



## Widespread Public Support for Renewable Energy Mandates Despite Proposed Rollbacks

a report from the National Surveys on Energy and Environment

### Introduction

In light of recent attempts in many state legislatures to repeal or weaken renewable portfolio standards (RPSs) in the 28 states that have adopted them, the latest version of the National Surveys on Energy and Environment (NSEE) gauged public opinion on these state renewable energy requirements. The survey finds that a majority of Americans—of every race, income, level of education, religion, political party, and region of the country—support state renewables requirements. Most Americans would be willing to spend an extra \$25 per year for more renewable energy—a number which exceeds the average \$15 per year cost premium of current RPS programs. However, once the cost premium for an RPS rises to \$50 per family per year, a majority of Americans say they would oppose an RPS. Further, though there is wide support for the idea of renewable energy requirements, few Americans know whether or not their state currently has an RPS in place.

### Key Findings

1. A strong majority (74%) of Americans agree that state governments should require a set portion of all electricity to come from renewable energy sources such as wind and solar power.
2. There is majority support for state RPS requirements across a range of demographic factors: race, income, level of education, religion, political party, and region of the country.
3. Support for renewable energy requirements is highest (87%) among those who believe in global warming. Even so, 39% of Americans who do not believe the climate is changing support state RPS requirements.
4. The cost of a state's RPS greatly impacts public acceptance. If the RPS were to increase the cost of electricity by \$25 per family per year, 58% of Americans say that states should require renewable energy. However, if the cost of an RPS program raised electricity rates \$50 per year, less than a majority (45%) would support an RPS.
5. When asked if their state requires a set portion of electricity to come from renewable sources, most Americans (59%) volunteered that they didn't know. Among those who did answer, only half answered correctly.

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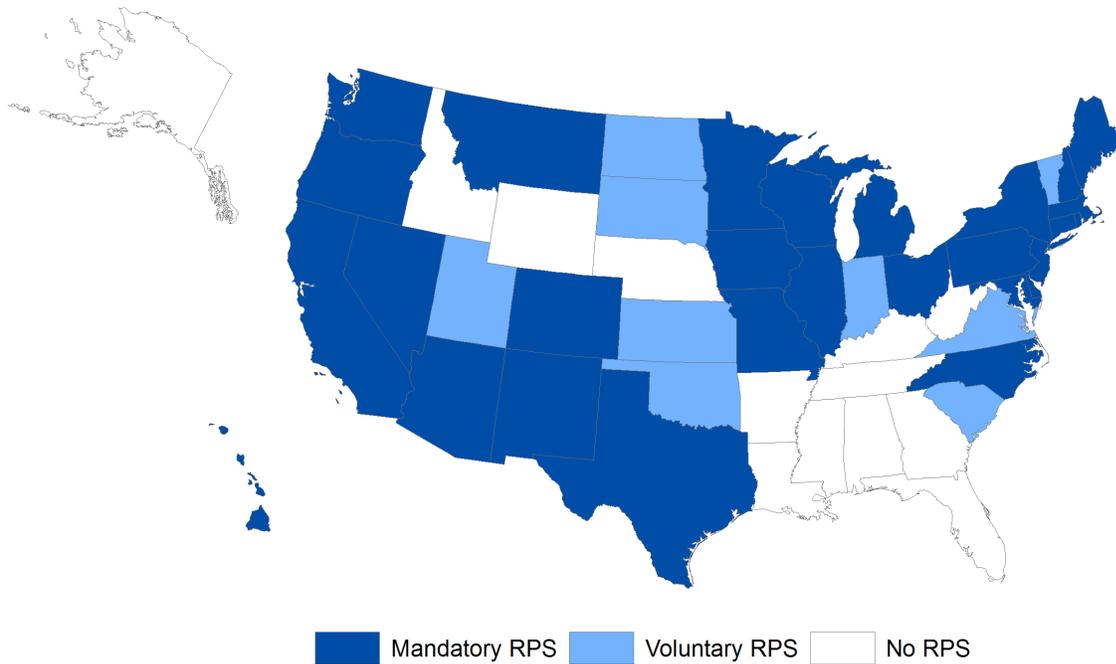
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## The RPS Landscape

For the last decade, the policy of choice for US states interested in actively promoting a shift to renewable energy has been the renewable portfolio standard (RPS). In general terms, this policy tool requires electric utilities operating within a state to increase the proportion of electricity that comes from renewable sources by a set deadline. Currently 28 states plus the District of Columbia have a compulsory RPS in place, while nine more states have voluntary standards or renewable energy goals (see map).



