the U.S. Energy Industry*, 29 ENERGY L.J. 49, 55–59, 76–77 (2008).

9. *See* Davies, *supra* note 8, at 1397; Fershee, *supra* note 8, at 76–77.

10. *See* Gary E. Marchant, *Sustainable Energy Technologies: Ten Lessons from the History of Technology Regulation*, 18 WIDENER L.J. 831, 834 (2009) ("Notwithstanding the many available legal options for attempting to induce technology change in energy supply and demand, forcing beneficial technology change is a difficult endeavor.").

11. One of these obstacles is the lack of large-scale transmission to serve renewable projects. *See* Ashley C. Brown & Jim Rossi, *Siting Transmission Lines in a Changed Milieu: Evolving Notions of the "Public Interest" in Balancing State and Regional Considerations*, 81 COLO. L. REV. 705 (2010).

among national RPS advocates, the costs of a national RPS (at least in its present form) are focused on a few states and the climate change benefits are overstated. Even where an RPS mandate applies, most utilities retain planning and operational flexibility regarding their nonrenewable fuel mix. Such a mandate in these situations can produce substitution effects that may have other unintended consequences.

Part III addresses possible solutions to promote the development of renewable power. At the very least, a national RPS could be repackaged to be more effective and garner widespread political support. Ultimately, however, the distributional, inefficiency, and substitutability problems created by a national RPS are more effectively addressed by other regulatory approaches that provide a stronger case for federal regulation, such as broad-based national subsidies, a carbon tax or cap-and-trade, or broader approaches to energy resource management. I conclude that a national RPS lacks a credible political rationale for national regulation and is not economically effective. Instead, large-scale development of renewable power depends on more fundamental reforms to the electric power system.

II. CRACKS IN THE POLITICAL ECONOMY FOUNDATIONS OF A NATIONAL RPS

A national RPS would build on the approach of as many as thirty-five states that already require or encourage that a certain percentage of power utilities sales come from renewable sources.[12] Various energy bills at the federal level incorporate a national RPS, including the Waxman-Markey Bill, which the U.S. House of Representatives approved in 2009.[13] Given that comprehensive legislative efforts to address climate change have stalled, some more recent federal proposals contemplate adding a national RPS as part of an energy-only bill that would not address carbon emissions.[14]

A. National RPS Proposals

The proposed national RPS contains a basic mandate, echoing the requirements of many state RPSs, that a certain percentage of power

12. *See* Davies, *supra* note 8, at 1341–42; *see also Federal Incentives*, DATABASE OF ST. INCENTIVES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org (last visited Jan. 17, 2011) (providing summary tables and summary maps of "state, local, utility and federal incentives and policies promot[ing] renewable energy and energy efficiency" and funded by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy).

13. American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. secs. 101–03.

14. *See* Simon Lomax & Lisa Lerer, *Democrats Fail to Reach Agreement on Energy Bill (Update2)*, BLOOMBERG BUSINESSWEEK (June 24, 2010, 6:31 PM), http://www.businessweek.com/news/2010-06-24/democrats-fail-to-reach-agreement-on-energy-bill-update2-.html (noting the possibility of a bill mandating renewable energy but failing to address carbon emissions).

sold or produced by utilities come from renewable sources.[15] Although this mandate feature of the national RPS parallels requirements in many states, the national RPS would do something many state RPSs do not—national RPS proposals would unify the national market by creating a nationwide renewable energy credit (REC) market, including for those states that do not have access to natural resources to develop renewable sources of power generation.[16]

Under the Waxman-Markey Bill (formally known as the American Clean Energy and Security Act (ACES) Climate Bill)[17] electricity providers are required to meet a minimum share of annual sales with electricity savings and qualifying renewable generation.[18] Renewable targets would begin at six percent in 2012 and rise to twenty percent by 2020.[19] Firms could meet their national RPS requirement by either selling power from qualified sources or purchasing RECs. Qualifying renewable generation sources could sell, trade, and bank federal RECs for three years following the generation of electric power.[20] ACES also contains a savings provision which would preserve individual state RPSs while establishing the federal RPS[21]—making the federal RPS a floor while allowing states to go further, much like many other environmental standards.

State approaches to encouraging renewable power in the form of an RPS mandate are imperfect. Individual state RPSs vary substantially: more than one dozen states have no requirement, and among those that have adopted one, requirements range from a modest four percent to as high as thirty percent at the more ambitious end of the spectrum.[22] Enforcement of state RPS requirements also varies, with some states applying hard mandates and others taking a more lenient approach.[23] Both proponents[24] and opponents[25] of a national RPS join issue in their recog-

15. H.R. 2454, sec. 101(a), § 610(b).

16. Even though many state RPS programs allow for RECs, these programs do not currently enable a nationwide REC market. *See* Davies, *supra* note 8, at 1378–79.

17. H.R. 2454.

18. This requirement applies to providers who sell more than four hundred million megawatts per year. *Id.* sec. 101(a), § 610(a)(18)(A), (d). Qualifying renewable resources include solar, wind, renewable biomass, landfill gas, and geothermal, but not nuclear. *Id.* sec. 101(a), § 610(a)(17) (defining "renewable energy resource"). Although not included as qualifying renewable resources, sales of generation from new nuclear, new carbon capture and sequestration, and existing hydropower capacity would be deducted from a retail provider's total sales for determining whether the requirement was met. *Id.* sec. 101(a), § 610(a)(19).

19. *Id.* sec. 101(a), § 610(d). Up to one-quarter of these targets could be met with energy efficiency measures (and individual state governors could petition to raise this amount to two-fifths). *Id.* sec. 101(a), § 610(b)(3)–(4).

20. *Id.* sec. 101(a), § 610(e)(9)–(10).

21. *Id.* sec. 101(a), § 610(k).

22. *See Renewable Portfolio Standards Fact Sheet*, U.S. ENVTL. PROTECTION AGENCY, http://www.epa.gov/chp/state-policy/renewable_fs.html (last updated Apr. 2009).

