



## Transforming the Massachusetts Energy Economy

### *Legislative Action*

June 2017

Legislation<sup>1</sup> under consideration on Beacon Hill would set a goal of 100% renewable electricity by 2035 and 100% renewable energy economy-wide (including transportation, heating and other sectors) by 2050. In an informal Boston Globe poll,<sup>2</sup> respondents were overwhelmingly in favor. This transformation is broadly supported because it will not only protect the environment, but also spur huge growth in local and regional renewable energy, and energy efficiency jobs.

The Massachusetts Sierra Club has identified three legislative priorities that are essential to achieving a clean energy economy:

- The Commonwealth must commit to the 100% goals **now** because we need to time for implementation. (The next two priorities are for laws required to speed the transition away from fossil fuels.)
- Legislation is required to accelerate the movement of electricity generation from fossil fuels to renewable sources such as wind and solar because clean electricity will power everything in the future.
- Legislation is required to move the energy needs of transportation and buildings away from gasoline, diesel, natural gas and home heating oil to the clean electricity.

### Setting the Goal

The Global Warming Solutions Act (GWSA) enacted in 2008 is an important first step. It requires reductions in greenhouse gas (GHG) emissions from all sectors of the economy equating to 25% below 1990 levels by 2020, and at least 80% reduction by 2050.

But the GWSA falls short of a mandate to phase out our dependence on fossil fuels.

Senate bill [S.1849](#) (Jamie Eldridge) and the identical House bill [H.3395](#) (Marjorie Decker and Sean Garballey) sets the goals of 100% renewable electricity by 2035 and 100% renewable energy economy-wide by 2050. This legislation would send a clear signal that the transition to clean energy cannot be delayed, and would mandate by law action beyond what is required by the GWSA.

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<sup>1</sup> Senate bill [S.1849](#) filed by Senator Jamie Eldridge and the identical House bill [H.3395](#) filed by Representatives Sean Garballey and Marjorie Decker

<sup>2</sup> March 17, 2017 <http://www.bostonglobe.com/metro/regionals/south/2017/03/17/should-massachusetts-commit-itself-percent-renewable-energy/fp0PmlhFzbRf6A3VMhiuEP/story.html>

This is a big, bold goal, one that would make Massachusetts a national leader in the race toward a cleaner, healthier future. Companies ranging from Apple, Google and Facebook to Johnson & Johnson have already committed to going 100% renewable. So have cities such as San Diego, Rochester, Minn., and Lancaster, California. Some cities, like Greensburg, Kansas, Burlington, Vt. and Aspen, Colorado, have already achieved 100% renewable energy<sup>3</sup>.

## Transforming Electricity Generation

In a renewable energy economy we will not burn fossil fuels; instead we will use clean electricity for everything: cars, trucks and buses, mass transit, and heating and cooling for buildings. So moving electricity generation to renewable energy sources such as wind and solar is essential for meeting clean energy goals and creating local and regional green economy jobs.

Massachusetts and the New England states already have a legal mechanism that can make this happen: the Renewable Portfolio Standard or RPS. The RPS has been an instrumental incentive in the build out of solar and wind energy to date. The problem is that under current law the RPS mandates are not nearly strong enough to stimulate further investments in renewable electricity generation. Legislation is required to significantly strengthen the RPS. The Sierra Club advocates for the RPS mandates in House bill H.3395 and its Senate equivalent bill S.1849. This is the same legislation that establishes the 100% goals. The proposed RPS increases are designed to meet the 100% renewable electricity goal by 2035.

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 Sierra Club advocates for House bill H.2700 (Kay Khan) which would transition MLPs into the RPS program<sup>4</sup>.

The RPS requires that electric utilities provide a certain percentage of the electricity they deliver to be from renewable sources such as wind and solar. This year it is 12%. Currently the percentage goes up only 1% a year. At this rate we won't get to 100% renewable electricity until 2105. The RPS in NY and CA will reach 50% renewable electricity by 2030; at our current rate in 2030 we will be only half that: 25%.

The primary benefit of the RPS is the financial incentive for investing in large scale renewable energy projects because it establishes a guaranteed demand for the electricity produced. However, the current yearly 1% increase does not create a demand for further clean energy development and will not lead to a net increase in jobs. A comprehensive modeling study<sup>5</sup> 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. "In a future with a high

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<sup>3</sup> <http://www.environmentmassachusetts.org/programs/mae/100-renewable-energy>

<sup>4</sup> In addition to bringing MLPs into the RPS, this bill calls for an annual 2% increase in the RPS. Representative Khan filed this bill before the *Analysis of the Massachusetts Renewable Portfolio Standard* was released in May showing that annual percentage increases greater than 2% are needed. She plans to amend it to require larger increases.

