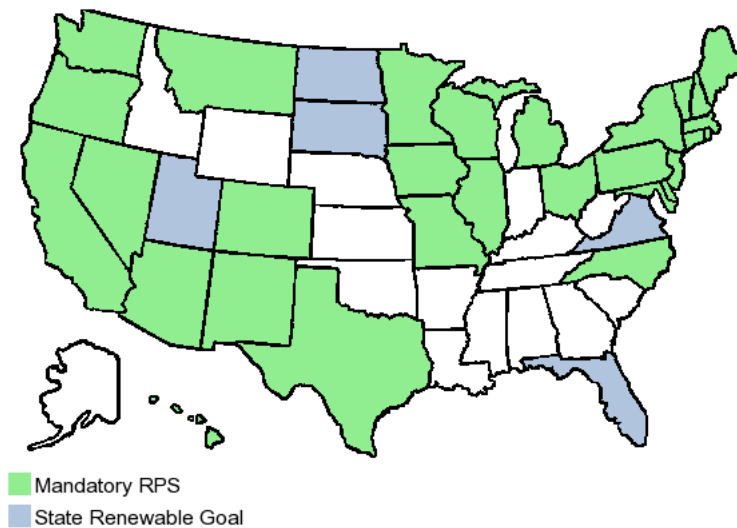


## Renewable Portfolio Standards (RPS)



These states have set standards specifying that electric utilities generate a certain amount of electricity from renewable sources. Most of these requirements take the form of "renewable portfolio standards," or RPS's, which require a certain percentage of a utility's power plant capacity or generation to come from renewable sources by a given date. The standards range from modest to ambitious, and definitions of renewable energy vary. Though climate change may not be the prime motivation behind some of these standards, the use of renewable energy does deliver significant GHG reductions. For instance, Texas is expected to avoid 3.3 million tons of CO<sub>2</sub> emissions annually with its RPS, which requires 2,000 megawatts of new renewable generation by 2009. Increasing a state's use of renewable energy brings other benefits as well, including job creation, energy security, and cleaner air.

Some of these efforts have been particularly successful. For example, Connecticut increased its RPS in 2003, extending the standard to all utilities in the state. Iowa met its standard in 1999. Many states allow utilities to comply with the RPS through tradeable renewable energy credits. While the success of state efforts to increase renewable energy production will depend in part on federal policies such as production tax credits, states have shown considerable efficacy in encouraging clean energy generation.

### Arizona

15% by 2025

On February 27, 2006, the Arizona Corporation Commission introduced new renewable energy standards requiring regulated electric utilities to generate 15 percent of their energy from renewable resources by 2025. Customers will face a slightly higher Environmental Portfolio Surcharge to offset the cost of compliance. If a utility does not meet the standard, the Commission may assess a penalty for non-compliance. The new rules also require a growing percentage of the total resource portfolio to come from distributed generation. Sources of energy that count toward the standard include electricity produced from qualifying biogas, hydropower, fuel cells that use only renewable fuels, geothermal, hybrid wind and solar, landfill gas, solar, and wind.

Press ReleaseRPS

### California

20% by 2010

On September 26, 2006 Governor Schwarzenegger signed Senate Bill 107, which requires California's three major utilities - Pacific Gas & Electric, Southern Edison, and San Diego Gas & Electric - to produce at least 20 percent of their electricity using renewable sources by 2010. Sources of energy that count toward the standard include biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, and tidal current.

Press ReleaseSB 107

### Colorado

20% by 2020 (at least 4% from solar)

On March 27, 2007, Governor Bill Ritter signed House Bill 1281, which increased Colorado's previous renewable portfolio standard. Under the new standard, large investor-owned utilities are required to produce 20 percent of their

energy from renewable resources by 2020, 4 percent of which must come from solar-electric technologies. HB 1281 requires municipal utilities and rural electric providers to provide 10 percent of their electricity from renewable sources by 2020. Sources of energy that count toward the standard include solar, wind, geothermal, biomass, and small hydroelectric.

