BYU Law Review

Volume 2011 | Issue 3 Article 11

9-1-2011

Where Are They Now? A Look at the Effectiveness of RPS Policies

Melanie Grant

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I. INTRODUCTION

Throughout the past decade, states have been enacting renewables portfolio standards (RPS) policies aimed at developing and incorporating renewable energy into the state energy scheme in order to improve and diversify energy sources across the country.[1] Although there is no nationwide requirement or policy enacted, thus far twenty-nine states and the District of Columbia have independently adopted some form of RPS policy.[2] Additionally, seven other states have developed nonmandatory renewable portfolio goals.[3] The projected improvement in "[e]nergy security and diversity, economic development, and environmental protection" has induced many states to incorporate such policies.[4] Furthermore, RPS policies have been spurred on by many factors, including "[f]ederal tax incentives, state renewable energy funds, voluntary green power markets, the specter of future greenhouse gas regulations, and the economic fundamentals of certain forms of renewable energy relative to conventional generation."[5]

It is difficult to fully assess what effect RPS policies have had on the nation's renewable energy landscape because each state has a distinct policy with different requirements for the policies as well as different time frames regarding when goals are to be accomplished. However, one can take an empirical look at state accomplishments and setbacks. This can be done in conjunction with understanding how states are measuring

1. *See* RYAN WISER & GALEN BARBOSE, RENEWABLES PORTFOLIO STANDARDS IN THE UNITED STATES: A STATUS REPORT WITH DATA THROUGH 2007, at 2 (2008); JONATHAN MCCLELLAND, STATE & FEDERAL RPS PROGRAMS: PROBLEMS WITH PLAYING FAVORITES 1 (SPRING 2009), *available at* http://www.mjbeckconsulting.com/images/stories/articles/rps_playing_favorites_5%20092.pdf.

2. RYAN WISER, GALEN BARBOSE & EDWARD HOLT, SUPPORTING SOLAR POWER IN RENEWABLES PORTFOLIO STANDARDS: EXPERIENCE FROM THE UNITED STATES, at ii (Ernest Orlando Lawrence Berkeley National Laboratory 2010).

3. SOLAR SET-ASIDES IN RENEWABLES PORTFOLIO STANDARDS, http://www.dsireusa.org/solar/solarpolicyguide/?id=21 (last visited July 26, 2011); *see also* RPS POLICIES MARCH 2011 (map), http://www.dsireusa.org/summarymaps/ index.cfm?ee=1&RE=1 (follow "RPS Policies" hyperlink).

4. SOLAR SET-ASIDES, *supra* note 3.

5. WISER & BARBOSE, *supra* note 1, at 12.

up to their self-initiated standards. Because RPS policies have not consistently required accountability and states are not effectively complying with these self-imposed, mandatory requirements, they appear to be more of a political tool used to provide a false sense of accomplishment in the development and use of renewable energy. To ensure better compliance, states should first develop the necessary foundation to adequately support the advancement of renewable energy resources through funding and transmission. Then, states should stringently enforce RPS policies to make themselves accountable for the mandatory standards set and to progress the development of renewable energy technology. This Comment will focus on what is actually being accomplished by states having RPS policies. First, Part II will discuss some basic background information about RPS policies. Then in Part III, states' current RPS policy goals will be explored further in an effort to understand the typical standards and requirements associated with RPS policies. Part IV will look at the amendments that states have made to their RPS policies and why these amendments were enacted. Part V will examine the compliance standards set forth and the enforcement of those standards. Finally, Part VI will examine compliance barriers states face and future issues that may hinder the effectiveness of RPS policies.

II. BACKGROUND

RPS policies have been adopted by states in an effort to develop renewable energy technology and expand energy diversity. An RPS policy sets forth a specific amount of energy that electricity suppliers must generate through renewable resources.[6] Although each state independently sets goals and compliance requirements, the overarching drive of RPS policies is to develop a greater amount of renewable energy supply in order to diversify and improve upon current state energy policies.[7] Although the lure of a diversified energy platform exists, the development of new renewable energy technologies and implementation of RPS policies has proven to be difficult.[8] Ideally, RPS policies will help develop and shape the energy landscape in the United States by providing diverse energy resources in a manner that combats energy

6. *Id.* at 2; FRED BOSSELMAN ET AL., ENERGY, ECONOMICS AND THE ENVIRONMENT 1078 (2d ed. 2006).

7. *See* WISER & BARBOSE, *supra* note 1, at 2; ARIZ. CORP. COMM'N, PROPOSED AMENDMENTS TO THE ENVIRONMENTAL PORTFOLIO STANDARD RULES 1 (2006).

8. WISER, BARBOSE & HOLT, *supra* note 2, at 1.

scarcity and harm to the environment.[9] However, lingering questions remain. For example, it is unclear what exactly RPS policies have done, whether they will actually develop into a diversified energy landscape, and whether they will provide the adequate renewable energy resources expected from these policies.

In evaluating the composition of the RPS policies, it is important to understand how they have begun to change the makeup of energy technology used across the nation. Initially policymakers seemed to have intended RPS policies to be technology-neutral, leading to increased energy diversity and sustainability of state energy sources by increasing competition among technologies.[10] States have not diversified as much as they may have hoped because wind power use has outcompeted other renewable energy sources in most states.[11] Although wind power leads RPS compliance, individual states still plan to incorporate other technologies into future compliance expectations.[12] Other technologies being considered to develop renewable energy plans include geothermal, biomass, and solar energy.[13] While states are continuously working to expand these areas of renewable energy resources in order to further diversify their energy resources and comply with their RPS policies, it is unclear whether this diversification will actually occur.[14]

RPS policies carry both advantages and disadvantages in executing these desired goals. RPS policies are beneficial in that they can "drive a known quantity of new renewable development, based on the specific standards that are established."[15] Furthermore RPS policies can be cost-efficient and incorporate neutrality among diverse types of energy resources if implemented effectively.[16] RPS policies can also be used to eliminate monopolistic companies through resource diversification. Another advantage to RPS policies is that they have low administrative burdens as well because that burden shifts to retail electricity suppliers.[17] However, these policies are not perfect because they are not designed for

9. *See* Patrick R. Jacobi, Note, *Renewable Portfolio Standard Generator Applicability Requirements: How States Can Stop Worrying and Learn to Love the Dormant Commerce Clause*, 30 VT. L. REV. 1079, 1080–81 (2006).

10. WISER, BARBOSE & HOLT, *supra* note 2, at 1; BOSSELMAN ET AL., *supra* note 6, at 1078.

11. WISER, BARBOSE & HOLT, *supra* note 2, at ii.

12. *Id.*

13. *Id.* at 5.

14. *See* WISER & BARBOSE, *supra* note 1, at 12–14.

15. BOSSELMAN ET AL., *supra* note 6, at 1079.

16. *Id.*

17. *Id.*

"long-term power purchase agreements."[18] Additionally, even in trying to incorporate diverse technologies, RPS policies encourage the least-cost technology to dominate the energy suppliers because of the high costs of diversifying renewable energy technology.[19] Finally, because RPS policies are so new in our energy landscape, effective incorporation of RPS policies is difficult.[20] RPS policies have the potential to reshape how energy is produced and used in the United States and the world. The key is developing a policy that states can implement effectively.

