

CHANGING RESOURCES, CHANGING MARKET: THE IMPACT OF A NATIONAL RENEWABLE PORTFOLIO STANDARD ON THE U.S. ENERGY INDUSTRY

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Synopsis: The U.S. Congress recently passed a new energy bill that, until that last minute, included provisions that would have established a national renewable portfolio standard (RPS). The RPS would have required electric utilities to procure a certain percentage of their electricity from renewable resources or purchase renewable energy credits from other sources to meet the standard. The recent energy bill is just the latest of repeated, and thus far failed, efforts to impose a national RPS. As such, there has been much debate about the potential merits and hazards of a national RPS, and more is sure to follow. Rather than joining this part of the policy debate, this Article considers the effects implementing a national RPS would have on the operation of the energy industry. More specifically, the Article considers what a national RPS would mean for electric utilities, regulators (state and federal), and consumers. The Article begins with an introduction to the most recent national RPS proposal, including a brief summary of both the program’s goals and major criticisms of the proposal. This introduction also includes an overview of the current and pending state-level RPS standards. The Article then discusses the primary issues a national RPS would raise for key stakeholders. First, the Article considers what a national RPS would mean for electric utilities—focusing on necessary compliance activities and the possible effects on short- and long-term investment decisions—including infrastructure and RPS compliance sources. Next, the Article discusses the impacts on state and federal regulators, focusing on the development of a renewable energy credit tracking system, the enforcement of the national RPS, and the role regulators at each level will have in the process. Finally, the Article considers the impacts a national RPS could have on consumers with regard to short- and long-term electricity costs. The Article concludes that, although the implementation of any major policy initiative takes significant resources, the biggest hurdle facing a national RPS is political, not technological or economic.

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I. INTRODUCTION

Across the country and around the world, renewable energy sources are creating interest and excitement as alternatives to traditional fuel sources for electricity generation. Proponents of mandating the use of renewable energy sources cite many potential benefits, including expanded economic development, improved national security, lower electricity prices, and reductions in greenhouse gas emissions. Although the extent and net value of such benefits are subject to debate, as are the best methods to achieve the benefits,¹ the broad range of potential benefits has created interest from a wide variety of constituencies, including business leaders, academics, environmental advocates, and even national security experts.²

The most common method for requiring the use of renewable fuel sources³ is the imposition of a renewable portfolio standard (RPS).⁴ The U.S. Congress recently considered, until the last moment,⁵ legislation that would have

1. See, e.g., Mary Ann Ralls, *Congress Got It Right: There's No Need to Mandate Renewable Portfolio Standards*, 27 ENERGY L.J. 451, 472 (2006) ("The challenge is to find the balance between realizing the promises of renewable energy while protecting consumers and communities from adverse impacts.").

2. See Brad Knickerbocker, *US Energy Proposal Pushes Toward Center*, CHRISTIAN SCI. MONITOR, Dec. 4, 2004, at 2 (stating that the National Commission on Energy Policy, which is a nonpartisan group of commissioners including "former EPA administrator William Reilly, United Steel Workers president Leo Gerard, Sharon Nelson of the Consumers Union, Ford Motor Company vice president Martin Zimmerman, former CIA chief James Woolsey, and Ralph Cavanaugh of the Natural Resources Defense Council" issued a report calling for the United States to, among other things, "[i]ncrease federal support for renewable energy technology by \$360 million a year").

3. Cf. CHRISTOPHER COOPER & BENJAMIN K. SOVACOO, *RENEWING AMERICA THE CASE FOR FEDERAL LEADERSHIP ON A NATIONAL RENEWABLE PORTFOLIO STANDARD (RPS)* 17 (2007), http://www.newenergychoices.org/dev/uploads/RPS%20Report_Cooper_Sovacool_FINAL_HILL.pdf ("The federal government has refused to orchestrate some harmony out of the [state RPS] chaos, despite repeated appeals.").

4. Sometimes an RPS is called a "Renewable Electricity Standard" or "RES." Although there could be a distinction in some instances, for purposes of this article, RPS and RES mean the same thing. See, e.g., Press Release, Congressman Mark Udall, Udall wins National Renewable Electricity Standard Vote on House Energy Bill (Aug. 4, 2007), <http://markudall.house.gov/HoR/CO02/Newsroom/Press+Releases/UDALL+WINS+NATIONAL+RENEWABLE+ELECTRICITY+STANDARD.htm>, (announcing that the RPS was added to House Bill via amendment by a vote of 220-190).

5. See *Energy Bill Headed to President's Desk After House Passes Stripped-Down Version*, FOSTER'S ELEC. REP. No. 537 (Dec. 19, 2007), at 1 ("[A]fter Senate Democratic leaders stripped the controversial RPS

established a national RPS, which would have required electric utilities to procure a certain percentage of their electricity from renewable resources or purchase renewable energy credits from other sources to meet the standard.⁶ Instead, the energy bill moved forward, once again, without establishing a national RPS. Twenty-five states and the District of Columbia already have some form of an RPS in place.⁷ Nonetheless, both literally and figuratively, renewable energy is not going away.

A national RPS would create a national market for renewable energy credits (RECs),⁸ which are earned by generating electricity from qualified renewable generators, such as those using wind, solar, and biomass as their energy source.⁹ Covered electricity retailers would be required to hold RECs in the specified proportion to the amount of retail energy they sold.¹⁰ These RECs could be self-generated or purchased from other qualifying renewable generators.¹¹

Such legislation has been proposed several times in the past,¹² but the increased profile of climate change issues and the increasing number of state RPS programs make a national RPS appear more likely, if not imminent. Since the earliest RPS proposals,¹³ there has been much debate about the potential merits and hazards of a national RPS, and more is sure to follow. Rather than joining this part of the policy debate, this Article considers the effects implementing a national RPS would have on the operation of the energy industry. More specifically, the Article considers what a national RPS would mean for electric utilities, regulators (state and federal), and consumers.

This Article begins with an introduction to the most recent national RPS legislative proposal, including a brief summary of both the program's goals and major criticisms of the proposal. This introduction also includes a synopsis of the current and pending state-level RPS standards. The Article then considers

and tax package provisions from the bill, the Senate on Dec. 13 approved the revamped version in an 86-8 vote, and sent it back to the House for that body's approval.”).

6. Renewable Energy and Energy Conservation Tax Act of 2007, H.R. 3221, 110th Cong. (as passed by House, Aug. 4, 2007).

7. See DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, RENEWABLES PORTFOLIO STANDARDS FOR RENEWABLE ENERGY, http://www.dsireusa.org/documents/summarymaps/RPS_Map.ppt (providing a map of the state RPS program as of September 2007).

8. COOPER & SOVACOO, *supra* note 3, at 11 (“A national REC trading market would allow generators to sell their RECs at a uniform price to retail suppliers anywhere in the nation.”); *cf.* H.R. 3221, 110th Cong. § 9611(a) (“A Federal renewable energy credit, may be sold, transferred or exchanged by the entity to whom issued or by any other entity who acquires the Federal renewable energy credit, except for those renewable energy credits from existing facilities.”).

9. See ENERGY INFO. ADMIN., OFFICE OF INTEGRATED ANALYSIS & FORECASTING, U.S. DEP'T OF ENERGY, ENERGY AND ECONOMIC IMPACTS OF IMPLEMENTING BOTH A 25-PERCENT RENEWABLE PORTFOLIO STANDARD AND A 25-PERCENT RENEWABLE FUEL STANDARD BY 2025 ix (2007), <http://www.eia.doe.gov/oiaf/servicerpt/eeim/index.html>.

10. *Id.*

11. *Id.*

12. COOPER & SOVACOO, *supra* note 3, at 17 (“Congress has rejected proposals to establish a uniform national RPS 17 times in the last 10 years.”).

13. See, e.g., Electric Consumers' Power to Choose Act of 1996, H.R. 3790, 104th Cong. § 112(a) (1996) (Referred to the Subcommittee on Energy and Power) (“[E]ach electric generator in the State that sells electric energy to any other person shall submit to the Commission Renewable Energy Credits in an amount equal to the required annual percentage of the total electric energy generated by such generator in the preceding calendar year.”).

what a national RPS means for electric utilities—focusing on necessary compliance activities and the possible effects on short- and long-term investment decisions—including infrastructure and RPS compliance sources. Next, the Article discusses the impacts on state and federal regulators, focusing on the development of a renewable energy credit tracking system, the enforcement of the national RPS, and the role regulators at each level will have in the process. Finally, the Article considers the impacts a national RPS could have on consumers with regard to short- and long-term electricity costs. The Article concludes that, although the implementation of any major policy initiative takes significant resources, the greatest hurdle facing a national RPS is political, not technological or economic.

II. RPS OPTIONS: FEDERAL PROPOSALS AND CURRENT STATE PROGRAMS

Legislation instituting a national RPS has passed the Senate three times since 2002,¹⁴ and the House of Representative recently passed such a proposal for the first time.¹⁵ Although a national program has not been implemented, significant interest abounds.¹⁶ At least twenty-five states and the District of Columbia have RPS programs in place, including the nation's three most populous states: California, Texas, and New York. This Part will first consider the recently failed national RPS proposal presented in House Bill 3221, and will then discuss the variety of RPS programs already implemented at the state level.

A. *National RPS: Halfway There – Failed Again*

Energy issues, from climate change to economic development to fuel costs, have played a prominent role in the energy legislation debates of the 110th Congress.¹⁷ Both houses passed new energy legislation, but only the House of Representatives' proposal included a national RPS as part of the plan. House Bill 969, the original source of the national RPS that eventually passed in House Bill 3221,¹⁸ proposed, among other things, "to establish a Federal renewable energy portfolio standard for certain retail electric utilities."¹⁹ The Senate, in passing its version of energy legislation that began in the House, added an amendment providing a Renewable Fuel Standard (RFS), but did not include a national RPS.²⁰ Ultimately, the final legislation included a version of the RFS, but left the national RPS for another day.

14. Energy Policy Act of 2005, H.R. 6, 109th Cong. (as passed by Senate, June 28, 2005); Energy Policy Act of 2003, H.R. 6, 108th Cong. (as passed by Senate, July 31, 2003); Energy Policy Act of 2002, H.R. 4, 107th Cong. (as passed by Senate, Apr. 24, 2002).

15. Press Release, Congressman Mark Udall, *supra* note 4.

16. See COOPER & SOVACOL, *supra* note 3, at 17-18 tbl.1 (listing the bill numbers and act names of seventeen proposals for a national RPS between 1997 and 2006).

17. See Ralls, *supra* note 1, at 452 ("Over the past ten years, Congress has grappled with comprehensive energy legislation.").

18. Renewable Energy and Energy Conservation Tax Act of 2007, H.R. 3221, 110th Cong. (as passed by House, Aug. 4, 2007).

19. H.R. 969, 110th Cong. (2007).

20. See Renewable Fuels, Consumer Protection, and Energy Efficiency Act of 2007, H.R. 6 § 111 (as passed by Senate, June 21, 2007). The RFS requires that rules be put in place that will "ensure that motor vehicle fuel and home heating oil sold or introduced into commerce in the United States (except in noncontiguous States or territories), on an annual average basis, contain[] the applicable volume of renewable

The Senate has supported an RPS in the past, but there were significant roadblocks this time around. Most prominently, even if the House and Senate had been able to come to some sort of consensus, the Bush Administration had indicated that the President would veto any energy legislation that included, among other things,²¹ an RPS or tax increases on the oil industry.²² Instead, the President favors “expanded U.S. production, new fuel economy standards and a big mandate for ethanol and other alternative fuels.”²³ The final legislation apparently allayed the President’s concerns; the President signed the bill into law on December 19, 2007.²⁴

Significant hurdles to a national RPS thus remain. However, a review of the potential impacts of a national RPS is necessary and prudent, especially given the recurring interest of both houses of Congress and the fact that more than half of the U.S. population lives in a state (or federal district) with an RPS.

