



NORTHEAST ENERGY EFFICIENCY PARTNERSHIPS

Regional Energy Efficiency Database (REED) Preview

Regional EM&V Forum
Annual Public Meeting
December 12, 2012

Regional Energy Efficiency Database (REED) Overview



Project Description: Database builds on Forum [Common Statewide EE Reporting Guidelines](#) adopted by Steering Committee in Dec 2010

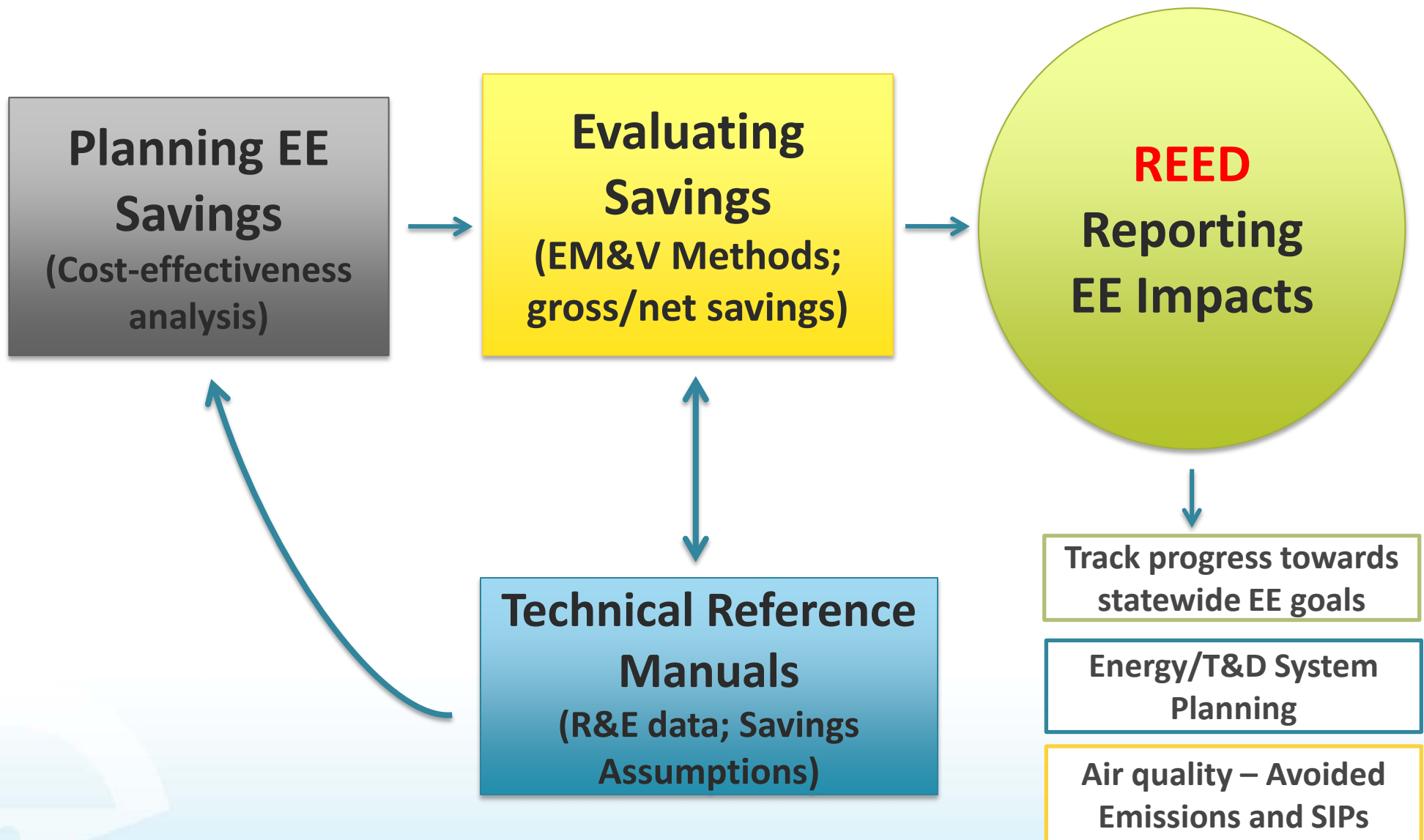
Final product: State data collection tool, regional public EE database, and interactive reporting of data. Modules include:

- ✓ Background EE Info
- ✓ Annual incremental energy savings
- ✓ Lifetime energy savings
- ✓ Peak demand savings (summer/winter)
- ✓ Expenditures, cost of saved energy
- ✓ Avoided emissions
- ✓ Job impacts

Project subcommittee members: state entities (SEOs, PUCs, PAs, air quality reps), ISO/RTO staff

EM&V FORUM

Addresses Key Areas of EM&V Cycle



REED Overview: Goal, Audiences and Uses



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

Audiences and Uses:

1. State PUC/SEO and PA benchmarking EE programs (program/policy design, effectiveness)
2. State DEP/regional EPA - air quality reporting/planning
3. ISO/RTO system/transmission planning
4. Stakeholder ability to compare, aggregate multi-state or sub-region EE impacts

REED Overview: Subcommittee Key Objectives and Criteria



1. REED EE data should be consistent with data collected by ISOs/RTOs to support long-term EE (in the interest of consistent EE data reporting to meet multiple policies).
2. Avoid duplication of EE reporting, and minimize reporting burden of states and/or program administrators in populating REED.
3. Provide flexibility in building REED to accommodate for potential future changes, yet proceed with REED implementation as soon as possible.

