



Testimony to the Joint Committee for Telecommunications, Utilities and Energy (TUE) on the RPS legislation (several bills)

September 19, 2017

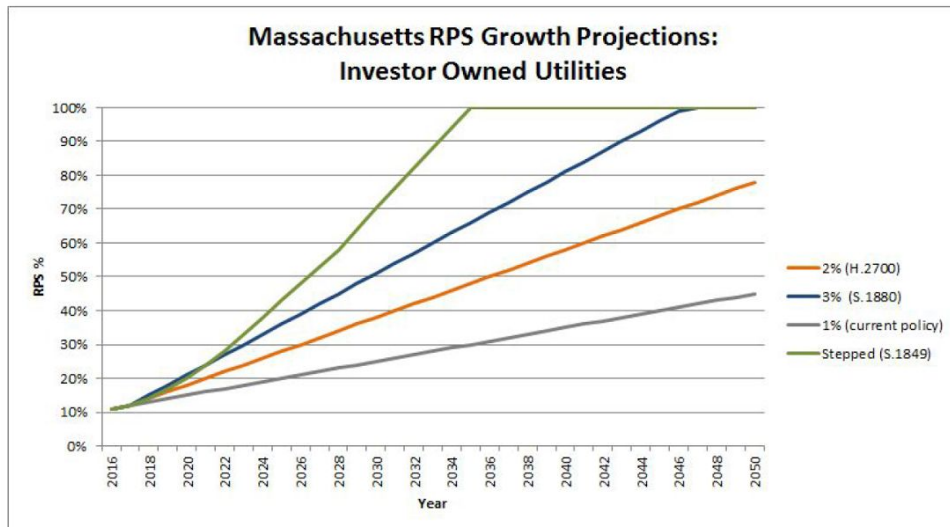
Summary

The Massachusetts Sierra Club appreciates the opportunity to present testimony on the several RPS bills under consideration. Some of the bills represent major and essential steps forward in pursuit of 100% renewable electricity, but no single bill (a) provides large annual RPS increases and (b) a requirement that the municipal light plants (MLPs) participate in the RPS.

The Massachusetts Sierra Club urges the TUE to report out a bill that contains annual RPS increases of 3% or more as well as requiring that MLPs transition into the RPS program. Such a bill represents the best economic interests of the citizens and businesses of the Commonwealth, the health interests of its residents, responds to the urgent need for action on climate change, and provides necessary leadership for other states.

Several bills propose a 3% annual increase in the RPS. The Massachusetts Sierra Club supports these in that they represent significant progress in the necessary movement to 100% renewable electricity. However, 3% is less than what is achievable and less than what is required to respond to the urgency for climate action. The Massachusetts Sierra Club advocates for the schedule of RPS increases that achieves 100% renewable electricity by 2035 found in [H.3395](#) and in [S.1849](#), *An Act transitioning Massachusetts to 100 percent renewable energy*. **The TUE should adopt the RPS schedule in S.1849/H.3395.**

Municipal light plants (MLPs) serve all or part of 50 communities in Massachusetts and deliver 13% of the electricity in the state. They are currently exempt from the RPS. In the interest of achieving 100% renewable electricity, **the TUE should include a requirement that transitions MLPs into the RPS. H.2700 and S.1880 each contain a schedule that brings MLPs into the RPS.**



Motivations

There are compelling reasons for significantly expanding the RPS, many of which relate to improving the Massachusetts economy.

RPS annual increases of 3% or more are required to create clean energy related jobs. The primary effect of the RPS is the financial incentive that it provides for investing in large scale renewable energy projects because it establishes a guaranteed demand for the electricity produced. A comprehensive modeling study¹ (Synapse/SEA) shows that:

- An annual increase of 3% (which gets us to 50% by 2030) along with 1.5% per year increases in Connecticut will create 37,000 net new jobs in New England by 2030. “This analysis accounts for job losses associated with ... displaced natural gas and coal generation. ... In a future with a high natural gas price, or high electrification, even more jobs could be created across the region.”
- An annual increase of 2% (which get us to 38% by 2030) is, “likely to produce a demand for renewables in line with anticipated supply ... Very few additional new renewables will be built”.
- With the current 1% annual increases “sustained surplus ... may impair the financial viability of existing Class I resources and are not likely to enable the financing required for new renewable development”.

An average annual increase of at least 3% is needed to create jobs and provide a benefit to the Massachusetts economy. Responding to the urgency of climate change requires larger increases.

There are already more than 3 times as many jobs in the Massachusetts solar industry as in fossil fuel electricity generation. Solar energy is the fastest-growing industry in the United States, currently creating jobs 20 times faster than the rest of the economy. Continued expansion of the clean energy economy in Massachusetts depends on at least 3% annual increases in the RPS.