Press ReleaseHB 1281

## Connecticut

27% by 2020

On June 4, 2007, Governor M. Jodi Rell signed House Bill 7432, which expanded the state's previous renewable portfolio standard. HB 7432 requires that 27 percent of the state's electricity come from renewable sources by 2020. The law includes standards for three classes of renewables. By 2020, 20 percent of the renewables must be from Class I, 3 percent must be from Class I or II, and 4 percent must be from Class III. Class I sources include solar, wind, new sustainable biomass, landfill gas, fuel cells (using renewable or non-renewable fuels), ocean thermal power, wave or tidal power, low-emission advanced renewable energy conversion technologies, and new run-of-the-river hydropower facilities with a maximum capacity of five megawatts. Class II sources include trash-to-energy facilities, biomass facilities not included in Class I, and certain hydropower facilities. Class III sources include customer-sited combined heat and power systems with a minimum operating efficiency of 50 percent installed at commercial or industrial facilities on or after January 1, 2006; electricity savings from conservation and load management programs that started on or after January 1, 2006; and systems that recover waste heat or pressure from commercial and industrial processes installed on or after April 1, 2007.

Press ReleaseHB 7432

## Delaware

20% by 2019 (at least 2% from solar)

On July 24, 2007, Governor Ruth Ann Minner signed Senate Bill 19, which expanded the state's previous renewable portfolio standard to require that 2 percent of the state's electricity supply come from solar photovoltaics by 2019, in addition to 18 percent from other renewable sources by the same date. Sources of energy that count toward the standard include wind, ocean tidal, ocean thermal, fuel cells powered by renewable fuels, hydroelectric facilities with a maximum capacity of 30 megawatts, sustainable biomass, anaerobic digestion, and landfill gas.

SB 19

## Florida

On June 25, 2008, Governor Charlie Crist signed into law House Bill 7135, which requires the Public Service Commission to develop a Renewable Portfolio Standard (RPS) by February 1, 2009. Each electricity provider, except municipal utilities and rural cooperatives, must supply an as-yet unspecified amount of renewable energy to its customers. Although HB 7135 does not specify the RPS target, Governor Crist's Executive Order 07-127 from July 13, 2007 requires utilities to produce at least 20 percent of their electricity from renewable resources.

Press ReleaseHB 7135

## Hawaii

20% by 2020

On June 2, 2004, Governor Linda Lingle enacted Senate Bill 2474, which requires the state's public utilities to provide 10 percent of their electricity from renewable sources by 2010, 15 percent by 2015, and 20 percent by 2020. Sources of energy that count toward the standard include wind, solar, ocean thermal, wave, and biomass resources. The RPS timetable and qualifying sources were updated in 2006 with SB 3185.

On January 28, 2008, Governor Lingle and the U.S. Department of Energy signed a Memorandum of Understanding to establish the Hawaii Clean Energy Initiative, a partnership to expand the use of renewable energy in Hawaii. The Initiative includes a goal to meet at least 70 percent of the state's energy needs with renewable production by 2030 through sources including wind, solar, and geothermal energy as well as expanded biofuel production. Other goals include increasing energy efficiency programs, meeting all energy needs with renewable production on the smaller islands, and increasing the state's overall energy security.

SB 2474SB 3185Memorandum of Understanding

## Illinois

25% by 2025

On August 28, 2007, Governor Rod Blagojevich of Illinois signed into law Public Act 095-0481, which sets a statewide Renewable Energy Standard and an Energy Efficiency Portfolio Standard. Under the RES, utilities in Illinois must produce a certain percentage of their power from renewable sources, starting with 2 percent in 2008 and increasing to 25

percent by 2025. Seventy-five percent of the electricity used to meet the renewable standard must come from wind power generation; other eligible electricity resources include solar, biomass, and existing hydropower sources. The law also includes an efficiency standard that requires utilities to implement cost-effective energy efficiency measures to reduce electric usage by 2 percent of demand by 2015.

