



Ensuring the Renewable Energy Promise of Renewable Portfolio Standards

The adoption of Renewable Portfolio Standards (RPS) has been one of the most effective policies to promote more generation of renewable electricity in the United States. These state-based policies require local energy utilities to increase the portion of the electricity they deliver from renewable sources. These RPS mandates account for 60 percent of the growth in U.S. renewable electricity generation since 2000¹ — and they may become an increasingly important driver of renewable production as the Trump administration seeks to cut back federal programs supporting wind and solar energy.²

It is essential to expand and strengthen RPS programs to reach 100 percent clean energy by 2035 in order to avoid the worst impacts of climate change.³ However, current RPS programs are projected to steer U.S. energy to only 40 percent renewables by 2050,⁴ and many RPS programs consider dirty sources of electricity — including burning garbage or capturing methane from factory farms — as renewable energy. At the same time, the fossil fuel industry, threatened by the growth of renewables, continues its political efforts to weaken and unravel RPS programs across the country.

Wind and solar electricity generation by utilities has grown rapidly in the last decade, but together these renewable sources still only accounted for just under 7 percent of all electricity generation by utilities in 2016.⁵ RPS programs have the promise to dramatically increase that number, but they must be strengthened to do so.

The Rise of Renewable Portfolio Standards

Although the federal government began to deregulate the electric utility industry in the late 1970s, in part to encourage renewable electricity, neither the wind nor solar industries grew much over the next two decades.⁶ In 1983, Iowa passed the first Renewable Portfolio Standard requiring the purchase of 105 megawatts (MW) of renewable energy by investor-owned Iowa utilities.⁷ By early 2017, 30 states and the District of Columbia had mandatory RPS programs, covering utilities responsible for 55 percent of U.S. electricity sales (see Figure 1 on page 2).⁸

By 2015, these RPS programs had compelled utilities to produce 135 million megawatt-hours of new, renewable energy, accounting for more than half of the renewable energy growth since 2000.⁹

The basic premise of all mandatory RPS programs is the same: the state requires that a certain portion of the electricity sold to customers come from “renewable” sources, although each state has different requirements. Some RPS mandates apply only to the largest utilities in the state, or have different requirements for different sized utilities. Some require the purchase of a specific number of megawatt-hours of renewable energy, while others require utilities to generate or purchase a minimum percentage of electricity from renewable sources. The definitions of “renewable” also vary by state; all states allow solar and wind to be counted toward an RPS, but some also allow dirty fuel sources such as coal, trash and animal waste (see “Scourge of Dirty ‘Renewables’” on page 3).

Many RPS programs require that a certain percentage of renewable energy be produced in-state,¹⁰ which provides direct benefits for state residents by reducing greenhouse gas and air pollution emissions and creating jobs. For example, North Carolina requires that not more than 25 percent of the state’s RPS goal be met through out-of-state renewable energy credits.¹¹ Even Washington, D.C., where renewable energy production is limited by