1. The RPS Proposal

For purposes of this Article, the impact of a national RPS will be considered under the plan passed by the House in House Bill 3221 (the Proposed RPS).²⁵ Like the prior three RPS proposals that passed the Senate,²⁶ the Proposed RPS would have been enacted as an amendment to Title VI of the

fuel” *Id.* § 111(a)(1)(A). The “applicable volume” would increase from 8.5 billion gallons of renewable fuel in 2008 to 36 billion gallons in 2022. *Id.* § 111(a)(2)(A)(i).

21. Letter from Allan B. Hubbard, Assistant to the President for Economic Policy and Director, National Economic Council, to Rep. Nancy Pelosi, Speaker of the House of Representatives (Oct. 15, 2007), <http://aaenvironment.com/BushLetterToPelosi.pdf>. The letter specifically offered

a basic framework for an energy bill that would not compel the President’s senior advisors to recommend a veto. Such a bill would:

- Contain an ambitious alternative fuel standard comparable to that proposed by the President in his 2007 State of the Union.
- Reform and strengthen the fuel economy standard for cars, and maintain separate, attribute-based standards for cars and light trucks, based on sound science, safety, and cost-benefit analysis.
- Not reduce but instead increase domestic energy production.
- Not raise taxes nor use the tax code to single out specific industries.
- Not contain provisions (such as the NOPEC provision) that encourage retaliation against American businesses abroad, discourage job-creating investment in the U.S. economy, and injure U.S. relations with other countries.
- Not impose price controls that could bring back long gas station lines reminiscent of the 1970s.
- Not expand the application of Davis-Bacon Act prevailing wage requirements.
- Not contain a mandatory Renewable Portfolio Standard.

Id.

22. Steven Mufson, *Blame and Anxiety Rise Along With Price of Oil*, WASH. POST, Oct. 17, 2007, at D1 (“[The Bush Administration] ruled out a renewable portfolio standard and tax increases on the oil industry, while pushing for expanded U.S. production, new fuel economy standards and a big mandate for ethanol and other alternative fuels.”).

23. *Id.*

24. Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121 Stat 1492 (2007).

25. The Proposed RPS appears as Subtitle H, section 9611(a) of House Bill 3221. The Proposed RPS was originally a separate bill, in February 2007. *See* H.R. 969, 110th Cong. (2007).

26. Energy Policy Act of 2005, H.R. 6, 109th Cong. § 291 (as passed by Senate, June 28, 2005); Energy Policy Act of 2003, H.R. 6, 108th Cong. § 264 (as passed by Senate, July 31, 2003); Energy Policy Act of 2002, H.R. 4, 107th Cong. § 264 (as passed by Senate, Apr. 24, 2002).

Public Utility Regulatory Policies Act of 1978 (PURPA).²⁷ As such, it is likely that a national RPS, if passed, would be included as part of PURPA.

The Proposed RPS required all “retail electric supplier[s]” to provide 15% of their energy sold from renewable sources by the year 2020.²⁸ That is, 15% of each covered retail electricity supplier’s energy would have needed to be either generated from renewable energy resources or the retail electric supplier would need to otherwise purchase or exchange credits derived from renewable generation.²⁹ The plan provided one additional option for a portion of the requirement: utilities were permitted to achieve up to 4% of this requirement through efficiency programs.³⁰ The Proposed RPS provided that renewable energy meant electric energy that is generated by a “renewable energy resource,” which “means solar (including solar water heating), wind, ocean, tidal, geothermal energy, biomass, landfill gas, or incremental hydropower.”³¹

The plan would have been phased in, starting with a requirement of 2.75% renewable energy beginning in 2010, increasing gradually (but significantly) through 2020 up to 15%.³²

RPS Requirements As Proposed in H.R. 3221

Calendar Years	Required annual percentage
2010.....	2.75
2011.....	2.75
2012.....	3.75
2013.....	4.5
2014.....	5.5
2015.....	6.5
2016.....	7.5
2017.....	8.25
2018.....	10.25
2019.....	12.25
2020 and thereafter through 2039.....	15

Source: H.R. 3221, 110th Cong. § 9611(a).

The Proposed RPS would have exempted retail electricity sellers who sold less than one million megawatt-hours of electricity for purposes other than resale use in the preceding year, as well as all municipal and rural cooperative suppliers.³³

27. H.R. 969, 110th Cong. § 9611(a) (2007) (proposing to add by amendment a new section 610 to the end of Title VI of PURPA).

28. H.R. 3221 § 9611(a).

29. *Id.*

30. *Id.*

31. *Id.*

32. *Id.*

33. *Id.*

Under the Proposed RPS, the Secretary of Energy would have been charged with establishing a program to verify and issue Federal renewable energy credits (RECs).³⁴ The RECs were to be issued to generators of renewable energy, and the program planned to track the sale, exchange, and retirement of RECs.³⁵ The proposal also provided that, “[t]o the extent possible, in establishing such program, the Secretary shall rely upon existing and emerging State or regional tracking systems that issue and track non-Federal renewable energy credits.”³⁶ As a general rule, one REC would have been issued for each kilowatt hour of renewable electric energy generated under the statute.³⁷ In addition, the plan provided a premium (i.e., additional RECs) in certain situations. Two RECs were to be issued per kilowatt hour of renewable energy generated on Indian land,³⁸ and three RECs would have been issued for renewable energy generated at an on-site facility where that renewable energy was used to offset all or part of the customer’s electricity requirements.³⁹

Finally, the Proposed RPS expressly preserved the validity of state programs, including those that exceeded the national RPS.⁴⁰ In recommending reliance upon state and regional systems that track “non-Federal renewable energy credits” in the development of a federal REC tracking system, House Bill 3221 contemplated the coexistence of such state programs.⁴¹ Further, the proposal stated, all retail electricity supplier payments made, “directly or indirectly, to a State for compliance with a State renewable portfolio standard program, or for an alternative compliance mechanism, shall be valued . . . based on the amount of electric energy generation from renewable resources and electricity savings that results from those payments.”⁴² The Proposed RPS thus would have kept intact state RPS programs and allowed for the issuance of both federal RECs and state RECs where the renewable energy source satisfied both the federal and state requirements. This does not mean that there would not have been lawsuits claiming some sort of preemption, but the Proposed RPS made the intent quite clear.⁴³

2. The Goals: The Case for a National RPS

Congressional proponents of the Proposed RPS (and most versions of an RPS) cite several goals, including: reduced pollution, improved national

34. *Id.* To track, measure, and verify electricity savings achieved under qualifying programs to the RPS requirement, Energy Efficiency Credits would also be issued. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. However, “renewable energy generated by biomass cofired with other fuels” would only receive two RECs if the biomass was also grown on Indian land. *Id.*

39. *Id.*

40. *Id.*

41. *Id.*

42. *Id.*

43. Not all proposed national RPS legislation has had the forethought to address the impact the proposal would have on state RPS laws. See Robert B. McKinstry, Jr., et. al, *Federal Climate Change Legislation as If the States Matter*, NAT. RESOURCES & ENV’T, Winter 2008, at 3, 6 (“Several of the bills before Congress would establish a national renewable electricity standard, but they do not address the question of what to do with [the] twenty-three existing [state RPS] laws.”).

security, job creation, and lower consumer prices.⁴⁴ Additionally, a national program, rather than a state-by-state program, is more likely to provide a strong national market, thus leading to more renewable energy projects.⁴⁵

In May 2007, the House Committee on Energy and Commerce sent a letter to more than forty “interested parties” from varying constituent groups inviting responses to several questions regarding a possible renewable energy portfolio standard.⁴⁶ Not surprisingly, the constituent groups supporting an RPS emphasized these key areas in their responses.⁴⁷ One of the broader descriptions of the potential benefits of a national RPS can be found in the Union of Concerned Scientists’ response, which stated that a national RPS “standard can provide many benefits for the nation, including increasing energy security, fuel diversity, price stability, jobs, farm and ranch income, tax revenues, technology development, customer choices, and reduced environmental impacts, water consumption, and resource depletion, as well as reduced compliance costs with current and future environmental regulations.”⁴⁸

If the claimed benefits are accurate (and, as noted below, there are many who believe they are not), there are several ways in which these benefits would be achieved. Probably the most obvious would be the potential environmental benefits.⁴⁹ Although electricity accounts for less than 3% of U.S. economic activity, “the burning of coal, oil, and natural gas for power currently accounts for more than 26 percent of smog-producing nitrogen oxide emissions, one-third of toxic mercury emissions, and 64 percent of acid rain-causing SO₂

44. See, e.g., 153 CONG. REC. H9847 (2007) (statement of Rep. Todd Platts (R-Pa.)) (“A 15 percent RPS is an important step that we can take to meet our growing energy needs in an environmentally friendly manner and decrease our dependence on foreign oil and create more jobs.”); Press Release, Congressman Mark Udall, *supra* note 4 (“The implementation of a national RES will benefit rural communities, save consumers money, reduce air pollution, and increase reliability and energy security.”).

45. See Robert B. McKinsty, Jr., et. al, *supra* note 43, at 3, 6 (“[D]ifferences among state renewable portfolio standards weaken the potential for a more robust national market for renewable energy and thus greater use of renewable energy.”).

46. Letter from Rep. John Dingell, Chairman, Committee on Energy and Commerce, & Rep. Rick Boucher, Chairman, Subcommittee on Energy and Air Quality, to Interested Parties (May 24, 2007), http://energycommerce.house.gov/Press_110/110-ltr.052407.To40-EnergyAssociations.pdf.

47. See generally House Comm. on Energy & Commerce: Responses to the Dingell/Boucher Letter of May 24, 2007, http://energycommerce.house.gov/Climate_Change/RSP%20responses.shtml (last visited on Jan. 21, 2008).

48. Letter from Alan Noguee, Director, Clean Energy Program, Union of Concerned Scientists, to Rep. John Dingell & Rep. Rick Boucher 2, http://energycommerce.house.gov/Climate_Change/RSP%20feedback/UCS%20Response%20to%20Dingell-Boucher%20RPS.pdf (last visited Jan. 31, 2008).

49. A national RPS is not the only way to achieve environmental benefits via renewable energy. Another legislative proposal, the Low Carbon Economy Act of 2007, would establish a mandatory greenhouse gas (GHG) emissions cap-and-trade program. See Low Carbon Economy Act of 2007, S. 1766, 110th Cong. (2007). If such a cap-and-trade proposal were enacted, one study indicated that a national RPS would have “little incremental effect because the GHG allowance program in S. 1766 encourages an increase in renewable generation similar to what would be needed to comply with the RPS.” ENERGY INFO. ADMIN., U.S. DEP’T OF ENERGY, ENERGY MARKET AND ECONOMIC IMPACTS OF S.1766, THE LOW CARBON ECONOMY ACT OF 2007, at vii (2007), [http://www.eia.doe.gov/oiaf/servicert/lcea/pdf/sroiaf\(2007\)06.pdf](http://www.eia.doe.gov/oiaf/servicert/lcea/pdf/sroiaf(2007)06.pdf). The study does not, however, indicate whether a cap-and-trade program or a national RPS program would be more effective or preferable; it simply indicates that a 15% RPS would result in roughly the same amount of renewable generation that would result if the proposed cap-and-trade program were implemented. See *id.*

emissions.”⁵⁰ One expert has asserted that if “20 percent of our electricity in 2020 were to be provided by renewables, then we would be displacing the equivalent of 71 million cars from the nation’s highway.”⁵¹ Others have noted that the increased use of renewable energy would reduce harmful emissions or reduce the cost of compliance with requirements to reduce pollution.⁵² “And by reducing the need to extract, transport, and consume fossil fuels, a national RPS would limit the damage done to our water and land and conserve natural resources for future generations.”⁵³

From a national security perspective, the primary benefit would come from a reduced dependence on foreign energy supplies, because renewable resources such as wind, sun, and biomass, tend to come from domestic sources.⁵⁴ In the electricity sector, the most significant source would be reduced need for natural gas, which is increasingly coming (in liquefied form)⁵⁵ from overseas.⁵⁶ Enormous amounts of natural gas are used for electric generation, including as much as 90% or more of new electric generation.⁵⁷

50. Alan Noguee, et al., *The Projected Impacts of a National Renewable Portfolio Standard*, ELEC. J., May 2007, at 33, 44.