23. Davies, *supra* note 8, at 1379–81.

24. *Id.* at 1389–90.

25. Robert J. Michaels, *A Federal Renewable Electricity Requirement: What's Not to Like?*, POL'Y ANALYSIS (Cato Inst., D.C.), Nov. 13, 2008, at 1, 14–17 [hereinafter Michaels, *What's Not to*

nition that state RPSs have not been effective at significantly increasing reliance on renewable resources in the mix of generation sources for electric power.

A national RPS is seen as a way of "fostering renewables development through an effective and efficient market, a market where geography does not matter."[26] Unfortunately, however, in its present formulation the national RPS is also hobbled by realities. Of course, legislation such as a national RPS may have some symbolic value by shaping public attitudes and changing social norms over time.[27] As a practical policy matter, however, evaluating the desirability of a national RPS requires an assessment of whether its costs justify the benefits. The costs of adopting a national RPS in its present form would be concentrated within a few states (many of which are natural resource-poor), rather than spread evenly among all states. It is not new to claim that the costs of climate change initiatives may be disproportionately concentrated on certain states—that concern, for example, has also plagued national debates surrounding cap-and-trade—but the national RPS also presents a dubious claim of climate change benefits. Many of the purported benefits of a national RPS are geographically widespread, but the most diffuse benefits (in the form of climate change reduction) are also the most questionable. Of the purported benefits that would accompany a national RPS, for example, job growth, technological adoption in infant industries, and the like, many are not concentrated in the states that would bear the costs, casting doubt on the political economy claim used to support national regulation in this context. The significance of these cracks in the foundation not only highlight the likely inefficiency of a national RPS; they also reveal the political obstacles supporters face in garnering a sufficiently strong coalition to convince Congress to adopt a national RPS.

B. The Concentrated Costs of a National RPS

Commentators have boldly claimed that one of the virtues of the RPS is that it "is not a tax."[28] In effect, however, any mandate to use renewable power must either be financed by firms or by consumers.[29] The current approach to RPSs, which varies from state to state, applies a mandate only to firms within each individual state that has adopted an RPS.[30] By contrast, a national RPS would apply to all firms regardless of

Like]; Robert J. Michaels, *National Renewable Portfolio Standard: Smart Policy or Misguided Gesture?*, 29 ENERGY L.J. 79, 102–05 (2008) [hereinafter Michaels, *Smart Policy or Misguided Gesture*].

26. Davies, *supra* note 8, at 1364.

27. Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2045–46 (1996).

28. Davies, *supra* note 8, at 1391.

29. *See* Jim Rossi, *The Limits of a National Renewable Portfolio Standard*, 42 CONN. L. REV. 1425, 1433-36 (2010) (making similar point).

30. *See Federal Incentives*, *supra* note 12.

location and must either be paid for by each firm's customers (if passed on through regulated rates) or absorbed by the firm as a cost.[31]

Much of the debate regarding the cost of RPSs is focused on the impact that an RPS will have on average consumer rates. Studies suggest that on average the impact of RPS mandates on customer rates (in states where they have been adopted) is as low as one percent—a relatively minimal impact on average rates.[32] Thus the significance of a national RPS is not its aggregate impact, but its distributional impact across various state, region, and customer groups. Any regulatory approach to promote renewables through a national RPS mandate will have different subsidy impacts for customers across states. Therefore, much like a tax, the mandate needs to be assessed from the perspective of who bears the burden, as well as whether the implicit redistribution reflected in the RPS is fair and efficient.

The simple reality is that, in the energy industry, geography matters: renewable resource access varies greatly across the regions of the United States. For example, southeastern states have strong potential for biomass development, but in comparison to most western states, they have very limited opportunities for the development of wind, solar, and geothermal.[33] It should not be surprising that the geographic distribution of natural resources varies across states based on regional weather and land variations. Although only a minority of states may need to conform to the new requirements of a national RPS, it appears that much of that burden will be concentrated on states that bear higher costs in complying with an RPS than states that are resource-rich.[34]

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31. Given rate regulation in most states, whether the cost is passed on to customers depends on what state regulators do with the increases in costs for compliance with a national RPS.

32. In March 2007, the Lawrence Berkeley National Laboratory (LBNL) released an analysis of twenty-eight different state or utility-level RPS cost impact studies over the previous decade. Nineteen studies predicted rate increases of no greater than one percent, only two projected increases of greater than five percent, and six studies projected rate *decreases*. The LBNL calculated that the median impact on a monthly residential electric bill of an RPS would be thirty-eight cents. CLIFF CHEN ET AL., ERNEST ORLANDO LAWRENCE BERKELEY NAT'L LAB., PUB. NO. 61580, WEIGHING THE COSTS AND BENEFITS OF STATE RENEWABLES PORTFOLIO STANDARDS: A COMPARATIVE ANALYSIS OF STATE-LEVEL POLICY IMPACT PROJECTIONS, at i (2007), http://eetd.lbl.gov/ea/ems/reports/61580.pdf. When other possible benefits of renewable energy facilities are factored in, such as avoiding the environmental externalities associated with mining and transportation of fossil fuels, reducing emissions from fossil fuel generation and avoiding the associated health costs due to those emissions, and reducing power plant costs and risks associated with construction, the minimal cost impact does not seem to be a barrier to the adoption of an RPS. It is notable, however, that this study focuses on states that have already adopted an RPS, which as a general matter are more resource-rich from the perspective of renewable project development than states that have not yet adopted an RPS.

33. For example, the National Renewable Energy Laboratory offers a series of dynamic maps showing variation in biomass, geothermal, solar, and wind potential. *See Renewable Resources Maps & Data*, NAT'L RENEWABLE ENERGY LAB., http://www.nrel.gov/renewable_resources/ (last updated Sept. 29, 2010).