III. CURRENT STATE-ENACTED RPS POLICIES

States adopting RPS policies are able to control and monitor the development of the state's renewable energy resources individually because no nationwide standard is currently required. Each state that has adopted a mandatory RPS policy has set out specific renewable energy goals to meet each year through state legislative action or state regulatory agencies.[21] RPS policies have been designed so that each state can create its own plan, set target goals, decide how to achieve compliance, and remedy unaccomplished goals. Because each state tailors its RPS policy to fit the capabilities and expectations of the state, the policies differ greatly. Thus, to understand the development of renewable energy resources, state policies must be looked at individually as well as collectively on a national level.

The most notable part of RPS policies is the ultimate percentage target of renewable energy usage. Most states mandate a specific percentage of overall energy to be produced through renewable technologies by a certain future date. In looking at each state's RPS policy, the percentage goals vary greatly.[22] Beyond just the percentage of renewable technology slated to be used in RPS policies, each state also differs in determining the types of energies used, the timing in meeting goals, the method of compliance, and the minimum standards for meeting the goals.[23]

18. *Id.*

19. *Id.*

20. *Id.*

21. WISER & BARBOSE, *supra* note 1, at 4.

22. *See infra* Figure 1.

23. *See* QUANTITATIVE RPS DATA PROJECT: RPS DATA SPREADSHEET DEC. 2010, http://dsireusa.org/rpsdata/ (follow "RPS Data Spreadsheet" under Dec. 2010 hyperlink) (last visited July 26, 2011). The Database of State Incentives for Renewables & Efficiency (DSIRE) is a comprehensive source of information on state, local, utility, and federal incentives and policies that

A. A Look at State Policies

Because states' RPS policies differ widely, explaining the overarching similarities between states is difficult. Some policies require states to have small compliance goals in the beginning years and more aggressive goals as time goes on, while others have no requirements for compliance until years into the future.[24] Because of the vast difference in RPS policies, there is "debate over what exactly constitutes an RPS [policy], and whether certain states qualify as having one."[25] Some state RPS policies are criticized because they do not incorporate goals of enhancing renewable energy technology to the same extent as other state policies.[26] Figure 1 illustrates the states that have set self-initiated mandatory RPS policies, varying from 15% of energy to be generated by renewable energy resources in 2025 to 40% renewable energy in 2030. Furthermore, the diagram also indicates those states that have set renewable portfolio goals rather than mandatory standards. Overall, a majority of states have undertaken some type of renewable energy initiative, and yet each state's policy varies greatly depending on the state's overall percentage goal and how they choose to reach it.

promote renewable energy and energy efficiency. Established in 1995 and funded by the U.S. Department of Energy, DSIRE is an ongoing project of the N.C. Solar Center and the Interstate Renewable Energy Council.

24. *See id.*

25. WISER & BARBOSE, *supra* note 1, at 6.

26. *See id.* at 6 n.9.

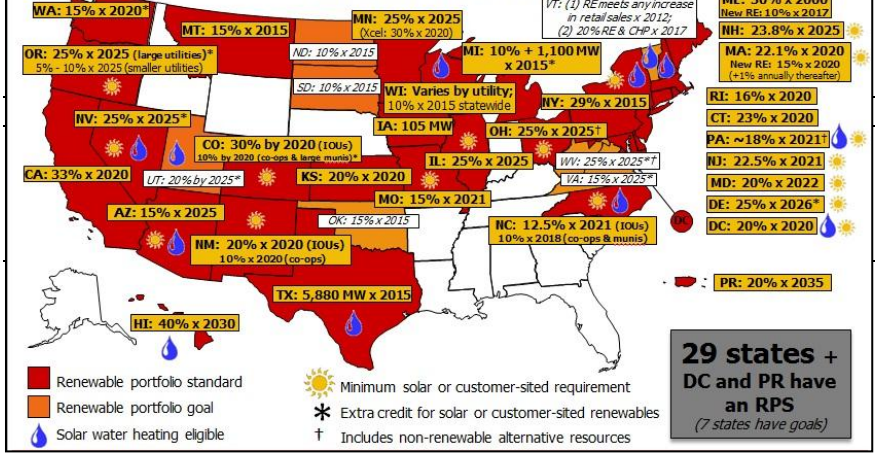

Figure 1.[27]

This section will further look at five key design elements of RPS policies as well as overarching minimum standards. State RPS policies incorporate many different design elements, and it is worthwhile to identify five of them.[28] The first element focuses on when compliance is expected to begin.[29] States have specific goals for a certain year in the future (i.e. 33% by 2020 in California), many of which are set significantly in the future. In order to ensure compliance with these larger goals, states have set smaller incremental goals to reach each year. However, compliance with these incremental goals is not necessarily required each year. Some states that were early adopters of RPS policies have been requiring compliance with the self-initiated incremental standards since 1999.[30] Other newer adopters have set compliance to start in 2012 or even later.[31] Furthermore, some states have set such small compliance standards in the early years of their policies that it would be impossible to not comply with the goal.[32] Thus, there is a distinct separation among the states as to when they must officially comply with their own self-mandated RPS policies.[33] Because some states do not require compliance with RPS policies until some specified date in the future, the only way to know what effect and progress the standard has had on the state of renewable energy productivity in general is through examining anecdotal evidence.[34] In contrast, Iowa, which was the first adopter of RPS, has been consistently complying and progressing with the standards it established in 1999, making it easier to measure the state's progress.[35] It is difficult to determine what impact

27. SUMMARY MAPS, http://www.dsireusa.org/summarymaps/index.cfm?ee= 1&RE=1 (follow "RPS Policies" hyperlink) (last visited July 26, 2011).

28. *See* WISER & BARBOSE, *supra* note 1, at 8.

29. *See id.*

30. *Id.*

31. *Id.*

32. *See* QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

33. *See* WISER & BARBOSE, *supra* note 1, at 8.

34. *See id.*

35. *See id.*

RPS policies have had on the energy plan overall when there is such variation among each state's compliance requirements.

The second important design element is the "current ultimate target."[36] This has typically required "utilities to use renewable energy or renewable energy credits (RECs) to account for a certain percentage of their retail electricity sales—or a certain amount of generating capacity—according to a specified schedule."[37] Generally, states will have an overall goal and then break down that goal into different utilities by the amount of wind, solar, biomass, geothermal, or hydroelectric energy.[38] The target percentages overall vary anywhere from 8% of energy sources using renewable energy technology by 2020 in Pennsylvania to 33% by 2020 in California.[39] Because each state sets its own current ultimate target, there is no uniformity in the overall target or in the types of utilities used to reach those targets.[40] As each state sets its current ultimate target, it can adjust the goal according to the specific development of renewable technology occurring in the state at the time. Thus, when developing the current ultimate target, states must look at the specific types of energy they plan on utilizing as well as the overall percentage that will be plausible to achieve.

The third major design element used in developing RPS policies is whether or not existing facilities may be considered part of the eligible resources when calculating the amount of energy attributable to renewable resources.[41] Most states that allow existing facilities require that facilities utilized be built after 1995.[42] Although a facility may not qualify under an RPS policy, policies "often allow incremental generation from such facilities to qualify."[43] For example, in Oregon, facilities built after January 1, 1995 are generally eligible; and, also, hydro facilities are eligible even if built before January 1, 1995 if they have been certified as "low impact."[44] Thus, in each state, the requirements and exceptions vary for which facilities qualify.

36. *See id.*

37. *Glossary*, DSIRE, http://www.dsireusa.org/glossary/ (follow "Renewables Portfolio Standard" hyperlink) (last visited July 26, 2011).

38. QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

39. *See supra* Figure 1.

40. QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

41. WISER & BARBOSE, *supra* note 1, at 8.

42. *Id.* at 8 n.1.