REED Outputs/Reports



Reporting Titles with descriptions of filter options (all by state or sub-region)
Cost of Saved Energy (Lifetime Cost/kWh or Cost/therm)
Total Peak Demand Savings (by Total, by Sector or by program, and either net or gross)
Total Annual Electric Savings (by Total, by Sector or by program, and either net or gross)
Total Lifetime Electric Savings (by Total, by Sector or by program, and either net or gross)
Total Annual Gas Savings (by Total, by Sector or by program, and either net or gross)
Total Lifetime Gas Savings (By Total, by Sector or by program, and either net or gross)
Total Annual Expenditures and as % of Total Costs (By Category, electric and/or gas)
Savings as a % of Utility kWh Sales (user to select electric and/or gas)
Total Avoided Emissions (NOx, SO2, CO2)
Total Jobs Created (Direct and Indirect) - from electric and/or gas programs



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Welcome to the Regional Energy Efficiency Database (REED).

If you are accessing the website to enter state energy efficiency data, please log in using the link in the upper right corner, and you will be taken to the **FORMS** page.

In 2010, the [Regional Evaluation Measurement & Verification \(EM&V\) Forum](#) developed [Common Statewide Energy Efficiency Reporting Guidelines](#) with state-level reporting templates and several process recommendations that provide for consistent reporting of electric and natural gas energy efficiency program energy and demand savings and associated costs, avoided emissions, and job impacts across the region.

REED data is provided by designated entities from the following jurisdictions: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, Maryland, New York, Delaware and the District of Columbia. REED is guided by a Steering Committee comprised of energy regulatory Commissioners, air quality representatives, and State Energy Office representatives from across the region.

If you have any questions about REED, please contact REED Manager Cecily McChalicher at cmcchalicher@neep.org.

For more information about NEEP, please view the [NEEP website](#).





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- Energy Savings
- Demand Savings
- Avoided Emissions
- Savings as Percent of Sales
- Total Annual Expenditures
- Expenditure

Region	State	Program Sector	Program Type	Gross Annual Energy Savings Gas Meter Level (therms)
ISO-NE	Connecticut	Commercial/Industrial	Retrofit Large - C&I	~750K
		Residential	Lost Opp - Residential	~150K
	Vermont	Commercial/Industrial	Retrofit Large - C&I	~600K
		Residential	Lost Opp - Residential	~250K
PJM	Maryland	Commercial/Industrial	Retrofit Large - C&I	~100K
		Residential	Lost Opp - Residential	~700K

Energy Savings Values

Gross Annual Energy Savings Gas Meter Level (therms)

Calendar Year

- 2009
- 2010
- 2011

State

- (All)
- Connecticut
- Maine
- Maryland
- Massachusetts
- New Hampshire
- Rhode Island
- Vermont

Program Sector

- (All)
- Commercial/Industrial

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[Avoided Emissions](#)
[Savings as Percent of Sales](#)
[Total Annual Expenditures](#)
[Expenditure](#)

Region	State	Program Sector	Program Type	Gross Annual Energy Savings Gas Meter Level (therms)
ISO-NE	Connecticut	Commercial/Industrial	Retrofit Large - C&I	~380K
		Residential	Lost Opp - Residential	~120K
	Vermont	Commercial/Industrial	Retrofit Large - C&I	~380K
		Residential	Lost Opp - Residential	~120K
PJM	Maryland	Commercial/Industrial	Retrofit Large - C&I	~380K
		Residential	Lost Opp - Residential	~120K

Energy Savings Values

Gross Annual Energy Savings Gas Meter Level (therms): **797,907**

Calendar Year

Keep Only
 Exclude

Program Sector: **Commercial/Industrial**
 Program Type: **Retrofit Large - C&I**
 Region: **ISO-NE**
 State: **Connecticut**
 Gross Annual Energy Savings Gas Meter Level (therms): **797,907**

Maryland
 Massachusetts
 New Hampshire
 Rhode Island
 Vermont

Program Sector
 (All)
 Commercial/Industrial

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Energy Savings

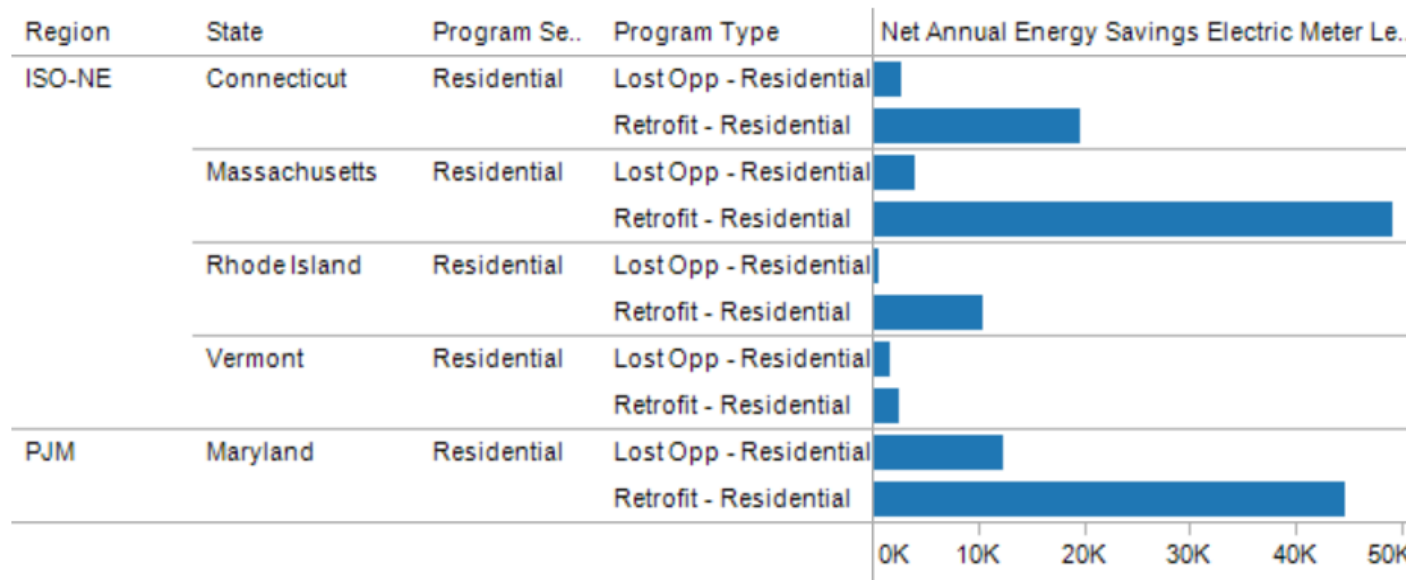
Demand Savings

Avoided Emissions

Savings as Percent of Sales

Total Annual Expenditures

Expenditure



Energy Savings Values

Net Annual Energy Savings Electric Meter Level (MWh)