\*Map accurate as of May 31, 2015.

The majority of these RPS statutes in the US were adopted in the early 2000s,<sup>1</sup> at a time when concerns over climate change were increasingly becoming part of public discourse. In the last decade, the portion of the nation's electricity generated by wind and solar—the primary technologies within most RPS statutes—has increased twelve-fold, from less than half a percent in 2004 to nearly 5% in 2014.<sup>2</sup> At the state level, many of these shifts have been even more dramatic. In Iowa, for example, the share of electricity coming from non-hydropower renewable sources grew from 3% in 2004 to 29% in 2014.<sup>3</sup> In Texas, installed wind energy capacity jumped from 184 MW in 2000 to 14,098 MW by the end of 2014.<sup>4</sup> While there is debate among economists about how much of these increases can be attributed to RPS policies,<sup>5</sup> most energy analysts believe that a shift toward renewables would slow in the absence of RPS policies.<sup>6</sup>



Just as the early 2000s were marked by expansion of RPS policies, the last couple of years in particular have seen many attempts to undermine RPS legislation.<sup>7</sup> Research from Colorado State University shows that in the last two legislative sessions, state legislators in 20 states introduced bills to weaken or completely eliminate the RPS (see *Appendix 1*). These bills included proposals to reduce the percentage of renewables required, extend the time period for compliance, expand eligibility to hydroelectric or fossil fuel-based generation plants, or entirely repeal the RPS, often borrowing language from a legislative template produced by the American Legislative Exchange Council.<sup>8</sup> Most of these bills either failed to make it out of committee or were voted down by at least one chamber (e.g., Kansas and Oklahoma). However, there are notable exceptions. In June 2014, Ohio's legislature and governor put a two-year freeze on the state's RPS to study the statewide costs and benefits of the renewable requirements. In January 2015, West Virginia became the first state to fully repeal its (voluntary) RPS. Four months later in May 2015, Kansas downgraded its mandatory RPS to a voluntary target, a compromise struck between the wind energy industry and lawmakers who proposed a new tax on energy produced by renewable sources.<sup>9</sup> As of this writing, bills to repeal future RPS targets are making their way through state legislatures in North Carolina<sup>10</sup> and Texas.<sup>11</sup>

In addition to legislative action to weaken RPS statutes in many states, legislative *inaction* in the states whose statutes expire at the end of 2015 is also a concern to supporters of renewable energy. While legislators in five of the seven states with soon-to-expire RPS statutes have proposed increasing their standard, none of these efforts have yet succeeded (see *Appendix 2*). Without action by state legislatures to expand these mandates, the pace of adoption of new renewable technologies is expected to slow.<sup>12</sup>

The arguments in favor of weakening RPS statutes—or in allowing existing statutes to expire—largely revolve around the cost of renewables. Proponents of RPS rollbacks argue that renewable energy mandates increase the cost of electricity to consumers when state statute—rather than the market—determine the amount of electricity from competing sources. Recent research finds that, to date, state RPS policies have indeed raised electricity rates in those states by about 1% or about \$15 a year for the average household,<sup>13</sup> though this varies greatly from state to state.<sup>14</sup> The cost of compliance with RPS statutes in the future, however, is less certain. On the one hand, higher targets may be more expensive as some of the most cost-effective sites for renewables production (i.e., the “low-hanging fruit”) have already been developed. On the other, federal regulation of greenhouse gas emissions from both new and existing power plants<sup>15</sup> may increase the cost of non-renewable energy production, making renewables comparatively inexpensive. Ultimately, natural gas prices may be the deciding factor in determining whether RPS statutes increase electricity costs. If natural gas prices remain low, in many states renewable energy will be a more costly option. If natural gas prices rise, renewable energy may be the most cost-effective generation option, as it already is in some states.<sup>16</sup>

As in previous waves of the National Surveys on Energy and Environment (NSEE), the Spring 2015 survey aimed to gauge public support for and opposition to state RPS statutes. The survey asked about the policy in general and then applied a cost to the program to see how support for an RPS might change based on the economics of the prospective standard. In addition, the survey gauged citizens' knowledge of whether or not their state has an RPS in place, and whether they would like to see that statute repealed, kept as it is, or expanded.