51. Dr. Marilyn Brown, Professor of Energy Policy, Georgia Tech University & Visiting Distinguished Scientist at Oak Ridge National Laboratory, Remarks at Environmental and Energy Study Institute Panel: Can a National Renewable Portfolio Standard Increase Energy Security, Reduce Emissions and Lower Costs? (July 17, 2007), <http://www.eenews.net/tv/transcript/647>.

52. Noguee, et al., *supra* note 50, at 44.

53. *Id.*; see also Letter from Anna Aurilio, Director, Washington Office, U.S. PIRG, & Rob Sargent, Energy Program Director, U.S. PIRG, to Rep. John Dingell & Rep. Rick Boucher, at 1 (June 15, 2007), http://energyccommerce.house.gov/Climate_Change/RSP%20feedback/US%20PIRG%2006%2015%2007.pdf (reporting that the Union of Concerned Scientists found that states with RPS plans in place will “spark the development of enough renewable electricity to supply more than 28 million homes by 2020 and achieve carbon dioxide emission reductions equivalent to taking 17.7 million cars off the road.”).

54. See Leon Lowery, Staff, Senate Committee on Energy and Natural Resources, Remarks at Environmental and Energy Study Institute Panel: Can a National Renewable Portfolio Standard Increase Energy Security, Reduce Emissions and Lower Costs? (July 17, 2007), <http://www.eenews.net/tv/transcript/647> (“And there’s just nothing that’s more domestic than the sun [that] shines down on the ground that grows the crops and the wind that blows over it and the water that waters it. You can’t get more domestic than that.”).

55. ENERGY INFO. ADMIN., U.S. DEP’T OF ENERGY, U.S. LNG MARKETS AND USES: JUNE 2004 UPDATE 1 (2004), <http://tonto.eia.doe.gov/FTPROOT/features/lng2004.pdf> (“Liquefied natural gas (LNG) has become an increasingly important part of the U.S. energy market.”). Liquefied natural gas (LNG) is “[n]atural gas that is stored and transported in liquid form at atmospheric pressure at a temperature of –260F. Like the natural gas that is delivered by pipeline into homes and businesses, it mainly consists of methane (CH₄).” *Id.* at 19. LNG’s physical properties permit “long-distance transport by ship across oceans to markets such as the United States and for its local distribution by truck onshore.” *Id.* at 1. In 2003, Trinidad and Tobago was the largest supplier of LNG to the United States; other sources include Algeria, Nigeria, Qatar, Oman, and Malaysia. *Id.* at 4-5.

56. David Niles, *US LNG: Consumption on the Increase*, ENERGY BUS. REV., July 6, 2007, http://www.energy-business-review.com/article_feature.asp?guid=03B5F7FB-E46E-4E3C-A406-7D72BD4B0C65 (“The use of LNG, which made up 3% of the US’s natural gas consumption in 2006, has seen robust growth in recent years. Indeed, annualized LNG consumption between 1996 and 2006 grew at 13%, while gas consumption grew at an annual rate of just 1.4% over the same period.”); see also Richard Glick, Director, Government Affairs, PPM Energy, Remarks at Environmental and Energy Study Institute Panel: Can a National Renewable Portfolio Standard Increase Energy Security, Reduce Emissions and Lower Costs? (July 17, 2007), <http://www.eenews.net/tv/transcript/647> (“Natural gas is becoming increasingly a fuel of great concern from a national energy security basis.”).

57. See U.S. GEN. ACCT. OFFICE, GAO-03-46, NATURAL GAS: ANALYSIS OF CHANGES IN MARKET PRICE at 19 (2002), <http://www.gao.gov/cgi-bin/getrpt?GAO-03-46> (“Because of its clean burning properties,

A reduction in the use of natural gas would also, by many accounts, lead to lower prices for consumers. A recent study by Woods Mackenzie, an energy-industry consultancy, indicated that a 15% national RPS would “drive down” the demand for, and price of, natural gas and “lower the overall price of power.”⁵⁸ The company found that regardless of whether a national RPS is implemented, the “United States needs to build 420 GW of capacity over the next twenty years to replace aging facilities and meet its ever-growing need for electricity.”⁵⁹ A national RPS would create incentives ensuring, essentially requiring, that some of that new generation be fueled by renewable sources. This switch, according to the Woods MacKenzie study, to renewable generation sources would lower fuel costs and reduce fossil fuel consumption, leading to lower electricity costs, amounting to approximately \$100 billion in savings.⁶⁰

Perhaps the most important, if not the most obvious, potential benefit of a national RPS is economic development and job creation. In projecting the impact of a 20% national RPS, the Union of Concerned Scientists determined that, by 2020, such an RPS “would generate more than 355,000 jobs in manufacturing, construction, operation, maintenance, and other industries—nearly twice as many as fossil fuels, representing a net increase of 157,480 jobs”⁶¹ Further, it was determined that renewable energy would “provide an additional \$8.2 billion in income and \$10.2 billion in gross domestic product in the U.S. economy in 2020.”⁶² Although premised on a national RPS percentage higher than that in the Proposed RPS, these numbers nonetheless indicate that a national RPS could provide significant economic benefits.

The most compelling job creation claims come from a report developed by the Renewable Energy Policy Project (REPP). The group determined that more than 16,000 firms in all fifty states have the technical potential to enter the growing wind turbine manufacturing sector.⁶³ The twenty states that would potentially benefit the most, receiving 80% of the job creation, are the same states that account for “76% of the manufacturing jobs lost in the [U.S. over the] last 3 1/2 years.”⁶⁴

The report considered the impact on U.S. manufacturing jobs if there were eight times more wind energy installations, which would mean a capital investment of \$50 billion.⁶⁵ Again, while this report is an estimate based on a

natural gas is now the preferred source of energy for most new electric generation capacity.”); *see also* ENERGY INFO. ADMIN., OFFICE OF COAL, NUCLEAR, ELECTRIC & ALTERNATE FUELS, U.S. DEP’T OF ENERGY, ELECTRIC POWER ANNUAL 2000, VOL. I, at 14 (2001), www.eia.doe.gov/cneaf/electricity/epav1/epav1.pdf (“In 2000, gas-fired capacity additions accounted for 22,238 megawatts (MW) out of 23,453 MW added to the electric grid.”).

58. Press Release, Woods MacKenzie, Federal Renewable Portfolio Standard Will Reduce Power and Natural Gas Costs, But Not Have a Significant Impact on GHG Emission Levels (May 2007), <http://publicutilities.utah.gov/archive/federalrenewableenergyportfoliostandard.pdf>.

59. *Id.*

60. *See id.* (finding that construction costs would likely increase \$134 billion but that lower wholesale power costs would save \$240 billion).

61. Letter from Alan Noguee, *supra* note 48, at 10.

62. *Id.*

63. RENEWABLE ENERGY POLICY PROJECT, WIND TURBINE DEVELOPMENT: LOCATION OF MANUFACTURING ACTIVITY 4 (2004), <http://www.crest.org/articles/static/1/binaries/WindLocator.pdf>.

64. *Id.*

65. *Id.*

number of major assumptions, the conclusions are still compelling, especially in states that have lost hundreds of thousands of jobs in the past six years.⁶⁶

3. The Criticisms: The Case Against a National RPS

Like any major energy policy in which there will be winners and losers, there are several arguments against a national RPS. Even if an energy policy ends in a net gain, there will be those who will not come out ahead in the game.⁶⁷ The primary arguments against a national RPS are that it could lead to increased consumer costs, that the RPS amounts to a wealth transfer from states with lower levels of renewable resources to states with high levels, and that it is unnecessary and better handled at the state level. There are additional arguments against the Proposed RPS that are critical of the current plan as drafted, including complaints about the limited scope of what is renewable⁶⁸ and the actual level of the RPS,⁶⁹ but this section of the Article focuses only on criticisms of a national RPS.

Some major studies indicate a potential increase in consumer electricity costs if a national RPS were implemented. The Energy Information Administration (EIA) released a study in June 2007 of a proposed 15% RPS by 2030, which indicated that “cumulative residential expenditures on electricity from 2005 through 2030 are \$7.2 billion (0.4 percent) higher, while cumulative residential expenditures on natural gas are \$1.0 billion (0.1 percent) lower.”⁷⁰ For a 25% RPS by 2025, the costs would likely be much more significant: “the cost of complying with the [25% RPS] is projected to increase the price of electricity by about 3.3 percent and 6.2 percent in 2025 and 2030, respectively.”⁷¹ On a more local level, opponents of the Proposed RPS have claimed that consumers in some states could see electricity bills rise as much as \$15 per month.⁷²

Such increased costs are also part of the second major argument against a national RPS—that it essentially amounts to a wealth transfer from states with

66. See *id.* (indicating that between January 2001 and May 2004 Michigan and Illinois alone lost more than 250,000 jobs).

67. See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 13-14 (4th ed. 1992) (discussing the economic concept of Kaldor-Hicks efficiency, which is the point where net social benefits are maximized without concern for the way the benefits are distributed). There do not appear to be any ways to simply make everyone better off with a national RPS, or any other energy policy for that matter. Cf. Guido Calabresi, *The Pointlessness of Pareto: Carrying Coase Further*, 100 *YALE L.J.* 1211, 1216 (1991) (“[I]f Pareto optimality means a place where no improvement can be made without ex ante creating the possibility that there will be some losers, then we are always there.” (emphasis omitted)).

68. See 153 *CONG. REC.* H9848 (2007) (statement of Rep. Cliff Stearns (R-Fla.)) (arguing that the Proposed RPS was wrong to exclude municipal waste as renewable).

69. See Letter from R. Bruce Josten, Executive Vice President, Chamber of Commerce of the United States of America, to Rep. John Dingell & Rep. Rick Boucher 9, http://energycommerce.house.gov/Climate_Change/RSP%20feedback/US%20Chamber%2006%2015%2007.pdf (arguing that “meeting even a 10 percent RPS by 2020 . . . is unrealistic.”).

70. ENERGY INFO. ADMIN., OFFICE OF INTEGRATED ANALYSIS & FORECASTING, U.S. DEP’T OF ENERGY, *IMPACTS OF A 15-PERCENT RENEWABLE PORTFOLIO STANDARD* v (2007), <http://www.eia.doe.gov/oiaf/servicrpt/prps/index.html>.

