Northeast and Mid-Atlantic Energy Efficiency Efficiency Policy By the Numbers

Summer 2015
AN OVERVIEW OF ENERGY EFFICIENCY POLICY IN THE NORTHEAST STATES

The Policy Snapshot is a brief overview of energy efficiency policy by the numbers in New England, New York, and the Mid-Atlantic regions. Included are charts on the following:

- The Case for Energy Efficiency
- State Energy Efficiency Policies and Savings Goals
- Region-wide Energy Efficiency Expenditures, 2008-2016
- Electric Energy Savings a percent retail sales, 2010-2013
- Natural Gas Savings as percent retail sales, 2010-2013
- ISO-New England Energy Efficiency Forecasts

The figures in this presentation are compiled from the Regional Energy Efficiency Database (REED), program administrator plans, annual reports, U.S. EIA, ACEEE, and ISO-NE’s Energy Efficiency Forecast.
Energy Efficiency: The Least Cost Resource
Energy Efficiency is the Least Cost Resource

Image from: Lazard’s Levelized Cost of Energy Analysis-Version 8.0
Energy Efficiency is the Lowest Risk Resource
Energy Efficiency Comes with Multiple Benefits

The Multiple Benefits of Energy Efficiency

- Job Creation
- Asset Values
- Consumer Surplus
- Poverty Alleviation
- Energy Savings
- Energy Security
- Industrial Productivity
- Development Goals
- Energy Prices
- Energy Efficiency Improvement
- Climate Change Mitigation
- Resource Management
- Public Budgets
- Macro Impacts
- Health and Social Benefits
- Energy Provider Benefits

Image from: A Layer Cake of Benefits: Recognizing the Full Value of Energy Efficiency
Energy Efficiency is a Resource for Meeting Climate Change and Air Quality Goals
### Avoided Emissions Due to EE in 2013

<table>
<thead>
<tr>
<th>State</th>
<th>Avoided CO₂</th>
<th>Avoided NOx</th>
<th>Avoided SOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>190,445,065</td>
<td>93,918</td>
<td>83,484</td>
</tr>
<tr>
<td>Delaware</td>
<td>155,612,136</td>
<td>132,124</td>
<td>342,053</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>52,762,745</td>
<td>44,799</td>
<td>115,979</td>
</tr>
<tr>
<td>Maryland</td>
<td>1,131,481,071</td>
<td>960,691</td>
<td>2,487,123</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>1,003,008,796</td>
<td>494,634</td>
<td>439,675</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>46,683,098</td>
<td>23,022</td>
<td>20,463</td>
</tr>
<tr>
<td>New York</td>
<td>928,062,181</td>
<td>1098825</td>
<td>1306712</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>147,280,338</td>
<td>72,630</td>
<td>64,561</td>
</tr>
<tr>
<td>Vermont</td>
<td>77,087,413</td>
<td>38,016</td>
<td>33,793</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,732,422,842</strong></td>
<td><strong>2,958,659</strong></td>
<td><strong>4,893,843</strong></td>
</tr>
</tbody>
</table>

The avoided CO2 emissions are equivalent to taking more than 350,000 cars off of the road.
State Policies in the Region
## EFFICIENCY POLICIES: NEW ENGLAND

<table>
<thead>
<tr>
<th>State</th>
<th>Policy Type</th>
<th>Program Administrator</th>
<th>Energy Savings Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>All Cost-Effective Energy Efficiency</td>
<td>Electric &amp; Gas Utilities</td>
<td>~1.4% of electric sales (proceeding pending)</td>
</tr>
<tr>
<td>Maine</td>
<td>All Cost-Effective Energy Efficiency</td>
<td>Efficiency Maine Trust</td>
<td>~1.5% of electric sales by 2016</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>All Cost-Effective Energy Efficiency</td>
<td>Electric &amp; Gas Utilities + CLC</td>
<td>2.5% of electric &amp; 1.08% of natural gas sales annually by 2018 (proceeding pending)</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Program Funding Only</td>
<td>Electric &amp; Gas Utilities</td>
<td>No mandated savings goals, but EERS proceeding pending</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>All Cost-Effective Energy Efficiency</td>
<td>Electric &amp; Gas Utilities</td>
<td>2.6% of electric &amp; 1.1% of natural gas sales annually by 2017</td>
</tr>
<tr>
<td>Vermont</td>
<td>All Cost-Effective Energy Efficiency</td>
<td>Energy Efficiency Utility</td>
<td>2.1% of electric sales annually by 2017</td>
</tr>
</tbody>
</table>
# EFFICIENCY POLICIES: NY AND MID-ATLANTIC

<table>
<thead>
<tr>
<th>State</th>
<th>Policy Type</th>
<th>Program Administrator</th>
<th>Energy Savings Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>All Cost-Effective Energy Efficiency</td>
<td>Utilities+ Sustainable Energy Utility</td>
<td>~In Progress</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>Efficiency Utility Goals</td>
<td>Sustainable Energy Utility</td>
<td>N/A</td>
</tr>
<tr>
<td>Maryland</td>
<td>Energy Efficiency Resource Standard</td>
<td>Electric and Gas Utilities</td>
<td>~2.0% of electric sales in 2020</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Efficiency Funding</td>
<td>Office of Clean Energy + Utilities</td>
<td>No mandated savings goals</td>
</tr>
<tr>
<td>New York</td>
<td>Energy Efficiency Portfolio Standard</td>
<td>NYSERDA + Utilities</td>
<td>(proceeding pending, 15-M-0252)</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Energy Efficiency Resource Standard</td>
<td>Electric Utilities</td>
<td>~0.8% of electric sales annually through 2021, but will likely be adjusted to account for 111(d) impacts</td>
</tr>
</tbody>
</table>
REGION’S LATEST DEVELOPMENTS

