

Renewable Portfolio Standards: Changing the Industry

Updates and Forecast for 2017

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Renewable portfolio standards have been prevalent in the United States for several decades and have played a major role in the successful deployment of renewable energy across the nation.

Since 1983, when Iowa implemented the first standards, environmental and human health concerns have driven legislatures in twenty-nine states¹ to enact the standards.

Those states have committed to enforceable renewable energy policies that discourage non-compliance through various forms of monetary disincentives. Eight other states² have adopted renewable portfolio goals and objectives that lack the mandatory nature of the standards, but signal each state's desire to incorporate renewable energy sources in its energy portfolio.

In a genuine demonstration of the states acting as laboratories for policy and innovation, each state has independently set different benchmarks and has implemented its unique portfolio standards.

Some states' standards only apply to certain energy supplier types (such as investor-owned utilities versus cooperatives), while other states set different standards for different types of energy suppliers.

Some states vary the time frame for accomplishing their renewable portfolio standards requirements. Some states cap the amount utilities must spend on renewable energy in relation to conventionally produced energy.

The energy sources that qualify as renewable resources vary across the states, with such qualifications often reflecting the fuel sources that occur in abundance in a state. Examples include wind energy in Kansas, swine waste in North Carolina, coal mine methane in Pennsylvania, ocean-generated energy in Maryland and solar energy in California.

State regulatory agencies typically implement or oversee the implementation of these policies. This iterative, state-by-state process has allowed states to customize their standards to their jurisdictions and the later adopters to learn from the experiences of the early adopters.

Many of the early adopters have refined their policies significantly since adoption. Since the year 2000, these changes have collectively driven over fifty percent of the renewable energy growth in the United States: state standards, reduced cost of renewable technologies, the Clean Power Plan, and federal tax incentives. Also important are state and local policies that encourage renewable energy, such as net metering payments and rebates on the costs of certain equipment.

State-level renewable portfolio standards have largely been successful in achieving the goal of increasing deployment of renewable energy generation. According to the Solar Energy Industries Association, the top ten solar states³ have all enacted standards.

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In addition to increasing renewable energy generation in states that have adopted these standards, the renewable portfolio standards have driven renewable energy development in states without them.

With a few exceptions, many states met their renewable portfolio objectives in recent years. The majority of states that have met these requirements have also surpassed their solar and distributed generation goals.

In California, the investor-owned utilities met the requirements of the thirty-three percent renewable portfolio standards ahead of schedule. That prompted the state legislature to increase the standards to fifty percent, and now generation from net-metered photovoltaic energy has far exceeded the requirement.

In addition to increasing renewable energy generation in states that have adopted these standards, the renewable portfolio standards have driven renewable energy development in states without them. That's because renewable energy generated in non-standards states is often transmitted across state lines to states with the standards.

Thirteen of the twenty-one states without renewable portfolio standards have renewable power production facilities that supply energy to other states with the standards. Specifically, ten percent of new renewable energy production in states without the standards has been built to serve the standards demand in nearby states.

For example, North Dakota⁴ and Wyoming do not have renewable portfolio standards. However, those states have produced between one thousand and five thousand megawatts of additional renewable energy for sale in other states that have the standards.

Likewise, power producers in Texas have exceeded their wind power generation requirements and have sold much of their

surplus to consumers in neighboring states with the standards.

When considered all together, states with the standards have succeeded in meeting approximately ninety-five percent of their benchmarks, indicating that these state-level policies have successfully encouraged renewable energy use and development.

The U.S. now has more qualifying renewable power generation sources than it needs to meet the existing standards.

To date, the renewable portfolio standards story in the U.S. is one of great success. Recent trends, however, indicate that the standards will continue to be scrutinized.

Recent RPS Changes

Over the past two years, the standards have been an ever-evolving landscape across the country, reflecting different policy priorities and political realities in the different states. In 2015, legislatures across the U.S. introduced a hundred thirty-nine bills related to the standards.

Only fourteen of those bills became law. The adopted legislation included Vermont's creation of its standards. It also included Hawaii's new commitment to supply all of its energy from renewable sources by 2045.

It included California's increased requirement that fifty percent of its energy be produced from renewable sources by 2030. And Kansas's rollback of its standards to replace them with voluntary goals. It also included West Virginia's repeal of its requirement that the state obtain twenty-five percent of its electrical power from renewable or advanced energy sources.

of the state's electricity to be generated by renewable sources by 2030. This legislation took effect in January 2016.