Calendar Year

- 2009
- 2010
- 2011

State

- (All)
- Connecticut
- Maryland
- Massachusetts
- New Hampshire
- Rhode Island
- Vermont

Program Sector

- (All)
- Residential

Program Type

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- Energy Savings
- Demand Savings
- Avoided Emissions
- Savings as Percent of Sales
- Total Annual Expenditures
- Expenditure

Region	State	Program Se..	Program Type	Net A
ISO-NE	Connecticut	Residential	Lost Opp - Residential	~2K
			Retrofit - Residential	~5K
	Massachusetts	Residential	Lost Opp - Residential	~2K
			Retrofit - Residential	~5K
Rhode Island	Residential	Lost Opp - Residential	~1K	
		Retrofit - Residential	~10K	
Vermont	Residential	Lost Opp - Residential	~1K	
		Retrofit - Residential	~2K	
PJM	Maryland	Residential	Lost Opp - Residential	~12K
			Retrofit - Residential	~45K

Program Sector: **Residential**
 Program Type: **Retrofit - Residential**
 Region: **ISO-NE**
 State: **Rhode Island**
 Net Annual Energy Savings Electric Meter Level (MWh): **10,376**

Keep Only
 Exclude
 [Filter Icon]

- State**
- (All)
 - Connecticut
 - Maryland
 - Massachusetts
 - New Hampshire
 - Rhode Island
 - Vermont
- Program Sector**
- (All)
 - Residential
- Program Type**

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Summary Underlying

Showing 10 out of 10 rows.
Download all rows as a text file

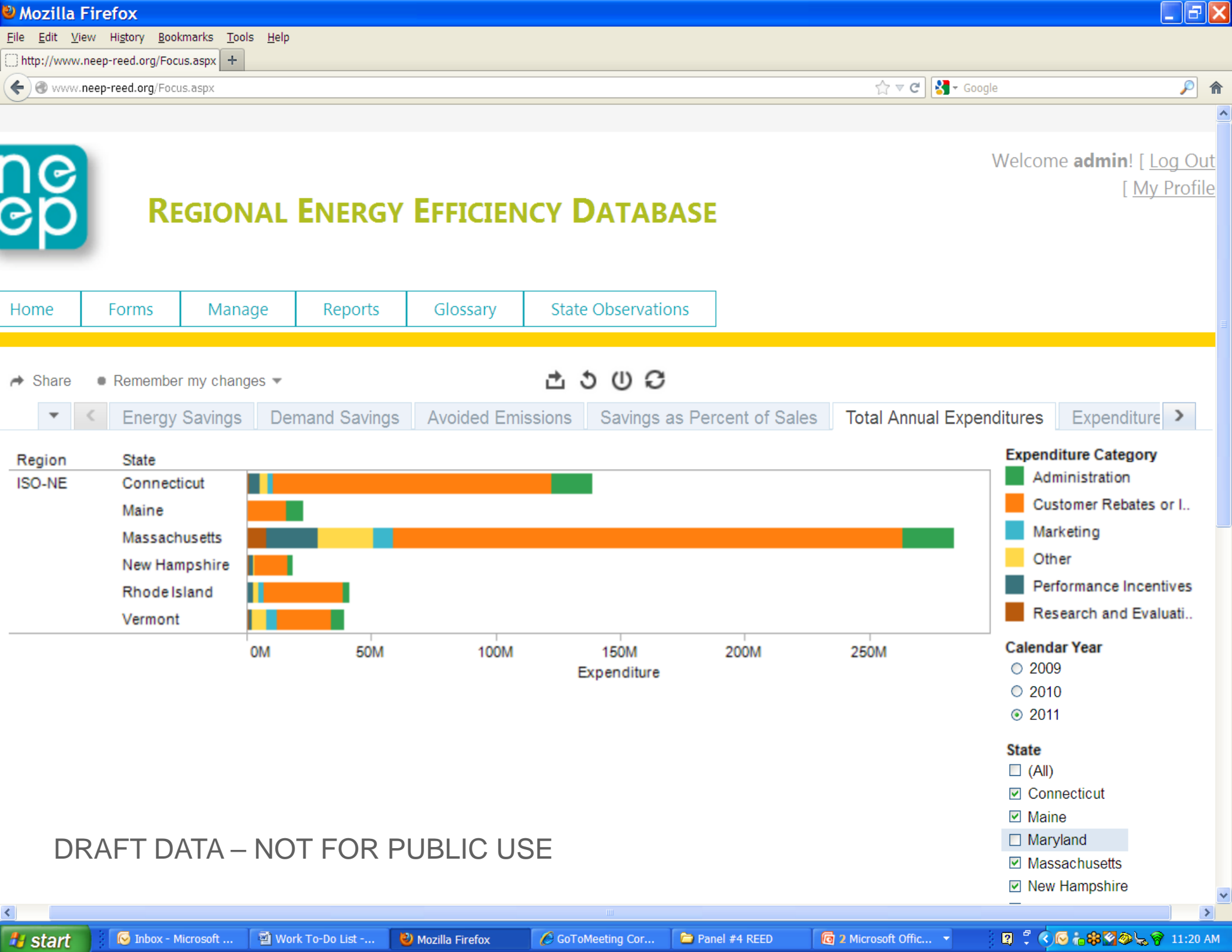
Table with 7 columns: Program Sector, Program Type, Region, State, Energy Savings Values, and SUM(Measure Choice - Energy Savings). It contains 10 rows of data for residential energy savings programs across various states like Vermont, Massachusetts, Connecticut, Maryland, and Rhode Island.