<sup>5</sup> *An Analysis of the Massachusetts Renewable Portfolio Standard, May 2017* by Synapse Energy Economics, Inc. and Sustainable Energy Advantage

natural gas price, or high electrification, even more jobs could be created across the region. This analysis accounts for job losses associated with ... displaced natural gas and coal generation”<sup>5</sup>.

- 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”<sup>5</sup>.
- 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”<sup>5</sup>.

In other words, **an average annual increase of at least 3% is needed to provide a benefit to the Massachusetts economy, and annual increases above this are needed to meet emissions targets.**

Massachusetts has 63,374 traditional energy workers statewide. Of those, 38,379 workers are employed in electric power generation<sup>6</sup>. And of those, solar makes up the largest segment with 19,635 jobs while fossil fuel generation accounts for only 5,753 jobs. Solar energy is the fastest-growing industry in the United States, currently creating jobs 20 times faster than the rest of the economy. For example, residential and commercial solar is creating a huge demand for electricians in Massachusetts. Joseph Casey, Northeast Business Development manager for the International Brotherhood of Electrical Workers (IBEW), reports that young adults see long term career potential in the electrical industry where none previously existed. These are good jobs that provide healthcare and retirement benefits. IBEW is providing training.

Without significant increases in the RPS mandates, Massachusetts will fall well behind other states in New England. Maine is already ahead of Massachusetts and RI and VT have recently enacted legislation that will put them ahead of Massachusetts. There is proposed legislation in CT to extend their RPS mandates. Massachusetts should not lose out on the economic benefits. Mid western states such as Iowa, Kansas, and Oklahoma already produce over 30% of their energy from renewable sources today. “The clean energy push allows their utilities to lock in low power prices for decades, creates manufacturing jobs, puts steady money in the hands of farmers who host wind turbines and lures big employers who want renewable power”<sup>7</sup>.

Continuing to allow expansion of fossil fuel jobs or continuing to invest in natural gas pipelines undermines the strategic advantage that Massachusetts has as an “innovation economy”. The RPS spurs leading edge development and investment to move clean energy generation into the Massachusetts economy. This will reduce the \$20 billion per year that is currently sent out of state to buy and import fossil fuels. A natural gas pipeline is a way to pump billions of dollars out of our economy, and incur unpredictable future price increases out of our control.

## **Transforming Transportation and Buildings**

Transportation is responsible for about 40% of the state’s total greenhouse gas emissions and home heating and cooling accounts for another 30+%. We must provide incentives to move our transportation and heating to the electric sector; we must electrify everything. This will require funding. A **carbon price**

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<sup>6</sup> <https://energy.gov/downloads/2017-us-energy-and-employment-report>

<sup>7</sup> In Trump Country, Renewable Energy is Thriving by Justin Gillis & Nadja Popovich, New York Times, June 6, 2017

provides incentives and can also provide funding for infrastructure projects and assistance to municipalities, businesses and residents. Economists believe carbon pricing is an effective mechanism to spur efficiency and electrification in transportation and buildings<sup>8</sup>. (Carbon pricing can work in conjunction with necessary regulations; it does not replace the need for regulations such as energy mandates for new buildings.)

Putting a price on carbon changes our behavior. We will choose to invest in making our homes and businesses energy efficient. New and expanded businesses will address this demand. Mass transit becomes more popular. Demand for fuel efficient cars and electric cars will increase. (We have seen the opposite recently – with the decline in gasoline prices, inefficient SUVs and pickup trucks once again dominate new vehicle sales.)