Public Act 095-0481 Press Release

## Iowa

105 MW

In 1983, Iowa enacted the Iowa Alternative Energy Production law. The law requires the state's two investor-owned utilities -- MidAmerican Energy and Alliant Energy Interstate Power and Light -- to contract for a combined total of 105 megawatts of their generation from renewable-energy resources, including small hydropower facilities. Sources of energy that count toward the standard include photovoltaics, landfill gas, wind, biomass, hydroelectric, municipal solid waste, and anaerobic digestion.

## Maine

30% by 2000

On September 28, 1999, Maine's Public Utilities Commission adopted a renewable portfolio standard, requiring that 30 percent of Maine's power come from renewable sources by 2000. Sources of energy that count toward the standard include fuel cells, tidal power, solar, wind, geothermal, hydroelectric, biomass, and generators fueled by municipal solid waste in conjunction with recycling. In June 2006, the state adopted a renewable portfolio goal to increase new renewable energy capacity by 10 percent by 2017. ?New? renewable energy sources include those placed into service after September 1, 2005. In 2007 the state updated the 2006 goal and made it a mandatory target. Resources that satisfy the new capacity requirement cannot also be used to satisfy the 30 percent portfolio requirement.

1999 RPS2007 Law

## Maryland

20% by 2022 (at least 2% from solar)

On April 24, 2008, Governor Martin O'Malley signed Senate Bill 209, which accelerates Maryland's existing renewable portfolio standard to require that 20 percent of the state's electricity supply come from renewable sources by 2022. The RPS had previously been expanded by SB 595 on April 24, 2007, to require that 2 percent of electricity come from solar power. SB retained the 2-percent solar carve out.

Sources of energy that count toward the standard include wind, qualifying biomass, methane from the anaerobic decomposition of organic materials in a landfill or wastewater treatment plant, geothermal, ocean, including energy from waves, tides, currents, and thermal differences, a fuel cell that produces electricity from qualifying biomass or methane, and small hydroelectric power plants.

Press ReleaseSB 209br>SB 595

## Massachusetts

15% new by 2020 with 1% increase each subsequent year

In July 2008, Governor Deval Patrick signed into law SB 2768, which mandates that the state's renewable portfolio standard grow one percent each year beyond the previous standard of 4 percent in 2009. Renewable energy will account for 15 percent of electricity generation by 2020 and 25 percent by 2030.

SB 2768 divides renewable energy into two classes. The RPS applies to Class I renewable energy sources, which are defined as commercial sources beginning in 1998 from one of the following sources: solar photovoltaic, solar thermal, wind, ocean thermal, wave, tidal, fuel cells using renewable fuels, landfill gas, new hydroelectric facilities or incremental new energy from increased capacity or efficiency improvements at existing facilities up to 25 MW, low emission biomass, marine or hydrokinetic, and geothermal energy.

Class II renewable energy sources include facilities that began commercial generation prior to 1998. SB 2768 allows the Department of Energy Resources to specify that a Class II sources make up a percentage of commonwealth generation to support the continued use of these facilities.

RPS

## Michigan

S.B. 213, the ?Clean, Renewable, and Efficient Energy Act,? establishes an Integrated Renewable Portfolio Standard (RPS) of 10 percent by 2015. Energy providers must comply with this new standard through renewable energy generation, renewable energy credits, and energy optimization schemes. The bill specifies biomass, solar photovoltaics and solar thermal energy, wind energy, hydroelectric power, geothermal energy, and energy generated from landfill gas capture as potential sources of renewable energy. Up to 10 percent of the RPS can be met with advanced clean energy

technologies that reduce emissions by 85 percent relative to average coal power plant emissions or integrated gasification combined cycle facilities that reduce emissions by 70 percent.

S.B. 213

### Minnesota

25% by 2025; Xcel Energy 30% by 2020

On February 22, 2007, Governor Tim Pawlenty signed into law Senate Bill 4, which mandates that 25 percent of Minnesota's power come from renewable sources by 2025. Xcel Energy, which currently generates about half of the state's electricity, will be required to produce 30 percent of its power from renewable sources by 2020. Sources of energy that count toward the standard include solar, wind, small hydroelectric power plants, hydrogen generated from renewable resources, and biomass from qualifying resources.