43. *Id.*

44. *Id.* at 8 n.3.

The fourth key design element consists of breaking down the target goals by energy type. These are referred to as "tiered" targets or "set-asides," allowing states to develop their RPS policies based upon current and prospective energy resources.[45] To develop energy diversity, states structure RPS policies to require different targets for different types of energy resources. These "are often used to ensure that an RPS supports certain 'preferred' resources, not just the least-cost renewable energy options."[46] Many states have broken down the target goals to consistently increase solar energy as compared to other types of energy in order to spur the development of solar energy technology. Other states have goals just for "non-wind" energy or have even created "energy efficiency" goals in order to improve overall energy efficiency rather than creating more sources for renewable energy.[47] This system furthers greater diversification of renewable energy resources by requiring states to meet specific energy production goals through a variety of energy resources. Otherwise, wind power would likely continue to be the predominant energy resource because it is much more cost-effective than other renewable energy technologies.

The fifth main design element of RPS policies is the use of credit multipliers.[48] Credit multipliers allow an additional credit for the compliance of one type of energy resource to count for compliance of other types of energy resources.[49] For example, if a state achieves some compliance in solar energy, it will also count for the requirements of other target goals because solar energy is a preferred renewable energy source.[50] Just as RPS policies carve out specific goals for certain types of energy so as to not give preference to lower-cost energy sources, they allow certain types of energy resources to receive preferential treatment in order to encourage continued development of more expensive but "promising" renewable technology.[51] However, credit multipliers have significantly declined in recent years while the tiered structure of RPS policies and set-asides have increased in the makeup of individual state

45. *Id.* at 6, 8.

46. *Id.* at 6.

47. *Id.* at 8.

48. *Id.*

49. Although many types of energy resources may use credit multipliers, the most common type of credit multiplier is associated with solar energy resources. *Id.* at 16.

50. *Id.* ("Favored renewable technologies are given more credit towards meeting RPS requirements than are other technologies.").

51. *Id.*

RPS policies.[52] One of the major criticisms of RPS policies is the lack of diversity of renewable energy resources. Consequently, states have designed their policies to include less credit multipliers and more renewable energy sources to combat this criticism.[53]

As each state utilizes these five key design elements in developing its own RPS policy, RPS policies are likely to vary drastically from state to state. Because of this variation, some scholars suggest that a federally mandated RPS policy would provide uniformity and progress for the nation as a whole in providing greater economic benefits rather than having each state undertake its own policy and development of the renewable energy technology.[54] Nevertheless, no national RPS is being developed currently and thus states continue to develop individual action plans to enhance their respective energy schemes.

B. Minimum Standards

As each state has freely developed its own policy and directed the development of renewable energy, it has become clear that there are no minimum standards to guide states in implementing and developing their own policies. Many scholars have expressed a desire and a need for a national RPS policy to create a minimum standard and to develop uniformity throughout the nation regarding the development of renewable energy technology.[55] Although this may not be practical at this time, the establishment of a national standard or basic minimum requirements set by the federal government might advance the progression of renewable technology resources.[56] Furthermore, establishing minimum standards could provide greater energy security and safety, and further the national goal to have twenty-five percent of all electricity come from renewable resources.[57] Thus, the variation in policies shows that some states have target goals set forth years into the future with no indication of what the effectiveness of such standards will be and how they will be part of the developing renewable energy landscape of the nation.

52. *Id.*

53. WISER, BARBOSE & HOLT, *supra* note 2, at 1.

54. *See* Lincoln Davies, *Power Forward: The Argument for a National RPS*, 42 CONN. L. REV. 1339, 1395–96 (2010).

55. *See id.*; David G. Hill, *National RPS Now!*, SOLAR TODAY, July/Aug. 2010, at 42, 42–43, *available at* http://www.solartoday-digital.org/solartoday/20100708?pg=44#pg42.

56. Hill, *supra* note 55, at 42–43.

57. *Id.*

Although a national standard seems productive, creating a national standard presents other problems. Some states cannot plausibly develop and utilize the same type of resources as other states. For example, not every state has the same capabilities for producing solar energy. Rather than create national minimum standards for states, it might be much more plausible to develop regional standards as natural geography provides similarity among states in the same region. Furthermore, rather than producing national standards that are impossible for states to reach, the federal government could instead impose national enforcement requirements, thus, forcing states to be accountable for the policies that they enact. Each state would still be able to design its own RPS policy and utilize technologies that are most accessible, but the federal government's involvement would include overseeing a national requirement for compliance. For example, if a state fails to comply, it will be required to pay the same amount of fine as another state rather than allowing some states to strictly enforce the standards while others are allowed to have a "good faith" effort satisfy the mandatory nature of the policies. Thus, rather than a set national target goals and schedule, some sort of national enforcement standard may be helpful in continuing to advance renewable energy technology.

IV. AMENDMENTS TO RPS POLICIES

The RPS policies for each state have been implemented and then evaluated to measure progress and plausibility of target goals. In order to progress towards achieving target renewable energy consumption, nearly every state that has enacted its RPS policy has made some changes over time in order to accommodate successes and failures in developing and honing RPS policies.[58] As with any developing system, adjustments must be made in order to find an effective and efficient way to improve renewable energy technology and resources. By looking at the changes and reasons behind amending RPS policies, states can implement more effective renewable energy policies. Although the exact changes and reasoning for the amendments in each state vary, overall, RPS policies were often amended based upon the need to comply with the state mandated standards, the desire to accelerate solar power technologies, the extension of using Alternative Compliance Payments (ACP), the need to develop efficiency standards, and the need to reevaluate the

58. *See* INCENTIVES/POLICIES FOR RENEWABLES & EFFICIENCY, www.dsireusa.org (follow each state's individual hyperlink) (last visited July 26, 2011).

eligibility of certain energy resources such as renewable energy technology.[59]

A. General Principles for Changes to RPS Policies

Because states have not been reaching targets set by RPS policies, they have adjusted these targets in order to provide more opportunities for compliance. One of the biggest changes in implementing RPS policies is that states are attempting to be more aggressive in integrating solar energy technology development into the renewable energy landscape.[60] This has been problematic in the past because of the cost and feasibility of obtaining and incorporating solar technology into RPS policies.[61] However, the overall goal of RPS policies is to create a diversified renewable energy plan that will incorporate new sources of energy into the current mix.[62] Thus, many states have amended their policies to advance the implementation of solar energy into state energy policies by aggressively adding standards for solar energy,[63] and also by including credit multipliers for progress on implementing solar energy projects.[64]

In looking at state policies, Colorado has enacted legislation to provide credit to the overall energy plan when certain solar energy projects are connected to transmission or distribution lines.[65] Furthermore, its plan was revised to accelerate overall and interim solar energy goals, just as New Mexico, Arizona, Maryland, and Delaware have revised their plans.[66] Many other states have also revised their energy plans to include solar energy more effectively into their RPS

59. WISER & BARBOSE, *supra* note 1, at 5.

60. *See* WISER, BARBOSE & HOLT, *supra* note 2, at 4; QUANTITATIVE RPS DATA PROJECT, *supra* note 23; SOLAR SET-ASIDES, *supra* note 3.

61. *See* WISER, BARBOSE & HOLT, *supra* note 2, at 4. "[S]maller solar projects . . . [have] high transaction costs, . . . explicit minimum project size thresholds, . . . and/or stringent metering requirements. . . . [S]olar projects have also . . . faced policy-related barriers to participation in RPS programs . . . [because of] uncertainty over renewable energy certificate (REC) ownership." *Id.*

62. *Id.* at 3–4.

63. QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

64. "A credit multiplier for solar [energy] offers additional credit toward compliance for energy derived from solar resources." SOLAR SET-ASIDES, *supra* note 3. This credit is used in conjunction with "set-asides." *Id.*

65. QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

66. *Id. See also* SOLAR SET-ASIDES, *supra* note 3; WISER, BARBOSE & HOLT, *supra* note 2, at 11–13.

policies.[67] For example, Illinois has created gradual solar energy goals for investor-owned utilities (IOU) beginning in 2012.[68] Massachusetts has increased its solar carve out and allowed photovoltaics (PV) to be incorporated into the energy plan.[69] Nevada extended its policy from 2015 to 2025 and increased solar energy compliance requirements for those additional years.[70] Oregon also adopted a PV standard to incorporate solar energy into its RPS policy.[71] Overall, many states have revamped their solar energy policies by allowing states to meet overall standards with the projection of greater sources of solar energy in the future.[72]

Another major change in many states' RPS policies has been the availability of Alternative Compliance Payments (ACP).[73] An ACP allows utility companies to purchase compliance to meet obligations under their RPS policies, which funding often is reinvested in renewable energy resources.[74] Many states—Maine, New Hampshire, New Jersey, Oregon, Rhode Island, and Washington—have recently made changes in their ACP requirements. These changes to ACP include specifying caps for maximum payment allowed,[75] additional resources for which ACP can be used as payment,[76] resources for which ACP cannot be used as payment,[77] and a gradual schedule for lessening the amount that ACPs can be used in the future to satisfy compliance requirements.[78] These ACP changes provide for greater advancement in the production of solar

67. QUANTITATIVE RPS DATA PROJECT, *supra* note 23; WISER, BARBOSE & HOLT, *supra* note 2, at 11–13.

68. QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

69. *Id.*

70. *Id.*

71. *Id.*

72. *See* WISER & BARBOSE, *supra* note 1, at 16; WISER, BARBOSE & HOLT, *supra* note 2, at 11.

73. *See* QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

74. WISER, BARBOSE & HOLT, *supra* note 2, at 22–23. *See also* WISER & BARBOSE, *supra* note 1, at 1.

75. *See* OREGON: INCENTIVES/POLICIES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=OR22R&re=1&ee=1 (last visited July 26, 2011).

76. *See* NEW HAMPSHIRE: INCENTIVES/POLICIES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NH09R&re=1&ee=1 (last visited July 26, 2011); N.H. CODE ADMIN. R. ANN. PUC 2500–07 (2008), *available at* http://www.puc.state.nh.us/Regulatory/Rules/ Puc2500.pdf.

77. *See* OREGON: INCENTIVES/POLICIES FOR RENEWABLES & EFFICIENCY, *supra* note 75.

78. *See* QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

energy technology rather than paying to reach compliance standards. Instead, the money that was previously used as ACP can now be invested in the development of solar energy technology and become part of the future incorporation of more solar energy into each state's RPS policy.

Many states have amended their goals from a percentage of renewable technology to now incorporate efficiency standards through solar energy sources in order to incorporate energy savings standards into their energy schemes.[79] At first, the basic make-up of RPS policies was percentage targets for the amount of energy produced through renewable resources.[80] However, with the continued desire to diversify technology, many goals have an efficiency component as well as a percentage component.[81] Furthermore, as part of the energy efficiency goal, every state has adopted some form of policy for energy efficiency in appliances, building codes, and equipment.[82] Thus, the overall goal is not just to have energy from a variety of sources, but to be able to develop the efficiency in energy standards and technology to improve the energy landscape in each state.[83] Specifically, Hawaii, Nevada, and North Carolina have adopted energy efficiency requirements as part of their overall energy plan.[84] As such, energy efficiency standards (or Energy Efficiency Resource Standards (EERS)) are similar to RPS, but focus more on the level of energy savings rather than energy purchased.[85] Thus, EERS and RPS policies are often combined into the state's energy plan.[86] Some states have found that an RPS policy that incorporates both energy efficiency and the development of renewable energy will maximize the energy efficiency because it will not only provide for an advancement of renewable energy technology but also utilize the

79. *See* David E. Adelman & Kirsten H. Engel, *Reorienting State Climate Change Policies to Induce Technological Change*, 50 ARIZ. L. REV. 835, 861, 863 (2008).

80. WISER & BARBOSE, *supra* note 1, at 2–3.

81. *See* QUANTITATIVE RPS DATA PROJECT, *supra* note 23; Adelman & Engel, *supra* note 79, at 865–68; Davies, *supra* note 54, at 1364.

82. *See* RULES, REGULATIONS, & POLICIES FOR ENERGY EFFICIENCY, http://www.dsireusa.org/summarytables/rrpee.cfm (last visited July 26, 2011); *see also Glossary*, *supra* note 37.

83. *See* Adelman & Engel, *supra* note 79, at 868.

84. WISER & BARBOSE, *supra* note 1, at 11.

85. Steven Nadel, *Energy Efficiency Resource Standards: Experience and Recommendations*, STATE CLIMATE AND ENERGY TECHNICAL FORUM, 1 (Mar. 2006), *available at* http://www.epatechforum.org/documents/2005-2006/2006-05-16/2006-05-16-ACEEE%20Report%20on%20EE%20Portfolio%20Standards.pdf.

86. *Id.*

technology more effectively and provide the most benefits in energy consumption and conservation.[87]

In addition to adopting more aggressive solar energy policies and incorporating energy efficiency standards, many states have also reevaluated the eligibility of biomass municipal solid waste as part of the RPS policies.[88] While wind, solar, landfill-gas, and geothermal energy have been incorporated in many states as eligible renewable energy sources, biomass is not always considered among these renewable energy resources.[89] North Carolina, Ohio, Oregon, and Wisconsin recently updated the eligibility of biomass to clarify either what qualifies as biomass municipal solid waste for purposes of RPS or which facilities qualify for biomass eligibility.[90] These states had already classified biomass as eligible under their RPS policies, but they made adjustments and clarifications regarding which specific energy sources qualify as biomass.[91]

B. The Necessity for Changes to RPS Policies

After failed attempts to meet incremental RPS policy goals, many states revised their RPS policies based upon specific needs of the state to incorporate more effective policies. In addition to understanding that these changes incorporate more solar power into energy plans, encourage greater energy efficiency, and also more clearly identify what types of energies make up RPS policies, it is also interesting to understand why the policies were amended in the first place. The changes to include more solar energy and PV in the RPS policies were implemented because of the desire to diversify energy sources and to provide for longevity in renewable energy technologies.[92] The prospective implementation of more solar energy in many of the states creates "a very real prospect for increased renewable resource diversity within state RPS programs."[93] Furthermore, this shift to solar energy can also be attributed to the

87. *See* Richard Sedano, *Compatibility of Energy Efficiency and Renewable Energy in Portfolio Standards*, CLEAN ENERGY STATES ALLIANCE (Nov. 19, 2009), *available at* http://www.cleanenergystates.org/Meetings/RPS_Summit_09/ Sedano_RPS_Summit2009.pdf.

88. *See* QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

89. WISER & BARBOSE, *supra* note 1, at 6 n.10.

90. QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

91. *See id*.