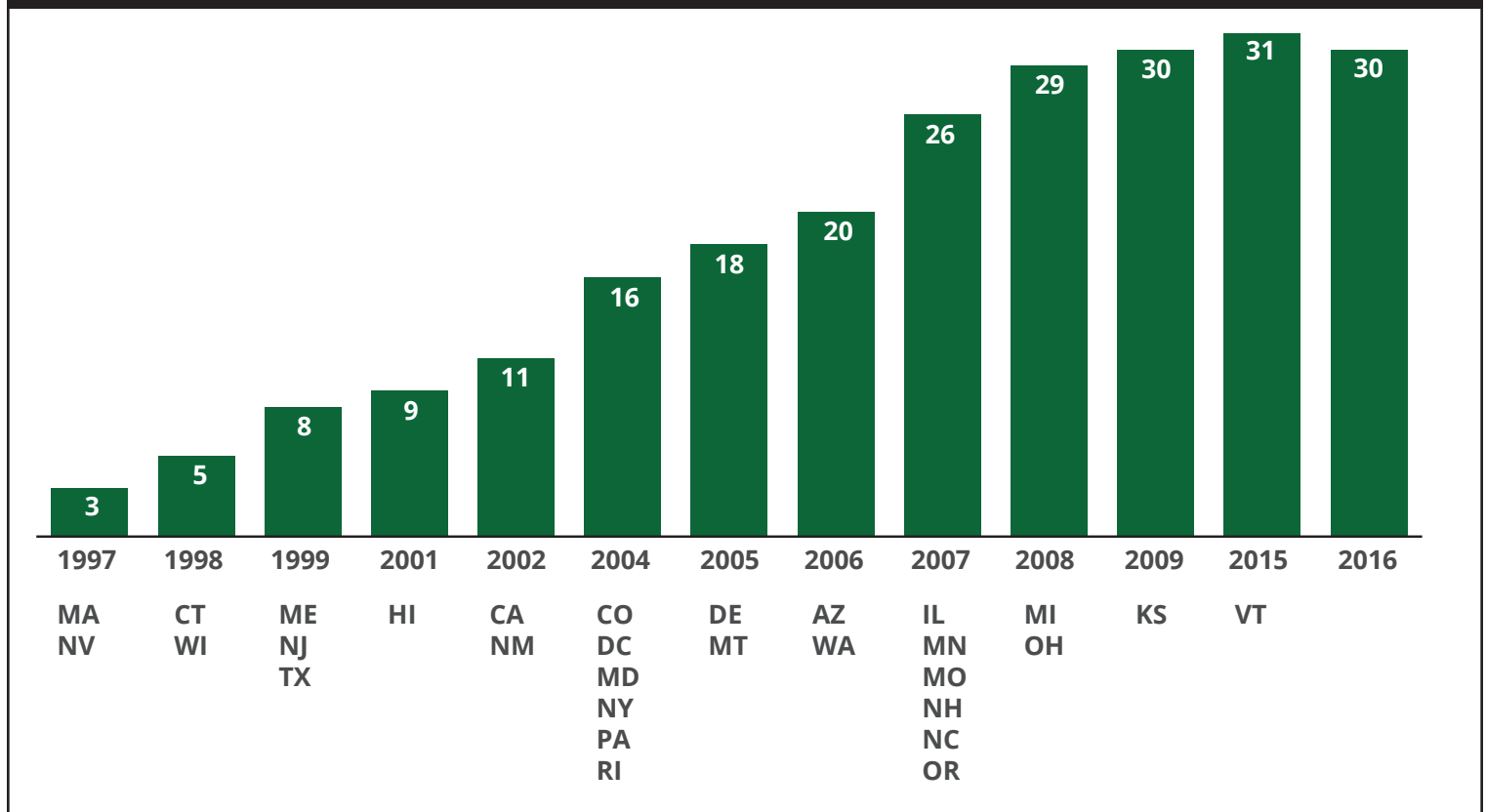
the city’s small geographic footprint, requires utilities to source a percentage of the District’s RPS portfolio from solar energy produced locally.¹²

Most states also allow utilities to fulfill their RPS mandates using what are called renewable energy credits (RECs), allowing utilities to buy credits representing the environmental benefits of renewable energy that can be counted toward RPS goals in lieu of generating renewable electricity.¹³ Every megawatt of electricity that a wind farm produces, for example, also generates one REC, which is what many utilities buy to meet their renewable targets under an RPS.