The Sierra Club supports carbon pricing in House bill [H.1726](#) (Jennifer Benson). Under this bill:

- 80% of the fees collected on gasoline and home heating fuel are returned to residents as fixed sum payments. Every resident gets the same rebate.
- Residents who use less carbon fuel benefit because they get back more than the added fees they pay on fuels. Carbon pricing can help level the playing field—for the most part someone making \$100,000 will spend more on energy and fuel than someone making \$15,000, but both will get the same rebate.
- There are other concerns about fairness and equity. For example, rural residents have no choice but to drive long distances. Some of the collected fees must be used to mitigate such issues.
- The transition to a 100% renewable energy economy is significantly enhanced because 20% of the collected fees will be used for investments in transportation, resiliency and clean energy projects, climate adaptation, assistance for low-income households and renters in reducing their energy costs, and local economic development and employment.
- Carbon fees will be phased in over time to give people and businesses time to adapt.
- Carbon fees will not apply to electricity generation, because the Regional Greenhouse Gas Initiative<sup>9</sup> already provides a means to mandate carbon pollution reduction in the electricity sector.

## **Continued Progress Toward Clean Energy Requires Action**

Continued progress toward clean energy can be managed fairly and effectively but will not come easily. Michael Brune, Executive Director of the Sierra Club, notes, “People may love clean energy, but the fossil fuel industry does not. It sees clean energy as an existential threat, and it will say and do anything to keep us hooked on dirty fuels. They spend hundreds of millions of dollars to persuade people that clean energy is an idea whose time has not yet come. They can’t really pretend it’s bad, so instead, they say it’s too good to be true.”

One powerful opponent is the Associated Industries of Massachusetts (AIM), a group that represents fossil fuel interests in the state. AIM argues that a transition to 100% renewable energy would hurt the

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<sup>8</sup> For example, Henry Paulson, Secretary of the Treasury under President George W. Bush, wrote: “We’re staring down a climate bubble that poses enormous risks to both the environment and economy ... The solution to both can be a fundamentally conservative one that will empower the marketplace to find the most efficient response. We can do this by putting a price on emissions of carbon dioxide.”

<sup>9</sup> <https://www.rggi.org/>

economy because it “would have a significant impact on your overall electricity bills”<sup>10</sup>. Their recommendation is to do nothing, “Let’s see what happens with both cost and feasibility with the current trajectory”. AIM reports that fossil fuel based wholesale electricity prices in New England are at historic lows and notes that solar and offshore wind cost more. Importantly, AIM does not claim that fossil fuel based electricity prices will remain at historic lows over the long term, and makes no mention of the rapid decline in renewable energy prices, nor the advent of new technology such as large scale storage which can offset the intermittent nature of solar and wind. There is ample evidence to refute AIM’s claims of higher electricity cost. For example, the Bloomberg New Energy Outlook 2016<sup>11</sup> report states that:

- “Recovering oil prices in the near term and the influence of rising US production costs on LNG markets in the longer-term will put upward pressure on gas prices”.
- “The cost of onshore wind is expected to drop 41% by 2040, driven primarily by improving capacity factors”.
- “The solar experience curve also marches on ... pushing new utility-scale solar down 60% from ... today to 2040 [worldwide]”. ... Solar’s precipitous cost decline sees it emerge as the least-cost generation technology in most countries by 2030.”
- “By around 2027, new wind and solar gets cheaper than running existing coal and gas generators, particularly where carbon pricing is in place.”

Our political and economic history is rife with examples of vested interests resisting change and putting profits over public health. On 9/18/16 the MetroWest Daily News documented the excessive influence the makers of prescription painkillers have with state governments throughout the country. “The [pharmaceutical industry] lobbyists didn’t speak up in legislative hearings. Instead they were talking individually to senators and representatives one-on-one” – backed by \$880 million in campaign contributions. In the 1960’s automakers famously resisted safety features such as seat belts, airbags, and antilock brakes. The lead industry, the tobacco industry, manufacturers of flame retardants... the list goes on.

## Call to Action

State level legislation is essential, particularly because of the disastrous climate change position of the current federal administration. Call your State Representative and State Senator, and Governor Baker (617-725-4005). To find you elected officials, visit <https://malegislature.gov/Search/FindMyLegislator>. Urge them to support:

- The 100% clean energy goals in House bill [H.3395](#) and the equivalent Senate bill [S.1849](#),
- The Renewable Portfolio Standard (RPS) mandate increased as provided in House bill [H.3395](#) and Senate bill [S.1849](#),
- Carbon pricing in House bill [H.1726](#).

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<sup>10</sup> <https://www.bostonglobe.com/metro/regionals/north/2017/03/10/should-massachusetts-commit-percent-renewable-energy/EOaqZ0r6m5qwFD5R5z0wmJ/story.html>

<sup>11</sup> <https://www.bloomberg.com/company/new-energy-outlook/#form>