34. One of the only empirical studies of states adopting RPSs determined that in-state RPS requirements are more likely to be adopted by states with poor air quality that are rich in renewable resources with low amounts of existing renewable electricity generation. In other words, states have adopted RPSs when local benefits are high and local costs are very low. *See* Thomas P. Lyon & Haitao Yin, Why Do States Adopt Renewable Portfolio Standards?: An Empirical Investigation 1 (Aug.

A national RPS thus serves as a form of wealth transfer from residents in states that lack natural resources to states that have resources rich for development and export related to renewable power project development. Some degree of redistribution with the transition from state-centered to national RPS approaches seems inevitable. Perhaps if states with heavy population bases favored such reforms they might be able to garner a sufficient majority to convince members of the House of Representatives. Waxman-Markey suggests that this may have occurred. To the extent that this redistribution is geographically concentrated within states in specific regions of the country, however, any legislative effort to adopt a national RPS must overcome obstacles necessary to garner support in Congress, especially those hurdles presented by the Senate (one of which allows each state the same amount of votes).

C. *The Limited Practical Benefits of a National RPS*

One criticism of technology-forcing standards or mandates in environmental regulation is that in many instances regulators have failed to pay attention to what Timothy Malloy refers to as "micro-market" effects.[35] Such effects include resource allocation decisions by firms and their constituent actors as they consider how to respond to regulation.[36] Sometimes, the response by firms will be consonant with other regulatory objectives, but sometimes the micro-market effects of firms may lead to conduct that departs from the broader intended goals of a regulatory system. Thus, a regulatory mandate may ultimately cause substitutions from one undesirable behavior to another.

The impact of the national regulatory mandate altering ethanol requirements in gasoline refining provides an example of deleterious micro-market effects. The combination of subsidies and regulatory mandates for corn-based ethanol have had the unintended effect of significantly increasing food prices as land for food crops has shifted to growing corn for fuel.[37] This shift in production decisions has impacted the price of food for citizens of developing nations, contributing to the global food shortage.[38] Additionally, cultivation of corn for biofuels adversely impacts the environment. For example, increased agricultural

17, 2009) (unpublished manuscript), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1025513.

35. Timothy F. Malloy, *Regulating by Incentives: Myths, Models, and Micromarkets*, 80 TEX. L. REV. 531, 535–37 (2002).

36. *Id.* at 536.

37. *See* Marchant, *supra* note 10, at 843–44; Clifford Krauss, *Ethanol, Just Recently a Savior, Is Struggling*, N.Y. TIMES, Feb. 12, 2009, at A1.

38. Lewis J. Perelman, *The Near-Term Potential of Climate-Friendly Technologies*, *in* 37 AICGS POLICY REPORT: SHORT-TERM SOLUTIONS TO THE CLIMATE AND ENERGY CHALLENGE 7, 15 (2008), http://www.aicgs.org/documents/pubs/polrep37.pdf.

production has increased pollution runoff into the Chesapeake Bay from surrounding farms.[39]

Similarly, an RPS mandate can affect firm behavior and produce unintended consequences. Because renewable approaches to generating electric power emit fewer greenhouse gases (GHG) than their alternatives (primarily fossil fuels), it is frequently maintained that a national RPS could help to mitigate climate change.[40] Due to operational decisions of firms, however, this also appears to be the most questionable benefit of a national RPS mandate. Specifically, mandates can have adverse substitution effects on firms in the energy industry and may lead firms in their planning and operational decisions to substitute their supply load in favor of using the lowest-costing fossil fuels (such as coal) rather than adopting approaches to generate electric power that have lower carbon emissions (such as natural gas).[41]

For example, an electricity utility's power supply portfolio typically includes a range of options, from nuclear to coal to natural gas to hydro, wind, and solar. An RPS mandate requires firms to allocate their financial resources to either produce or procure electric power from sources that are significantly more costly than traditional fossil fuels, such as coal.[42] Like any other business, a utility firm is unlikely to absorb the costs of compliance with an RPS from its own profit margins. To the extent that a firm's demand for various approaches of obtaining electricity is elastic (in other words, responsive to changes in price), an RPS may lead to substitution away from more expensive forms of producing electric power and towards the firm's least expensive options. Based on historical and market prices of fuel, coal—which already comprises nearly half of the United States' electric power generation[43]—has one of the lowest marginal costs for firms seeking to generate electric power, especially given the existence of substantial power generation and transportation infrastructure supporting the use of coal.[44] Coal is also one of the dirtiest fuels, and, by a wide margin, has the largest carbon impact of fuels used in electric power production.[45]

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39. *Id.*; *see also* Marchant, *supra* note 10, at 844.

40. Davies, *supra* note 8, at 1370–72.

41. This argument is developed in greater detail in Rossi, *supra* note 29, at 1436–41.

42. *See* Melissa Powers, *The Cost of Coal: Climate Change and the End of Coal as a Source of "Cheap" Electricity*, 12 U. PA. J. BUS. L. 407 (2010) (discussing coal); *see also* PAUL KOMOR, PEW CTR. ON GLOBAL CLIMATE CHANGE, WIND AND SOLAR ELECTRICITY: CHALLENGES AND OPPORTUNITIES 6, 12–13 (2009), http://www.pewclimate.org/docUploads/wind-solar-electricity-report.pdf (discussing wind and solar generated electricity).

43. In 2008, coal comprised nearly fifty percent of generation capacity for electric power in the United States. *See Electricity Explained: Electricity in the United States*, U.S. ENERGY INFO. ADMIN., http://tonto.eia.doe.gov/energyexplained/index.cfm?page=electricity_in_the_united_states (last updated Oct. 18, 2010).

44. J.W. Anderson, *Coal: Dirty Cheap Energy*, RESOURCES, Winter 2005, at 31, 32.

45. *See id.*; *see also* U.S. ENERGY INFO. ADMIN., PUB. NO. 0573(2008), EMISSIONS OF GREENHOUSE GASES IN THE UNITED STATES 2008, at 2 (2009), ftp://ftp.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/ggrpt/057308.pdf.