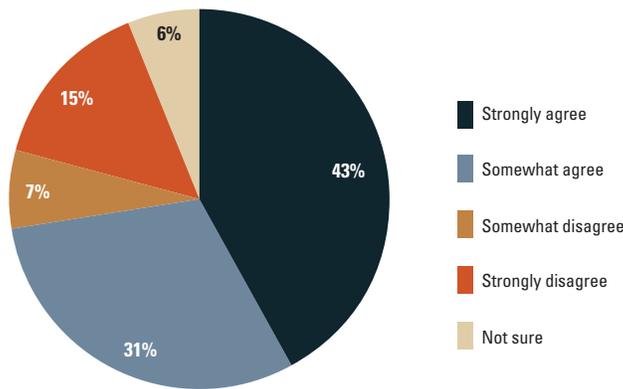
## Majority Support for State Renewable Energy Requirements

A strong majority (74%) of Americans agree that state governments should require a set portion of all electricity to come from renewable energy sources such as wind and solar power, while only 22% disagree with state renewable energy requirements (see *Figure 1a*). This majority support for state RPS requirements holds across a range of demographic factors: race, income, level of education, religion, political party, and region of the country (see tables in *Appendix 3*). Further, while support for RPS requirements is highest (87%) among those who believe average temperatures across the globe are on the rise, over a third (39%) of Americans who do not believe the climate is changing also said they agree that states should require renewable energy (see *Figure 1b*).

**Figure 1**  
**Current attitudes towards state renewable energy requirements**

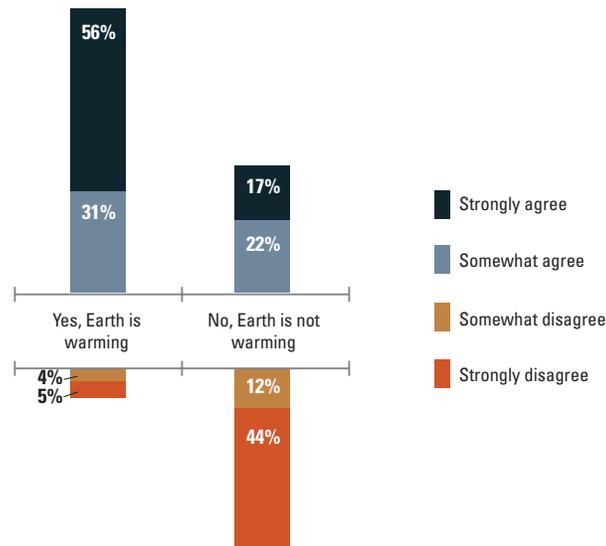
*Agreement/Disagreement with the statement "State governments should require a set portion of all electricity to come from renewable energy sources such as wind and solar power."*

### 1a. Summary of all responses



### 1b. Responses based on reaction to statement

*"There is solid evidence that the average temperature on Earth has been getting warmer over the past four decades."*



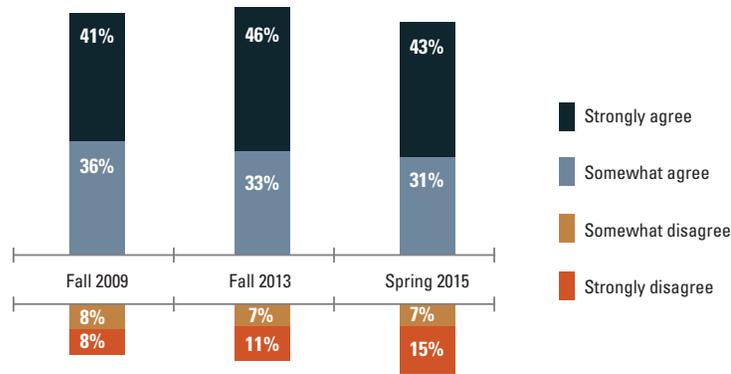
Note: "Not sure" responses are not shown.