The use of RECs can diminish the benefits of renewable energy on public health and job creation, for example if a state continues to burn polluting fuels while sourcing renewable energy from elsewhere. States such as Maryland source most of their renewable energy with out-of-state RECs instead of dramatically ramping up in-state production of solar, wind or geothermal energy to meet RPS goals.¹⁴

In practice, almost all states are meeting their RPS goals — or even exceeding them, which indicates the need for

FIGURE 1: CUMULATIVE ADOPTION OF STATE MANDATORY RPS PROGRAMS



SOURCE: Food & Water Watch analysis of National Conference of State Legislatures and University of North Carolina Database of State Incentives for Renewables & Efficiency (DSIRE). States below the year axis indicate the year the mandatory RPS was adopted; Iowa’s 1983 RPS is not shown; Kansas converted to a voluntary RPS in 2016.

more ambitious targets.¹⁵ Leading renewable energy-producing states such as Iowa and Texas, driven in part by government subsidies and supports, have installed wind turbines with the capacity to generate far more renewable energy than has been required under these states' RPS statutes.¹⁶ If utilities do not meet the RPS goals, they are required to pay fees set by the state.¹⁷

The Scourge of Dirty “Renewables”

While RPS programs have contributed to the expansion of wind and solar electricity generation, they also have supported the use of dirty fuel sources that states have deemed to be “renewable,” including a variety of “biomass” sources (plant-based or agricultural waste fuels) such as burning poultry litter, wood, garbage and toxic industrial residues. Some RPS programs even allow energy produced from coal (Ohio and Pennsylvania) or nuclear power (Ohio) to be included in RPS programs.¹⁸ These dirty fuel sources should not be considered to be “renewable.”

The inclusion of dirty energy sources can undermine even the strongest RPS programs. For example, in 2015, Hawaii increased its RPS goal to reach 100 percent renewable energy by 2045, creating the most ambitious RPS in the nation and making the state a leader on renewables.¹⁹ However, Hawaii continues to meet its annual RPS goal with an array of dirty renewables. Hawaii Electric, which serves 95 percent of the state's residents, sourced more than a fifth of its renewable energy from biofuel and biomass sources in 2016, including municipal solid waste.²⁰

Nearly half (42 percent) of the renewable energy in Maryland's RPS in recent years has come from dirty sources such as “black liquor” (a waste product of industrial paper manufacturing) and trash incineration.²¹ This dirty energy competes with solar, wind and geothermal in the RPS and greatly diminishes the effectiveness of RPS programs to move the United States toward a model of genuinely sustainable, renewable energy.

Black liquor: Nearly a third of state RPS programs specifically allow paper mill residues — sometimes explicitly identifying the use of black liquor — to qualify as renewable energy sources.²² Black liquor is a toxic industrial waste from the paper milling process that can be burned to produce heat and electricity.²³ Burning black liquor emits air pollutants including particulate matter and greenhouse gases.²⁴



Even states without their own RPS or states that do not include black liquor in their RPS programs can still generate renewable energy credits that can be sold or traded; Tennessee and Louisiana have no RPS programs, but they generate black liquor RECs used in other states' RPS programs.²⁵ In Maryland, black liquor was the single leading source of renewable credits in 2015, accounting for nearly one-third of all RECs used to fulfill the state's RPS program — almost all of which were purchased from out of state.²⁶ In Ohio's RPS, black liquor was the third largest source of renewables in 2015 — and the leading source of renewable energy produced in-state.²⁷

Trash incineration: As of early 2017, more than a third of RPS programs have deemed that fuel derived from municipal trash incineration counts as renewable energy.²⁸ Incinerating trash produces toxic air emissions and contributes to climate change. In 2011, the New York Department of Environmental Conservation found that incinerators emit nearly 14 times more mercury than coal per megawatt.²⁹ According to the U.S. Environmental Protection Agency (EPA), about 33 million tons of garbage was incinerated in 2014 to produce energy.³⁰ Garbage incineration may produce more greenhouse gas emissions per megawatt of energy than some fossil fuels.³¹

According to the most recent data available, New Jersey was meeting its RPS goals with almost as much “renewable” energy from garbage incineration as it was from solar sources.³² The same is true in Maryland, where garbage incineration has been the leading source of renewable energy generated in the state several times in recent years.³³ Meanwhile, Ohio sources “renewable” energy from tires to help meet its RPS goals.³⁴

Manure digesters and litter incinerators: Almost all states with RPS programs consider energy produced from animal waste, such as manure digesters (burning



the methane released from factory farm manure) and poultry litter incineration, to be renewable.³⁵ These expensive, inefficient and polluting waste-to-energy facilities often receive substantial subsidies and support the factory farm model of animal production.