By contrast, natural gas, which currently comprises nearly twenty percent of electric power production capacity, is typically more expensive and subject to greater market price variation than coal.[46] Natural gas, however, has one of the lowest carbon impacts of any fossil fuel.[47] Thus, natural gas is frequently advocated as a desirable fuel in the electric power industry, especially for purposes of GHG reduction and global warming mitigation.[48] Although more expensive than coal, the costs of using natural gas to generate electricity remain below the costs of wind and substantially below the costs of solar and many other renewable technologies.[49] To the extent that an RPS leads firms to substitute away from natural gas and towards coal-generated electricity in their planning and operational decisions, it will undermine any GHG reduction goal of a national RPS. For example, a Resources for the Future study concluded that, "[t]he RPS tends to encourage renewables largely at the expense of natural gas, and thus is less effective at reducing carbon emissions than would be a direct tax on carbon emissions."[50] In terms of both cost and operational considerations, new renewable generation is most likely to displace natural gas plants that are switched on and off as needed because they are efficient and low-cost options.[51]

If an RPS mandate is not financed in a way that provides complete cost recovery to firms—so as to leave a firm neutral with respect to its resource allocation decisions—an RPS would likely incentivize substitutions away from natural gas toward coal as a fuel source for the nonrenewable portion of its generation portfolio.[52] Such substitution, however,

46. *See* Anderson, *supra* note 44, at 32.

47. "Natural gas produces 43 percent fewer carbon emissions than coal for each unit of energy delivered, and 30 percent fewer emissions than oil." *Clean Energy: How Natural Gas Works*, UNION OF CONCERNED SCIENTISTS, http://www.ucsusa.org/clean_energy/technology_and_impacts/energy_technologies/how-natural-gas-works.html (last updated Aug. 31, 2010).

48. The American Clean Skies Foundation, along with the UN Foundation and Worldwatch Institute, sponsored a side conference during the Copenhagen talks which emphasized the benefits to carbon emissions of natural gas. *See* Aubrey K. McClendon & Gregory C. Staple, *NGO Says Natural Gas Provides New Option for Immediate U.S. Carbon Cuts*, PR NEWSWIRE (Dec. 12, 2009), http://www.prnewswire.com/news-releases/ngo-says-natural-gas-provides-new-option-for-immediate-us-carbon-cuts-79124117.html; *see also* Pierre Briancon, *A Call to Arms from Copenhagen*, N.Y. TIMES, Jan. 1, 2010, at B2, *available at* http://www.nytimes.com/2010/01/01/business/economy/01views.html ("Cheap gas encourages utilities to build more gas-fired power plants, which are cleaner than coal-powered ones.").

49. *See* U.S. ENERGY INFO. ADMIN., PUB. NO. 0383(2010), ANNUAL ENERGY OUTLOOK 2010 WITH PROJECTIONS TO 2035, at 66–67 (2010), http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2010).pdf; *see also 2016 Levelized Cost of New Generation Resources from the Annual Energy Outlook 2010*, U.S. ENERGY INFO. ADMIN. (n.d.), http://www.eia.doe.gov/oiaf/aeo/pdf/2016levelized_costs_aeo2010.pdf.

50. Karen Palmer & Dallas Burtraw, *Cost-Effectiveness of Renewable Electricity Policies*, 27 ENERGY ECON. 873, 874 (2005).

51. *See* Rossi, *supra* note 29, at 1438–40.

52. Although there is anecdotal evidence that firms do substitute away from natural gas in response to regulatory mandates, whether and the extent to which this occurs—and the impacts on GHG emissions—is ultimately an empirical question. Because many states have had RPS mandates for some time, this could be studied. One challenge in drawing any conclusions about the implications for a national RPS from such data, however, is that state regulators often have direct control over fuel mix

would also increase carbon emissions and thus is inconsistent with the climate change mitigation goal of the RPS. Even if cost recovery makes firms neutral regarding substitution away from natural gas, system-wide operational considerations would likely still favor using less natural gas for peaking purposes.

Perhaps the most promising benefit of a national RPS is technological innovation[53] and the growth of a new energy industry that is more attuned to energy sustainability goals.[54] To the extent that a national RPS strengthens the interstate market in RECs, it can encourage states themselves to develop new incentives for renewable technologies and provide greater regulatory stability for developers of renewable projects rather than relying on the current patchwork of approaches among states.[55] By increasing the amount of electric power generated by renewable resources, it is maintained that an RPS mandate would promote broad energy policy goals of energy independence and security.[56] Some of these benefits are geographically widespread, or more diffuse, but other benefits—such as those related to green jobs and employment—are concentrated primarily on resource-rich states.[57] Yet these kinds of benefits, such as the creation of jobs and infant-industry growth, are typically advanced by firms that are organized at the state, rather than national, level, especially given large variations in resource availability across regions of the United States. The ability of states to pursue these benefits on their own may, at some extreme, be limited by federalism concerns (such as the dormant Commerce Clause), so allowing a national RPS to preempt unconstitutional state protectionist measures may be one of the more significant benefits offered by a national RPS. State politics, however, still have a lot of leeway to advance the interests of job and infant-industry growth in renewable power.

III. SHORING UP THE NATIONAL RPS'S SHAKY FOUNDATIONS

The distributional and economic effects of a national RPS should not be ignored. If not properly addressed, these potential problems could undermine any claim that national regulation is a better regulatory solution to the scope of the problem than state or local regulation. Policymakers can address some of these adverse effects without completely

and switching to coal in the context of utility regulatory proceedings. Federal regulators, meanwhile, would not have such direct control (apart from indirect pollution controls).