71. See ENERGY INFO. ADMIN., *supra* note 9, at 16.

72. See 153 *CONG. REC.* H9850 (2007) (statement of Rep. Mike Ross (D-Ark.)) (“Arkansans are among some of the lowest income in the United States, and this requirement will disproportionately affect them, resulting in their being forced to pay up to \$15 more a month for electricity.”).

few renewable resources to those with significant renewable resources. States like North Dakota, Montana, Texas, and Kansas have significant renewable energy sources available, especially wind.⁷³ Southeastern states,⁷⁴ like Florida⁷⁵ and Virginia,⁷⁶ have very limited wind resources available, which could mean that such states would need to purchase RECs from renewable-rich states to stay in compliance with the national RPS requirements.⁷⁷ The risk of this wealth transfer is apparent in certain scenarios. For example, the EIA determined that under a 25% RPS by 2025, the RPS would lead to higher overall electricity prices, but could,

result in lower electricity prices in some areas of the United States. The Western Regions have considerable renewable resources that could enable suppliers to provide renewable generation in excess of their own requirements and sell surplus credits to producers in other areas with less economical renewable options. The resulting revenue could more than offset the costs of building renewable plants in the West.⁷⁸

A major component of the wealth-transfer complaint of a national RPS is that it unfairly promotes wind and solar energy, thus requiring states with limited solar and wind resources to pay other states for the renewable resources.⁷⁹ However, there are indications that other renewable sources, biomass in particular, would help balance this potential inequity.⁸⁰ “[B]iomass generation is considerably higher than the output from wind capacity . . . because of a higher

73. See AM WIND ENERGY ASS'N., WIND ENERGY: AN UNTAPPED RESOURCE, http://www.awea.org/pubs/factsheets/Wind_Energy_An_Untapped_Resource.pdf (last visited Feb. 9, 2008). The top seven states for wind energy potential are, in order, North Dakota, Texas, Kansas, South Dakota, and Montana. *Id.*

74. Southern Co., a major Southeastern utility serving 4.3 million customers in Alabama, Georgia, Florida, and Mississippi, has been one of the biggest opponents of a national RPS, arguing that a national RPS would raise costs for its customers. See Jim Snyder, *Southern Co. Takes Aim at Renewable-Energy Bill*, THE HILL, May 8, 2007, (stating that Southern Co. also used this argument “to defeat the effort to nationalize the power grid.”), <http://thehill.com/business--lobby/southern-co.-takes-aim-at-renewable-energy-bill-2007-05-08.html>.

75. See 153 CONG. REC. H9848 (2007) (statement of Rep. Cliff Stearns (R-Fla.)) (“Even if all existing renewable resources were included in the RPS, Florida would still have difficulty meeting the requirements given our limited availability of solar, landfill gas and virtually no wind power in the State.”).

76. See 153 CONG. REC. H9849-50 (2007) (statement of Rep. Rick Boucher (D-Va.)) (“I urge the House not to penalize ratepayers who happen to live in areas that have few renewable resources.”).

77. Ralls, *supra* note 1, at 456 (“Utilities located in states without sufficient eligible renewables would have to purchase credits or be penalized monies that would go . . . into the coffers of the states with substantial renewable resources and technologies.”); see also 153 CONG. REC. H9848 (2007) (statement of Rep. Cliff Stearns (R-Fla.)) (“Utilities located in areas of the country with poor renewable resources, like Florida, will be required to purchase credits from utilities located in areas with strong renewable resources potential, leading to significant wealth transfers out of Southeastern States.”).

78. See ENERGY INFO. ADMIN., *supra* note 9, at 16.

79. See 153 CONG. REC. H9849 (2007) (statement of Rep. Sue Myrick (R-N.C.)) (“[The Proposed RPS] unfairly penalizes consumers in States like North Carolina, where investor-owned utilities provide a majority of the State’s power using coal-fired generation and nuclear power . . . Many States don’t have the environmental capacity to generate significant power through solar or wind.”).

80. See ENERGY INFO. ADMIN., *supra* note 70, at 13 (“As with wind, data suggest that there are sufficient biomass resources to fuel the increased biomass generation projected in the [15%] RPS case.”); ENERGY INFO. ADMIN., *supra* note 9 at 14 (“Considerable increases in biomass electricity generation occur in virtually every region of the United States [under a 25% RPS].”).

biomass capacity factor.”⁸¹ Additionally, energy efficiency provisions, like those in the Proposed RPS, could further assist in the “uneven geography of renewable resources.”⁸² Nonetheless, this risk remains a significant criticism of a national RPS.

Finally, many opponents of a national RPS argue that it is unnecessary⁸³ to have a national plan because state and regional initiatives are already handling the issue in regions where it is appropriate and the states, individually or regionally, are better situated to implement plans that account for regional differences.⁸⁴ For example, in the case of the Proposed RPS, a major complaint is that a “one-size-fits-all Federal mandate does not take into account the specific energy and economic needs of individual States by requiring that 15 percent of retail electricity sales be generated from specific renewable resources which are not prevalent” in all regions.⁸⁵ Although there are arguably benefits that a national plan can achieve that individual state plans cannot,⁸⁶ as discussed in Part II.B, many state plans are already well established and effective.

B. State-Level RPS Programs: Halfway There; More to Come?

Half the U.S. states and the District of Columbia have implemented an RPS at some level.⁸⁷ State RPS expectations vary significantly from state to state—from as low as 8% by 2020 in Pennsylvania⁸⁸ to 25% by 2013 in New York.⁸⁹

81. ENERGY INFO. ADMIN., *supra* note 9, at 14; *see also* Glick, *supra* note 56 (“Obviously, biomass generates four times as much electricity as wind does [and] the Southeast is where a significant bulk of the biomass is.”).

82. Marilyn Brown, Forward, *in* Cooper & Sovacool, *supra* note 3, at 4 (stating that, by including efficiency provisions, “equity is advanced: utilities in states with scarce renewable resources can place relatively more emphasis on energy efficiency than utilities operating in resource-rich regions.”).

83. *See* Letter from R. Bruce Josten, *supra* note 69, at 1.

84. *See* Ralls, *supra* note 1, at 456-63. According to Ralls,

Regional consortiums, states, local municipalities, and individual utilities are best positioned to evaluate the panoply of renewable data, in conjunction with their policy objectives, to establish programs that work for their citizens and consumers. At the end of the day, the goal of any renewable program should be to provide cleaner, reasonably-priced and reliable electric service. Mandates such as a federal RPS will not achieve these goals.

Id. at 472.

85. 153 CONG. REC. H9848 (2007) (statement of Rep. Cliff Stearns (R-Fla.)); *see also* Ralls, *supra* note 1, at 456 (“[T]he economic reality of a national RPS militates against a “one-size-fits-all” approach.”); Response from Edison Electric Institute (EEI) to Rep. John Dingell & Rep. Rick Boucher 13, http://energycommerce.house.gov/Climate_Change/RSP%20feedback/EEI%2006%2009%2007.pdf (last visited Feb. 9, 2008) (“A one-size-fits-all federal RPS mandate would ignore the available energy resources and economic needs of individual states.”).

86. *See, e.g.,* Lowery, *supra* note 54. (“[N]o matter how many different state programs you develop you can’t drive a national market that will minimize the costs for everybody everywhere without a national system, without a national credit trading system.”).

87. Mark Clayton, *In Big U.S. Energy Bill, Who Will Pay?*, CHRISTIAN SCI. MONITOR, Nov. 7, 2007, at 1 (“Although 25 states already have such [RPS] requirements—many of them far tougher than the proposed national RPS—utilities in the Southeast and elsewhere oppose a federal standard that doesn’t take geography into account.”).

88. *See* 73 PA. CONS. STAT. § 1648.3 (2007). The Pennsylvania RPS law has two tiers for compliance for different types of energy sources, which creates “essentially a Renewable Portfolio Standard similar to other states’ of 8%, with an additional energy standard of 10%.” CTR. FOR RENEWABLE ENERGY AND SUSTAINABLE TECH., RPS PENNSYLVANIA, http://www.crest.org/articles/static/1/Pennsylvania_RPS.html (last visited Feb. 9, 2008).

Two RPS states have not fixed a percentage target, and have instead set specific megawatt goals: Iowa—105 MW per year,⁹⁰ and Texas—5880 MW by 2015.⁹¹ Additionally four states—Missouri,⁹² North Dakota,⁹³ Vermont,⁹⁴ and Virginia⁹⁵—have passed non-binding goals or objectives to provide incentives, but not obligations, to promote renewable energy generation.⁹⁶

As might be expected, the retail electric suppliers in states with an RPS are expected to account for the bulk of the renewable energy generating capacity in the United States.⁹⁷ It is clear that RPS states have built, and are building, more renewable energy generation facilities than non-RPS states, but it is not clear to what extent this is the result of an RPS policy. That is, an RPS policy provides incentives for building new renewable generation capacity, but other factors, especially the availability of renewable energy resources, also play a significant role.⁹⁸

III. IMPACT ON RETAIL ELECTRICITY SUPPLIERS

The addition of a national RPS would heavily impact the investment decisions of retail electricity suppliers, and would have significant administrative and operational effects. Capital-heavy investment decisions are always difficult, and a national RPS would add a new wrinkle to an already complex analysis. From the administrative side, a national RPS would add compliance activities related to monitoring and reporting, as well as to the process of obtaining RECs.

89. Order Approving Renewable Portfolio Standard Policy, Case No. 03-E-0188, at 3 (N.Y. Pub. Serv. Comm'n Sept. 24, 2004), [http://www3.dps.state.ny.us/pscweb/WebFileRoom.nsf/0/85D8CCC6A42DB86F85256F1900533518/\\$File/301.03e0188.RPS.pdf?OpenElement](http://www3.dps.state.ny.us/pscweb/WebFileRoom.nsf/0/85D8CCC6A42DB86F85256F1900533518/$File/301.03e0188.RPS.pdf?OpenElement).

90. IOWA CODE § 476.44 (2006).

91. TEX. UTILS. CODE ANN. § 39.904 (2007).

92. MO. ANN. STAT. § 393.1025 (West 2007).

93. N.D. CENT. CODE § 49-02-28 (2007).

94. VT. STAT. ANN. tit. 30, §§ 8001-8006 (2007).

95. VA. CODE ANN. § 56-249.6 (West 2007).

96. See generally DATABASE OF STATE INCENTIVES FOR RENEWABLES AND EFFICIENCY, RULES, REGULATIONS, & POLICIES FOR RENEWABLE ENERGY, <http://www.dsireusa.org/summarytables/reg1.cfm?&CurrentPageID=7&EE=0&RE=1> (last visited Jan. 24, 2008) (providing state-by-state laws relating to renewable and efficient energy policy).

97. GLOBAL ENERGY DECISIONS, A DIFFERENT APPROACH: THE BOTTOM LINE ON RENEWABLES 10 (2005) (“The top 25 affected utility companies will account for nearly 63 percent of the cumulative investment needed to meet the [renewable energy] standards by 2020—even though they account for less than 18 percent of the total retail power market.”); see also ENERGY INFO. ADMIN., OFFICE OF INTEGRATED ANALYSIS & FORECASTING, U.S. DEP’T OF ENERGY, ANNUAL ENERGY OUTLOOK 2007 WITH PROJECTIONS TO 2030, at 87 (2007), [http://tonto.eia.doe.gov/ftproot/forecasting/0383\(2007\).pdf](http://tonto.eia.doe.gov/ftproot/forecasting/0383(2007).pdf) (stating that, assuming full compliance with state RPS goals, “State renewable energy programs are projected to result in a national total of 61 billion kilowatthours of additional nonhydropower renewable generation in 2030 relative to the reference case, a 29-percent increase”).

98. See ENERGY INFO. ADMIN, *supra* note 97 at 30 (stating that while some regions would see significant growth in renewable energy production under state RPS standards, others, like “Texas, the Southwest, and the Northwest have either largely met their renewable electricity requirements with existing and planned capacity or are projected to build sufficient renewable capacity based on economic merits . . .”); see also *id.* at 8 (“The robust growth [in the consumption of renewable fuels expected between 2005 and 2030] is a result of State renewable portfolio standard (RPS) programs, mandates, and goals for renewable electricity generation; technological advances; high petroleum and natural gas prices; and Federal tax credits, including those in EPACT2005.”).

From an operational perspective, a national RPS will impose new variables in each supplier's business decision-making efforts. Utilities will, for example, need to decide whether to invest in new generation infrastructure, directly or indirectly,⁹⁹ or purchase from other renewable generators.¹⁰⁰ The ability to purchase RECs from others, though, can help retail electric suppliers defer some investment decisions and plan for more cost-effective uses of capital.¹⁰¹

A. *Electric Generation Investment Decisions: From Hard to Harder*

The most significant difficulty in making investment decisions regarding new generation, which exists without a national RPS, is calculating the expected return on that investment. Deregulation in electricity markets has, in some cases, increased competition, but has also “had the side effect of increasing risk in a highly capital-intensive industry.”¹⁰² Before deregulation, “utility debt was considered virtually risk-free since the rate of return was guaranteed by the public utility commission, and the costs of new construction could be passed on to ratepayers.”¹⁰³ Now, in many places, return on new generation investment depends solely on the market.