92. WISER & BARBOSE, *supra* note 1, at 16; WISER, BARBOSE & HOLT, *supra* note 2, at ii.

93. WISER, BARBOSE & HOLT, *supra* note 2, at ii.

"improved economics of solar relative to wind power."[94] Federal tax incentives, state renewable energy rebate and incentive programs, and voluntary green power markets all contribute to the improved economics of solar energy.[95]

Beyond the desire to diversify renewable energy resources, other factors led to the changes in state RPS policies. One issue that many states have faced is failure to meet the standards and expectations policymakers set forth when designing RP policies.[96] Some states have had more modest goals than others, and have been able to meet such standards; however, some states have failed to meet even the modest standards they set for early compliance expectations.[97] Thus, the RPS design must be evaluated and adjusted so that it is still both productive and workable. This failure to meet standards also explains the changes in ACP. They seem to be driven by the fact that "several states have struggled to meet early-year RPS targets."[98] The ACP have been adjusted in some states to allow for more payments for compliance now, while adjusting downward for future years when the need for ACP will hopefully dissipate with the development of solar energy and other renewable energy resources.[99]

Besides not being able to meet the standards set forth in RPS policies, many states have had setbacks in funding for energy development.[100] It seems as though many states did not anticipate the high costs required to develop new technologies for energy expansion.[101] States have also found that the funding allocated to RPS policies have not been enough to meet the standards and expectations of RPS

94. *Id.* at 4.

95. *Id.* at 25.

96. *See* ARIZ. CORP. COMM'N, *supra* note 7, at 7; WISER & BARBOSE, *supra* note 1, at 20–21.

97. ARIZ. CORP. COMM'N, *supra* note 7, at 7; WISER & BARBOSE, *supra* note 1, at 21.

98. WISER & BARBOSE, *supra* note 1, at 1.

99. QUANTITATIVE RPS DATA PROJECT, *supra* note 23.

100. WISER & BARBOSE, *supra* note 1, at 21; ARIZ. CORP. COMM'N, *supra* note 7, at 8. For example, one Michigan power company reported anticipated expenditures in 2009 of $279,000 and then tripled the expected costs to $837,000; another power company anticipated the increase to jump from $2,220,000 to nearly $13,000,000. The costs associated with developing renewable energy resources are great. ALPENA POWER CO. RENEWABLE ENERGY ANN. REPORT FOR 2009, CASE NO. U-15804, 1, 5 (Aug. 17, 2010), http://www.dleg.state.mi.us/mpsc/renewables/annualreports/2009/alpenapower09.pdf; CONSUMERS ENERGY CO. RENEWABLE ENERGY PLAN ANN. REPORT 2009, CASE NO. U-15805, 1, 5 (June 30, 2010), http://www.dleg.state.mi.us/mpsc/renewables/ annualreports/2009/consumersenergy09.pdf.

101. *See* WISER & BARBOSE, *supra* note 1, at 21.

policies.[102] Furthermore, some states have set a cost cap which has created an artificial limit on expanding the development of solar technology.[103] Beyond incentives for companies to produce new technology, the federal government implemented a pilot program in order to overcome the upfront costs.[104] This program, Property Assisted Clean Energy (PACE), "create[s] a property tax financing district to help consumers pay for solar energy systems through a long-term assessment on the customer's property tax bill or another local bill."[105] However, challenges exist in securing the financing through these property tax systems—namely the barrier created by the Federal Housing Finance Authority.[106] As PACE programs come into effect, some of the funding issues may abate on their own.[107]

Beyond funding limitations and failure to meet the goals put in place, other concerns have been raised about the reliability of electrical systems throughout the United States, which have led to further changes in state energy plans.[108] Because of some large scale blackouts in certain portions of the nation, states are developing energy plans that can sustain the energy demands of the region.[109] The concern for reliability stems from the condition of major transmission lines, central power plants, and the availability of fuel for the power plants.[110] Thus, the need to diversify energy sources in order to prevent sweeping blackouts has caused some states to focus on developing a variety of technologies to include in the state energy plan.[111] In order to continue to develop an effective energy policy, states must consider the burden that energy resources will create and whether they will be able to accommodate the growing needs by broadening the types of energies relied upon in any given area.[112]

102. ARIZ. CORP. COMM'N, *supra* note 7, at 8.

103. WISER & BARBOSE, *supra* note 1, at 20.

104. PACE FINANCING, http://www.dsireusa.org/solar/solarpolicyguide/?id=26 (Last visited July 26, 2011); DEPARTMENT OF ENERGY, GUIDELINES FOR PILOT PACE FINANCING PROGRAMS (2010). *See also* WHITE HOUSE, POLICY FRAMEWORK FOR PACE FINANCING PROGRAMS (Oct. 18, 2009), *available at* http://www.whitehouse.gov/assets/ documents/PACE_Principles.pdf.

105. PACE FINANCING, *supra* note 104.

106. *Id.*

107. *See id.*

108. ARIZ. CORP. COMM'N, *supra* note 7, at 8.

109. *See id.*

110. *Id.* at 9.

111. *Id.*

112. *Id.*

In addition to reliability concerns, changes to RPS policies have been considered because of security concerns, environmental impacts, and economic factors.[113] In order to develop a successful energy plan, states must create a well-developed infrastructure that can protect against catastrophic natural disasters or other forms of attack.[114] Furthermore, it is often difficult to find a balance between making economical energy choices and minimizing environmental impact.[115] Ensuring that energy is economical involves more than just measuring the current cost.[116] The longevity of the source must be considered in light of future expectations, the life expectancy of the plant, and the costs of waste disposal.[117] Also, in regard to providing an effective energy policy, the impact on the environment is a great concern.[118] As states develop RPS policies, they must consider "the resulting environmental impacts of those choices"[119] because diversifying energy resources also affects the environment throughout the process. To create an effective renewable energy policy, states must consider all the factors now and in the future that will provide sufficient energy sources in an environmentally conscious manner.[120]

V. COMPLIANCE STANDARDS

In order to really understand if RPS policies have been effective in promoting renewable energy, one must assess how states have met the standards that they have set forth in their RPS policies. Because many states have recently initiated their RPS policies or have set the first expectation for compliance in the future, it is still somewhat difficult to obtain a complete sense of state compliance as set forth in RPS policies.[121] Furthermore, many states have differing policies creating a discrepancy in what constitutes compliance.[122] However, from the information available, one can generally analyze how states are

113. *Id.* at 9–10; *see also* Davies, *supra* note 54, at 1372.

114. ARIZ. CORP. COMM'N, *supra* note 7, at 10.

115. *Id.*

116. *Id.*

117. *Id.*

118. *Id.*

119. *Id.*

120. *Id.*

121. *See* WISER & BARBOSE, *supra* note 1, at 2, 6–7, 23; WISER, BARBOSE & HOLT, *supra* note 2, at 25.

122. WISER & BARBOSE, *supra* note 1, at 2.

complying with the standards.[123] There are three basic compliance models that states follow. When looking at the different types of compliance models, it is necessary to determine if states are indeed meeting their own mandated expectations. But if not, states should take action to ensure compliance with their own RPS policies. This section will look at the three types of compliance models and what each model means. This section will then determine how states are meeting their requirements for compliance and whether states are, in fact, fulfilling their requirements.