53. At the state level, technological innovation may be one of the most significant benefits created by an RPS and one of the areas RPSs have had the greatest success. *See* David E. Adelman & Kirsten H. Engel, *Reorienting State Climate Change Policies to Induce Technological Change*, 50 ARIZ. L. REV. 835, 866–69 (2008).

54. Davies, *supra* note 8, at 1366–67.

55. *Id.* at 1358 (discussing job growth and noting that the core purpose of an RPS is to promote "a new energy market in renewables to, in turn, spur the transition to a sustainably fueled society").

56. *Id.* at 1372–74.

57. *See* Rossi, *supra* note 29, at 1433–35 (making a similar argument).

abandoning the RPS as a tool—as some have already suggested.[58] Ultimately, national reforms must focus on fixing the cracks in a national RPS as well as building a new foundation altogether for renewable power projects—in particular, reducing some of the broader legal and policy barriers faced by developers of renewable power projects.

A. Fixing the Cracks in the Foundation

Some of the cracks in a national RPS can easily be fixed by small tweaks to national proposals. Several modifications might help make a national RPS a more legitimate, politically appealing, and effective regulatory tool.

To begin, any national RPS must recognize that access to natural resources and the weather conditions necessary to exploit them are not equally distributed among all fifty states. Allowing states to meet the RPS through conservation and efficiency (as does Waxman-Markey, to an extent[59]), in addition to developing new renewable technologies or purchasing RECs, would dampen the disproportionate burden some states would otherwise be forced to bear under a national RPS mandate.

Under Waxman-Markey's proposed national RPS, only solar, wind, biomass, landfill gas, and geothermal qualify as renewable sources.[60] From the perspective of encouraging economic development and investment in specific technologies, such an approach seems focused. Yet, favored technologies change and regulators have a particularly poor track record in choosing technological winners, which could undermine the technology-forcing goal of a national RPS. In addition, states that do not have access to natural resources for development to meet an RPS might be allowed to meet the federal RPS through the development of nuclear or other low carbon technologies that have been excluded from the overall narrow definition of technologies in a national RPS. Another technology that regulators should consider including in an RPS is carbon capture and sequestration. Michigan includes such technologies in its RPS; however, at least according to a recent survey, other states have not followed suit.[61]

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58. *See* Michaels, *What's Not to Like*, *supra* note 25, at 3, 23–25; Michaels, *Smart Policy or Misguided Gesture*, *supra* note 25, at 107–10. Michaels also testified before Congress in opposition to Waxman-Markey—in large part due to its national RPS requirement. *See Hearings on the American Clean Energy Security Act (ACESA) of 2009: Before the Subcomm. on Energy and Env't of the Comm. on Energy and Commerce*, 111th Cong. 3–4 (2009) (testimony of Robert J. Michaels, Ph.D.), http://democrats.energycommerce.house.gov/Press_111/20090423/testimony_michaels.pdf.

59. American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. sec. 101(a), § 610(f).

60. *Id.* sec. 101(a), § 610(a)(17).

61. Michigan allows a portion of its RPS to be met with credits from an "[a]dvanced cleaner energy system," which is defined, in part, as "[a] coal-fired electric generating facility if 85% or more of the carbon dioxide emissions are captured and permanently geologically sequestered." MICH. COMP. LAWS § 460.1003(c) (2008); *see* Donna M. Attanasio, *Surveying the Risks of Carbon Dioxide:*

Also, in adopting RPSs, Congress might also consider changing the baseline to recognize the status quo, rather than assume that each state is beginning from the same place in developing renewable power. For example, rather than a flat RPS requirement across all states regardless of natural resource distribution, Congress could instead articulate a requirement in terms of percentage growth in the deployment of renewable power from the status quo for each state. This would certainly dampen the disproportionate distributional effects of a national RPS for some states and would ensure a more level playing field, making the national RPS more politically appealing.

Finally, instead of leaving cost recovery completely to the vicissitudes of state regulators, a national requirement that states provide for complete cost recovery for compliance with an RPS might make the effects on firm resource allocation decisions more neutral. Absent a clear statement by Congress preempting state regulation, cost recovery for building renewable plants in order to comply with a national RPS or purchasing RECs will be subject to the vagaries of prudence determinations by state regulators. Especially in instances in which a new technology proves more expensive than originally anticipated or the funding for RECs goes to firms in another state or region of the country, state regulators will be pressured to disallow some costs. Distributional impacts of cost recovery could be further eliminated if Congress authorized regional organizations, such as regional transmission organizations, to facilitate cost spreading for compliance with a national RPS.

B. Alternative Financial Incentives

Moreover, from an economic perspective, the RPS is not the most efficient lever for improving investments in renewable power and new technologies. Even if the distributional impacts of a national RPS were spread consistently across states, there are still problems with the fairness and efficiency of an RPS mandate versus other approaches to encouraging renewable project development. The type of subsidy reflected in a national RPS does not provide the transparency or efficiency of an explicit subsidy. The costs of RPSs, whether state or federal, are incurred by the customers of those utilities who are subject to the RPS mandate. Costs of encouraging development of renewable resources, which are based on the variation of natural resources and weather conditions, might match directly to the benefits for utilities' customers if done at a state or regional level. This cost/benefit matching principle is the basic premise on which cost-of-service utility ratemaking has operated: when benefits are concentrated to specific groups of customers, it also makes

Geological Sequestration and Storage Projects in the United States, 39 ENVTL. L. REP.: NEWS & ANALYSIS 10,376, 10,377 (2009).

sense to concentrate costs on these customers as a matter of fairness and efficiency.

It is questionable, however, whether a national RPS would work this way. Because many of the purported benefits of a national RPS are either concentrated on individual states that are rich in natural resources (e.g., the benefits of jobs and economic development are not, in the near term, benefits every state will experience) or are diffuse (e.g., the benefit of reducing GHG emissions is not something unique to citizens of an individual state),[62] a national RPS is not as likely to have benefits for the customer groups financing it. To the extent that demand is elastic (as it is in the interstate market for electricity), many customers (at least in the wholesale market) may substitute away from the firm that is increasing its prices to subsidize that state's renewable energy industry. Where the benefits of a social program are not homogenous or are diffuse across geographic areas, a progressive national tax supporting a subsidy is a more transparent, fairer, and more efficient way of encouraging development of renewable projects than an implicit subsidy built into state-set retail utility rates.

