

An Analysis of the Massachusetts Renewable Portfolio Standard

May 2017

Building on Success

Massachusetts has long been a national leader in efforts to capture clean energy economic development opportunities, enhance energy security, and reduce emissions. The state’s Renewable Portfolio Standard (RPS) legislation is an important part of this leadership in advancing clean energy and combating climate change.

RPS policies are the foundation for clean energy markets and a proven policy tool to support successful, cost-effective renewable energy development at the state level. An RPS is a market-based mechanism that creates demand for clean energy, which can be met by a variety of cost-effective resources. RPS policies are currently in effect in 29 states and Washington, DC.

A recent report *An Analysis of the Massachusetts Renewable Portfolio Standard* by Synapse and Sustainable

Energy Advantage analyzed regional renewable portfolio standards in light of the many new policy actions put into place over the last several years.

Recent Developments Impacting the RPS

New legislation requiring long-term contracting for clean energy in Massachusetts, Connecticut, and Rhode Island

Revised incentives for distributed generation resources and changes to RPS policies in other states in New England

Proposed Massachusetts-specific CO₂ caps

Revised forecasts for electricity sales that take the full impact of new energy efficiency measures into account

The analysis found that *supply* of RPS-eligible resources is likely to significantly increase in the future, above and beyond the *demand* required under each state’s RPS policy. This supply and demand imbalance means that the RPS will cease to act as a long-term driver of renewable energy through at least 2030.

To examine this imbalance, we modeled other scenarios in which the Massachusetts RPS is adjusted to increase by 2 and 3 percent per year, rather than 1 percent per year as it does today. These increases are enough to shift the supply / demand imbalance, and allow the RPS to drive additional renewable energy.

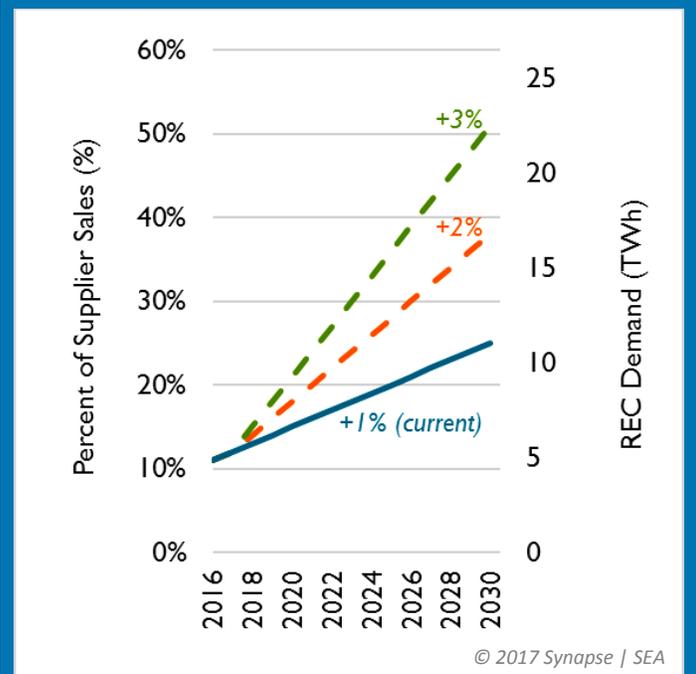
Here’s what we found:



The current RPS is unlikely to drive incremental new renewables

Current long-term contracting and distributed generation policies drive the construction of new resources which are also eligible for RPS compliance. In a business-as-usual future, the number of these resources is likely to exceed the demand created by the New England states’ RPS policies. In this future, the RPS will not act as a long-term driver of cost-effective renewable energy before 2030.

Figure 1. Current and alternate RPS requirements in Massachusetts



Energy Balance

Increasing the MA RPS will cause the supply and demand of renewables to come back into balance earlier

Changing the Massachusetts RPS to grow by 2 percent per year (instead of by 1 percent per year, as it does today), will nudge future RPS demand toward alignment with the expected supply of new renewables as early as the late 2020s.

Adjusting the RPS in Massachusetts to grow by 3 percent per year, rather than 1 or 2 percent, can drive even more renewables. Since New England's RPS market is regional, an extension of the Connecticut RPS (currently legislated to stop increasing in 2020) can also boost renewables. Depending on the RPS level modeled, 2,000 and 4,900 GW of new renewables beyond what is already called for in existing laws and regulations could be built by 2030.

Costs

Increasing the RPS lowers wholesale electricity prices

Renewable resources frequently have variable operating costs close to zero, unlike resources such as natural gas and coal that require staff operation and fuel to run. With increased levels of renewables, we estimate that by 2030 wholesale market prices for energy will decrease between 0.5 percent and 8.1 percent, depending on how many new renewables are added

Between 2018 and 2030, diversifying New England's electricity mix by adding more renewables and reducing reliance on natural gas could save New England up to \$2.1 billion in wholesale energy costs, in the face of a higher natural gas price.

Jobs

Increasing the RPS drives jobs for New Englanders

A higher rate of increase in the RPS drives new renewable construction. An increased RPS could add up to 37,000 new jobs to the New England economy through 2030.

Climate

More renewables help New England meet its climate goals

Because of flattening demand for electricity in New England, when new renewables come online, they displace generation from coal and natural gas. By 2030, natural gas generation could be between 33 and 50 percent, lower than today. Strong RPS policies decrease electric-sector CO₂ emissions by 60 to 71 percent, relative to 2030.

Bills

Increased renewables result in minor increases to electricity bills

A cleaner future comes at a cost; but fortunately, it's a small one. Increasing the RPS will increase electric bills for Massachusetts residential ratepayers by \$0.15 to \$2 per month, through 2030.

Increasing the RPS...

- Fixes the supply/demand imbalance for renewables
- Lowers wholesale electricity costs
- Drives new jobs in New England
- Lowers greenhouse gas emissions

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