Press ReleaseSB 4

### Missouri

15% by 2021

On November 4, 2008, Missouri voters approved the Missouri Clean Energy Initiative, creating the nation's third state Renewable Portfolio Standard (RPS) to be adopted by ballot initiative. Currently, 29 states and the District of Columbia have established mandatory RPSs. Most state RPSs have been adopted through legislation or executive order. The proposal requires that investor-owned utilities increase renewable electricity generation to two percent of total output by 2011, five percent by 2014, 10 percent by 2018, and 15 percent by 2021. Two percent of generation must come from solar energy; the remainder may come from other renewable sources including landfill gas, wind, biomass, and hydroelectric power. In order to protect rate-payers, utilities are prevented from increasing power prices more than one percent.

The Clean Energy Initiative ramps up the goals set forward in S.B. 54 enacted in Missouri in 2007, which calls on utilities to make a "good-faith effort" to generate 11 percent of electricity from renewable sources by 2021.

Press ReleaseSB 54

### Montana

15% by 2015

On April 28, 2005, Governor Brian Schweitzer signed into law Senate Bill 415, The Montana Renewable Power Production and Rural Economic Development Act, which established a renewable energy portfolio standard for the state. SB 415 mandates that 15 percent of the state's energy come from renewable sources by 2015, and for each year thereafter. Sources of energy that count toward the standard include wind, solar, geothermal, existing hydroelectric projects, landfill or farm-based methane gas, wastewater-treatment gas, low-emission, nontoxic biomass, and fuel cells where hydrogen is produced with renewable fuels.

Press ReleaseSB 415

### Nevada

20% by 2015 (at least 5% from solar)

On June 7, 2005 the Nevada Governor Kenny Guinn signed into law Assembly Bill 3, expanding Nevada's previous renewable portfolio standard. The updated standard requires that 20 percent of the state's electricity come from renewable energy sources by 2015, and for each year thereafter. Of the 20 percent, not less than 5 percent must be generated from solar renewable energy systems. Utilities can also earn credit for up to 25 percent of the standard through energy efficiency measures. Sources of energy that count toward the standard include biomass, fuel cells, geothermal, solar, waterpower, and wind.

AB 3

### New Hampshire

25% by 2025

On May 11, 2007, Governor John Lynch signed into law House Bill 873, the Renewable Energy Act, which establishes a renewable energy portfolio standard for the state. HB 873 mandates that 25 percent of the state's electricity come from renewable sources by 2025, a goal Governor Lynch had previously set for New Hampshire. Sources of energy that count toward the standard include wind, solar, geothermal, hydrogen derived from biomass fuels or methane gas, ocean thermal, wave, current, tidal energy, methane gas, eligible biomass technologies, and existing small hydroelectric sources.

## New Jersey

22.5% by 2021 (at least 2% from solar)

On April 12, 2006, the New Jersey Board of Public Utilities (BPU) approved new regulations that expanded the state's renewable portfolio standard. The BPU decision requires utilities produce 22.5 percent of their electricity from renewable sources, at least 2 percent of which must come from solar sources. Sources of energy that count toward the remainder of the standard include solar, wind, wave, tidal, geothermal, methane gas captured from a landfill, fuel cells powered by renewable fuels, electricity generated by the combustion of gas from the anaerobic digestion of food waste and sewage sludge at a biomass generating facility, and hydropower.

Press ReleaseRPS

## New Mexico

20% by 2020

On March 5, 2007, Governor Bill Richardson signed into law Senate Bill 418, which established a renewable portfolio for the state. SB 418 mandates that by 2020, 20 percent of an electric utility's power come from renewable sources. Sources of energy that count toward the standard include solar, wind, hydropower, geothermal, fuel cells that are not fossil fueled, and qualifying biomass resources.