The Proposed RPS provides some rate protection for electric utilities that are subject to rate regulation at the state or federal level. The Proposed RPS provides that covered utilities “shall not be denied the opportunity to recover the full amount of the prudently incurred incremental cost of renewable energy and energy efficiency obtained to comply with the requirements [of the national RPS].”¹⁰⁴ However, some risk would remain, because “[i]n most states, electric rate structures are based on sales volume, and utility companies lose money if sales decrease.”¹⁰⁵ As such, a national RPS “could create financial risks for electric companies unless states change their regulatory structure.”¹⁰⁶

The mere existence of a national RPS would provide some incentive for all utilities to invest in renewable generation because that investment would have two markets—the market for its electricity and the market for its RECs—instead of just the market for its electricity for a traditional generation facility.¹⁰⁷ In

99. That is, retail electric suppliers could choose to build new renewable generation facilities themselves, create a joint venture, or make an investment (small or large) in the project of another company. See generally WILLIAM A. KLEIN & JOHN C. COFFEE, JR., *BUSINESS ORGANIZATIONS AND FINANCE: LEGAL AND ECONOMIC PRINCIPLES* 315-19 (10th ed. 2007) (discussing the “notion of financing within and outside the firm . . . and a few factors that might affect the choice of one device over its economic equivalent”).

100. See Thomas W. Kaslow & Robert S. Pindyck, *Valuing Flexibility in Utility Planning*, *ELEC. J.*, Mar. 1994, at 60. (“Utilities should view flexible investment alternatives as resource ‘options,’ which provide a potentially valuable right without the encumbrances of an obligation.”).

101. David Berry, *The Market for Tradable Renewable Energy Credits*, 42 *ECOLOGICAL ECON.* 369, 371 (2002) (“By being able to defer an investment decision, the utility may be able to get additional information on its investment options or negotiate more favorable contracts to purchase renewable generating equipment.” (citation omitted)).

102. See Seth Blumsack, *Measuring the Benefits and Costs of Regional Electric Grid Integration*, 28 *ENERGY L.J.* 147, 178 (2007).

103. *Id.*

104. H.R. 3221 § 9611(a), 110th Cong. (2007).

105. Response from EEI, *supra* note 85, at 6.

106. *Id.*

107. RYAN WISER & STEVEN PICKLE, *FINANCING INVESTMENTS IN RENEWABLE ENERGY: THE ROLE OF POLICY DESIGN AND RESTRUCTURING*, at xvi (1997), <http://eetd.lbl.gov/EA/EMP/reports/39826.pdf> (“In a

addition, it is likely that power projects will require “more equity, less debt, and shorter debt repayment periods” than in the past.¹⁰⁸ “Developers will probably attempt to sign bilateral contracts with large end users, marketers, aggregators, and utilities, but contract terms are likely to be shorter than in the past.”¹⁰⁹ In fact, “[c]orporate balance-sheet financing may also become more common.”¹¹⁰ If a utility buys RECs and energy from another supplier, there is also a risk that purchase agreement would end up showing as a long-term debt on the utility’s balance sheet.¹¹¹ Thus, how a national RPS would impact such capital-intensive investments is hard to predict.

The implications of a national RPS may not be quite as burdensome as they initially appear, however, because, many states have RPS programs already, and, as explained below, even those operating in non-RPS states are often served by organizations, e.g., Regional Transmission Operators (RTOs) and Independent System Operators (ISOs),¹¹² with the expertise necessary to facilitate compliance. Nonetheless, it is retail electricity suppliers that would bear the greatest burden of a nationally imposed RPS, because they would need to participate in facilitating compliance, as well as facilitating the renewable generation market.

Another significant issue facing investment decisions is what a national RPS would mean for decisions related to other types of generation that utilities have considered. Some utilities, for example, have been considering building new nuclear generation facilities.¹¹³ A national RPS would seem to make that less appealing, although it is not entirely clear that new nuclear facilities were that likely, or the best option, anyway. Nonetheless, a national RPS, at least absent a corresponding greenhouse gas emissions’ cap, would add another hurdle for nuclear investment. Clean coal technologies, another major generation source in development,¹¹⁴ would face similar hurdles, unless, of course, the national RPS were to include clean coal as a renewable source. And, of course, what constitutes “clean” is never an easy answer.¹¹⁵

restructured electricity industry featuring an RPS, renewable energy project owners would have a revenue stream that comes from two “commodity” markets: the power market and the REC market.”).

108. *Id.* at xv.

109. *Id.*

110. *Id.*

111. *See id.*

112. RTOs and ISOs are independent not-for-profit organizations that manage the joint transmission assets owned by various electric utilities in the RTO’s or ISO’s covered region. See Seth Blumsack, *Measuring the Benefits and Costs of Regional Electric Grid Integration*, 28 ENERGY L.J. 147 (2007). RTOs often provide a regional spot market for electricity, options for hedging congestion risk, and other services. *Id.* Especially relevant here, RTOs, such as PJM’s GATS, have programs for tracking RECs. Press Release, PJM/EIS, PJM EIS Launches Environmental Tracking System (Apr. 15 2005), <http://www.pjm.com/contributions/news-releases/2005/20050415-GATS-launched.pdf>.

113. *See* Thomas Content, *Midwestern Governors Sign Deal to Cut Greenhouse Gases Accord Excludes Nuclear Energy*, MILWAUKEE J. SENTINEL, Nov. 16, 2007, at D1 (“Given rising demand for energy, some have called for tripling the amount of power the world generates from nuclear power over the coming decades.”).

114. *Id.* (“[P]olicies [to reduce greenhouse gas emissions] include a major investment in energy efficiency and renewable energy, as well as a surge in nuclear and other forms of power generation such as ultra-clean coal-fired power plants that would bury underground the carbon dioxide produced from burning coal.”).

115. *See* Spencer Hunt, “Clean Coal” Plants Hitting Snags, COLUMBUS DISPATCH, Jan. 11, 2008, at 1B (“Spiraling construction costs and questions about carbon dioxide emissions -- a leading global-warming

B. Compliance Requirements

A national RPS would mean new federal reporting requirements for retail electricity suppliers. For those operating in RPS states, a federal RPS would mean a second, potentially duplicative, reporting requirement. Electricity industry representatives (such as the Edison Electric Institute) have argued that a federal RPS, which mandates “different targets, technologies, and timetables through a federal RPS on top of the state programs would create uncertainty and drive up the cost of meeting renewable mandates even further for electricity suppliers and consumers in those states.”¹¹⁶

For covered utilities operating only in non-RPS states, a federal mandate would mean initiating a new program for tracking and reporting RECs. As such, it does appear that it would be more burdensome for such facilities because it would require setting up a process to deal with RECs in the first place. For those utilities that already track RECs for state compliance, the adaptability of many of the RECs tracking systems should make compliance with the additional federal requirement less burdensome and more straightforward than it would be otherwise.

C. RECs: Where Will They Come From and How to Decide?

Early in the life of a national RPS, the income received from REC sales will provide an incentive for investment in qualifying renewable technologies even if they involve higher costs than other non-qualifying generating technologies.¹¹⁷ However, as the end date for the RPS program grows near (2030 in the EIA study),¹¹⁸ the lesser amount of time remaining where REC payments can be expected will reduce the expected benefit of the investment in qualifying renewable generation.¹¹⁹ As such, any new later-in-time investor will seek higher REC prices to compensate the shorter time horizon under which they can recoup their investment.¹²⁰ This puts retail electricity suppliers in a difficult position under plans such as the Proposed RPS. As the amount of energy that must come from qualifying renewable resources is increasing, the incentive for building qualifying generation facilities is decreasing.

This could lead to perverse results. Under the Proposed RPS, as originally drafted, there was a cap on REC prices,¹²¹ but according to the EIA’s analysis of a 15% RPS, by 2020, investors would be “unwilling to invest in sufficient amounts of qualifying generation to meet the RPS target unless the credit price were to exceed the 1.9-cent price cap [used in the EIA analysis].”¹²² As a result,

contributor -- already have delayed plans to build dozens of traditional coal-burning power plants nationwide. Plans for at least 11 coal-to-gas plants have been scrapped or delayed.”)

116. Roger Kranenburg, *Charting a Course for Renewables*, INSIGHT, Oct. 2007, http://www.platts.com/Magazines/Insight/2007/oct/200710B25150Eh3C0sQw3H_1.xml.

117. See ENERGY INFO. ADMIN., *supra* note 70, at 5.

118. The sunset year in the Proposed RPS was 2039. See H.R. 3221 § 9611(a).

119. See ENERGY INFO. ADMIN., *supra* note 70, at 5.

120. *Id.*

121. See H.R. 969 § 1(a), 110th Cong. (2007) (“The Secretary shall offer renewable energy credits for sale at the lesser of 3 cents per kilowatt-hour or 200 percent of the average market value of renewable credits for the applicable compliance period.”).

122. ENERGY INFO. ADMIN., *supra* note 70, at 5.

covered retail electricity suppliers would opt to stay in compliance with the RPS program by purchasing RECs from the federal government at the price cap rather than purchasing RECs from new renewable generation.¹²³ Interestingly, the “EIA analysis of an alternative RPS requirement with no cost cap and no sunset provision indicates that the same targets as in the proposed program could be met in all years, and the credit price would generally fall below the 1.9-cent-per-kilowatthour cap.”¹²⁴ If, in fact, the market were to react as the EIA analysis predicts (assuming passage of the Proposed RPS), it is hard to imagine that Congress would not act to extend or repeal the sunset date. Regardless, any uncertainty related to the sunset and the availability of RECs to satisfy the RPS puts an additional burden on retail electric suppliers by making the RECs market even harder to predict.

In fact, it is this kind of uncertainty in federal renewable energy policy that has been a recurring complaint from the electric industry. Particularly in the context of tax credits for renewable projects, the industry has argued that long-term planning for the use of renewable energy sources is harmed by a lack of a coherent and consistent plan: “In the past, the short-term, start-and-stop nature of renewable tax credits has dissuaded utilities, developers, manufacturers and investors from maximizing the potential of renewable technologies and resources”¹²⁵ The industry has thus supported long-term extension of such tax credits to ensure the stability needed for long-term planning and financing of renewable energy projects.¹²⁶

D. The Great Unknown: Operational and Infrastructure Implications

Considering the major operational impacts on electric utilities is exceedingly difficult. Many of the studies discussed in Part II provide significant caveats related to the assumptions used in developing the respective models. The outcomes of the currently available studies are so broad that the results seem to add little more than quantified speculations, at least in terms of making specific predictions about the implications of a national RPS. That is, the studies provide a lot of numbers to consider, but the results indicate that the impact of a national RPS could be revolutionary or exceedingly moderate.

For instance, the study from Woods MacKenzie indicates that a national RPS would lead to such significant amounts of renewable energy that consumers could save as much as \$100 billion on their electric bills.¹²⁷ If this is to become a reality, it will mean a fundamental change in how utilities operate.

Whether from wind, solar, biomass, or other renewable sources, massive amounts of renewable energy generation would require tremendous investment in new generation facilities.¹²⁸ Some sources, like solar or wind, could even require additional investment in additional traditional-fuel generation to support the intermittent energy sources (i.e., to provide energy when the wind or sun is

123. *See id.*

124. *Id.*

125. Roger Kranenburg, *supra* note 116.

126. *Id.*

127. Press Release, Woods MacKenzie, *supra* note 58.

128. *Id.*

not available).¹²⁹ Furthermore, to provide renewable energy at that level, major investments in the transmission grid would need to occur.¹³⁰ Infrastructure changes at such a high level would fundamentally change how electricity is delivered, and thus how utilities operate.

