

NORTHEAST ENERGY EFFICIENCY PARTNERSHIPS

A Regional Perspective on Energy Efficiency Programs in the Northeast for the Massachusetts Energy Policy Review Commission

Jim O'Reilly & Josh Craft May 17, 2013

ENERGY EFFICIENCY REMAINS OUR LEAST COST, LOWEST RISK ENERGY RESOURCE



RELATIVE COST RANKING OF NEW GENERATION RESOURCES

HIGHEST LEVELIZED COST OF ELECTRICITY (2010)

Solar Thermal Solar—Distributed* Large Solar PV* Coal IGCC-CCS Solar Thermal w/incentives Coal IGCC Nuclear* Coal IGCC-CCS w/ incentives Coal IGCC w/ incentives Large Solar PV w/incentives* Pulverized Coal Nuclear w/incentives* **Biomass** Geothermal Biomass w/ incentives Natural Gas CC-CCS Geothermal w/incentives Onshore Wind* Natural Gas CC Onshore Wind w/incentives* **Biomass Co-firing** Efficiency

> LOWEST LEVELIZED COST OF ELECTRICITY (2010)

RELATIVE RISK RANKING OF NEW GENERATION RESOURCES

HIGHEST COMPOSITE RISK

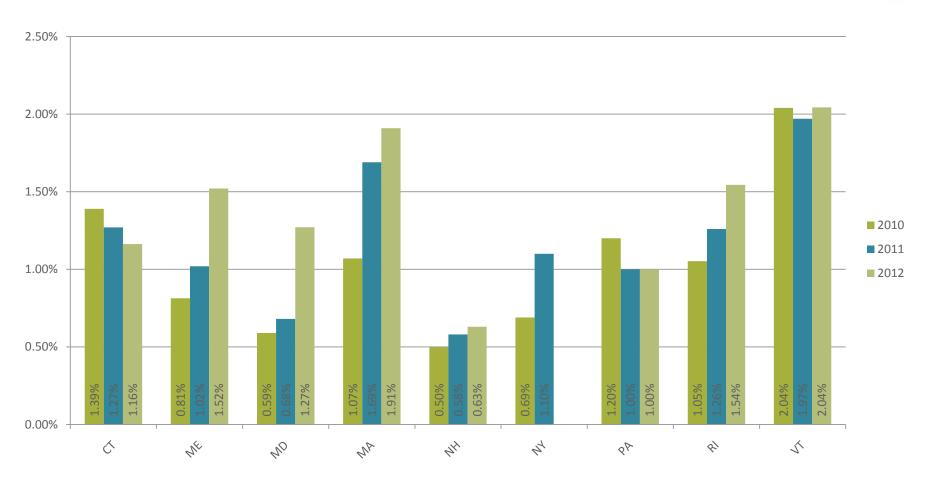
Nuclear Pulverized Coal Coal IGCC-CCS Nuclear w/ incentives Coal IGCC Coal IGCC-CCS w/ incentives Natural Gas CC-CCS **Biomass** Coal IGCC w/ incentives Natural Gas CC Biomass w/ incentives Geothermal Biomass Co-firing Geothermal w/ incentives Solar Thermal Solar Thermal w/ incentives Large Solar PV Large Solar PV w/ incentives Onshore Wind Solar—Distributed Onshore Wind w/incentives Efficiency

LOWEST COMPOSITE RISK

Comparison of the costs and risks for electricity resource options.

ELECTRIC SAVINGS FROM STATE ENERGY EFFICIENCY PROGRAMS AS A PERCENTAGE OF RETAIL SALES, 2010-2012

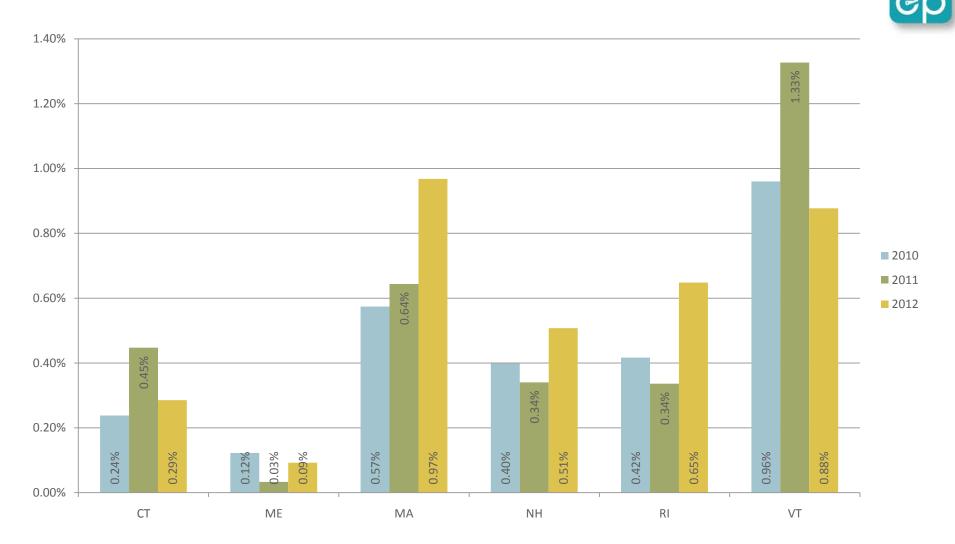




Massachusetts is on track to meet its ambitious electric energy savings goals, and is second only to Vermont in savings on a retail sales basis through 2012. The goals set for 2013-2015 are the highest in the nation.