Press ReleaseSB 418

## New York

25% by 2013

On September 22, 2004, The New York Public Service Commission adopted a renewable portfolio standard. The standard requires that 25 percent of the state's electricity come from renewable sources by 2013. The standard identifies two tiers of eligible resources, a "Main Tier" and a "Customer-Sited Tier". The "Main tier" is mandatory and is to account for 24 percent of the standard. Eligible sources include biogas, biomass, liquid biofuel, fuel cells, hydroelectric, solar, ocean or tidal power, and wind. The "customer-sited" tier will make up the remaining 1 percent of renewable energy sales and is to come from voluntary green market programs. Sources of energy that count toward the Customer-Sited Tier include fuel cells, solar, and wind resources.

Press ReleaseRPS

## North Carolina

12.5% by 2021

On August 20, 2007, Governor Mike Easley of North Carolina signed into law S.L. 2007-397, which establishes a Renewable Energy and Energy Efficiency Portfolio Standard for the state. Under the law, by 2021 electric public utilities must meet 12.5% of retail electricity demand through renewable energy or energy efficiency measures, and electric membership corporations and municipalities that sell electric power in the state would have to meet a standard of 10% by 2018. Resources that can be used to meet the standard include solar energy, wind energy, hydropower, geothermal energy, ocean current or wave energy, biomass resources, and energy efficiency measures. The law also includes provisions to encourage the use of solar energy, swine and poultry wastes, as well as implementation of energy efficiency programs.

S.L. 2007-397

## North Dakota

In March, 2007, the North Dakota legislature signed HB 1506, which established a voluntary Renewable Portfolio objective of 10% by 2015.

HB 1506

## Ohio

On May 1, 2008, Governor Ted Strickland signed substitute Senate Bill 221 into law, establishing an alternative energy portfolio standard (AEPS) for the state of Ohio. The law mandates that by 2025, at least 25 percent of all electricity sold in the state come from alternative energy resources. At least half of the standard, or 12.5 percent of electricity sold, must be generated by renewable sources such as wind, solar (which must account for at least 0.5 percent of electricity use by 2025), hydropower, geothermal, or biomass. At least half of this renewable energy must be generated in-state. In addition to renewables, the additional 12.5 percent of the overall 25 percent standard can also be met through alternative energy resources like third-generation nuclear power plants, fuel cells, energy-efficiency programs, and clean coal technology that can control or prevent carbon dioxide emissions. The bill also creates a renewable energy credit (REC) tracking system, which allows utilities to buy, sell, and trade credits to comply with the renewable energy and solar energy requirements. Additionally, electric utilities will be required to achieve energy savings of 22.5 percent by the

end of 2025 through energy efficiency programs. Utilities must also implement programs to reduce peak energy demand one percent beginning in 2009, and an additional .75 percent per year through 2018.

SB 221

### Oregon

25% by 2025

On June 6, 2007, Governor Ted Kulongoski signed Senate Bill 838, adopting a renewable electricity portfolio standard for the state. SB 838 requires the state's largest utilities to meet 25 percent of their electric load with new renewable energy sources by 2025. Sources of energy that count toward the standard include wind, solar, wave, geothermal, biomass, new hydro or efficiency upgrades to existing hydro facilities.

Press ReleaseSB 838

### Pennsylvania

18.5% by 2020 (at least 0.5% from solar)

On December 16, 2004, Governor Edward Rendell signed into law Pennsylvania's Alternative Energy Portfolio Standard, requiring that qualified power sources provide 18.5 percent of Pennsylvania's electricity by 2020. There are two tiers of qualified sources that may be used to meet the standard. Tier 1 sources must make up 8 percent of the portfolio, and include wind, solar, coalmine methane, small hydropower, geothermal, and biomass. Solar sources must provide 0.5 percent of generation by 2020. Tier 2 sources make up the remaining 10 percent of the portfolio, and include waste coal, demand side management, large hydropower, municipal solid waste, and coal integrated gasification combined cycle.