Showing 10 out of 10 rows.
Download all rows as a text file

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Net Annual Energy Savings Electric Meter Level (MWh)	Net Annual Energy Savings Gas Meter Level (therms)	Net Annual Energy Savings Other (MMBTU)	Net Lifetime Energy Savings Electric Meter Level (MWh)	Net Lifetime Energy Savings Gas Meter Level (therms)	Net Lifetime Energy Savings Other (MMBTU)	Program Sector	Program Type	Region	Reporting Period	State
Null	200,357	0	Null	3,497,623	0	Residential	Retrofit - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
Null	35,947	0	Null	898,681	0	Residential	Lost Opp - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
Null	14,336	0	Null	286,720	0	Residential	Lost Opp - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
Null	248,919	0	Null	4,280,444	0	Residential	Retrofit - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
Null	24,557	0	Null	613,952	0	Residential	Lost Opp - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
Null	176,155	0	Null	3,193,688	0	Residential	Retrofit - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
Null	13,476	0	Null	269,517	0	Residential	Lost Opp - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
Null	48,890	0	Null	1,222,256	0	Residential	Lost Opp - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
Null	7,340	0	Null	146,801	0	Residential	Lost Opp - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
2,547.385	Null	Null	42,636.843	Null	Null	Residential	Lost Opp - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
16,210.675	Null	Null	158,853.536	Null	Null	Residential	Retrofit - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
296.13	Null	Null	3,451.573	Null	Null	Residential	Lost Opp - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut
3,540.534	Null	Null	31,174.502	Null	Null	Residential	Retrofit - Residential	ISO-NE	12/31/2011 12:00:00 AM	Connecticut



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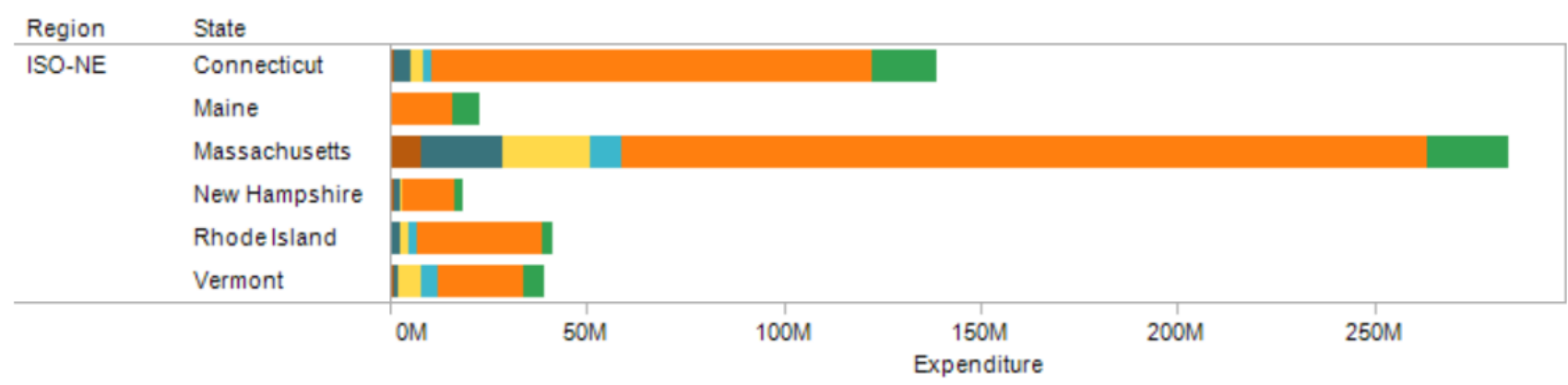
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- Energy Savings
- Demand Savings
- Avoided Emissions
- Savings as Percent of Sales
- Total Annual Expenditures
- Expenditure



Expenditure Category

- Administration
- Customer Rebates or I..
- Marketing
- Other
- Performance Incentives
- Research and Evaluati..

Calendar Year

- 2009
- 2010
- 2011

State

- (All)
- Connecticut
- Maine
- Maryland
- Massachusetts
- New Hampshire

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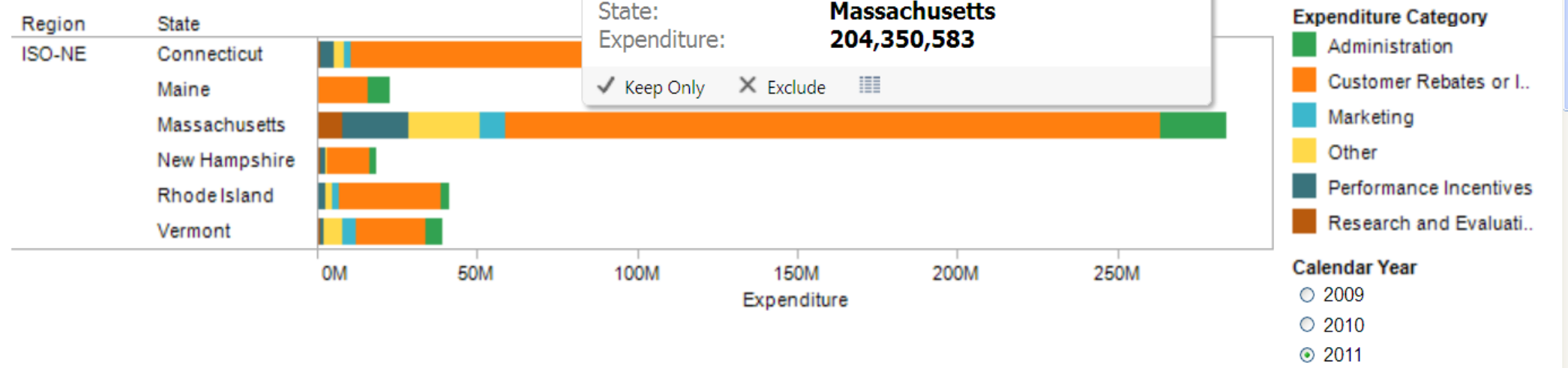
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Energy Savings Demand Savings Average Expenditures Expenditure