Electricity savings are taken from state annual efficiency reports from 2010 to 2012. States without reported savings data for particular years are left blank. Electricity sales data are taken from the EIA's State Electricity Profiles website. Data included are final sales for 2010 & 2011 (2011 data are use for 2012 sales).

GAS SAVINGS FROM STATE ENERGY EFFICIENCY PROGRAMS AS A PERCENTAGE OF RETAIL SALES, 2010-2012

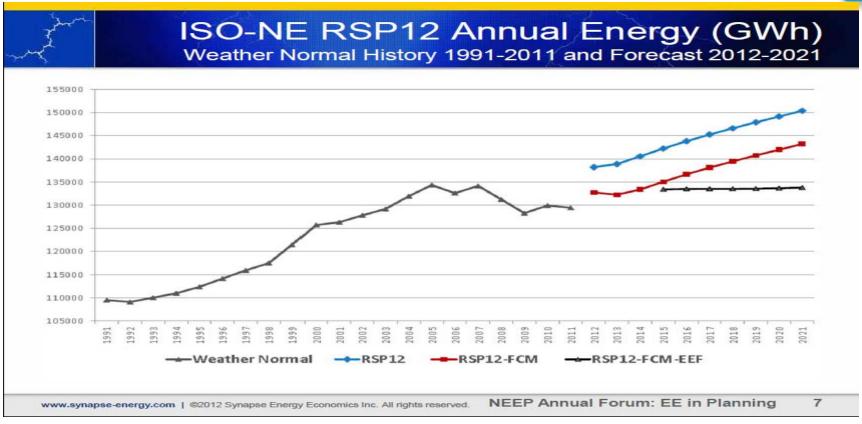


Massachusetts is also a leader in achieving natural gas energy efficiency savings, with savings increasing significantly over the last 3 years.

States that have natural energy efficiency programs are included in this chart. Natural savings are taken from state annual efficiency reports from 2010 to 2012. Natural gas sales are taken from the EIA Natural Gas Consumption by End Use site. Data included are final sales for 2010 & 2012 (2011 data are use for 2012 sales).

ENERGY EFFICIENCY WILL SIGNIFICANTLY REDUCE REGIONAL ELECTRICITY LOAD IN NEW ENGLAND

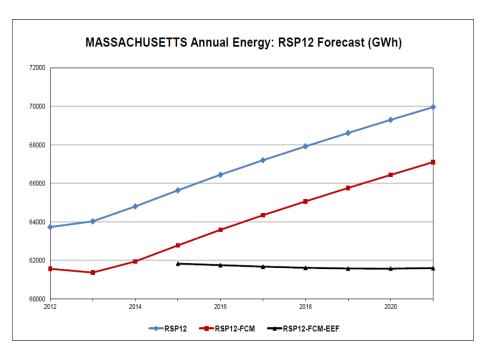


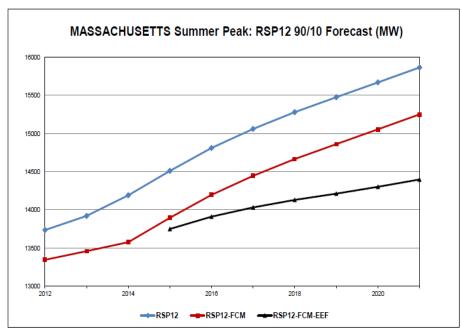


According to ISO-New England, the \$6 billion in planned investments in energy efficiency in New England will significant curb peak demand and keep electric load growth flat through 2021. This shift has already resulted in \$260 million savings from deferred transmission upgrades in NH and VT.

Paul Peterson, Synapse Energy Economics, Presentation at EM&V Forum Annual Public Meeting, December 2012, http://neep.org/uploads/EMV%20Forum/Calendars/Synapse%20EE%20in%20System%20Forecasting.pdf