The RPS in North Carolina, a leading poultry-producing state, required utility companies to obtain at least 900,000 megawatt-hours of electricity from poultry waste beginning in 2014, creating a major incentive to build manure-to-energy plants and to expand factory farms to feed these expensive facilities.³⁶ Maryland and Minnesota also have pursued the construction of poultry litter incinerators to address the waste from factory farms³⁷ — even though these plants can emit more carbon monoxide, particulate matter, nitrogen oxides and carbon dioxide per megawatt than new coal plants.³⁸

Energy produced with digesters, which are heavily subsidized with federal and state funds, presents similar problems.³⁹ Up to half of the energy may be needed to power the digesters themselves, and when they burn methane, they release greenhouse gases such as carbon dioxide and nitrogen oxide.⁴⁰ Incidental methane releases, accidental manure spills and deadly explosions mean that digesters provide neither clean nor safe energy.⁴¹

The Fossil Fuel Industry's Attack on RPS Programs

Dozens of new bills have been introduced into statehouses in recent years to weaken or strengthen RPS programs.⁴² States such as California and Vermont have recently enacted ambitious new RPS goals, aiming to achieve renewable energy shares of 50 percent and

75 percent, respectively, in the decades ahead.⁴³ At the same time, the fossil fuel industry and conservative groups are pushing many states to consider repealing

mandatory RPS programs — Kansas already bowed to this pressure and made its RPS program voluntary.⁴⁴

In 2012, the American Legislative Exchange Council (ALEC), a pro-business group backed by ExxonMobil, Koch Industries, Duke Energy and Peabody Energy, began offering model legislation to repeal or weaken state RPS programs.⁴⁵ ALEC's model legislation has made its way into a variety of state bills. *The Washington Post* reported that, "In some cases, the legislative language matches or closely resembles [ALEC] model bills and resolutions."⁴⁶

Americans for Prosperity, also backed by the Koch brothers, was deeply involved in legislative efforts that successfully replaced Kansas's mandatory RPS with a voluntary program in 2015.⁴⁷ A Koch Industries lobbyist was present at Kansas Governor Sam Brownback's press conference announcing the plan.⁴⁸ The enacted statute not only replaced the mandatory RPS with voluntary goals, but it further weakened the RPS by downgrading a permanent tax break for wind farms to a 10-year tax break.⁴⁹

RPS opponents claim that renewables increase costs for consumers. An Americans for Prosperity *Wall Street Journal* opinion piece claimed that wind and solar electricity "costs a pretty penny" and that RPS mandates greatly increase costs to ratepayers.⁵⁰ Yet, a Kansas Corporation Commission study found that the state's renewable energy standards had a small effect on electricity prices, accounting for just one-fifth of one cent out of the average 9.9 cents per kilowatt-hour — or 2 percent of electricity prices.⁵¹ A National Renewable Energy Laboratory study found that complying with RPS programs costs utilities less than 1 percent of average retail electricity rates.⁵²

Estimates of price increases associated with renewables often do not take into account the enormous financial benefits of shifting away from fossil fuels, including on human health and the environment⁵³; these emissions often have the greatest impact on lower-income and minority communities, where the polluting fossil fuel plants often are located.⁵⁴

A 2016 government study found that the economic benefits of expanded renewable energy use under RPS programs — including reduced emissions of greenhouse gas and particulate matter, job growth in the renewable energy field and reduced water use — far outweigh the costs.⁵⁵ Notably, the most aggressive RPS programs modeled in this study (49 percent renewable energy by 2050) yielded the greatest benefits, estimated at more than \$1 trillion.⁵⁶