In light of the recent surge in state legislative actions to roll back RPS provisions, one might expect that public opinion has also recently shifted. In fact, using data collected in previous waves of the NSEE, we find that public opinion related to RPS requirements has remained relatively constant over time. In the fall of 2009—when few, if any, state RPS statutes were in jeopardy of repeal—77% of Americans supported state renewable energy requirements. In fall 2013 the survey found 79% agreed with state RPS requirements, and this spring finds 74% support, both of which are within the margin of error (see *Figure 2*). Notably, however, the strength of opposition among a minority of Americans seems to have steadily increased over that time period. In fall 2009, only 8% strongly disagreed that states should require a portion of electricity to come from renewable sources. By spring 2015, that number has risen to 15%.

**Figure 2**  
**Comparing attitudes towards state renewable energy requirements**  
**2009 - 2015**

*Agreement/Disagreement with the statement “State governments should require a set portion of all electricity to come from renewable energy sources such as wind and solar power.”*



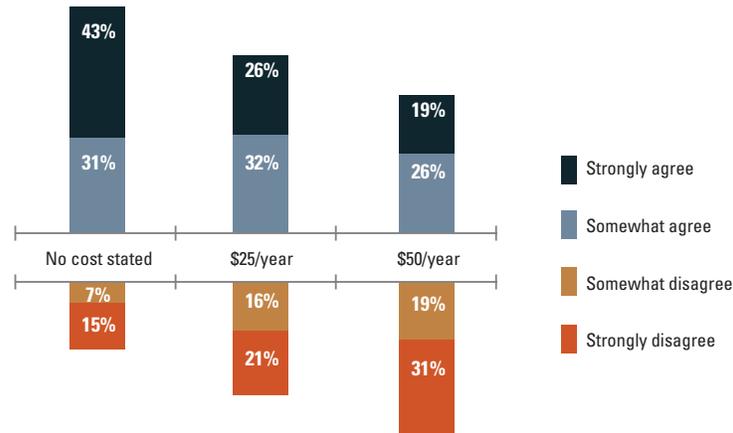
Note: “Not sure” responses are not shown.

## Support for RPS Closely Tied to Costs

Because so many of the arguments in favor of weakening RPS statutes or in allowing existing statutes to expire revolve around the cost of renewables, in the Spring 2015 NSEE we also applied a cost to the RPS requirements to see how public support might change based on the economics of the mandate. In the survey, we tested two different values—\$25 and \$50 per household per year—both of which exceed the \$15 per year average cost premium of current RPS programs nationwide. Given the uncertainty of future costs of RPS requirements and the wide variation in electricity prices from state to state, these numbers provide conservative benchmarks for future costs associated with state renewables requirements and are in line with estimates of past cost increases associated with the establishment of an RPS.

Not surprisingly, as the stated cost of the renewable energy requirements increases, support for these mandates drops. At \$25 per family per year, 58% of Americans say that they would support a state RPS (see Figure 3). When the cost rises to \$50 per year, there is no longer majority support for the RPS, with only 45% agreeing states should require renewable energy.

**Figure 3**  
Attitudes towards state renewable energy requirements with costs attached



Note: "Not sure" responses are not shown.

**Figure 3 Question text:**

*"Please identify your level of agreement with the following statements regarding energy policy. For each statement please indicate if you strongly agree, somewhat agree, somewhat disagree or strongly disagree."*

*"First, state governments should require a set portion of all electricity to come from renewable energy sources such as wind and solar power."*

*"State governments should require a set portion of all electricity to come from renewable energy sources such as wind and solar power even if it increases the cost of electricity by about 25 dollars per family per year."*

*"State governments should require a set portion of all electricity to come from renewable energy sources such as wind and solar power even if it increases the cost of electricity by about 50 dollars per family per year."*



## Few Aware of their State’s RPS Status

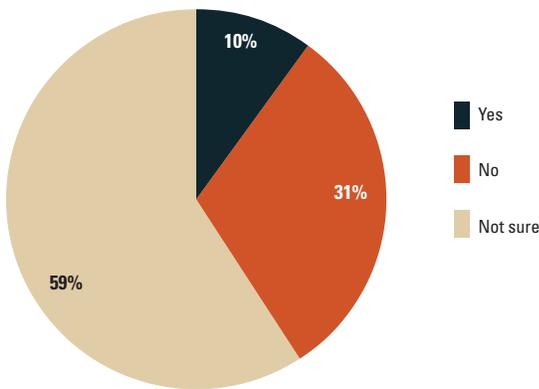
Despite their relatively high support for state-level renewable energy requirements and the fact that most state policies were adopted over a decade ago, few Americans know whether their state currently has an RPS in place. When asked if their state requires a set portion of electricity to come from renewable sources, most (59%) Americans volunteered that they “didn’t know” or were “not sure” (see *Figure 4a*). And among those that did answer, fewer than half answered correctly (see *Figure 4b*). Most commonly, residents living in a state with a mandatory RPS were over twice as likely (26%) to respond that there was no renewable energy requirement in their state than to correctly answer that their state has an RPS (12%). Residents of states with voluntary RPS statutes appear to be the most knowledgeable of their state’s RPS status, though the survey sample size of residents that live in such states is small, and so may not be generalizable to all residents in these states (see *Note 17*).