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[Avoided Emissions](#)
[Savings as Percent of Sales](#)
[Total Annual Expenditures](#)
[Expenditures as Percent of Total C](#)

Region	State	Program Sector	Program Type	Gross Summer Demand Savings Meter Level (MW)
ISO-NE	Connecticut	Commercial/Industrial	Retrofit Small - C&I	~5.0
	Maine	Commercial/Industrial	Retrofit Small - C&I	~8.5
	New Hampshire	Commercial/Industrial	Retrofit Small - C&I	~2.0
	Rhode Island	Commercial/Industrial	Retrofit Small - C&I	~4.0
	Vermont	Commercial/Industrial	Retrofit Small - C&I	~7.5
PJM	Maryland	Commercial/Industrial	Retrofit Small - C&I	~7.0

Demand Savings Values
 Gross Summer Demand Savings Meter Level (MW)

Calendar Year
 2009
 2010
 2011

State
 (All)
 Connecticut
 Maine
 Maryland
 Massachusetts
 New Hampshire
 Rhode Island
 Vermont

Program Sector
 (All)
 Commercial/Industrial

Program Type
 (All)
 0
 Demand Response
 Education

Each jurisdiction's definition of peak demand varies. Examples of peak demand definitions include the following:
 - Demand coincident with utility system peak load
 - Demand coincident with ISO/RTO summer or winter peak, or according to performance hours defined by wholesale capacity markets

REED allows for reporting of both summer and winter net and gross peak demand savings, however, not all states report all parameters.

See the **State Observations** pages for more detailed information.

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[Total Annual Expenditures](#)
[Expenditures as Percent of Total C](#)

Region	State	Program Sector	Program Type	Gross Summer Demand Savings Meter Level (MW)	Demand Savings Values
ISO-NE	Connecticut	Commercial/Industrial	Retrofit Small - C&I		Gross Summer Demand Savings Meter Level (MW)
	Maine	Commercial/Industrial	Retrofit Small - C&I		
	New Hampshire	Commercial/Industrial	Retrofit Small - C&I		
	Rhode Island	Commercial/Industrial	Retrofit Small - C&I		
	Vermont	Commercial/Industrial	Retrofit Small - C&I		
PJM	Maryland	Commercial/Industrial	Retrofit Small - C&I	0	

Keep Only
 Exclude

Program Sector: **Commercial/Industrial**
 Program Type: **Retrofit Small - C&I**
 Region: **ISO-NE**
 State: **Connecticut**
 Demand Savings Values: **Gross Summer Demand Savings Meter Level (MW)**
 Measure Choice - Demand Savings: **4.829**

Each jurisdiction's definition of peak demand varies. Examples of peak demand definition:

- Demand coincident with utility system peak load
- Demand coincident with ISO/RTO summer or winter peak, or according to performance hours defined by wholesale capacity markets

REED allows for reporting of both summer and winter net and gross peak demand savings, however, not all states report all parameters.

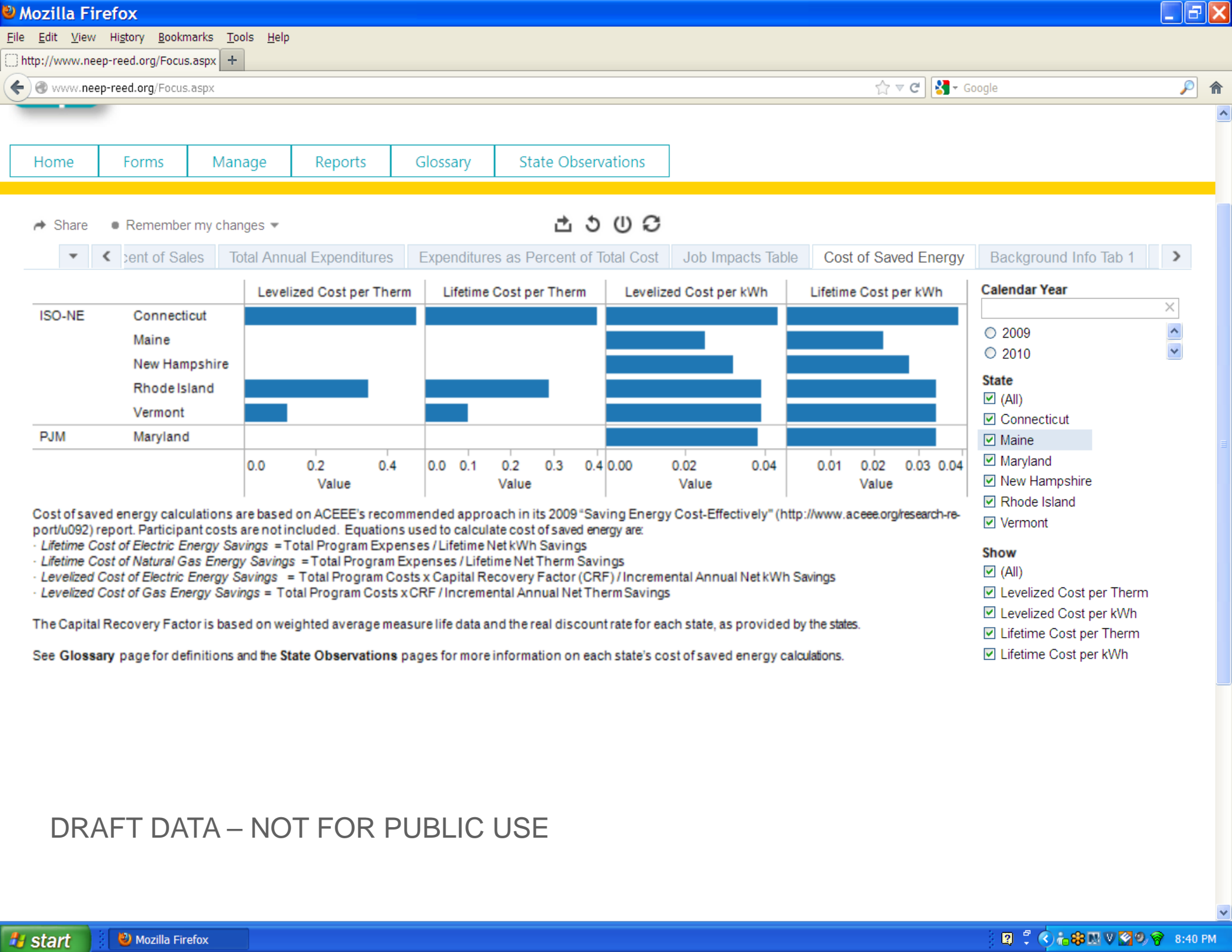
See the **State Observations** pages for more detailed information.