In September 2016, Governor Brown signed into law four new bills that will promote California's achievement of its standards. This new legislation authorizes the California Public Utilities Commission to (1) establish an independent panel comprised of electrical systems experts to resolve interconnection fee disputes, (2) double the Self-Generation Incentive Program budget for the succeeding three years, (3) evaluate the manner in which long-duration storage could be used to integrate energy from renewable sources into the grid, and (4) prioritize energy storage projects for public-sector and low-income energy customers. The law requiring the Commission to prioritize energy storage projects also requires investor-owned utilities to each deploy as much as five hundred megawatts of additional storage capacity with no more than one hundred twenty-five megawatts behind the meter.

This first-of-its-kind renewable portfolio standard for energy storage was an outgrowth of the vast success of the California standards for renewable energy. The large amounts of renewable energy that have come online in California have caused grid stability issues necessitating deployment of battery storage. California's experience may foreshadow future developments in other states with these standards.

Colorado: Colorado's renewable portfolio standards for 2020 and beyond require investor-owned utilities to cause thirty percent of the energy supplied for retail electricity sales to be generated by eligible renewable energy sources. In addition, electric cooperatives

that serve at least a hundred thousand meters must cause twenty percent of the energy supplied for retail electricity sales to be generated by eligible renewable energy sources.

On November 9, 2016, the Colorado Public Utilities Commission approved a settlement agreement between Xcel Energy and twenty-two of twenty-six interveners related to Xcel Energy's acquisition and delivery of renewable energy.

The settlement allows Xcel Energy to implement a three-year pilot program to experiment with time-of-use

rates for residential net metering customers whereby customers in the program will be charged higher rates during higher energy demand times.

The Commission will at a later date determine whether to allow Xcel Energy to transition all of its residential net metering customers to a time-of-use billing system. The Xcel Energy settlement agreement also contains provisions that increase Xcel Energy's current renewable power production requirements.



The direction created by the myriad false starts in 2015 and 2016 will ripen in 2017 and beyond, at least in those states with existing standards. We will see more renewable portfolio standards revisions in upcoming years.

A brief review of selected standards activity from 2016 may be predictive of things to come in 2017.

California: California's legislature expanded and extended its renewable portfolio standards in 2015 to require fifty percent

These provisions include Xcel Energy's agreement to collaborate with the Colorado Energy Office to develop a rooftop solar program. The program will have both a community solar component and an on-site solar component.

These provisions could increase the current amount of solar production capacity from community solar and commercial generation. It will add a hundred seventeen megawatts of community solar gardens, two hundred twenty-five megawatts of rooftop solar and sixty megawatts of power generated by industrial waste heat.

The Colorado experience is demonstrative of the inherent tensions between utilities and renewable power developers that underlie the renewable portfolio standards debate. Hopefully, the cooperative resolution reached in Colorado is a sign of future cooperation between the stakeholders.

New York: New York's standards expired on February 29, 2016. Prior to expiration, Governor Cuomo issued an executive order directing the New York Public Service Commission to establish a new standard.

Consequently, on August 1, 2016, the New York Public Service Commission adopted a Clean Energy Standard for New York. Previously, New York employed a central procurement approach to achieve its standards instead of requiring individual power providers to source a certain percentage of their energy from renewable sources.

Public utilities in New York imposed a surcharge on customers' bills and transferred those funds to the New York State Energy Research and Development Authority. That agency entered into contracts with energy producers that incentivized renewable energy production by those producers.

New York's Clean Energy Standard requires 26.31 percent of the energy supplied in the state to be derived from renewable sources by 2017, 30.54 percent by 2021 and 50 percent by 2030.

To achieve this goal, the state will continue funding hydro-power and other renewable energy production projects initiated under its renewable portfolio standards. It will also create market incentives to promote renewable energy generation and purchase.

New York will reduce the soft costs of and streamline the interconnection and siting process for renewable energy development, and create a green energy certification program for consumers.

The Standard will also impose obligations on load serving entities to incentivize renewable energy credits.

The New York Public Service Commission initiated the Reforming the Energy Vision proceeding to implement the Clean Energy Standard, resulting in yet another remarkably

collaborative effort between competing stakeholders.

Oregon: In 2016, Oregon's legislature updated, expanded and extended its existing renewable portfolio standards. The newly adopted standards require both of Oregon's investor-owned utilities to phase out coal generation by 2035 and require fifty percent of the total retail electric load to be generated by renewable sources by 2040.

The definition of qualifying electricity now includes electricity generated from municipal solid waste combustion in facilities that began operating before January 1, 1995. It also includes biomass facilities in Oregon that began operating before January 1, 1995. And it includes qualifying facilities under the Public Utility Regulatory Policies Act.

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Renewable energy certificates earned from this electricity may be used immediately or banked, at the utility's discretion. Since January 1, 2016, however, most certificates can only be banked for compliance for five years after the compliance year in which they are issued.

