The New England states include Massachusetts, Connecticut, Rhode Island, New Hampshire, Vermont, and Maine, with a total population of 8 million. These states are all small in acreage but have larger populations than many western states - for instance, tiny Rhode Island has a larger population than the Dakotas, Wyoming, Montana, or Alaska.

In terms of energy policy, probably the most important thing to know about all these states is that they belong to RGGI, the Northeast/mid-Atlantic carbon trading system. That system has recently become more ambitious in its efforts to cut carbon. But each of these states has its own distinctive features.

The data from these states is really striking. There are enormous differences between the generation mix within this confined cluster of smallish states. Vermont and New Hampshire, for instance, are completely different in their generation mixes. The degree of energy diversity among these states makes integrated planning for transmission especially important. It also increases the utility of market-based solutions like the RGGI cap-and-trade system.

Massachusetts was discussed in an earlier post. With a bit of help from a Georgetown University database, here are the basics about the others.

**Connecticut.** Connecticut produces almost no renewable energy. Its generation is more or less evenly split between nuclear and gas. Since 2010, coal has been nearly pushed out of the market. The state has a renewable energy standard of 27% by 2020, which I assume it is planning to meet by buying credits from elsewhere. In 2013, the state was ranked in the top five for energy efficiency. Connecticut had a long run of Republican governors until 2010, when it flipped. Both houses of the legislature have been in Democratic hands almost continuously for the past fifteen years. In June of 2017, the Governor announced that the state was joining the U.S. Climate Alliance. He said, "[w]e remain committed to meeting the standards set forth in the Paris Climate Agreement because it is the right thing to do for not only the future of our state, but for the future of our planet."

**Maine.** Maine's power mix is dramatically different from Connecticut, primarily composed of 11.0% wind, 25% natural gas, 28.6% hydro, and 26.8% biomass. Like Connecticut, it has virtually no solar. Maine had a 40% renewable mandate for 2017, which it easily met with very steady annual growth from almost nothing since 2007. Interestingly, total energy use seems to be down significantly from its peak. As in other parts of the country, Maine's ability to sell its renewable power to other states (especially Massachusetts) is  $\frac{\text{hampered}}{\text{homega}}$  by lack of transmission capacity.

Maine's position is interesting because its legislature is narrowly divided, with a small Democratic majority in one house and a one-vote GOP majority in the other. The Governor is as outspoken a conservative as you could find anywhere, whom the Washington Post has called "unhinged." He doesn't seem to have dented the state's commitment to renewable energy.

**New Hampshire.** New Hampshire gets half its energy from nuclear, a third from natural gas, with renewables accounting for most of the rest along with a dash of coal power. There's bit of wind power (2%), but most of the renewables are biomass (8%) and hydro (6%). The renewables mandate is just below 25% by 2025. The Republicans control both houses of the legislature by decent margins (but not like the margins the GOP has in parts of the South and West). The governor's office had been held by the Democrats for over a dozen years until the current incumbent took office two years ago.

**Rhode Island.** The geographically smallest state in the Union has a renewable mandate of 16% by 2019, but it currently gets only about 4% of its power from renewables. Renewables have rapidly expanded since 2012, so the state may actually close in on its target by the end of 2019. The striking aspect of Rhode Island's energy mix is that virtually all of its other energy (94%) comes from natural gas. In 2015, the Governor signed an executive order calling for the state government to reduce energy use and get all of its energy from renewables by 2025. She also favors a state carbon tax. In 2017, according to news reports, the state legislature enacted bills providing a "10-year extension on the state's renewable energy growth program, streamlined processes for statewide solar permitting applications and connecting renewable energy installations to the power grid, and allows farmers to install a renewable energy system on [up to] 20 percent of their total farm land acreage."

**Vermont.** Vermont had a renewable mandate of 20% by 2017. The target is virtually irrelevant, however, because Vermont generates nearly all of its power from renewables: 16% wind, 5% solar (far more than any of its neighbors), 56% hydro, 23% biomass. But there's a major caveat here. Vermont used to generate a lot more power, seemingly for export, from nuclear, which cut off completely a couple of years ago. The current Governor is a Republican but seems enthusiastic about renewable energy and urged Trump to stay in the Paris Accord.

[Note: the third paragraph of this post was revised after receiving additional information.]