Maryland
 Massachusetts
 New Hampshire
 Rhode Island
 Vermont

Program Sector
 (All)
 Commercial/Industrial

Program Type
 (All)
 0
 Demand Response
 Education

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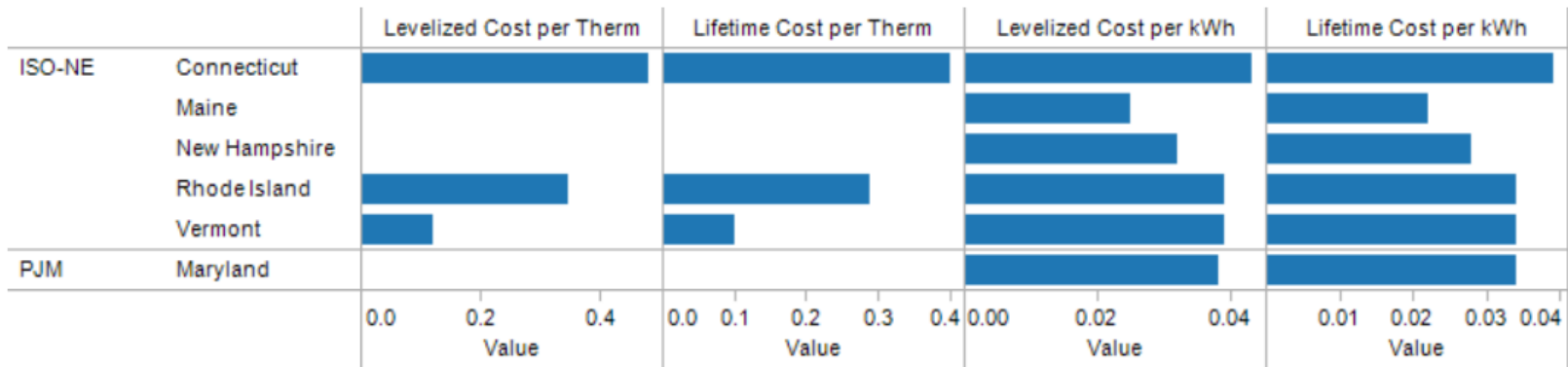


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Percent of Sales Total Annual Expenditures Expenditures as Percent of Total Cost Job Impacts Table Cost of Saved Energy Background Info Tab 1



Calendar Year

2009

2010

State

(All)

Connecticut

Maine

Maryland

New Hampshire

Rhode Island

Vermont

Show

(All)

Levelized Cost per Therm

Levelized Cost per kWh

Lifetime Cost per Therm

Lifetime Cost per kWh

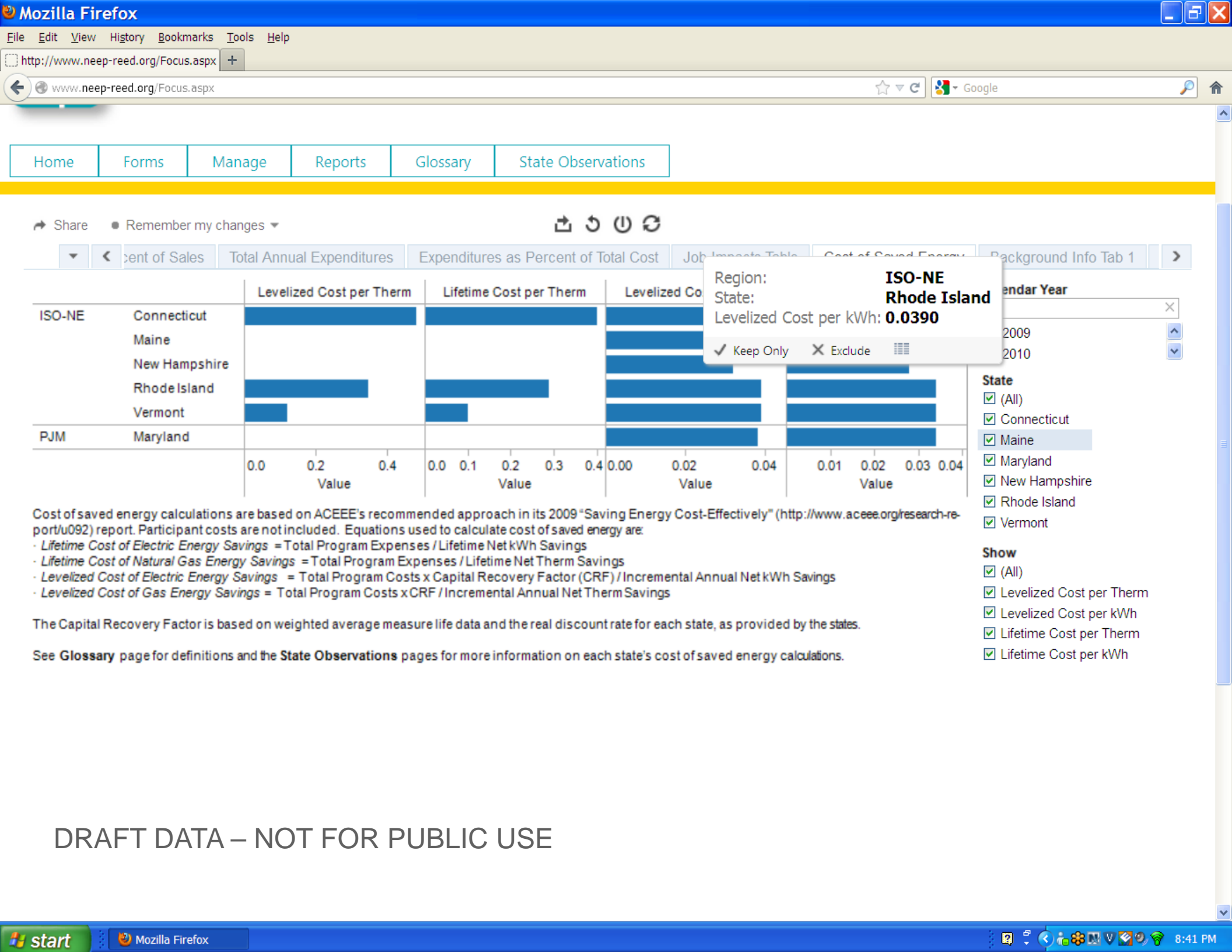
Cost of saved energy calculations are based on ACEEE's recommended approach in its 2009 "Saving Energy Cost-Effectively" (<http://www.aceee.org/research-report/u092>) report. Participant costs are not included. Equations used to calculate cost of saved energy are:

- *Lifetime Cost of Electric Energy Savings* = Total Program Expenses / Lifetime Net kWh Savings
- *Lifetime Cost of Natural Gas Energy Savings* = Total Program Expenses / Lifetime Net Therm Savings
- *Levelized Cost of Electric Energy Savings* = Total Program Costs x Capital Recovery Factor (CRF) / Incremental Annual Net kWh Savings
- *Levelized Cost of Gas Energy Savings* = Total Program Costs x CRF / Incremental Annual Net Therm Savings

The Capital Recovery Factor is based on weighted average measure life data and the real discount rate for each state, as provided by the states.

See [Glossary](#) page for definitions and the [State Observations](#) pages for more information on each state's cost of saved energy calculations.

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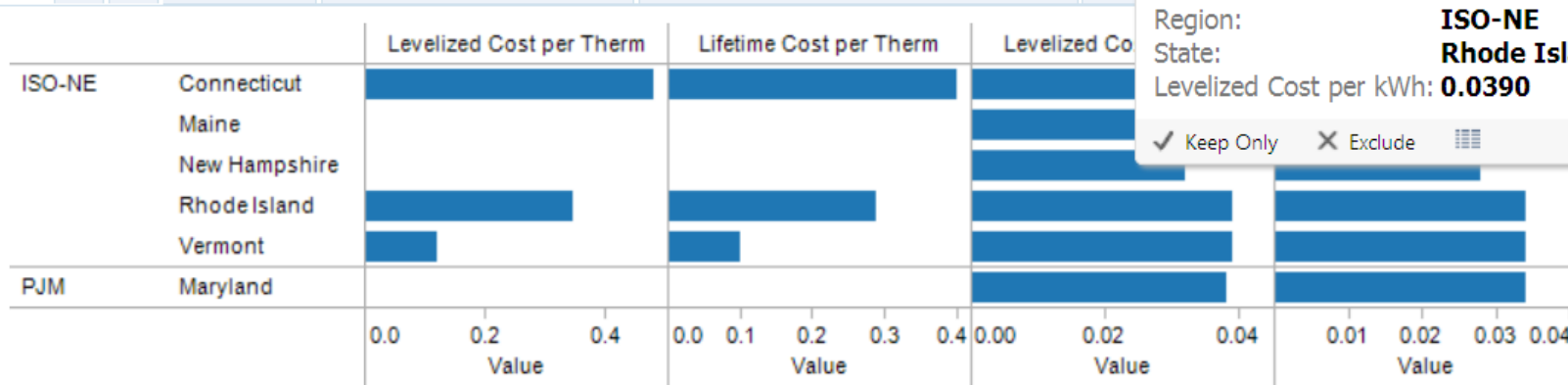


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Percent of Sales Total Annual Expenditures Expenditures as Percent of Total Cost Job Impacts Table Cost of Saved Energy Background Info Tab 1



Region: ISO-NE
 State: Rhode Island
 Levelized Cost per kWh: 0.0390
 Keep Only Exclude

End Year: 2009
 2009
 2010

State

- (All)
- Connecticut
- Maine
- Maryland
- New Hampshire
- Rhode Island
- Vermont

Show

- (All)
- Levelized Cost per Therm
- Levelized Cost per kWh
- Lifetime Cost per Therm
- Lifetime Cost per kWh