A. Three Compliance Models

In determining what the compliance rates are for states, one must first understand what constitutes compliance. Thus, it is important to note that there are three general compliance models that states are following:

> 1. in states with retail electric competition, electricity suppliers are typically given broad latitude to comply with RPS requirements as they see fit;
>
> 2. in states with still-regulated utility monopolies, electricity regulators oversee—to varying degrees—utility procurement and contracting under the RPS; and
>
> 3. in two states, New York and Illinois, a state agency/instrumentality has direct responsibility to conduct procurements under the RPS.[124]

In the first model, regarding the "broad latitude" for compliance, states have implemented a substantial degree of flexibility into their compliance requirements. First, states have incorporated set-asides (which dictate when a specific amount of energy must be met using solar energy),[125] credit multipliers (which allow solar energy to count toward compliance of other energy source requirements),[126] as well as alternative compliance payments (ACP) (which allow states to purchase compliance and avoid enforcement)[127] in order to meet target renewable energy targets.[128] Thus, it seems that although most states have target RPSs, the manner in which states are achieving them is varied and

123. *See id.* at 20–26.

124. *Id.* at 6–7.

125. SOLAR SET-ASIDES, *supra* note 3.

126. *Id.*

127. *Id*; WISER & BARBOSE, *supra* note 1, at 23.

128. SOLAR SET-ASIDES, *supra* note 3; WISER & BARBOSE, *supra* note 1, at 7.

flexible in terms of actual renewable energy resources contributing to compliance.

Furthermore, states have flexibility in enforcement actions.[129] The enforcement actions may not take place for several years after the failure to meet standards because states are anticipating that the development of new technologies will increase and compliance will be achieved in future years.[130] Also, some states have allowed for a good faith exemption or waiver where developments have taken place, but full compliance has not yet been achieved.[131] Many states have not reached a compliance year yet, and many that have enacted "modest renewable energy purchase obligations, so early-year targets were not particularly challenging to achieve."[132]

In the second compliance model, states have appointed regulators to oversee and obtain utility procurement.[133] This procurement involves soliciting utilities to develop renewable energy.[134] "The RPS solicitation process is the primary policy framework for the development of utility-scale renewable energy."[135] For example, the California Public Utilities Commission has been instrumental in obtaining contracts for utilities companies to develop new technologies and incorporate renewable energy resources into its state energy plan.[136] Furthermore, in Massachusetts, the Department of Technology and Energy has set requirements for procurement and has utilized competitive solicitation in order to procure a default energy supply.[137] States, such as California, New Mexico, Minnesota, and New Jersey use regulators in order to

129. *See* WISER & BARBOSE, *supra* note 1, at 23.

130. *Id.*

131. *Id.*

132. *Id.* at 12.

133. *See id.* at 7; R. WISER, K. PORTER & R. GRACE, EVALUATING EXPERIENCE WITH RENEWABLES PORTFOLIO STANDARDS IN THE UNITED STATES 6, 9, 14 (2004), *available at* http://eetd.lbl.gov/ea/emp/reports/54439.pdf.

134. CAL. PUB. UTILS. COMM'N, PROCUREMENT, http://www.cpuc.ca.gov/PUC/energy/Renewables/procurement.htm (last visited July 26, 2011).

135. *Id.*

136. WISER, PORTER & GRACE, *supra* note 133, at 9.

137. COMMONWEALTH OF MASS., DEP'T OF TELECOMM. & ENERGY, REQUEST FOR COMMENTS ON THE PROCUREMENT OF DEFAULT SERVICE POWER SUPPLY FOR RESIDENTIAL AND SMALL COMMERCIAL AND INDUSTRIAL CUSTOMERS 4–5 (Dec. 6, 2004), *available at* http://www.masstech.org/policy/RPS/2004-122-06_DTE-04-115_ORDER_Default-Service_126ordreqcom.pdf.

bolster renewable technologies and advance the development of new technologies that are part of the RPS policy.[138]

For the third compliance model, New York and Illinois have created state agencies to manage and oversee RPS policies. New York created a commission that manages the RPS fund and sets targets for compliance on a multiple tier system. "New York's RPS program uses a central procurement model, with [the Commission] as the central procurement administrator. . . . [T]he renewable generator transfers to [the Commission] . . . renewable electricity generated, and guarantees delivery of the associated electricity to the New York State ratepayers."[139] Similarly, Illinois created the Illinois Power Agency (IPA) "to develop electricity procurement plans for investor-owned electric utilities (EUs)."[140] These agencies manage and direct the procurement of electricity in their respective states, enforce RPS policies, and enact annual savings goals in order to maintain and enhance the development of renewable energy technology.[141]

As previously discussed, each state has great flexibility in creating its own RPS policy and in directing the progress of renewable energy resources. This flexibility is also clear in developing compliance requirements and adhering to specific target goals and mandates in order to develop and diversify the current renewable energy resources and efficiency standards. Each state is able to designate its compliance requirements by utilizing set-asides, credit multipliers, or alternative compliance payments, or by creating a regulatory body to oversee compliance with RPS policies.

B. Are States Complying?

Once the manner in which compliance models are set forth is established, it is easier to evaluate what states have accomplished. Much of the data seems to show that the majority of states were able to meet

138. WISER, PORTER & GRACE, *supra* note 133, at 9.

139. HISTORY OF NEW YORK'S RENEWABLE PORTFOLIO STANDARD, http://www.nyserda.org/rps/furtherreading.asp (last visited July 26, 2011); *see also* NYSERDA, NEW YORK STATE RENEWABLE PORTFOLIO STANDARD PERFORMANCE REPORT (2010), *available at* http://www.nyserda.org/publications/2010_rps_report.pdf; NEW YORK: INCENTIVES/POLICIES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NY03R&re=1&ee=1 (last visited July 26, 2011).

140. ILLINOIS: INCENTIVES/POLICIES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=IL04R&re=1&ee=1 (last visited July 26, 2011).

141. *See id.*

their early targets.[142] Figure 2 suggests that many states were able to reach their overall goals in 2006.[143]

Application of Renewable Electricity and/or RECs Towards RPS Targets

State	1999	2000	2001	2002	2003	2004	2005	2006
AZ	-	-	89%	64%	31%	31%	26%	25%
CA	-	-	-	-	-	100%	100%	98%
CT	-	no data	no data	no data	no data	100%	100%	93%
HI	-	-	-	-	-	-	100%	-
IA	100%	100%	100%	100%	100%	100%	100%	100%
MA	-	-	-	-	100%	65%	64%	74%
MD	-	-	-	-	-	-	-	100%
ME	-	100%	100%	100%	100%	100%	100%	100%
MN	-	-	-	61%	72%	72%	81%	no data
NJ	-	-	100%	100%	100%	100%	100%	100%
NM	-	-	-	-	-	-	-	100%
NV	-	-	-	-	31%	30%	95%	39%
NY	-	-	-	-	-	-	-	52%
PA	-	-	no data	no data	-	-	-	100%
TX	-	-	-	99%	96%	99%	99%	100%
WI	-	40%	100%	100%	100%	100%	100%	100%

Blank cells = no compliance obligation existed in that year
No data = unable to obtain compliance data for that year

Figure 2. [144]

142. WISER & BARBOSE, *supra* note 1, at 20.
143. *Id.* at 21.
144. *Id.* at 22.

However, Figure 2 also shows that there is not a lot of data available to truly determine whether states have been able to consistently meet target goals mandated by RPS policies.[145] Those that failed to meet their goals—such as Nevada, Arizona, and New York—appear to be far from reaching their ultimate target percentage rates. Furthermore, several states set smaller goals in the early years that were easier to meet, which indicates some dedication to renewable energy, but does not demonstrate significant progression toward the development of renewable technology sources.[146] Thus, it is clear that although compliance is being met by some states, others have continued to fall short of their early mandated targets.[147]

In addition to examining overall RPS compliance, the rate at which states have been able to meet specific solar energy set-asides is also limited.[148] "[Sixty-eight percent] of the aggregate solar/DG [set-aside] compliance obligation in 2008 was achieved through the purchase of solar energy, DG, and/or SRECS."[149] These early year target obligations are extremely limited compared to the future increments and expectations of solar energy target obligations.[150] It seems that the expectation for states to meet these solar energy set-asides is either unrealistic or the development of the technology is not being properly supported through funding or other means. Even states with very small solar capacity obligations have not been able to meet their RPS policy goals.[151] It also seems that SRECs (Solar Renewable Energy

145. *See supra* Figure 2. Though some states have been able to reach 100% compliance, this chart fails to indicate what levels states were expected to reach. Furthermore, many states have fallen short of compliance and have reached levels as low as 31% compliance. This clearly shows that the progress toward renewable energy is still far from being met through RPS policies.