LEADING THE PACK

<table>
<thead>
<tr>
<th></th>
<th>2015 % Retail Sales</th>
<th>Electric Savings</th>
<th>Gas Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts</td>
<td>2.6%</td>
<td>1.19%</td>
<td></td>
</tr>
<tr>
<td>Rhode Island</td>
<td>2.5%</td>
<td>1.0%</td>
<td></td>
</tr>
<tr>
<td>Vermont</td>
<td>2.2%</td>
<td>1.0%</td>
<td></td>
</tr>
</tbody>
</table>

NOTABLE TRENDS

- **Geo-targeting** efficiency measures and distributed generation as a substitute for T&D upgrades
- Incorporating expected **111(d) compliance** into cost effectiveness screening
- Shareholder incentives targeting **peak demand** savings goals
- **Energy Transformation** portfolios in Vermont, **fuel neutrality** in New York
- **Market segmentation** within programs
Efficiency by the Numbers
AN OVERVIEW OF THE REGIONAL ENERGY EFFICIENCY DATABASE (REED)

Welcome to the Regional Energy Efficiency Database (REED).

REED serves as a dashboard for the consistent reporting of electric and natural gas energy efficiency program energy and demand savings and associated costs, avoided emissions, and job impacts across the Northeast and Mid-Atlantic region.

REED is a project of NEEP's Regional Evaluation, Measurement and Verification Forum (EMBV Forum) which is guided by a Steering Committee comprised of energy regulatory commissioners and air quality and state energy office directors and representatives from across the region. REED is based on the EMBV Forum's Common Statewide Energy Efficiency Reporting Guidelines, which were adopted by the Forum Steering Committee in 2010. The Guidelines provide state-level reporting templates and process recommendations for improving the consistency of energy efficiency reporting across Forum jurisdictions.

REED includes program year 2013-2011 energy efficiency data from the following ten states: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont. The complementary REED Program Year 2012 Annual Report and REED Program Year 2011 Annual Report provide an overview of the high-level impacts of energy efficiency programs at the regional level as well as comparisons across states that help increase our understanding of similarities and differences in results across programs by type, sector and state.

If you have any questions or comments about REED please email REED Manager, Patrick Wallace, at reed@neep.org.
AN OVERVIEW OF THE REGIONAL ENERGY EFFICIENCY DATABASE (REED)

**What it is:** REED serves as a dashboard for the consistent reporting of electric and natural gas energy efficiency program energy and demand savings and associated costs, avoided emissions, and job impacts across the Northeast and Mid-Atlantic regions.

**REED’s Purpose:** Promote transparency and consistency in reporting of EE impacts across the region to increase the credibility and understanding of the EE resource to support state and regional energy, economic and environmental policies.

Visit REED at [www.neep-reed.org](http://www.neep-reed.org)
Energy Efficiency investments in New England, New York, and the Mid-Atlantic states continue to hover around $2 billion per year in the region. Budgets increased significantly, though they have levelled off in many states.

*Expenditures include all electric and natural gas ratepayer funding and funding from RGGI and wholesale markets like the Forward Capacity Market. Data is taken from a number of sources, including NEEP’s REED database, EIA File 861, and ISO-New England’s EE Forecast. 2007 to 2013 are year-end reported data while 2014 to 2016 expenditures are forecasted data that are subject to change.
Efficiency investments are rising in many states in New England and in the Mid-Atlantic. The next generation of three year plans continues the trend towards robust investments in energy efficiency. Combined efficiency program investments per-capita will average approximately $45 in 2016.

Expenditures include all electric and natural gas ratepayer funding and funding from RGGI and wholesale markets like the Forward Capacity Market. 2010-2013 are year-end reported data while 2014-16 expenditures are forecasted data that are subject to change. Population figures are taken from the U.S. Census Bureau via Google, and 2014 population figures used for 2014-16.
Policy has driven energy efficiency to make up a growing portion of our electricity demand, with leading states achieving savings of about 2 percent of annual electric sales.

Electricity savings are taken from NEEP’s REED Database, EIA File 861, and the ISO New England EE Forecast. Electricity sales data are taken from the EIA’s State Electricity Profiles website. New York and New Jersey figures for 2013 are taken from ACEEE.
While natural gas programs are more modest, leading states aim to achieve savings of about 1 percent of retail sales.

Natural gas savings are taken from NEEP’s REED Database, EIA File 861, and the ISO New England EE Forecast. Natural gas sales data are taken from the EIA Natural Gas Consumption by End Use site. New York and Jersey 2013 savings figures are from ACEEE.
EE SAVINGS ARE CUMULATIVE

Savings as a percent of sales figures (like those in the previous slides) are generally calculated on an annual basis, but the savings from energy efficiency programs accumulate over time.
ENERGY EFFICIENCY WILL SIGNIFICANTLY REDUCE TRANSMISSION AND SYSTEM COSTS

According to ISO-New England, the nearly $6 billion in planned investments in energy efficiency will significantly curb peak demand and keep electric load growth flat through 2021. These reductions helped create $400 million savings from deferred transmission upgrades.

...BUT NOT ALL STATES WILL BENEFIT EQUALLY
COMPARING MASSACHUSETTS’ AND NEW HAMPSHIRE’S PROJECTED LOAD GROWTH

The forecast finds that states that aggressively pursue energy efficiency will see their electricity loads fall significantly. States with lower levels of investment, like New Hampshire, will not benefit as greatly.

...AND A SIMILAR STORY FOR PEAK DEMAND

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