Exceptions to this rule include one for consumer-owned utilities, which may bank the certificates indefinitely as long as they are ultimately used to comply with energy standards in the future.

Another exception applies to renewable energy certificates obtained by any energy producer before January 1, 2016 that are subject to the consumer-owned utility banking rule. The new law also tasks the Oregon Public Utility Commission with creating a community solar program.

Rhode Island: Rhode Island's legislature extended the state renewable portfolio standards timeline to 2035, and increased the standards to be met in years 2019 through 2035 from 14.5 percent by 2019 to 40 percent by 2035.

Under Rhode Island's prior standards, the Rhode Island Public Utility Commission had the right to delay by one year any scheduled annual standards increase if it determines that there is an inadequate supply of renewable energy.

Under this modified standard, the Rhode Island Public

Utility Commission has the authority to delay any such increases indefinitely until such time that the commission determines that the supplies are adequate to achieve the purposes of Rhode Island's portfolio standards.

Solar-specific incentives such as distributed generation and community solar projects were also included in the standards.

Conclusions and Predictions

The most current data available indicates the renewable portfolio standards are achieving their objectives of stimulating deployment of renewable generation. Electric power production statistics indicate that in all states with the standards, except Wisconsin and Michigan, the amount of net generation from renewable sources increased between September 2015 and September 2016.

North Carolina exemplifies the success of the standards; its net electricity generated by utility-scale renewable energy production facilities increased by sixty-four percent within the preceding year. In most states without these standards or goals, this net generation amount decreased.

Further, in most states surrounded on three sides by states with the standards, the amount of net generation from renewable sources increased between September 2015 and September 2016, even when those states had no standards or goals.

For example, Nebraska has not implemented the standards or goals, but the net electricity generated by utility scale renewable energy production facilities within Nebraska, excluding hydroelectric power, increased by 13.8 percent between September 2015 and September 2016.

Likewise, in Utah and Indiana, the net electricity generated by utility scale renewable energy production facilities increased by 81.9 percent and 19.7 percent respectively.

The Trump administration's expressed conservative stance on existing environmental regulations and energy development could dampen the spread of renewable portfolio standards legislation

to states that have not already adopted goals or standards.

Variations among the states in the types of renewable energy programs are also likely to persist, since the federal government is less likely to pursue the Clean Power Plan or implement national portfolio standards.

Politics aside, the vast majority of renewable energy legislation proposed in 2015 and 2016 was not implemented.

Regardless of any changes to federal energy policy that may occur during the next presidential administration, this uptick in the number of standards legislation proposals over the preceding years is a signal. We may continue to see an increase in renewable energy policies or programs, or changes to existing programs, in those states where proposed changes failed to emerge from committee deliberations.

In states that favor renewable energy, we expect further expansion of standards with an emphasis on energy storage and community solar. Hopefully, the next states that tackle standards issues will model their proceedings on the collaborative process exhibited in New York.

In other states that oppose the further expansion of renewables in favor of traditional power generation, renewable portfolio standards may be under further assault in 2017. [PDF](#)

The full version of this article, including footnotes, appears at www.fortnightly.com.

Endnotes:

1. Washington, Oregon, California, Nevada, Arizona, Montana, New Mexico, Colorado, Texas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Michigan, Ohio, North Carolina, Maryland, Delaware, Pennsylvania, New York, New Jersey, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, Maine and Hawaii.
2. Utah, North Dakota, South Dakota, Kansas, Oklahoma, Indiana, South Carolina and Virginia.
3. California, Arizona, North Carolina, New Jersey, Nevada, Massachusetts, New York, Hawaii, Colorado and Texas.
4. North Dakota has renewable energy goals but not renewable portfolio standards.

WHY PUBLIC UTILITY COURSES SHOULD BE GIVEN IN OUR SCHOOLS

Undoubtedly, the public utilities and their problems have been generally misunderstood, due to a lack of understanding by the public that has come into contact with the many companies. As to general courses in the fundamental principles of public utilities they can be justified in our undergraduate curriculum because practically every person is affected by services, rates, and general operation of the public service companies. Whether it be contact through sending messages, shipping, riding, use of light, power or heat, or by employment in a public service company, most

of us are constantly affected in some way...

We now come to a consideration of the place of public utility instruction in the field of secondary education... Consideration of the subjects can be embraced in the general economics, civics, and kindred courses. One suggestion as to how to challenge the students to delve further into the field would be to have special project work on the part of some students who would present their findings to the class.

— Why Public Utility Courses Should Be Given in Our Schools, by David F. Owens, *Public Utilities Fortnightly*, October 18, 1928