Press ReleaseRPS

### Rhode Island

16% by 2020

On June 29, 2004, Governor Donald Carcieri signed the Clean Energy Act, requiring state electricity retailers to derive at least 3 percent of the electricity they sell in state from renewable energy by December 31, 2006. The percentage of renewable energy required will then rise 1 percent per year through 2020, though the Rhode Island Public Utility Commission (PUC) is authorized to revise the schedule after 2013. Existing renewable resources may only contribute 2 percent of the required amount of renewables in any year; the rest must be from new renewable energy production. Sources of energy that count towards the standard include direct solar radiation, wind, movement or the latent heat of the ocean, the heat of the earth, small hydroelectric facilities, eligible biomass, and fuel cells using renewable resources.

RPS

### South Dakota

On February 21, 2008, Governor Mike Rounds signed into law HB 1272, which established a voluntary Renewable Portfolio objective of 10% by 2015.

HB 1272

### Texas

5,880 MW by 2015

On August 1, 2005, Governor Rick Perry signed a bill increasing the amount of renewable generation required in the state. The law requires that 5,880 megawatts of new renewable generation be built in the state by 2015, which will meet about 5 percent of the state's projected electricity demand. The legislation also sets a cumulative target of installing 10,000 megawatts of renewable generation capacity by 2025. In an effort to diversify the state's renewable generation portfolio, the measure also includes a requirement that the state must meet 500 megawatts of the 2025 target with non-wind renewable generation.

Press Release RPS

### Utah

On March 18, 2008, Governor Huntsman signed SB 202, which established a voluntary Renewable Portfolio goal of 20% by 2025. The bill requires utilities pursue renewable energy to the extent that it is cost effective.

SB 202

### Vermont

25% by 2025

On June 14, 2005, Governor Jim Douglas signed a renewable portfolio standard into law, requiring renewable generation to equal incremental load growth between 2005 and 2012, but not requiring utilities to hold renewable energy credits equal to renewable generation. If utilities have not met this requirement, the state will instate an RPS equal to the percentage of load growth between 2005 and 2012. If the state experiences 7 percent load growth, but utilities have not obtained 7 percent of their electricity from eligible renewables by 2012, the state will adopt an RPS of 7 percent. Sources of energy that count toward the standard include wind, solar, small hydropower methane from landfill gas, anaerobic digesters, and sewage-treatment facilities, while excluding municipal solid waste. Vermont utilities are permitted to build generation capacity out of state to comply with the mandate.

On March 20, 2008, Governor Jim Douglas signed the Energy Efficiency and Affordability Act of 2008, which established a renewable energy goal for the state. The law sets a goal of producing 25 percent of the energy consumed in the state from renewable sources, particularly Vermont's farms and forests, by 2025.  
RPS

## Virginia

12% of 2007 sales by 2022

On April 11, 2007, Governor Tim Kaine signed Senate Bill 1416, which established a voluntary renewable portfolio goal. The standard sets a renewable energy target of 12 percent of base year sales by 2022. The standard targets are defined as percentages of 2007 (the "base year") electricity sales minus the average annual percentage of power supplied from nuclear generators between 2004 and 2006. A utility may participate in the voluntary RPS program if it demonstrates that it has a reasonable expectation of achieving the 12 percent target in 2022. Sources of energy that count toward the target include solar, wind, geothermal, hydropower, wave, tidal, and biomass energy. Wind and solar receive a double credit toward RPS goals.

SB 1416

## Washington

15% by 2020

On November 7, 2006, Washington state voters approved ballot initiative 937, setting renewable energy standards for utility companies in the state. The measure requires all utilities serving 25,000 people or more to produce 15 percent of their energy using renewable sources by 2020. Such sources include wind, solar, and tidal power as well as landfill-methane capture. Sources of energy that count toward the standard include water, wind, solar, geothermal, landfill gas, wave, ocean, tidal power, gas from sewage treatment facilities, biodiesel fuel that is not derived from crops raised on land cleared from old growth or first-growth forests, and qualifying biomass resources.

Initiative 937