Moreover, customers would pay for a national RPS based on the amount of power consumed.[63] In this sense, the costs associated with the subsidy will be shared among poor and wealthy customers. Although any impact of a national RPS on aggregate customer rates may ultimately be relatively small, its effects would almost certainly be more regressive than the same result achieved through a uniform national subsidy—because the costs of a uniform national subsidy would be borne by taxpayers based on wealth, not by consumers based on usage. In the end, whatever Congress decides to call it, a national RPS mandate does have the effect of a tax and needs to be compared to other taxation approaches, including national subsidies that are supported through a progressive income tax. Moreover, in its design, attention needs to be paid to minimize the inefficiency and unfairness of an unevenly concentrated RPS.

In comparison to a national RPS, a permanent national subsidy (in the form of grants, production tax credits, or loan guarantees) provides a fairer and more efficient tool for promoting renewable sources of electric

62. *See* Wiener, *supra* note 2, at 1965 ("[B]ecause GHGs mix globally and have global impacts, local abatement actions pose local costs, yet deliver essentially no local climate benefits."). *But see* Massachusetts v. EPA, 549 U.S. 497, 504 (2007) (recognizing a potential causal link between the concentration of carbon in the atmosphere from motor vehicles and the rise in *global* temperatures). Others argue that individuals often look to economic considerations first—climate benefits are just ancillary. *See* Barry Rabe, *Race to the Top: The Expanding Role of U.S. State Renewable Portfolio Standards*, SUSTAINABLE DEV. L. & POL'Y, Spring 2007, at 10, 10 ("GHG reduction constitutes one important benefit from greater use of renewable energy and has been an important consideration, but in many instances, climate benefits are deemed ancillary to a variety of economic advantages.").

63. Current proposed federal statutes, such as Waxman-Markey, require utility providers to subsidize the requirement to generate or purchase a certain percentage of power sold from renewable sources. *See supra* text accompanying notes 17–21. In turn, compliance would be paid for by each utility by an increase in the cost of each unit of electricity it sells to customers.

power. In terms of distributional effects, if financed by a progressive income tax, such a subsidy would be shared among all states and would not be as regressive as a national RPS. In addition, the allocation of the subsidy to firms would be more politically accountable and transparent than the implicit subsidy reflected in the mandate of a national RPS. A national subsidy may also be a more efficient, adaptive, and precise lever for inducing investments in new technologies—though a permanent national subsidy seems to be a politically unlikely solution for addressing the growth of renewable power in the United States.

As an alternative to a permanent national subsidy, feed-in tariffs (or efforts to guarantee a price for the purchase of power from renewable sources) have some clear distributional advantages over a national RPS. In their current formulation, feed-in tariffs are subsidized by each individual utility's customers through increased rates.[64] Many criticize feed-in tariffs,[65] which are a regulatory strategy used in Europe (similar to the approach of PURPA avoided costs, such tariffs guarantee a stream of payments for developers of renewable projects). Feed-in tariffs, however, do not present the same distributional concerns as an RPS in the allocation of the cost burden: because feed-in tariffs are unlikely to be utilized by firms in resource-poor states, the costs of adopting this regulatory strategy are more likely to be focused on states that are ripe for development of renewable resources. From a distributional perspective, feed-in tariffs seem more desirable than a national RPS as a strategy for promoting renewable power projects. There are inevitably some limits to a state's ability to adopt feed-in tariffs, so perhaps adoption of a renewable feed-in tariff at the national level, akin to the approach of PURPA, could be extended to new renewable projects—though this would need to be financed through some sort of tax on the wholesale price of electricity.

C. Toward Carbon-Neutral Pricing

Related to the issue of incentives, addressing deficiencies in the pricing of carbon, whether in the form of a carbon tax or cap-and-trade, could also make economic investments in renewable projects more attractive.[66] As regulatory strategies, both a carbon tax and cap-and-trade

64. *Solar Power*, PEW CENTER. ON GLOBAL CLIMATE CHANGE, http://www.pewclimate.org/technology/factsheet/solar (last visited Jan. 17, 2011) (noting that feed-in tariff prices are paid for through increased customer rates).

65. Davies, *supra* note 8, at 1391.

66. I do not intend to obfuscate the distributional and efficiency differences between a carbon tax and cap-and-trade. Although a carbon tax may have many advantages over cap-and-trade, David Weisbach has argued that in the domestic setting the differences between the two approaches can be mitigated through proper design. *See generally* David A. Weisbach, *Instrument Choice Is Instrument Design* (Univ. Chi. Law Sch. Law & Econ., John M. Olin Working Paper No. 490, 2009), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1493312. To see what a carbon tax could look like, see Gilbert E. Metcalf & David Weisbach, *The Design of a Carbon Tax*, 33 HARV. ENVTL. L. REV.

would internalize the costs associated with the carbon impacts of various approaches to generating electricity. Effectively, carbon pricing mechanisms would represent a significant national tax on the usage of coal and other fossil fuels with significant carbon impacts. Such reforms would have much less of an effect on the cost of natural gas (which is less carbon intensive) than coal. Moreover, a carbon tax or cap-and-trade would have little impact on the cost of using renewable approaches to generating electricity. Both would significantly increase the relative cost of using coal, however, thus discouraging firms from substituting away from other technologies toward coal. Firms will only have accurate incentives in making decisions about the fuel mix of their electric power supply portfolios if carbon is priced to take into account environmental harms.