**Figure 4**

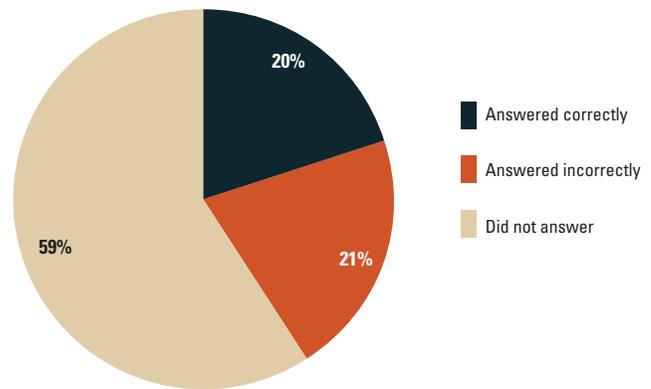
**Citizen knowledge of their state’s renewable energy policy**

*Question text: “Some states have required that a set portion of the electricity produced in that state should be from renewable sources such as wind or solar power. Does your state have a requirement for the production of renewable energy?”*

**4a. Respondent’s answer**



**4b. Accuracy of respondent’s answer**



Given the recent increase in legislative activity to repeal RPSs, the NSEE also aimed to understand how prevalent anti-RPS attitudes were amongst the public. Survey respondents that thought their state currently has an RPS were asked whether their state should “increase, decrease, or make no changes to the amount of electricity that must be produced from renewable sources such as wind or solar power.” As reported in *Figure 4a*, only 10% of all those surveyed thought their state has an RPS, so the sample size for this subsequent question is too small to allow for generalizations about public sentiment (see *Note 18*). However, because of its relevance to ongoing debates about the future of RPS statutes, the NSEE will continue to explore this question in more detail in the future.

## Conclusion

Despite recent attempts in many state legislatures to repeal or weaken RPSs, the NSEE finds wide constituencies of support for state renewable energy requirements. Opponents of RPS statutes often argue that these policies needlessly increase the cost of electricity. We find that public support is closely linked to the price premium of a state's RPS, and so it is reasonable to assume that public support for RPS mandates might wane if the costs of these programs increase in future years. However, given that very few Americans are knowledgeable about their state's renewable energy policies, it is unlikely that current efforts to roll back RPS statutes are the result of a groundswell of public dissatisfaction or concern over the current costs of renewable energy requirements.

## Methods

The following report contains the results of a telephone survey of 751 adult (age 18 or older) residents of the United States between April 8 and April 30, 2015. Respondents were interviewed in English on both landlines (334) and cell phones (417) by the staff of the Muhlenberg College Institute of Public Opinion (MCIPO) in Allentown, Pennsylvania on the Institute's Computer Aided Telephone Interviewing (CATI) system. Of the 417 cell phone respondents, 293 had no landlines in their household. Both the landline and cell phone samples were provided by the Marketing Systems Group (MSG), Horsham, Pennsylvania. Both landlines and cell phones were chosen randomly from sampling frames of United States landline and cell numbers provided by MSG.

With a randomly selected sample of 751 respondents the margin of error for the surveys is +/- 3.6% at a 95% level of confidence. Margins of error for questions with smaller sample sizes will be larger. In addition to sampling error, one should consider that question wording and other fielding issues can introduce error or bias into survey results. The sample data has been weighted by age, race, educational attainment, income, and gender to reflect 2013 population parameters for these factors provided by the United States Census Bureau. The calculation of sampling error takes into account design effects due to the weighting identified above. In order to reach a representative sample of adult Americans both landlines and cell phones are called up to 10 times. The response rate for this survey as calculated using the American Association of Public Opinion Research (AAPOR) RR3 formula is 11%. Due to rounding, the totals provided in tables may not equal 100. The full instrument will be available upon release of subsequent reports in summer 2015. The instrument was designed by Christopher Borick of Muhlenberg College, Barry Rabe of the University of Michigan, and Erick Lachapelle of the University of Montreal. For more detailed information on the methods employed please contact the MCIPO at 484-664-3444 or email Dr. Borick at cborick@muhlenberg.edu.