146. WISER & BARBOSE, *supra* note 1, at 12. In 2006, not many states had yet required compliance with their RPS policies. In 2010, the target goals for the states varied greatly. For example, in Arizona, the overall goal was 2.5%, Maryland's goal was 5.75%, and New Mexico's goal was 6%, which it has maintained since 2007. However, other states have more aggressive goals early in the development of their RPS policies: Connecticut's goal was 14% for 2010, and Minnesota's goal was 15%. Thus, the goals vary greatly by state as well as by year. The compliance requirements for earlier years are much less stringent. RPS DATA PROJECT, *supra* note 23.

147. Some of the states that have fallen short of their target goals, like Arizona, Massachusetts, and Connecticut, have done so because "funding levels have been insufficient," which creates a "difficult project development climate," or contractual failures that prohibit companies from maintaining the schedule previously delineated. WISER & BARBOSE, *supra* note 1, at 21.

148. WISER, BARBOSE & HOLT, *supra* note 2, at 27.

149. *Id.*

150. *See id.* at 27–28.

151. *Id.* at 29.

Certificates)[152] have been unable to keep up with the yearly targets that have been set by the states' RPS policies.[153] As shown in Figure 3 below, only three states have been able to meet the target solar compliance obligations.

State	2008 Solar/DG Set-Aside Compliance Obligation		Percent of "Compliance" Obligation Achieved*
	% of Applicable Retail Sales	Equivalent Capacity @ 15% capacity factor (MW_{ac})	
Nevada	0.54%	104	100%
New Jersey	0.16%	99	58%
New York	0.07%	58	27%
Arizona	0.18%	52	40%
Colorado	0.20%	46	100%
Maryland	0.01%	2	7%
Washington D.C.	0.01%	1	0%
Pennsylvania	0.01%	1	100%
Delaware	0.01%	1	84%
		Weighted Average	*68%*

Figure 3. 2008 Solar/DG Set-Aside Compliance Results[154]

Because only three states were able to comply with their solar energy obligations for 2008, the future of solar power as part of RPS policies remains uncertain. Yet, it is important to note that both the continued development and the incentives for utilizing solar energy are likely to cause a decline in the cost of solar power in future years and therefore, compliance should be more probable.[155] However, in looking at the current rate of development of solar power, the impact of set-asides has not expanded the growth of solar energy resources.[156] Many of the incentives to spur the growth of solar energy development have not impacted the solar energy technologies as expected because it has been easier to reach compliance through ACPs or other methods rather than taking on the greater burden of developing solar technology.[157] Thus, solar energy goals cannot be an accurate assessment of the progression

152. SRECs represent the value of solar energy resources and the amount of energy that they represent. SRECs can be traded and sold in order to produce funding for further development of solar energy resources. *Id.* at 28.

153. *See id.* at 28.

154. *Id.*

155. *Id.* at 22.

156. *Id.* at 25.

157. *Id.* at 26–27.

and impact of RPS policies on the growth of renewable energy technologies as a whole. States continue to struggle to meet modest solar power target goals and the incentives to increase solar power fail to overcome the cost barrier to developing solar energy.

Another problem with measuring how well states are achieving their renewable energy goals is the alternative ways to reach compliance. Built into compliance models are the opportunity for states to count credit multipliers or ACPs in order to determine if they have complied with the target goals. Thus, the reported compliance percentages may be inflated because compliance is not using renewable energy per se. Rather, states can be meeting these energy goals through previous years' compliance or ACPs.[158] The flexibility built into compliance models makes it difficult to determine if the compliance reported fulfills the objective of RPS policies through developing renewable energy sources.

A significant part of RPS policies is the ability for states to comply through ACPs.[159] Although some states do not make extensive payments to meet compliance, many still rely upon ACPs in order to meet the standards set in their RPS policies.[160] Thus, compliance levels have been inflated because purchasing compliance, although acceptable based upon RPS policies, does not contribute to increased renewable energy consumption. Rather, the reported rate of compliance suggests that the state has met the expectation while in reality the goal was met through monetary contribution. Although these payments may be necessary to reach the target goal for that year, this mode of complying seems to defeat the purpose of expanding the development of renewable energy resources.

Because many RPS policies are still in their infancy, there is an extensive amount of leeway in the requirements as well as the penalties applied when determining compliance.[161] Beyond states being able to make ACPs to avoid enforcement actions, they have "opportunities to

158. *See* WISER & BARBOSE, *supra* note 1, at 7.

159. *Id.* at 23; *see also* DEPARTMENT OF ENERGY RESOURCES, MASSACHUSETTS RENEWABLE PORTFOLIO STANDARD, ANNUAL RPS COMPLIANCE REPORT FOR 2008, at 5–6 (July 29, 2010), http://www.mass.gov/Eoeea/docs/doer/rps/rps-2008annual-rpt.pdf. In Maryland's first year of compliance in 2006, it paid over $38,000 in compliance fees. PUBLIC SERVICE COMMISSION OF MARYLAND, RENEWABLE ENERGY PORTFOLIO STANDARD REPORT OF 2008, at 12 (2008).

160. In Massachusetts, for 2008, only .1% of RPS targets were met through ACPs, which has been a great improvement, but still lends to the notion that states are unable to obtain the renewable energy technology and sources in order to meet the capacity for the targets set by RPS policies. DEPARTMENT OF ENERGY RESOURCES, *supra* note 159, at 6.

161. WISER & BARBOSE, *supra* note 1, at 23.

'make-up' purchase shortfalls . . . ensuring that any enforcement actions will not occur for several years after a given compliance year."[162] States can make-up for their shortfalls by surpassing their obligations in future years and credit their over-compliance to prior unfulfilled obligations.[163] Although, this could be successful, banking on future excess success when basic minimum energy targets are barely being met seems like a dangerous set-up for failure, and thus, reevaluating and revising RPS policies will surely be necessary as time progresses. Other states do not hope for future excess success, but rather, permit failure on energy obligations with no penalty on a discretionary basis.[164] Minnesota permits failure in meeting its energy obligation under the "good faith" exemption by only requiring the state to make a good faith effort toward its goals even if the target energy obligations have not been met.[165] Therefore, for states that follow this type of exemption, it seems as if enforcement actions have barely been taken.[166] Coupling the flexibility in compliance with the lack of enforcement actions, RPS policies are basically a good suggestion that states should do what they can to improve the renewable energy resources, but do not really solve or accomplish the problems that states are facing and only require states to put forth a good faith effort to meet the obligations.

VI. BARRIERS TO COMPLIANCE

Whether or not states are utilizing ACPs, credit multipliers, or just not enforcing their compliance standards, complying with RPS policies has not been as successful as each state anticipated upon creating their yearly target goals. The purpose and hope of RPS policies is to develop and diversify the renewable energy technology on a state by state basis. However, states are overcoming some barriers to success in this venture. As discussed below, the main barriers to RPS policies (whether a national standard is set or not) are lack of transmission, lack of funding, the climate of project development, and the inability to support long-term contracts.