Stable, predictable electricity rates attract business. Only renewable electricity can provide stable prices. The wind and sun are free meaning that the cost of the electricity produced is not subject to the volatility of gas prices. Modeling shows that if natural gas prices rise significantly as some expect², increasing the RPS could save New England consumers up to \$2.1 billion between 2018 and 2030.³

Iowa, Kansas, South Dakota, Oklahoma and North Dakota generate 23% to 37% of their electricity from renewables *today* (compared with 12% in Massachusetts). “Their leaders see tapping the wind, and to a lesser degree the sun, as an economic strategy. ... The clean energy

¹ Synapse Energy Economics, Inc. and Sustainable Energy Advantage, [An Analysis of the Massachusetts Renewable Portfolio Standard](#), May 2017

² Tillier, Martin, [3 Reasons Natural Gas is Heading a Lot Higher](#), Aug. 13, 2017 Oil Price.com

³ [An Analysis of the Massachusetts Renewable Portfolio Standard](#), May 2017

push allows their utilities to lock in low power prices for decades, creates manufacturing jobs, ... and lures big employers who want renewable power.”⁴

Clean energy provides better health and lower health care costs. The study, “A Prospective Analysis of Costs, Benefits and Impacts of U.S. Renewable Portfolio Standards”⁵ supposes that nearly all states implement an RPS that reaches 35% by 2030 in the High RE scenario. This is approximately equivalent to 2% annual RPS increases in Massachusetts. RPS increases of 3% or more will result in greater benefits than those cited below:

- “We estimate cumulative emission reductions of 29% for each of the three air pollutants addressed (sulfur dioxide, nitrogen oxides, and fine inhalable particles) resulting in health and environmental benefits of \$558 billion [nation-wide], ... equivalent to 5.0c/kWh-renewable energy.
- Cumulative life-cycle GHG emissions decrease by 23% resulting in \$599 billion of global benefits when applying a “central value” for the social cost of carbon, equivalent to 5.4c/kWh-renewable energy.

When comparing the costs and monetized benefits, we find that the benefits exceed the costs, even when considering the highest cost and lowest benefit outcomes (Figure below). ... Under the High RE scenario, the high end costs are 1.5¢/kWh-RE while air pollution and health benefits total at least 2.7¢/kWh-RE and GHG benefits total at least 1.2¢/kWh-RE. The figures here are presented on a national basis and reflect levelized 2015–2050 values.”

Comparison of national systems costs and monetized benefits

Note: Positive values reflect benefits in the High RE scenarios, whereas negative values reflect higher costs relative to the No RPS scenario.

Clean energy keeps money in the Massachusetts economy instead of exporting it to buy natural gas which equates to more economic growth and jobs. Massachusetts exports more than \$18 billion a year to buy fossil fuels. With renewable energy, that money stays in the Massachusetts economy. A strong

⁴ Justin Gillis & Nadja Popovich, *In Trump Country, Renewable Energy is Thriving*, New York Times, June 6, 2017

⁵ Trieu Mai, et al. *A Prospective Analysis of the Costs, Benefits, and Impacts of U.S. Renewable Portfolio Standards*, 2016. NREL/TP-6A20-67455/LBNL- 1006962. Golden, CO and Berkeley, CA: National Renewable Energy Laboratory and Lawrence Berkeley National Laboratory. <http://www.nrel.gov/docs/fy17osti/67455.pdf>

RPS is an essential policy to spur leading edge development and investment to move clean energy generation into the Massachusetts economy. By contrast, continuing to invest in natural gas pipelines undermines the strategic advantage that Massachusetts has as an innovation economy.

Benefits of clean renewable energy exceed the costs. The Synapse/SEA model shows that increasing the Massachusetts RPS to 3% will increase the monthly average retail electric bill for residential customers by just \$2.17. In New York, which has a more aggressive RPS of 30.54% by 2021, making the transition to renewables will cost the average residential rate payer less than \$2 per month. The rate structure can be designed to shield low income residents from the increase. The job benefits, health benefits, price stability benefit and economic benefit of spending more money within our own economy far outweigh this modest cost.

The retail price increase is associated with the cost of building renewable infrastructure, but the Synapse/SEA model shows that a 3% RPS will *lower* wholesale prices 4.2% per year. The larger the RPS percentage, the greater the savings in electricity generation cost because there is no cost for fuel. In the long term, the lower wholesale prices can be reflected in retail pricing.