## Funding and Financial Disclosure

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## Notes

1. Twenty-one of the 29 state statutes were established between 2000 and 2009. The remaining eight were adopted in the late 1990s, except for Iowa, which established its RPS in 1983.
2. United States Energy Information Administration (US EIA). (2015). *March 2015 monthly energy review*, Table 7.2a Electricity net generation total (all sectors). Washington, DC: US EIA. Retrieved from <http://www.eia.gov/beta/MER/index.cfm?tbl=T07.02A#/?f=M>
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17. Given the small number of states with voluntary RPSs (many of which have relatively small populations), only 51 of the Spring 2015 NSEE respondents came from one of these 8 states. When asked if their state requires a set portion of the electricity come from renewable sources, the majority of respondents in these states with voluntary RPSs correctly answered that their state does not have such a requirement, while only 10% answered incorrectly.

Question text: “Some states have required that a set portion of the electricity produced in that state should be from renewable sources such as wind or solar power. Does your state have a requirement for the production of renewable energy?”

	State has no RPS	State has mandatory RPS	State has voluntary RPS
Answered correctly	38%	12%	51%
Answered incorrectly	6%	26%	10%
Didn't know	56%	62%	39%
N	159	534	51

18. Only those respondents who thought their state currently had an RPS target were asked whether their state should make changes to that target. Because of the high numbers of people who volunteered that they did not know if their state had an RPS, the subsequent question was asked of only 76 people, yielding a margin of error of  $\pm 11.2\%$ , which is too large to make nationwide generalizations. Even so, the results provisionally indicate that, overwhelmingly, respondents would rather expand the RPS than have it repealed; 66% of respondents say they would like their state to increase the RPS, 20% would make no changes to the standard, and only 2% would decrease the RPS target.

Question text: “Do you believe your state should increase, decrease or make no changes to the amount of electricity that must be produced from renewable sources such as wind or solar power?”

Increase	66%
Decrease	2%
Make no changes	20%
Not sure	12%
N	76



## Appendix 1

### States which saw legislative bills to roll back (weaken or repeal) mandatory RPS statutes in the 2013 and 2014 legislative sessions

	2013	2014
Arizona		Y
California	Y	
Colorado	Y	Y
Connecticut	Y	
Delaware		
Hawaii	Y	
Illinois		
Kansas	Y	Y
Maine		Y
Maryland	Y	
Massachusetts		
Michigan		
Minnesota	Y	
Missouri	Y	Y
Montana	Y	
Nevada		
New Hampshire		
New Jersey		
New Mexico		
New York		
North Carolina	Y	
Ohio	Y	Y
Oregon	Y	
Pennsylvania	Y	Y
Rhode Island		Y
Texas	Y	
Washington	Y	Y
West Virginia	Y	
Wisconsin	Y	Y

#### Sources:

Center for the New Energy Economy. (2013). *State renewable portfolio standards hold steady or expand in 2013 session*. Fort Collins, CO: Colorado State University. Retrieved from <http://www.aeltracker.org/graphics/uploads/2013-State-By-State-RPS-Analysis.pdf>

Center for the New Energy Economy. (2014). *Summary of state renewable portfolio standard legislation in 2014*. Fort Collins, CO: Colorado State University. Retrieved from <http://www.aeltracker.org/graphics/uploads/CNEE-2014-State-RPS-Legislation-Analysis.pdf>