It is not clear how quickly, if at all, major transmission infrastructure can be made available.¹³¹ Some western states have worked to develop a renewable-only transmission, the Frontier Line.¹³² The proposed Frontier Line is a transmission line that would run as long as 1300 miles, from Wyoming to California (through Nevada and Utah).¹³³ It would “leverage up to 6,000 megawatts of wind power and 6,000 megawatts of clean coal power,”¹³⁴ at an estimated cost of \$3.3 billion, with estimated annual benefits of between \$926 million and \$1.7 billion annually for the area.¹³⁵

More significantly, “development of a nationwide transmission super highway” would likely be needed to satisfy major new wind generation at a level leading to cost savings of \$100 billion.¹³⁶ Whether related to renewable energy or not, a national transmission superhighway would provide additional benefits, in terms of reliability and, potentially, financially.¹³⁷ In fact, in the CapX 2020 project is one such program that is intended to help (among other things) facilitate compliance with Minnesota’s renewable energy¹³⁸ objectives.¹³⁹ The CAPX 2020 Vision Plan includes a \$1.25 billion transmission infrastructure project of 1620 miles of 345kV transmission lines. A CapX 2020 study concluded that the covered region, which includes Minnesota, North Dakota, South Dakota, and Wisconsin, “will experience specific and numerous transmission overloads, outages, and voltage problems” if transmission additions are not made between 2005 and 2020.¹⁴⁰ The fact that the need for this

129. *Id.*

130. *Id.*

131. *As Utilities Race to Meet RPS with New Wind Projects, Key Grid Expansion Sets Slower Pace*, ELEC. UTIL. WEEK, June 11, 2007, at 1 (“Tens of thousands of megawatts of wind projects are waiting to be built, but it will take five to seven years for the supporting transmission to be constructed, according to utility executives.”) [hereinafter *Utilities Race to Meet RPS*].

132. See generally Joshua P. Fershee, *Levels of Green: Balancing State and Regional Efforts, in Wyoming and Beyond, to Reduce Greenhouse Gas Emissions*, 7 WYO. L. REV. 269, 280-81 (2007) (discussing state-level activities that “seek to promote and facilitate the creation and transmission of green power”).

133. *Western Governors Back Four-State, \$3.3B Line to Bring Energy to West Coast Load Centers*, ELEC. UTIL. WEEK, Apr. 11, 2005, at 16.

134. Fershee, *Levels of Green*, *supra* note 132, at 280.

135. FRONTIER LINE BACKGROUNDER, CLEAN, RELIABLE AND AFFORDABLE ENERGY FOR THE AMERICAN WEST 2 http://www.frontierline.org/docs/Frontier_Line_backgrounder.pdf (last visited Feb. 15, 2008).

136. EDISON ELEC. INST., TRANSMISSION PROJECTS: AT A GLANCE 2 (2008), http://www.eei.org/industry_issues/energy_infrastructure/transmission/Trans_Project_lowres.pdf.

137. See Lakshman D. Guruswamy, *A New Framework: Post-Kyoto Energy and Environmental Security*, 16 COLO. J. INT’L ENVTL. L. & POL’Y 333, 342 (2005) (stating that the lack of sufficient transmission lines and grids prevents the cost-effective transfer of wind power from renewable-rich states like North Dakota to the population-rich east and west coasts).

138. *Utilities Race to Meet RPS*, *supra* note 131, at 1. (“In Minnesota, 9,800 MW of proposed wind projects are waiting in the queue for transmission studies at the Midwest Independent System Operator . . .”).

139. See CAPX 2020, CAPX 2020 TECHNICAL UPDATE: IDENTIFYING MINNESOTA’S ELECTRIC TRANSMISSION INFRASTRUCTURE NEEDS 8 (2005), http://www.capx2020.com/Images/cert_need/013_A-1_CapX2020%20Technical%20Update%20-%20Identifying%20Mn%20Electric.pdf.

140. *Id.* at 3.

transmission infrastructure was clear before Minnesota's RPS was even mandatory¹⁴¹ indicates that a national RPS would likely trigger similar needs throughout the country. A national RPS would thus also require additional, and more aggressive, legislation to facilitate transmission investment on the scale needed to satisfy the RPS goals.¹⁴²

The EIA studies, on the other hand, indicated moderate increases in costs to consumers.¹⁴³ Depending on the parameters of the RPS, it is possible that a national RPS could change almost nothing operationally, if the cost of the major infrastructure changes is too high or the incentives too low. For instance, if the RPS includes a cost cap that is too low, most utilities would simply buy RECs from the government rather than invest in renewable projects. In this scenario, only the easiest renewable energy programs would be pursued, and it is likely those programs will occur with or without a national RPS. As discussed in Part III.C, the EIA predicted this kind of outcome in the latter stages of a proposed 15% RPS.¹⁴⁴ Quite simply, developers of renewable energy projects will not invest in projects if most of their customers have a cheaper way out.

Whether a national RPS would trigger fundamental change or have only moderate impact adds to the difficulty utilities would face in making investment and policy decisions. What should be clear is that generation investment and transmission investment are not separate issues, and any national RPS should be part of a comprehensive energy package to help utilities make informed and more accurate decisions.

IV. IMPACT ON STATE AND FEDERAL REGULATORS

A national RPS would require new or expanded activity by state and federal regulators. The first order of business for state and federal regulators would be the implementation or expansion of a REC tracking program. Second, state and federal regulators would each have a role in enforcing the national RPS.

A. Development of REC Tracking Program

Under the Proposed RPS, the federal government within one year of enactment, must establish by rule “a program to verify and issue Federal renewable energy credits to generators of renewable energy, track their sale, exchange and retirement and to enforce” the RPS.¹⁴⁵ To the extent possible, such a program “shall rely upon existing and emerging State or regional tracking systems that issue and track non-Federal renewable energy credits.”¹⁴⁶ Given that, in some form, twenty-five states already have an RPS, there is a substantial framework for implementing the program.

141. *Id.* at 8 (stating that the generation used for the CapX 2020 study included “sufficient renewable resources to address the Minnesota Renewable Energy Objective of the CapX 2020 participants.”).

142. *See* Fershee, *supra* note 132, at 285 (“Increased transmission capacity is necessary to make large-scale green power programs viable.”).

143. ENERGY INFO. ADMIN., *supra* note 9, at 16; ENERGY INFO. ADMIN., *supra* note 70, at v.

144. *Id.* at 5.

145. Renewable Energy and Energy Conservation Tax Act of 2007, H.R. 3221 § 9611(a), 110th Cong. (as passed by House, Aug. 4, 2007).

146. *Id.*

It is not as though the federal program can simply parallel an existing state program, however. Each state program is unique in some manner,¹⁴⁷ and not all state laws are consistent with the Proposed RPS.¹⁴⁸ For instance, in Connecticut, the definition of renewable energy includes “hydropower that meets the low-impact standards of the Low-Impact Hydropower Institute.”¹⁴⁹ Connecticut, thus, permits all hydropower meeting the prescribed standards,¹⁵⁰ but the Proposed RPS only permits “incremental hydropower.”¹⁵¹ Thus, under the federal program, related state RECs could not be used for federal compliance. Similarly, it is possible that an activity that would not satisfy a state RPS, and thus not be eligible for a state REC, could still satisfy the federal RPS.¹⁵²

Ultimately, although such issues will require effort and coordination, the process should be manageable because independent efforts are already underway to “create a common currency for renewables, prevent double counting, and support existing and emerging markets for renewables.”¹⁵³

Regional programs, such as PJM’s¹⁵⁴ Generation Attributes Tracking System (GATS), already track RECs in a way that should be transferable to a federal program because it already handles multiple state programs.¹⁵⁵ GATS “tracks generation attributes and the ownership of the attributes as they are traded or used to meet government standards.”¹⁵⁶ Further, GATS creates generator-specific electronic certificates that list the attributes electricity suppliers need to satisfy state policies and document renewable generation.¹⁵⁷ “Data in the GATS include megawatt-hours produced, emissions data, fuel source, location, state program qualification and ownership of attributes for each

147. Karlynn S. Cory & Blair G. Swezey, *Renewable Portfolio Standards in the States: Balancing Goals and Rules*, ELEC. J., Apr. 2007, at 21, 24 (“REC tracking platforms have been designed for the specific state or regional circumstances. As more states employ REC tracking systems to monitor RPS compliance, the trading of RECs between systems with divergent definitions and tracking structures will have to be addressed.”).

148. See Response from EEL, *supra* note 85, at 13 (“[N]ine of the 24 existing state plans would fail to meet a proposed federal RPS target of 15 percent by the year 2020.”).

149. CONN. GEN. STAT. ANN. § 16-245n(a) (2007).

150. *Id.*; see also LOW IMPACT HYDROPOWER INST., LOW IMPACT HYDROPOWER CERTIFICATION PROGRAM (2004), http://lowimpacthydro.org/documents/criteria_summary.pdf (stating that a hydropower facility, for certification, must meet the criteria in the following eight areas: “(1) river flows, (2) water quality, (3) fish passage and protection, (4) watershed protection, (5) threatened and endangered species protection, (6) cultural resource protection, (7) recreation, and (8) facilities recommended for removal.”).

151. H.R. 3221 § 9611(a) (“[I]ncremental hydropower shall be based, on the increase in average annual generation resulting from the efficiency improvements or capacity additions.”).

152. This would appear to be less of a concern, because it would provide more compliance options instead of less, but it could create some confusion in the given state.

153. See CENTER FOR RESOURCE SOLUTIONS, NORTH AMERICAN ASSOCIATION OF ISSUING BODIES (NAAIB), <http://www.resource-solutions.org/policy/naaib/> (last visited Jan. 28, 2008) (“The NAAIB is a voluntary association of certificate tracking systems, regulators and interested market participants that are vested in preventing double-counting and promoting harmonization among certificate tracking systems in North America.”).

154. PJM is an RTO that serves approximately fifty-one million people and coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. See PJM, OVERVIEW, <http://www.pjm.com/about/overview.html> (last visited Jan. 28, 2008).

155. See Press Release, PJM EIS, *supra* note 112.

156. *Id.*

157. *Id.*

megawatt-hour tracked.”¹⁵⁸ Similar REC tracking programs—including those affiliated with ERCOT,¹⁵⁹ ISO New England,¹⁶⁰ and the Western Electricity Coordinating Council (WECC)¹⁶¹—exist, or are in development, throughout the country.

In fact, most U.S.-based RECs are tracked by technology created by a single company: “APX technology is now the system of choice for every major renewable energy market in North America, including the PJM (GATS), ISO New England (NEPOOL GIS), WECC (WREGIS), MISO (M-RETS) and ERCOT (Texas REC) markets.”¹⁶² The various state and regional REC tracking programs were developed by state regulators who watched and learned from other states, then implemented programs to meet the requirements of their own state.¹⁶³ “As a result, today a well proven, richly functional infrastructure is in place to create, track and manage RECs and related environmental commodities across the nation’s largest regional markets.”¹⁶⁴ Already, data indicates that a significant number of “regional stake holders have cross regional interests” in the three fully operating major regional markets.¹⁶⁵ Given that the predominant technology for tracking RECs is already working across regions with significant differences, a national solution should be feasible, if not simple.¹⁶⁶

An effective national RPS would require oversight and enforcement of the program. The additional burden created by tracking federal RECs should be manageable because monitoring compliance largely requires only that the regulator review the number of approved federal RECs submitted by the covered utility, much of which can be done electronically.¹⁶⁷ As long as the technological solution is trusted, such monitoring should be achieved largely via electronic RECs tracking mechanisms,¹⁶⁸ thus easing the administrative burden.¹⁶⁹

158. *Id.*

159. ERCOT, the Electric Reliability Council of Texas, is the program administrator of the REC trading program in Texas. See ENERGY RELIABILITY COUNCIL OF TEXAS, RENEWABLE ENERGY CREDIT, <http://www.ercot.com/services/programs/rec/index.html> (last visited Jan. 28, 2008).