RPS opponents also insist on letting the “free market” determine the fate of electricity generation, condemning the billions of dollars in subsidies that renewables receive as wasteful.⁵⁷ However, fossil fuels have depended heavily on a variety of government interventions in the marketplace for decades — including hundreds of billions of dollars a year in subsidies around the globe.⁵⁸ The International Energy Agency has long called for an end to fossil fuel subsidies, noting that doing so will “provide an impetus for investment, growth and jobs in renewable energy and energy efficiency.”⁵⁹

The fossil fuel industry-backed assault on RPS programs is designed to protect the oil and gas industry. And it demonstrates that even the industry believes that government policies supporting renewables can foster the transition away from fossil fuels that we need. The powerful, well-funded and coordinated opposition to renewables wields enormous political influence and continues to skew policies and distort the market in favor of fossil fuels — even as renewables become cleaner and more affordable.

Conclusion

Renewable Portfolio Standards programs can only deliver on their promise to beat back the worst effects of climate change if these programs are limited to clean energy sources and if they aggressively move states toward 100 percent renewable energy.

Garbage and manure may appear to be unlimited resources, but they are far from clean. Merely exchanging coal-fired power plants with trash-fired power plants and poultry incinerators does not move U.S. energy policy in the right direction. And investments and incentives to promote the use of these dirty sources displace financing and commitment for genuinely clean energy, such as wind, solar and geothermal power.

Recommendations

All state governments should implement Renewable Portfolio Standards that

- Exclude dirty sources of electricity generation and allow only solar, wind and geothermal energy to qualify for RPS programs;
- Increase the amount of required renewable generation to 100 percent by 2035; and
- Set ambitious goals for in-state production of renewable energy.

Methodology

Food & Water Watch reviewed the mandatory state RPS programs based on legislative, statutory, regulatory and executive branch documentation of the structure and eligible energy sources. As of May 2017, there were 30 states with mandatory RPS programs that Food & Water Watch identified through the National Conference of State Legislatures’ online database of state RPS as well as through the Database of State Incentives for Renewables & Efficiency (DSIRE) coordinated by North Carolina State University’s Clean Energy Technology Center.⁶⁰ The number of states with RPS programs can change over time as states adopt or modify existing programs.

Food & Water Watch examined the eligible energy sources (such as black liquor, trash incineration and livestock manure-to-energy) under every state’s RPS program based on the statute, the regulation and documentation from the state public utility commissions or corporation commissions that implement the programs. To examine some states’ historic portfolios of renewable energy, Food & Water Watch compiled data from REC tracking databases and annual reports from public commissions.

This analysis is subject to limitations and interpretations, but Food & Water Watch sought to be conserva-



tive in assessing eligible energy sources. The online REC tracking databases employ varying language and sometimes fail to adequately define terms.⁶¹ The statutes and even regulations for some of the discussed eligible energy sources can be vague; black liquor, animal waste and municipal waste all could fall under the broader categories of “biofuels” or “biomass,” but the identified states all specifically permitted or reported the use of these energy sources. Finally, states regularly amend statutes or revisit regulations that can add or restrict the use of certain fuel types. This analysis is current as of early May 2017.

This analysis identified the use of animal waste in state RPS programs including all references to poultry litter incineration, manure or anaerobic digestion of biomass.

This analysis included only municipal solid waste in the category of “trash incineration” as an eligible fuel source but did not include landfill gas, biogas from municipal waste or landfill pyrolysis. No state was deemed to allow black liquor if it identified only wood, wood waste or lumber mill residue as eligible fuel sources; the identified states either specifically allowed or reported the use of pulping liquors or paper mill residues as eligible fuels or responded to an inquiry confirming the use of black liquor under their RPS program. Illinois’ official definition of renewable energy does not include any reference to mill residue, paper waste or black liquor, but Food & Water Watch discovered through another source that the state allows the use of black liquor, which state authorities told us falls under the statutory definition of “alternative sources of environmentally preferable energy.”⁶²

Endnotes

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- 25 Public Service Commission of Maryland (2017) at Appendix A; Food & Water Watch analysis of PJM Environmental Information Services Generation Attribute Tracking System. Illinois, RPS retired certificates for reporting year 2015-2016.
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