The cost of dealing with storms and flooding far, far exceeds the cost of rapidly transitioning to renewable electricity through a strong RPS. If Hurricane Sandy had hit Massachusetts 5 hours earlier during high tide the destruction here would have been more similar to the devastation experienced by New York and New Jersey. *Chronic inundation* is flooding beyond which sustaining normal routines becomes impossible. (If saltwater regularly soaked your basement or first floor, kept you from getting to work, or damaged your car, how often would it have to happen before you began looking for a new place to call home?) If emissions continue to rise through the end of this century, the Town of Winthrop will experience chronic inundation by 2030 and Chelsea, Hull, Nahant and Revere will too by 2045.⁶

Massachusetts residents are ready for decisive action. In an informal Boston Globe poll early this year (before Hurricane Harvey) respondents were overwhelmingly in favor of 100% renewable electricity by 2035 and 100% renewable energy economy-wide by 2050.⁷

A June 2017 WBUR poll shows a big jump in concern about climate change and its effects. “The pace of change in Massachusetts was quite surprising to me, Koczela says. Back in 2011 77% of the registered voters Koczela surveyed said they believed the world was getting warmer. In 2015, it was 78%. Now it is 88% - and Koczela says the public is coalescing around a cause. ... Koczela found 74% of voters interviewed for the poll say they’d pay \$10 more a month on their energy bill if it would significantly reduce greenhouse emissions.”

On behalf of the over 60,000 members and supporters of the Massachusetts Sierra Club across the Commonwealth, please adopt the RPS mandates presented in this testimony.

⁶ Union of Concerned Scientists, [When Rising Seas Hit Home: Hard Choices Ahead for Hundreds of US Coastal Communities](#), 2017

⁷ Boston Globe, March 17, 2017

<http://www.bostonglobe.com/metro/regionals/south/2017/03/17/should-massachusetts-commit-itself-percent-renewable-energy/fp0PmlhFzbRf6A3VMhiuEP/story.html>

Massachusetts has been a leader on issues such as health care and gay rights. Residents expect the state to be leading the fight on climate change. Substantially increasing the RPS is central to this leadership, and is good for citizens, good for business, and good for the Commonwealth.

ADDENDUM A – TWO RECENT MASSACHUSETTS ACTIONS AFFECTING RPS

Two recent actions in Massachusetts lead to questions about their effect on the proposed RPS increases:

- Pursuant to the Supreme Judicial Court’s May 17, 2016 ruling in Kain v. DEP and Governor Baker’s Sep. 16, 2017 Executive Order No. 569, on Aug. 11, 2017 MassDEP promulgated six regulations that strengthen the Commonwealth’s efforts to reduce emissions and help ensure that the 2020 statewide emissions limit mandated by the Global Warming Solutions Act (GWSA) is met. One of these regulations, the Clean Energy Standard⁸ (CES) mandates that utility companies and other power providers are required to obtain 16% of their energy from clean sources, such as wind and solar, in 2018. That requirement will increase by 2 percentage points a year until 2050.

This regulation contains provisions that strengthen, not weaken, the need for 3+% annual increases in the RPS for the following reasons:

- After a one year 4% increase in 2018, the CES regulation requires only a 2% annual increase after that. As noted above, 2% RPS increases will produce “no net change in jobs between the 1% increases and the 2 percent scenario” unless Connecticut strengthens its RPS.
 - Of significant importance, the CES mandates can be met with renewables other than RPS Class 1 renewables. For example, hydro imports coming in from Quebec on new transmission lines apply to CES.
 - Municipal Light Plants (MLPs) are exempt from the CES, but were assumed to be included in the proposed CES included in the Synapse/SEA model assumptions.
- On Aug. 23, 2017 the RGGI states announced proposed program changes: Additional 30% emissions cap decline by 2030⁹, or a reduction of approximately 3.5%/year.

This change will enhance the job creating benefit of large RPS increases. A more stringent emissions cap results in a higher RGGI price which has a similar impact as a higher price for natural gas. In the Synapse/SEA model the “high natural gas price” scenario showed an increase of 45,000 net new jobs instead of the 37,000 jobs stated above. (The 37,000 jobs is based on a “medium” natural gas price from the 2017 Annual Energy Outlook Reference case.)

⁸ <http://www.mass.gov/eea/agencies/massdep/air/climate/section3d-comments.html>

⁹ http://www.rggi.org/docs/ProgramReview/2017/08-23-17/Announcement_Proposed_Program_Changes.pdf

The RGGI cap reductions will further reduce the utility bill impacts of an RPS increase. In the “high natural gas price” Synapse/SEA modeling scenario, the monthly bill increase with a 3% MA RPS drops to \$1.30 from the \$2.17 seen in the “medium natural gas price” scenario.