## Appendix 2

### Status of RPS legislative action in states where the RPS will expire in 2015

State	Current standard	Recent action
Michigan	10% by 2015 (mandatory)	A package of bills introduced in April 2015 would expand the RPS to 20% by 2022. Currently in committee.
Montana	15% by 2015 (mandatory)	In March 2015, both chambers passed a bill (SB114) allowing existing hydroelectric power to count as an “eligible renewable resource” towards RPS, effectively weakening RPS. No proposals in state legislature to increase standard.
New York	29% by 2015 (mandatory)	An expansion (to 40% by 2022) was proposed in 2014 but didn’t make it out of committee. Same was reintroduced in February 2015, and is currently in committee.
North Dakota	10% by 2015 (voluntary)	No proposals in the state legislature to increase standard in either 2014 or 2015.
Oklahoma	15% by 2015 (voluntary)	A bill to expand and make the RPS binding was proposed in 2014, but didn’t make it out of committee. An expansion (to 25% by 2020) was proposed in February 2015 and is currently in committee.
South Dakota	10% by 2015 (voluntary)	A bill introduced in February 2015 would extend the deadline to meet the goal by 5 years without increasing the target percentage from renewables, in effect weakening the voluntary standard. This bill was not voted on before adjournment. No proposals in state legislature to increase standard.
Wisconsin	10% by 2015 (mandatory)	An expansion (to 30% by 2030) proposed in 2014 failed to pass in committee. No new proposals in 2015.



## Appendix 3

### Agreement/disagreement with the statement “State governments should require a set portion of all electricity to come from renewable energy sources such as wind and solar power,” by selected demographic characteristics

#### By Race/Ethnicity

	White/ Caucasian	African- American	Hispanic	Asian
Strongly Agree	40%	25%	63%	47%
Somewhat Agree	30%	33%	30%	25%
Somewhat Disagree	6%	13%	0%	25%
Strongly Disagree	16%	23%	7%	3%
Not Sure	7%	6%	0%	0%
N	450	96	111	32

Note: Additional races/ethnicities dropped because of small numbers of respondents

#### By Annual Household Income

	Less than \$20,000	\$20,000- 40,000	\$40,000- 60,000	\$60,000- 80,000	\$80,000- 100,000	Over \$100,000
Strongly Agree	41%	39%	44%	44%	62%	40%
Somewhat Agree	30%	34%	23%	36%	19%	30%
Somewhat Disagree	6%	8%	8%	4%	11%	6%
Strongly Disagree	9%	17%	21%	8%	9%	22%
Not Sure	14%	2%	4%	8%	0%	3%
N	64	109	118	73	47	78

#### By Educational Attainment

	Less than high school graduate	High school graduate	Some college or technical school	College graduate	Graduate or professional degree
Strongly Agree	47%	29%	44%	56%	40%
Somewhat Agree	23%	37%	30%	25%	33%
Somewhat Disagree	6%	10%	5%	4%	10%
Strongly Disagree	9%	18%	15%	13%	13%
Not Sure	15%	7%	5%	2%	5%
N	47	215	216	177	88

**By Religion/Creed**

	<b>Protestant</b>	<b>Catholic</b>	<b>Other religion</b>	<b>Atheist</b>
Strongly Agree	36%	47%	49%	46%
Somewhat Agree	27%	34%	29%	32%
Somewhat Disagree	10%	3%	6%	7%
Strongly Disagree	20%	13%	12%	11%
Not Sure	8%	4%	4%	4%
N	290	202	157	28

**By Political Party**

	<b>Democrat</b>	<b>Republican</b>	<b>Independent</b>
Strongly Agree	51%	31%	46%
Somewhat Agree	31%	29%	28%
Somewhat Disagree	5%	7%	8%
Strongly Disagree	8%	28%	5%
Not Sure	5%	5%	5%
N	262	158	175

**By Region of the Country**

	<b>Northeast</b>	<b>South</b>	<b>Midwest</b>	<b>West</b>
Strongly Agree	46%	37%	41%	50%
Somewhat Agree	32%	31%	28%	31%
Somewhat Disagree	5%	8%	9%	5%
Strongly Disagree	12%	20%	14%	9%
Not Sure	6%	4%	8%	5%
N	145	275	169	162



## Reports from Issues in Energy and Environmental Policy

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# The Center for Local, State, and Urban Policy

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The **Center for Local, State, and Urban Policy (CLOSUP)**, housed at the University of Michigan's Gerald R. Ford School of Public Policy, conducts and supports applied policy research designed to inform state, local, and urban policy issues. Through integrated research, teaching, and outreach involving academic researchers, students, policymakers and practitioners, CLOSUP seeks to foster understanding of today's state and local policy problems, and to find effective solutions to those problems.

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