MASSACHUSETTS' EE POLICY IS DRIVING REDUCTIONS IN ELECTRICITY USE AND PEAK DEMAND

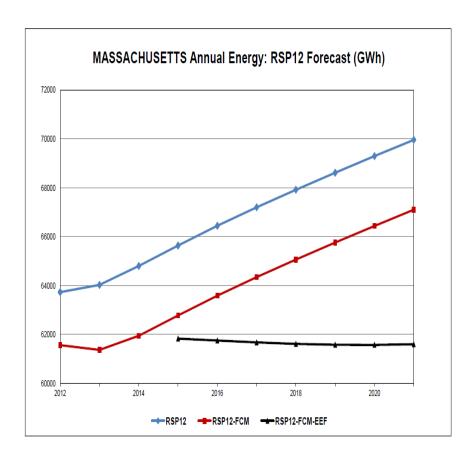


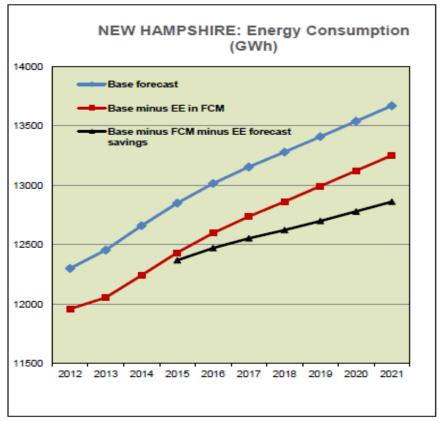


Because of its investments, Massachusetts will see their electricity consumption decline and reduce peak demand growth over the next decade. This peak demand savings will total 853 MW by 2021, similar to the capacity of electric generation plants in the state, such as the Salem Harbor coal plant or the Pilgrim Nuclear Generation station.

STATES THAT INVEST LESS IN EE WILL SEE HIGHER LEVELS OF ELECTRICITY LOAD GROWTH





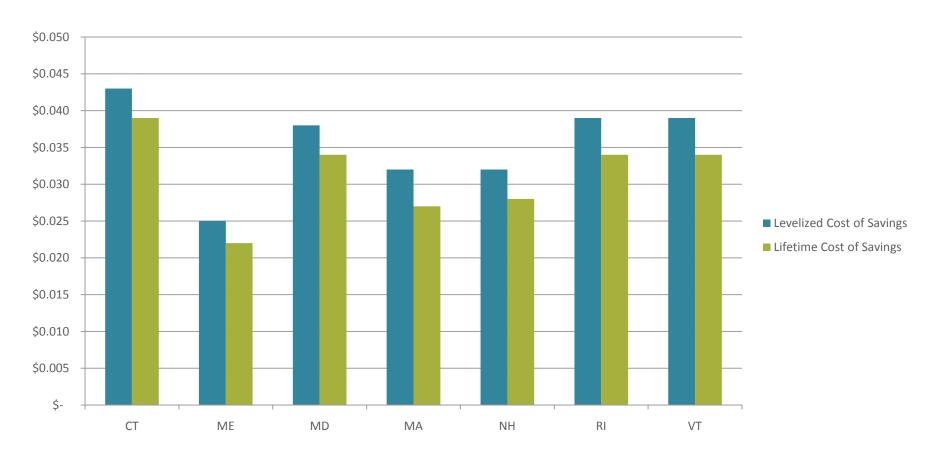


States that are not prioritizing energy efficiency investments, such as New Hampshire, however, will not see the same type of benefits as Massachusetts.

ISO New-England, "ISO on Background: Energy-Efficiency Forecast," December 14, 2012: http://www.iso-ne.com/nwsiss/pr/2012/ee forecast final 12122012 post.pdf

LEVELIZED & LIFETIME PRODUCTION COSTS OF STATE ELECTRIC EE PROGRAMS (\$/KWH), 2011



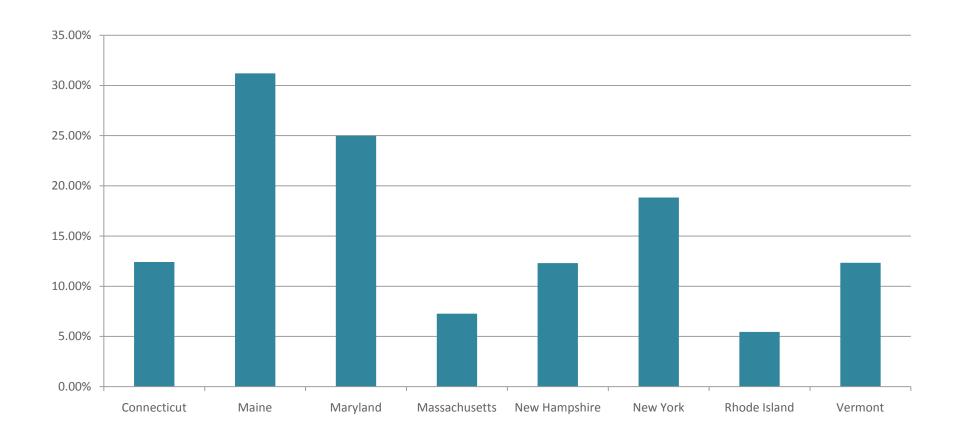


Program costs per kWh on a levelized and lifetime basis for Massachusetts' EE programs are consistent with those around the Northeast region, despite its high level of investment.

2011 data submitted from state EE programs to NEEP's Regional Energy Efficiency Database (REED). Available at http://www.neep-reed.org. NEEP makes no representation or warranty as to the accuracy, reliability or completeness of the information provided in the REED, has not independently verified the accuracy and reliability of such information, and is not responsible for any inaccuracies, errors, omissions, misinterpretations or infringement in such information.

ADMINISTRATIVE COSTS AS PERCENT OF TOTAL COSTS FOR STATE ELECTRIC EE PROGRAMS, 2011





Administrative costs for Massachusetts programs were modest in comparison with those from other programs around the region in 2011.

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