162. *Id.*

163. *Id.*

164. *Id.*

165. MINNESOTA: INCENTIVES/POLICIES FOR RENEWABLES & EFFICIENCY, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MN14R&re=1&ee=1 (last visited July 26, 2011).

166. *Id.*

First, many states have problems meeting their RPS targets or foresee major problems with meeting target goals in the future because of a lack of sufficient transmission capabilities.[167] To meet the growing needs of renewable energy and reach their target goals, states need the proper transmission capabilities.[168] Electricity companies as well as governmental organizations have advocated that as part of RPS policies, investments should incorporate expanding transmission capabilities in order to assist the infrastructure in complying with the development of renewable energy technologies.[169]

In response to the need for enhanced transmission infrastructures, states have attempted to increase transmission by requiring transmission development plans and developing transmissions before the development of new technologies.[170] However, these attempts at increasing transmission have not been entirely successful.[171] One example is the Frontier Line, which was slated to develop a 1,300-mile transmission line through Wyoming, Utah, Nevada and California.[172] While each state increased its target RPS goals in expectation of utilizing this new transmission line, the project for adequate transmission has been dormant since 2007.[173] The expansion of renewable energy technology and the overall system of utility diversification fails to conform to the customary approach of the utility company siting and transmission line development.[174] Thus, when non-utility companies or out-of-state companies attempt to site and build transmission lines, the plans often cannot be approved because the current system requires individual utility companies to plan transmission development.[175] Developing transmission lines often involves a lengthy approval process that can take up to ten years for approval, planning, and then building the necessary

167. WISER & BARBOSE, *supra* note 1, at 32.

168. *Id.*

169. *Id.*

170. *Id.* at 32–33.

171. Joshua P. Fershee, *The Future of Energy Policy: A National Renewable Portfolio Standard: Moving Power Forward: Creating a Forward-Looking Energy Policy Based on a National RPS*, 42 CONN. L. REV. 1405, 1415 (2010).

172. *Id.*

173. *Id.*

174. Ashley C. Brown & Jim Rossi, *Multistate Decision Making for Renewable Energy and Transmission: Spotlight on Colorado, New Mexico, Utah, and Wyoming: Siting Transmission Lines in a Changed Milieu, Evolving Notions of the "Public Interest" in Balancing State and Regional Considerations*, 81 U. COLO. L. REV. 705, 719–21 (2010).

175. *Id.* at 720–721.

transmission lines.[176] For RPS policies to have a chance at growing at the projected rates, the transmission infrastructure must be developed more rapidly to support the projected energy needs in future years. Without reevaluating and redesigning the transmission system, RPS policies will continue to fail to meet yearly target goals.

In addition to inadequate transmission lines, the overall cost of developing and expanding renewable energy resources has been quite expensive and continues to grow. Renewable energy is expected to lower the overall electricity costs in the long run; however, "there is little evidence of a sizable impact on average retail electricity rates so far."[177] Beyond not knowing the future impacts of electricity reduction, wind power, the most economically advantageous renewable resource thus far, has significantly increased in price.[178] Because wind power costs have been underestimated, this suggests that the actual costs of RPS policies will be much greater than anticipated.[179] Furthermore, because of this cost uncertainty, "any long-term 'incremental' cost of RPS programs is difficult to estimate."[180] Since RPS policies were structured with incremental goals and long-term expectations, it seems likely that unless the current costs can be curtailed, the future target goals will not be achieved since the funding necessary to develop the technology is not available.[181] States are attempting to reduce the costs incurred and limit the maximum impact of price increases on electricity rates.[182] To do so, states are incorporating different types of cost caps.[183] This may seem like a viable solution, but the mandated energy use of renewable energy technology through RPS policies may dictate that these cost caps will be ineffective.

Other barriers to effective RPS policies and the advancement of renewable energy resources are the climate of project development and the difficulty in developing long-term contracts. As part of project development, there is a lengthy and complicated process in order to build

176. CAL. PUB. UTILS. COMM'N, *supra* note 134.

177. WISER & BARBOSE, *supra* note 1, at 29.

178. *Id.* at 30.

179. Cliff Chen, Ryan Wiser & Mark Bolinger, *Weighing the Costs and Benefits of State Renewables Portfolio Standards: A Comparative Analysis of State-Level Policy Impact Projections*, ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LAB., at iv (2007).

180. WISER & BARBOSE, *supra* note 1, at 30.

181. *See* ARIZ. CORP. COMM'N, *supra* note 7, at 8.

182. WISER & BARBOSE, *supra* note 1, at 30.

183. *Id.*

new renewable energy facilities.[184] The basic processes to obtain the land and permits present significant difficulties in creating new renewable energy facilities.[185] As states and enthusiasts amend and refine RPS policies to have significant energy consumption occur through renewable resources, it seems that they have often failed to calculate the time and feasibility of meeting all the requirements necessary to follow through with RPS policy target goals. The expectation is that projects will be easily implemented, while in reality, this has not been the case.[186] Another difficulty of project development is that typically electricity utilities expect to have long-term contracts of ten years to supply electricity.[187] However, many of the renewable energy technologies have created short-term contracts.[188] This is because "their future load requirements are uncertain . . . or because their credit may not be strong enough to support such contracts."[189] Therefore, renewable technologies are unable to produce the long-term contracts that would ensure stability in the energy marketplace, and are instead creating uncertainty and increased prices. Overall, renewable energy sources must overcome barriers, such as lack of transmission lines, lack of funding, the process to develop new renewable energy resource projects and developing long-term contracts, in order to become a viable part of the energy landscape.

VII. CONCLUSION

The effectiveness of RPS policies is difficult to truly ascertain because each state's policy varies greatly from another state's policy. As each state can determine what its target goals are for using renewable energy resources each year, the general understanding is that any projected goal is moving overall energy consumption toward renewable resources. However, this is not quite clear from the compliance data. As each state uses its own model for compliance and can purchase compliance through ACPs or just completely ignore compliance in general, the success of RPS policies is yet to be established. Thus, it seems like some states have enacted RPS policies to gain the political

184. CAL. PUB. UTILS. COMM'N, *supra* note 134.

185. *Id.*

186. *See id.*

187. WISER & BARBOSE, *supra* note 1, at 26.

188. *Id.*

189. *Id.* at 28.

benefit of being perceived by the general public as being part of the renewable energy movement, rather than truly developing the technology. Because the data is difficult to find and understand, although many believe that the goals are becoming more aggressive, the realities of achieving them are not often discussed. Furthermore, the continued development of new renewable energy resources is not advancing as smoothly as hoped because of lack of transmission, funding, and the basic requirements of developing new projects. Many suggest that a national RPS would solve many problems facing the development of RPS policies. However, when the transmission infrastructure is severely lacking, no funding is available to finance the project, and the difficulty in developing new utilities is apparent, even a national RPS would not likely be successful in creating the diversified energy landscape that RPS policies are expected to accomplish. RPS policies would likely be more successful if there was first funding allocated to developing new facilities, and then target goals were moderately increased each year and enforced if compliance is not met. The current policies are extremely scattered and the benefits in each state likely do not truly reflect what these policies were intended to achieve.

Melanie Grant[*]

* J.D. Candidate, April 2012, J. Reuben Clark Law School, Brigham Young University.