160. ISO New England is an RTO, serving Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. See ISO NEW ENGLAND, OVERVIEW, http://www.iso-ne.com/aboutiso/co_profile/overview/index.html (last visited Jan. 28, 2008).

161. The WECC was formed by a merger of several groups in the West and Southwest, and “WECC’s interconnection-wide focus is intended to complement current efforts to form Regional Transmission Organizations (RTO) in various parts of the West.” WESTERN ELECTRICITY COORDINATING COUNCIL, ABOUT WECC, <http://www.wecc.biz/wrap.php?file=wrap/about.html> (last visited Jan. 28, 2007).

162. Press Release, APX, Inc., Midwest Renewable Energy Tracking System (M-RETS) Issues Certificates (Oct. 23, 2007), http://www.apx.com/news/pr_APX_MRETS_Issues_Certificates.asp. (“APX is North America’s leading infrastructure provider for environmental markets in renewable energy and greenhouse gases including carbon commodities.”)

163. REINER MUSIER, APX, INC., U.S. MANDATORY REC MARKETS—AN ESTABLISHED ENVIRONMENTAL INFRASTRUCTURE 6 (2006), <http://www.apx.com/documents/Whitepaper--US-Mandatory-REC-Markets.v.Final.pdf>.

164. *Id.*

165. *Id.* at 3-4 (stating that data was gathered from account holders in “PJM GATS, NEPOOL GIS, and TEXAS REC; the WECC WREGIS system is still in the implementation phases.”)

166. See *id.* at 4 (“Learning to manage that complexity in software technology has been one of the keys to successful deployments of the market technology.”)

167. Note that the larger monitoring burden falls on the covered retail electric supplier, and not the regulator. See *supra* Part III.A.

168. MUSIER, *supra* note 163, (“[T]he integrity of the environmental commodity is essential for the development of effective markets The technology implication for market systems is that the commodity,

For covered utilities that fail to meet the RPS requirements, the enforcement provisions of the Proposed RPS would require additional review and possible adjudication. The Proposed RPS provides that a retail electric supplier that does not comply with the RPS requirements “shall be liable for the payment of a civil penalty,”¹⁷⁰ meaning that the Department of Energy would need to review filings from, and assess penalties upon, those failing to report compliance with the national RPS.¹⁷¹ This enforcement, while adding an additional administrative burden, is necessary for an effective RPS. State RPS programs with ineffective or under-enforced penalties have been less effective than those with strong enforcement policies.¹⁷² In Arizona, for instance, the “lack of enforcement and non-compliance penalties has resulted in significant under-compliance with the [renewable energy] standards.”¹⁷³

Enforcement of a national RPS would create an additional case load, but not one that should prove problematic. Unfortunately, the Proposed RPS called for EPA enforcement when a better alternative for compliance monitoring was readily available. The DOE has little, if any, experience in administering a program on the scale of a national RPS, and has shown no indication that enforcement of a major program is within the agency’s capabilities. Further, the Proposed RPS includes a program providing RECs for certain energy efficiency measures, an area in which the DOE has already failed to show effective leadership. The DOE was charged with the task of promulgating energy efficiency standards for household appliances in 1987,¹⁷⁴ but failed to update the efficiency standards, leading to a lawsuit brought by fifteen states.¹⁷⁵ Even when

its pedigree, and its verification attributes need to be managed in a unified, transparent manner for market participants.”).

169. See RYAN WISER, ET. AL., RENEWABLES PORTFOLIO STANDARDS: A FACTUAL INTRODUCTION TO EXPERIENCE FROM THE UNITED STATES 6 (2007) , <http://eetd.lbl.gov/ea/ems/reports/62569.pdf> (stating that most states have sought to create REC markets and implement electronic tracking systems to ease compliance burdens).

170. H.R. 3221 § 9611(a). The enforcement provision provides:

(j) ENFORCEMENT. — A retail electric supplier that does not comply with subsection (b) shall be liable for the payment of a civil penalty. That penalty shall be calculated on the basis of the number of kilowatt-hours represented by the retail electric supplier’s failure to comply with subsection (b), multiplied by the lesser of 4.5 cents (adjusted for inflation for such calendar year, based on the Gross Domestic Product Implicit Price Deflator) or 300 percent of the average market value of Federal renewable energy credits and energy efficiency credits for the compliance period. Any such penalty shall be due and payable without demand to the Secretary as provided in the regulations issued under subsection (e).

Id.

171. See CONGRESSIONAL BUDGET OFFICE, COST ESTIMATE: HR 3221 RENEWABLE ENERGY AND CONSERVATION TAX ACT OF 2007, at 10 (2007), <http://www.cbo.gov/ftpdocs/88xx/doc8806/hr3221.pdf> (“To comply with the proposed targets, retail electric suppliers would either remit federally issued credits or make cash payments. The Department of Energy would oversee a system for trading two types of federal credits: renewable energy credits and energy efficiency credits.”).

172. RYAN WISER ET AL., EVALUATING EXPERIENCE WITH RENEWABLES PORTFOLIO STANDARDS IN THE UNITED STATES 16 tbl. 2 (2004), <http://eetd.lbl.gov/ea/ems/reports/54439.pdf>.

173. *Id.*

174. See National Appliance Energy Conservation Act of 1987, Pub. L. 100-12, 101 Stat. 103 (1987) (codified at 42 U.S.C. §§ 6291-97, 6299, 6302, 6303, 6305, 6306, 6308, & 6309).

175. Consent Decree, *New York v. Bodman*, No. 05 Civ 7807 (JES), (S.D.N.Y. Sept. 7, 2005)..

DOE has acted to increase efficiency standards, the agency has not indicated a willingness to push for significant progress.¹⁷⁶

In contrast, the Federal Energy Regulatory Commission (FERC) has indicated the ability to handle, and, in fact, even the interest in having, additional powers to assess civil penalties for activities under the FERC's jurisdiction.¹⁷⁷ FERC Chairman Joe Kelliher made this clear:

In the past, the Commission lacked the enforcement power it needed to prevent market manipulation and uphold its tariffs and market rules. We asked Congress to give us the right regulatory tools to do our job. Congress agreed, and gave FERC new enforcement powers and significant civil penalty authority. Today we exercise that power for the first time. We are committed to firm but fair enforcement and our actions today make that plain.¹⁷⁸

Any drafter of a future national RPS proposal should strongly consider the FERC, a commission with the demonstrated interest and ability in energy-related enforcement, as the overseer of the program.

Other options exist for those unable to meet the RPS requirement in a given year. That is, retail electric suppliers that are not able to obtain a sufficient number of RECs are not automatically going to be assessed civil penalties. As a means of compliance, the Proposed RPS also provides for a "Renewable Energy Credit Borrowing."¹⁷⁹ Under this provision, a retail electric supplier can submit a compliance plan to the Secretary of Energy demonstrating that sufficient federal RECs would be earned "within the next 3 calendar years which, when taken into account, will enable the retail electric supplier to meet the [RPS] requirements . . . for calendar year 2012 and the subsequent calendar years involved."¹⁸⁰ Once the plan is approved, the federal RECs that will be earned under the plan can be applied to meet the RPS requirements each calendar year involved.¹⁸¹ Failure to repay any borrowed RECs would subject the retail electric supplier to civil penalties.¹⁸² Oversight and enforcement of the RECs borrowing program, and any resulting proceedings to assess civil penalties, would also add administrative burdens.

Most of these burdens appear minimal at the federal and state levels. On the federal level, the Congressional Budget Office (CBO) concluded "that transactions associated with the proposed federal permits would have no impact

176. See, e.g., Press Release, American Council for an Energy-Efficient Economy, U.S. Energy Department Sets New Energy Savings Standards, (Oct. 12, 2007), <http://www.aceee.org/press/0710transformers.htm> ("We're glad DOE has improved upon their original proposed standard . . . But, with the buyers and one of the biggest sellers of transformers urging even higher standards, DOE could have done better.") (quoting Steven Nadel, Executive Director of the American Council for an Energy-Efficient Economy (ACEEE)).

177. See Press Release, FERC, Commission Imposes First Penalties Under EPCRA Authority (Jan. 18, 2007) <http://ferc.gov/news/news-releases/2007/2007-1/01-18-07-M-3.asp> (reporting that the FERC assessed civil penalties totaling \$22.5 million in acting for the first time under "its expanded civil penalty authority provided by Congress in the Energy Policy Act of 2005").

178. *Id.*

179. H.R. 3221 § 9611(a).

180. *Id.*

181. *Id.*

182. *Id.* Note that the Proposed RPS references subsection (i) as the source for civil penalties, but subsection (j) is the current location of the enforcement provision. In the most recent version, subsection (i) is actually the section providing for Energy Efficiency Credits.

on the federal budget.”¹⁸³ On the state level, the CBO observed that state “[r]egulatory entities would not be allowed to prohibit utilities from recovering prudent costs associated with meeting the portfolio standard.”¹⁸⁴ However, the CBO estimated that the administrative costs related to that restriction, “if any, would be minimal.”¹⁸⁵

V. IMPACT ON CONSUMERS

The impact on consumers of a national RPS is one of the most hotly contested issues surrounding possible legislation. As one might expect, varying proposals provide widely varying projected impacts. Even small changes can lead to significant differences. For example, the EIA determined that under a 15% national RPS, “retail electricity prices [would] rise by an average of 0.9 percent over the 2005 to 2030 period in the RPS case,” as compared to the reference case, and RECs would cost 1.9 cents per kilowatt hour between 2020 and 2030.¹⁸⁶ In contrast, under a proposed 25% national RPS, the EIA determined that the average retail electricity price is 6.2% higher in 2030 and the REC prices would vary between 3.8 cents and 4.8 cents per kilowatt hour from 2025 to 2030.¹⁸⁷ This is not an apples-to-apples comparison because there are a significant number of variables in each study,¹⁸⁸ beyond just the RPS percentage. Nonetheless, this helps underscore the point that measuring the specific impact of a national RPS is complex and difficult. On a more general level, however, it is clear that there are some consistent issues consumers will face, regardless of the specific national RPS put in place.

From a practical perspective, consumer impacts of a national RPS would be limited, although not insignificant. Important in considering the likely consumer impact of a national RPS is that many consumers (indeed, roughly half of the country) are already subject to some form of RPS. As such, the question is not a decision between a national RPS and no RPS; instead, the question is whether all consumers will be subject to an RPS or just some.¹⁸⁹

For those consumers not currently buying electricity under an RPS, a state RPS may be pending.¹⁹⁰ Further, as one study advocating a federal RPS stated, “Not only does reliance on state-based action make for an uncertain regulatory environment for potential investors, it creates inherent inequities between ratepayers in some states that are paying for ‘free riders’ in others.”¹⁹¹ The study explained that renewable energy generation has a free-rider problem because

183. See CONGRESSIONAL BUDGET OFFICE, *supra* note 171, at 10.

184. *Id.* at 20.

185. *Id.* at 20 (estimating the costs of “intergovernmental mandates” under House Bill 3221).

186. ENERGY INFO. ADMIN., *supra* note 70, at iv.

187. ENERGY INFO. ADMIN., *supra* note 9, at xi.

188. See Benjamin K. Sovacool & Christopher Cooper, *Green Means ‘Go?’—A Colorful Approach to a U.S. National Renewable Portfolio Standard*, ELEC. J., Aug./Sept. 2006, at 19, 26 (stating that “every [RPS] report is laden with its own assumptions.”).

189. See Benjamin K. Sovacool & Christopher Cooper, Letter to the Editor, *Messrs. Sovacool and Cooper Respond*, ELEC. J., Dec. 2006, at 4 (“The true question is whether a federal RPS mandate is a better intervention than a patchwork of 50 inconsistent, state-based RPS mandates.”).