Indeed, it is well recognized that, on its own, an RPS is simply unable to advance broader climate change goals such as GHG reduction. A 2009 study by three Department of Energy researchers concluded that "[w]hile the RPS does help reduce emissions, it is an imperfect substitute for cap-and-trade, even in the 2025 timeframe. This is because coal use needs to be reduced drastically to make large emissions cuts and the RPS does not directly address this."[67] As compared to a national RPS, a cap-and-trade system "admits a broader range of GHG abatement policies."[68] One economist warns that the RPS approach "gives renewables priority simply because they are renewables rather than because they are efficient ways to mitigate pollution."[69] In this sense, an RPS operates like conventional command-and-control regulation: it "may be inefficient because it forecloses any possibility that other policies can do the same job at a smaller cost."[70] It does not allow polluters to choose their most cost-effective way of complying with the law, but instead mandates that more of specified types of renewable energy technology be built.[71]

In addition to building a more carbon-neutral subsidy mechanism into a national RPS, a cap-and-trade system (or some other form of carbon pricing, such as a carbon tax) would provide clearer economic benefits to the developers of renewable projects. Some economists advance

499, 502–03 (2009). Whether Congress has the political will to recognize such differences is another matter.

67. AUDREY J. LEE ET AL., REGIONAL IMPACTS OF A NATIONAL RENEWABLE PORTFOLIO STANDARD 2 (2009), *available at* http://www.usaee.org/usaee2009/submissions/ExtendedAbs/AudreyLee.doc.

68. *Id.*

69. Michaels, *What's Not to Like*, *supra* note 25, at 26.

70. *Id.* at 24.

71. A study by the Electric Power Research Institute (EPRI) examined six scenarios for California's limits on GHG emissions under the state's Global Warming Solutions Act. ELEC. POWER RESEARCH INST., PUB. NO. 1014641, 1 PROGRAM ON TECHNOLOGY INNOVATION: ECONOMIC ANALYSIS OF CALIFORNIA CLIMATE INITIATIVES: AN INTEGRATED APPROACH 2–4 (2007), http://www.epa.state.il.us/air/climatechange/documents/california-climate-study-final-report.pdf. This study confirms that "[b]road cap-and-trade programs are more cost-effective than are command-and-control regulations because the former can equalize the cost of avoiding an additional ton of emissions (marginal abatement costs) across all available options." *Id.* at 6–7.

this concern as an argument against any national RPS,[72] but perhaps this only means that an RPS is not as likely to be effective at advancing larger climate change goals on its own. Put simply, a national RPS without cap-and-trade will not have much traction in achieving carbon reduction goals. An RPS would be a much easier political sell if it were coupled with cap-and-trade, and as a matter of public policy, Congress should not adopt a national RPS mandate unless it is also committed to or has adopted cap-and-trade or some form of a carbon tax. Interest groups who support renewable power might recognize how unsuccessful an RPS would be on its own, without paying attention to carbon pricing.

D. Building a New Infrastructure Foundation for Renewables

Perhaps most significantly, discussion of a national RPS highlights the inadequacy of the traditional approach of deferring to state and local regulators regarding siting infrastructure, the setting of rates, and basic fuel mix in the context of electric power systems. Limited transmission infrastructure remains one of the largest obstacles to widespread deployment of renewable resources.[73] A recent study prepared for the National Renewable Energy Laboratory suggests that it is feasible for wind power to constitute twenty to thirty percent of the electric generation capacity for the eastern two-thirds of the United States, but it would require the investment of over $100 billion in transmission infrastructure.[74] Among those states that have adopted an RPS, states that have addressed siting obstacles (Texas among them) have had the most success in meeting their RPS goals.[75] Those states that have not addressed siting, such as California, have fallen short of their RPS goals.[76] Because the siting of renewable facilities involves competing land use concerns, as well as larger economic concerns related to the "need" for additional infrastructure, state and local regulators have continued to assert authority over such decisions.[77]

The legal barriers to transmission expansion are significant. State and local opposition to new transmission line projects based on a narrow understanding of benefits (as benefitting only in-state customers) has li-

72. Michaels, *What's Not to Like*, *supra* note 25, at 27.

73. *See* BRACKEN HENDRICKS, CTR. FOR AM. PROGRESS, WIRED FOR PROGRESS: BUILDING A NATIONAL CLEAN-ENERGY SMART GRID 2–3 (2009), http://www.americanprogress.org/issues/2009/02/pdf/electricity_grid.pdf.

74. ENERNEX CORP., EASTERN WIND INTEGRATION AND TRANSMISSION STUDY 74–80, 114 (2010), http://www.nrel.gov/wind/systemsintegration/pdfs/2010/ewits_final_report.pdf; *see also* Matthew L. Wald, *Wind Power for the East Said Attainable, at a Cost*, N.Y. TIMES, Jan. 21, 2010, at B6, *available at* http://www.nytimes.com/2010/01/21/business/energy-environment/21wind.html.

75. *See* Michael Giberson, *Texas Wind Power: It Isn't About the RPS*, KNOWLEDGE PROBLEM (May 18, 2010, 8:44 AM), http://knowledgeproblem.com/2010/05/18/texas-wind-power-it-isnt-about-the-rps/.

76. *See* Michaels, *What's Not to Like*, *supra* note 25, at 16–19.

