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A QUICK LOOK INTO IMPORTANT ISSUES OF THE DAY

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States' Increasing Renewable Energy Ambitions

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Renewable energy sources—such as wind, solar and hydropower—account for approximately 17 percent of U.S. electricity generation. Wind and solar have grown rapidly: Since 2006, their annual electricity generation has increased by a factor of 11. State energy policies, such as renewable portfolio standards (RPS), are a major driver of this growth.

Renewable portfolio standards require utilities to meet a growing portion of their electricity needs with renewable sources. Utilities that are subject to these mandates must obtain renewable energy credits or certificates (RECs)—which represent the environmental benefits of one megawatt-hour (MWh) of renewable energy generation. RECS are created when renewable energy is sent out to the grid and are used to verify that utilities are meeting their targets.

States have created renewable standards to diversify their energy mix, promote economic development and reduce emissions. These standards partially drive the nation's $64 billion renewable energy market.

Twenty-nine states, Washington, D.C., and three territories have established an RPS, while eight states and one territory have set voluntary renewable energy goals. RPS targets, the entities they include and the

State Renewable Energy Efforts

■ States with renewable portfolio standards

Arizona	15% by 2025
California	60% by 2030
Colorado	30% by 2020
Connecticut	40% by 2030
Delaware	25% by 2026
Hawaii	100% by 2045
Illinois	25% by 2026
Iowa	105 megawatts (MW)
Maine	40% by 2017
Maryland	25% by 2020
Massachusetts	41.1% by 2030 plus 1% each year thereafter
Michigan	15% by 2021
Minnesota	26.5 by 2025
Missouri	15% by 2021
Montana	15% by 2015
Nevada	25% by 2025
New Hampshire	25.2% by 2025
New Jersey	54.1% by 2031
New Mexico	20% by 2020
New York	50% by 2030
North Carolina	12.5% by 2021
Ohio	12.5% by 2026
Oregon	50% by 2040
Pennsylvania	18% by 2021
Rhode Island	38.5% by 2035
Texas	5,880 MW by 2015
Vermont	75% by 2032
Washington	15% by 2020
Wisconsin	10% by 2015
Washington, D.C.	100% by 2032
Northern Mariana Islands	20% by 2016
Puerto Rico	20% by 2035
U.S. Virgin Islands	30% by 2025

■ States with renewable energy goals

Indiana	10% by 2025
Kansas	20% by 2020
North Dakota	10% by 2015
Oklahoma	15% by 2015
South Carolina	2% by 2021
South Dakota	10% by 2015
Utah	20% by 2025
Virginia	15% by 2025
Guam	25% by 2035

resources eligible to meet requirements vary widely among states. Most states' renewable energy targets are between 10 and 45 percent, although seven states and Washington, D.C., have requirements of 50 percent or greater. Some states only require investor-owned utilities (IOUs) to adhere to the RPS while others include electric cooperatives and municipal utilities, although requirements are typically equivalent to or lower than those for IOUs.

Eligible resources for RPS compliance include wind, solar, biomass, geothermal and some hydroelectric facilities—depending on the size and vintage. Several states also include additional resources such as landfill gas, tidal energy, combined heat and power, and even energy efficiency.

To promote a diversified resource mix and encourage deployment of certain technologies, states have established carve-outs and renewable energy credit multipliers within their RPSs for specific energy technologies, such as offshore wind or rooftop solar. Carve-outs require a certain percentage of overall renewable energy to be met with a specific technology, while credit multipliers award additional renewable energy credits for electricity produced by certain technologies. At least 21 states and Washington, D.C., have credit multipliers, carve-outs or both for certain energy technologies in their RPS policies.

Since 2000, roughly half of all renewable energy growth can be attributed to RPS policies. However, their role has diminished in recent years, accounting for only 34 percent of renewable energy capacity additions in 2017. Although RPS policies still play a vital role, other factors, including declining renewable energy costs and other state energy policies, such as net metering, are also driving renewable energy growth. As renewable energy becomes more economically viable, some states are considering whether RPS policies are still needed to encourage greater deployment of resources. In 2017, Maryland, Montana and New Hampshire enacted legislation to study the costs and benefits of their RPS policies.

State Action

Hawaii instituted the most aggressive RPS in 2015, with a requirement that 100 percent of its energy come from renewable sources by 2045. Many other states have followed with large increases in their targets, including Washington, D.C., which, in 2018, established a 100 percent renewable energy mandate by 2032, replacing Hawaii's RPS as the most aggressive. Falling prices for renewable energy, along with the fact that many states have been able to easily attain interim RPS goals, have led many to consider or enact legislation to increase their renewable energy commitments. Significant legislative RPS increases in recent years include:

- **Hawaii** House Bill 623 (2015) established the country's first 100 percent RPS by 2045.
- **Vermont** House Bill 40 (2015) created an RPS of 75 percent by 2032, replacing the state's voluntary renewable energy goal.
- **Oregon** Senate Bill 1547 (2016) increased the state's RPS to 50 percent by 2040.
- **Maryland** legislators overrode Governor Larry Hogan's veto, enacting House Bill 1106 in 2017 to increase the state's RPS to 25 percent by 2020.
- **Washington, D.C.,** Bill 904 (2018) established a 100 percent RPS by 2032.

In 2018, states introduced more than 100 RPS-related bills and enacted at least a dozen, including notable legislation in California, Massachusetts and New Jersey. California Senate Bill 100 established a 100 percent clean energy mandate, requiring utilities to procure all their electricity from clean energy sources by 2045, and increased the state's RPS to 60 percent by 2030.

An emerging trend is states' creation of energy storage targets or "clean peak" standards in conjunction with RPS policies. Massachusetts enacted House Bill 4857 in 2018, increasing the RPS's required growth rate between 2020 and 2029 from 1 to 2 percent of sales annually. It also established the country's first clean peak standard, which requires utilities to procure a certain amount of electricity during peak demand hours from clean energy resources. These include renewable energy, energy storage and "demand response," where consumers are offered financial incentives for allowing the utility to adjust their heating, cooling and other energy services. The bill directs the Massachusetts Department of Energy Resources to set the initial standard, which will increase by 0.25 percent annually.

States have also revised existing and created new carve-outs for certain energy technologies. In addition to increasing and extending the state's RPS to 50 percent by 2030, New Jersey Assembly Bill 3723, enacted in 2018, phases out the solar carve-out and increases the carve-out for offshore wind to 3.5 gigawatts (GW).

Other RPS-related legislation includes bills to refine resource eligibility rules for hydroelectric and biomass facilities, and to require long-term renewable energy procurement contracts for utilities.

As states continue to close in on their RPS targets and states' deadlines for meeting their renewable energy commitments approach, more state activity on RPS policies is expected.

Did You Know?

- Renewable energy accounts for approximately 17 percent of U.S. electricity generation.
- More than half the states have established state renewable portfolio standards (RPS), which require that a percentage of electricity sold by utilities is generated by renewable resources.
- At least four states have increased their RPS requirements in the past two years, and seven states and Washington, D.C., have targets of 50 percent or greater.

Additional Resources

- NCSL's State Renewable Portfolio Standards and Goals
- "U.S. Renewable Portfolio Standards: 2018 Annual Status Report," Lawrence Berkeley National Laboratory

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