190. See COOPER & SOVACOO, *supra* note 3, at 16 (“Seven more states—Florida, Indiana, Louisiana, Nebraska, Utah, Vermont, and Virginia—are considering mandating some form of RPS.”).

191. *Id.* at 19.

“everyone benefits from the environmental advantages of renewable energy.”¹⁹² As such, private companies might invest millions of dollars in researching and developing clean energy technologies, yet be unable to recover the full profit of their investments.¹⁹³ To the extent this is accurate, consumers not under an RPS, even those with less renewable generation resources in their state, would reap the benefits of technologies developed under state RPS programs, without paying their fair share.

In the short term, direct consumer impacts are limited to cost concerns. By most accounts, consumers throughout the country would face a relatively mild increase or mild decrease in the cost of electricity. One report that reviewed the RPS program analysis of both the Union of Concerned Scientists and the EIA found cumulative energy bill savings throughout the country in each of the four scenarios considered.¹⁹⁴ The savings by region varied significantly, though. For example, in the review of EIA assumptions if there were a 20% RPS, savings, by Census region, ranging from as high as 8.1% in the West South Central to 0.1% in the South Atlantic were reported.¹⁹⁵ All of the review studies showed a significant variance by region, which explains some of the resistance to an RPS from regions, like the South Atlantic, with less renewable energy resources. Potential savings are far more limited under an RPS for the region, and if costs were to increase, those regions would likely face a greater share of the cost increase.

A long-term reduction in natural gas costs as a result of a mandatory national RPS could lead to increased consumer use of natural gas. In fact, even without a national RPS, future residential heating applications are expected to continue to drive residential demand for natural gas.¹⁹⁶ “Between 1991 and 1999, 66 percent of new homes, and 57 percent of multifamily buildings constructed used natural gas heating. In 2003, 70 percent of new single family homes constructed used natural gas.”¹⁹⁷ If natural gas prices do, in fact, continue to decline as a result of a national RPS, this trend can only be expected to continue.

VI. CONCLUSION

Often lost in the debate about the value and appropriateness of a national RPS is that there is little dispute about the value and appropriateness of renewable energy itself. Awareness that energy issues intersect with other key issues like national security and climate change has never been higher. Support for renewable energy, at least as a concept, is overwhelming.¹⁹⁸ A recent poll indicates that 85% of those polled believe that existing federal incentives for

192. *Id.* at 21.

193. *See id.*

194. Alan Noguee et al., *supra* note 50, at 39.

195. *Id.*

196. NATURAL GAS SUPPLY ASS'N, NATURAL GAS DEMAND, <http://www.naturalgas.org/business/demand.asp#residentdemand> (last visited Jan. 24, 2008).

197. *Id.*

198. Press Release, Am. Wind Energy Ass'n, Americans Overwhelmingly Support Federal Incentives for Renewable Energy: Zogby Poll (Jan. 22, 2007), http://www.awea.org/newsroom/releases/poll_renewable_energy_012208.html.

renewable energy technologies should be extended.¹⁹⁹ Other polls have indicated support across the political spectrum for renewable energy²⁰⁰ and, more specifically, a renewable portfolio standard.²⁰¹

In addition, more than thirty states have taken some kind of legislative action to promote renewable energy programs, and more programs are being proposed.²⁰² Some states have even increased their commitment to energy from renewable resources. Colorado, for example, implemented a 10% RPS in 2004, against the wishes of the state's utilities; in 2007, "with utility support, Colorado increased its RPS to 20% by 2020."²⁰³

Public support, and even support from individual utilities, for renewable energy, of course, does not translate into national support for a particular program, policy, or fuel source. The best methods for promoting and providing renewable energy—and who should pay for it—are issues in search of a solution. Ultimately, though, renewable energy has moved well beyond the theoretical stages. If desired, a national RPS can be efficiently and effectively implemented. That does not mean it would not require significant upfront expense, and perhaps long-term expense, as well. But those risks face any energy policy, including the status quo.

It is important for proponents and opponents alike to recognize that the debate over a national RPS is only one piece of the puzzle. The cost studies indicate that a national RPS is likely to be neither a panacea nor a disaster.²⁰⁴

199. *Id.*

200. See Press Release, Zogby Int'l, Majority Continues to Oppose Oil Drilling in Arctic National Wildlife Refuge, New Zogby Poll Reveals, (Jan. 24, 2004), <http://www.zogby.com/news/ReadNews.dbm?ID=789>. A 2004 Zogby poll found:

More than 75% of voters in every region of the country and in all education, age and income subgroups choose conservation/fuel efficiency or alternative energy sources as the best way to reduce oil imports. Some of the strongest support comes from Independents (92%), Women (87%), Union households (85%), and NASCAR fans (81%). More than 3 of 4 Republican voters (77%) also choose either conservation/fuel efficiency or alternative energy over more oil drilling (17%).

Id.

201. Press Release, Am. Wind Energy Ass'n, New Poll Shows Overwhelming Bipartisan Support for National Renewable Electricity Standard (Nov. 13, 2007), http://www.awea.org/newsroom/releases/Poll_Shows_Bipartisan_Support_111207.html (stating that 92% of Democrats, 77% of Republicans, 85% of independent voters, 86% of Southerners, 83% of those in military families, 77% of self-identified conservatives, and 81% of rural voters agreed that the federal government should require at least some electricity to come from renewable energy sources).

202. See *Missouri Group Launches Ballot Initiative for Mandatory RPS*, ELEC. POWER DAILY, Jan. 25, 2008, at 1; *Californians Seeks to Launch Ballot Initiative to Raise Renewable Portfolio Standard*, FOSTER'S ELEC. REP., Dec. 31, 2007, at 1 ("[Although California already requires] the state's privately owned utilities to obtain 20% of their power supplies for end-use customers from renewable energy resources by 2010, renewable energy advocates are circulating petitions . . . asking voters to raise the requirement for all utilities to 40% by 2020 and 50% by 2025.").

203. *Missouri Group Launches Ballot Initiative for Mandatory RPS*, *supra* note 202, at 1.

204. As discussed in Part III.C above, the EIA studies estimate the costs for consumers would likely increase from between 1% and 7%. Any increase in costs can be difficult, especially for low-income families. However, as seen in California in 2001, consumers saw prices spike as a result of policies designed to lower prices. See Brian Orion, *Transmission in Transition: Analyzing California's Proposed Electricity Transmission Regulatory Reforms*, 56 HASTINGS L.J. 343, 344 (2004) (stating that the promise of deregulatory legislation "was compelling" but "[t]he reality turned out to be starkly different: Deregulation led to

The country still needs to address, to name just a few: an aging and insufficient energy infrastructure,²⁰⁵ including a significant lack of transmission capacity;²⁰⁶ increasing gasoline costs;²⁰⁷ and climate-change issues.²⁰⁸ A national RPS would impact all of these issues, but all of these issues would impact the potential success of a national RPS. By most accounts, a national RPS is technologically achievable and, notwithstanding some potentially higher costs, economically feasible. That does not make it good policy, but it should move the debate forward.

Although this Article has attempted to raise a number of questions that should be resolved, or at least considered, before imposing a national RPS, an element of uncertainty is bound to remain. There are those who believe that a national RPS is only a valid option once all scenarios are considered, and, in essence, all potential problems solved. This would, certainly, be ideal, but it is not feasible. Legislation designed to tackle difficult issues requires making, hopefully, educated decisions, but is inherently uncertain. In fact, the vast majority of current studies indicate that results from a national RPS would range between either: (1) a fundamental change in how electricity markets operate; or (2) a moderate price increase for consumers, with moderate changes to the current system.

Any major policy decision imposes risks; but, despite the histrionics, a national RPS actually appears to present limited downside, along with significant upside. That is, a national RPS, along the lines of those recently proposed, that fails (or is moderately successful) would likely lead to minor increases in consumer rates. A major success could reduce natural gas consumption and lower rates by a significant margin.

The reality is that, without major advances in technologies, a national RPS is likely only to have moderate success. However, the implementation of an RPS could be the catalyst needed to trigger major advances in technologies. No major policy change should be implemented without careful consideration. But, while more study and analysis will help the debate, the potential upside to a national RPS appears to outweigh the downside, at least from a nationwide perspective.

widespread blackouts in early 2001, forced the state into signing costly long-term energy contracts, and cost consumers billions”). Thus, a risk of increased prices should not, alone, be dispositive.

205. See Joshua P. Fershee, *Misguided Energy: Why Recent Legislative, Regulatory, and Market Initiatives are Insufficient to Improve the U.S. Energy Infrastructure*, 44 HARV. J. ON LEGIS. 327, 362 (2007) (“Given the unquestioned need for additional generation facilities and transmission lines and increased access to natural gas supplies to avert potentially drastic energy outages, it is time for . . . an innovative plan, building upon EAct 2005, which will lead to immediate and sustained energy infrastructure enhancements.”).

206. See Joseph T. Kelliher, Chairman, FERC, Chairman Kelliher on Transmission Pricing Proposed Rules (Docket No. RM06-4-000) (Nov. 17 2005), <http://www.ferc.gov/news/statements-speeches/kelliher/2005/11-17-05-kelliher-pricing.pdf> (explaining that underinvestment in transmission “is a national problem” in need of a “national solution”).

207. See 153 CONG. REC. S2911 (daily ed. Mar. 8, 2007) (statement of Sen. Bernard Sanders (I-Vt.)) (stating that gasoline prices rose more than seventy percent between January 2001 and March 2007.).

208. See, e.g., Fiona Harvey, *Review Finds Temperature Rise Is Due to Human Action*, FIN. TIMES (London), Feb. 2, 2007, available at <http://search.ft.com/ftArticle?sortBy=gadatearticle&queryText=Fiona+Harvey&aje=true&id=070202001214&ct=0&page=58> (reporting that the fourth draft report of the Intergovernmental Panel on Climate Change, convened by the United Nations, determined that “[w]ater shortages, heatwaves, storms and floods are likely to be the result of global warming caused by human actions”).

Risk is a part of all major policy changes, and the downside in this situation is far lower than in many other cases. If nothing else, a national RPS would further highlight the lack of necessary transmission in the United States. It is likely that the local nature of renewable energy generation would provide an awareness of infrastructure issues at a more local level than exists today, and that could help address the NIMBY (not-in-my-backyard) problem that has long plagued transmission projects.²⁰⁹ Although it is unlikely anyone would welcome transmission lines in their backyard, local jobs created from both renewable generation and transmission projects may make siting more palatable than it has been in the recent past.

Renewable energy has great potential for expanded economic development, improved national security, lower electricity prices, and reductions in greenhouse gas emissions. And, while a national RPS is one way to help realize this potential, it should also be clear that for a national RPS to lead to more than moderate change, a comprehensive national energy policy is necessary.

That is not to say that all questions must be answered before moving forward. In fact, without a national RPS in place, it may be impossible to determine the potential of renewable energy because even a moderately increased market for renewable energy could lead to significant technological advancements. All the planning in the world will not necessarily translate into effectiveness in the marketplace. At some point, an idea must be tested to find out if it will actually work.

Public opinion polls, growing support from utilities, and continually increasing state RPS legislation indicate that support for a renewable energy mandate is stronger than ever. However, opposition remains strong. Rightly or wrongly, the majority of Americans appear ready to take a calculated risk to find out if renewable energy can fulfill its promise. The question remains: Is Congress?

209. See Brownell: *With New EPACT Authority, FERC Will Push Infrastructure Development, Watch Markets*, INSIDE F.E.R.C., Mar. 6, 2006 (reporting comments of then-FERC Commissioner Nora Brownell at a Ziff Energy Gas Storage Conference) (“Nobody wants anything in their backyard. I don’t want anything in my backyard either, but I want to turn the lights on when I flip a switch.”).