77. *See* Uma Outka, *Siting Renewable Energy: Land Use and Regulatory Context*, 37 ECOLOGY L.Q. (forthcoming 2010), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1567077.

mited the approval of transmission infrastructure that is essential to the development of new renewable power projects in the Southwest, areas of the Dakotas and the Rockies, and coastal areas in the eastern United States.[78] Congress has recognized the problem with leaving transmission planning and siting entirely within the hands of state regulators, therefore expanding federal authority over transmission line siting in limited circumstances.[79] Pending reform proposals would afford federal authorities expanded backstop authority to override state or local regulators when there are significant national interests in the development of renewable power projects, while retaining considerable input and initial decision-making authority at the state and local level.[80]

There are also substantial cost-allocation obstacles to building new infrastructure for renewable resources. Who should bear the costs of new transmission infrastructure is an issue that deeply divides states in certain regions of the country and will require an explicit cost-allocation solution between producers and consumers of electric power from new renewable projects.[81] Renewable project developers and customers in large urban areas, for example, stand to benefit from transmission upgrades in the Midwest, but utilities that do not stand to immediately benefit have opposed efforts to regionalize the costs of these projects in transmission rates.[82] In a recent Seventh Circuit case, Judge Richard Posner wrote an opinion that, for the first time, required the Federal Energy Regulatory Commission (FERC) to quantify the benefits from allocating the costs of new transmission for renewable power projects.[83] Highlighting the strong divergence of opinion about who should pay for new transmission, Judge Richard Cudahy, dissenting in part, emphasized the need for regional sharing of transmission costs, even when network reliability benefits could not be precisely quantified.[84] Such cost-allocation issues remain one of the most contentious issues in the energy industry today.[85]

Most significantly, discussions regarding a national RPS highlight how decisions regarding the planning and siting of new power plants relate to regional and national fuel mix concerns, and increasingly are no

78. *See* Brown & Rossi, *supra* note 11, at 709–13.

79. *See id.* at 741.

80. For further discussion, see *id.* at 746–48.

81. *See, e.g.*, Ill. Commerce Comm'n v. Fed. Energy Regulatory Comm'n, 576 F.3d 470, 473 (7th Cir. 2009).

82. *See, e.g., id.* at 473–74.

83. *Id.* at 477.

84. *Id.* at 479–80 (Cudahy, J., concurring in part and dissenting in part).

85. As exemplified in a Texas court's decision to reverse and remand a Public Utility Commission to approve billions in new transmission lines for failure to consider lower-cost options that would benefit customers. *See* Tom Fowler, *Judge Orders Halt to Work on Wind Transmission Project*, HOUSTON CHRON. (Jan. 15, 2010, 10:08 PM), http://www.chron.com/disp/story.mpl/business/energy/6818579.html. For further discussion of the significance of the issue of cost allocation for new transmission, see Jim Rossi, *The Trojan Horse of Electric Power Transmission Line Siting Authority*, 39 ENVTL. L. 1015 (2009).

longer purely state and local issues. Decisions regarding the planning and siting of power plants—as well as decisions about fuel mix and power generation portfolios—are historically (and for the most part remain) squarely within the jurisdictional authority of state and local regulators.[86] Although a national RPS would make renewable fuel mix an issue of national concern, one problem I have highlighted is that the RPS fails to address fuel mix beyond renewable resources—including how the coal and natural gas will continue to play an important role in the operation of utility systems. State and local regulators considering siting and operation decisions for utilities focus almost entirely on the benefits to their in-state customers.[87] As the debate over a national RPS highlights, the decisions regarding what kind of plant to build and where to build are no longer purely state and local issues and cannot be resolved without some attention to the broader impacts of decisions on regional and national goals.[88]

Looking to the future of energy law, new approaches to allow regional or federal regulation (with a large range of fuel mix concerns in mind) may be necessary in those instances in which state or local governments fail to approve plants for reasons that reflect parochial state concerns. Regional bodies are already taking an active interest in the planning of infrastructure to encourage renewable power projects.[89] These bodies may ultimately be able to handle the complex coordination issues that arise when individual states refuse to approve power plants to meet broader interstate interests; but, as with transmission, additional proposals to expand regional or federal authority over the planning and siting of power plants may prove necessary in the future. Such changes anticipate a growing shift in the balance of federal-state power in energy law.

IV. CONCLUSION

It should not be surprising that to date Congress has failed to adopt a national RPS. As I have argued, in its present form the proposed national RPS imposes geographically disproportionate economic costs and its most salient benefits also tend to be at the state and local level. By highlighting the questionable political economy of a national RPS, I do not intend to dismiss any benefits of national attention to renewable

86. *See* Ashley C. Brown & Damon Daniels, *Vision Without Site; Site Without Vision*, ELECTRICITY J., Oct. 2003, at 23, 23–24 (discussing state and local role in power plant siting).

87. *See* Brown & Rossi, *supra* note 11, at 721–26 (discussing emphasis on in-state benefit in state transmission siting proceedings).

88. Though the scope of the problem may be regional, there are adaptive advantages to state regulators retaining primary authority over such decisions, particularly given the complexity and variability of various geographic solutions to climate change problems such as the fuel mix of power plants. *See* David E. Adelman & Kirsten H. Engel, *Adaptive Federalism: The Case Against Reallocating Environmental Regulatory Authority*, 92 MINN. L. REV. 1796, 1796 (2008).

89. *See* Brown & Rossi, *supra* note 11, at 761–76.

energy. National subsidies and tax credits can make a large difference, as could larger national attention to infrastructure, transmission, and power plant siting. And certainly some pieces of a national RPS would be desirable in completing the puzzle for the energy law's future strategy.

For example, by articulating standards for a state's recognition of renewable power generated elsewhere, Congress can facilitate market unification for renewable credits. A nationally unified renewable credit market is a clear improvement over the status quo to the extent that it promotes the stability of state regulation and encourages each state to take an ambitious approach to promoting renewable projects, one that is tailored to its regional and natural resource situation. Any political economy claim that an RPS requires a strong national solution as a mandate for firms appears to be weak, however, given that the climate change benefits of a national RPS are questionable. The main costs of adopting a national RPS mandate will be borne by one set of states, with the benefits accruing primarily to states that do not bear the costs.

As a practical policy matter, a more comprehensive approach to energy policy is the only way to ensure that a national RPS meets its stated goals—even then its political economy foundations as a national, rather than a state or local, solution seem shaky. The national regulatory approach to achieving these goals needs to begin by confronting broader system-wide barriers to the development of renewable projects in the electric power industry, rather than embracing simple fixes that cannot accomplish what they purport to.