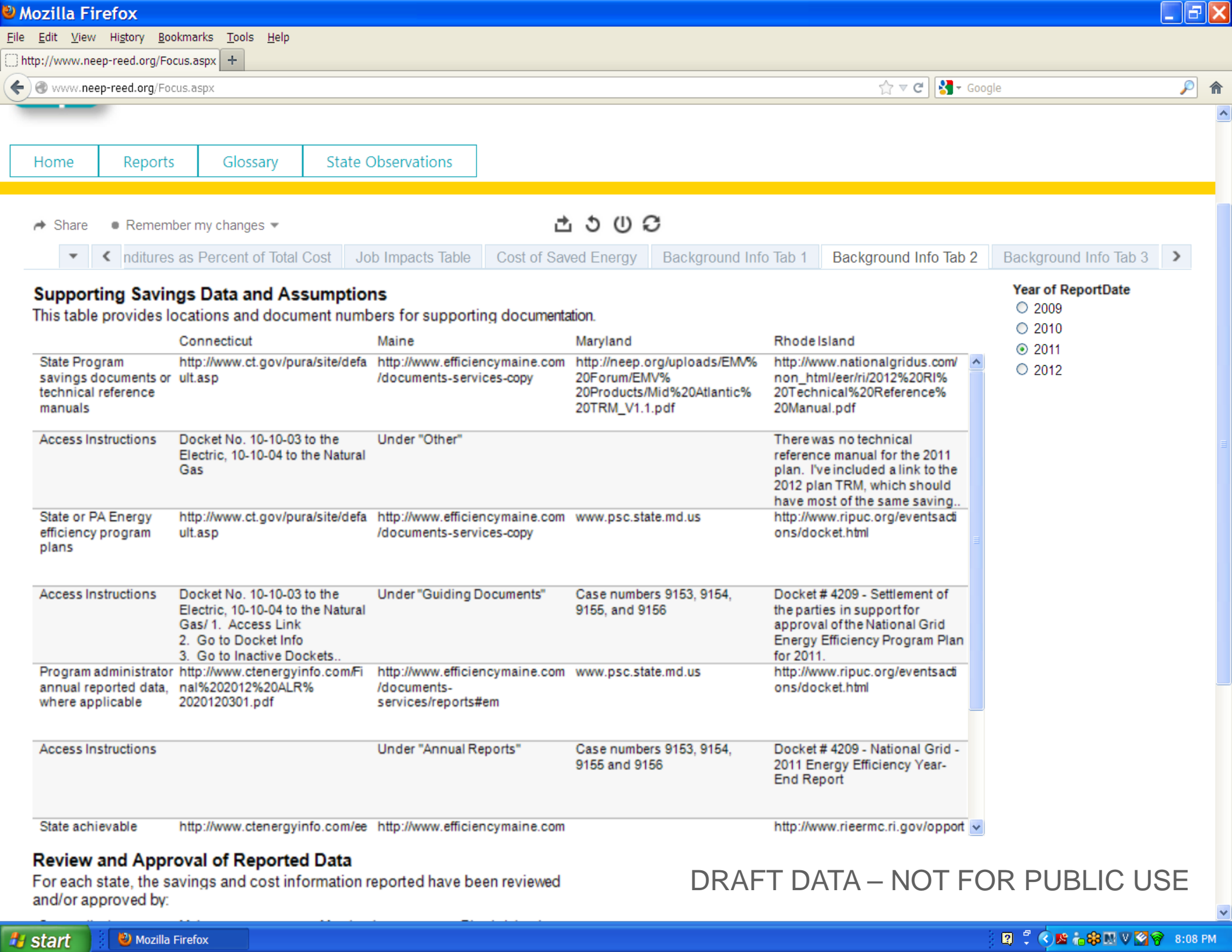
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- Lifetime Cost of Electric Energy Savings = Total Program Expenses / Lifetime Net kWh Savings
- Lifetime Cost of Natural Gas Energy Savings = Total Program Expenses / Lifetime Net Therm Savings
- Levelized Cost of Electric Energy Savings = Total Program Costs x Capital Recovery Factor (CRF) / Incremental Annual Net kWh Savings
- Levelized Cost of Gas Energy Savings = Total Program Costs x CRF / Incremental Annual Net Therm Savings

The Capital Recovery Factor is based on weighted average measure life data and the real discount rate for each state, as provided by the states.

See Glossary page for definitions and the State Observations pages for more information on each state's cost of saved energy calculations.

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nditures as Percent of Total Cost Job Impacts Table Cost of Saved Energy Background Info Tab 1 Background Info Tab 2 Background Info Tab 3

Supporting Savings Data and Assumptions

This table provides locations and document numbers for supporting documentation.

	Connecticut	Maine	Maryland	Rhode Island
State Program savings documents or technical reference manuals	http://www.ct.gov/pura/site/default.asp	http://www.energymaine.com/documents-services-copy	http://neep.org/uploads/EMV%20Forum/EMV%20Products/Mid%20Atlantic%20TRM_V1.1.pdf	http://www.nationalgridus.com/non_html/ee/ri/2012%20RI%20Technical%20Reference%20Manual.pdf
Access Instructions	Docket No. 10-10-03 to the Electric, 10-10-04 to the Natural Gas	Under "Other"		There was no technical reference manual for the 2011 plan. I've included a link to the 2012 plan TRM, which should have most of the same saving..
State or PA Energy efficiency program plans	http://www.ct.gov/pura/site/default.asp	http://www.energymaine.com/documents-services-copy	www.psc.state.md.us	http://www.ripuc.org/eventsactions/docket.html
Access Instructions	Docket No. 10-10-03 to the Electric, 10-10-04 to the Natural Gas/ 1. Access Link 2. Go to Docket Info 3. Go to Inactive Dockets..	Under "Guiding Documents"	Case numbers 9153, 9154, 9155, and 9156	Docket # 4209 - Settlement of the parties in support for approval of the National Grid Energy Efficiency Program Plan for 2011.
Program administrator annual reported data, where applicable	http://www.ctenergyinfo.com/Final%202012%20ALR%2020120301.pdf	http://www.energymaine.com/documents-services/reports#em	www.psc.state.md.us	http://www.ripuc.org/eventsactions/docket.html
Access Instructions		Under "Annual Reports"	Case numbers 9153, 9154, 9155 and 9156	Docket # 4209 - National Grid - 2011 Energy Efficiency Year-End Report
State achievable	http://www.ctenergyinfo.com/ee	http://www.energymaine.com		http://www.riermc.ri.gov/opport

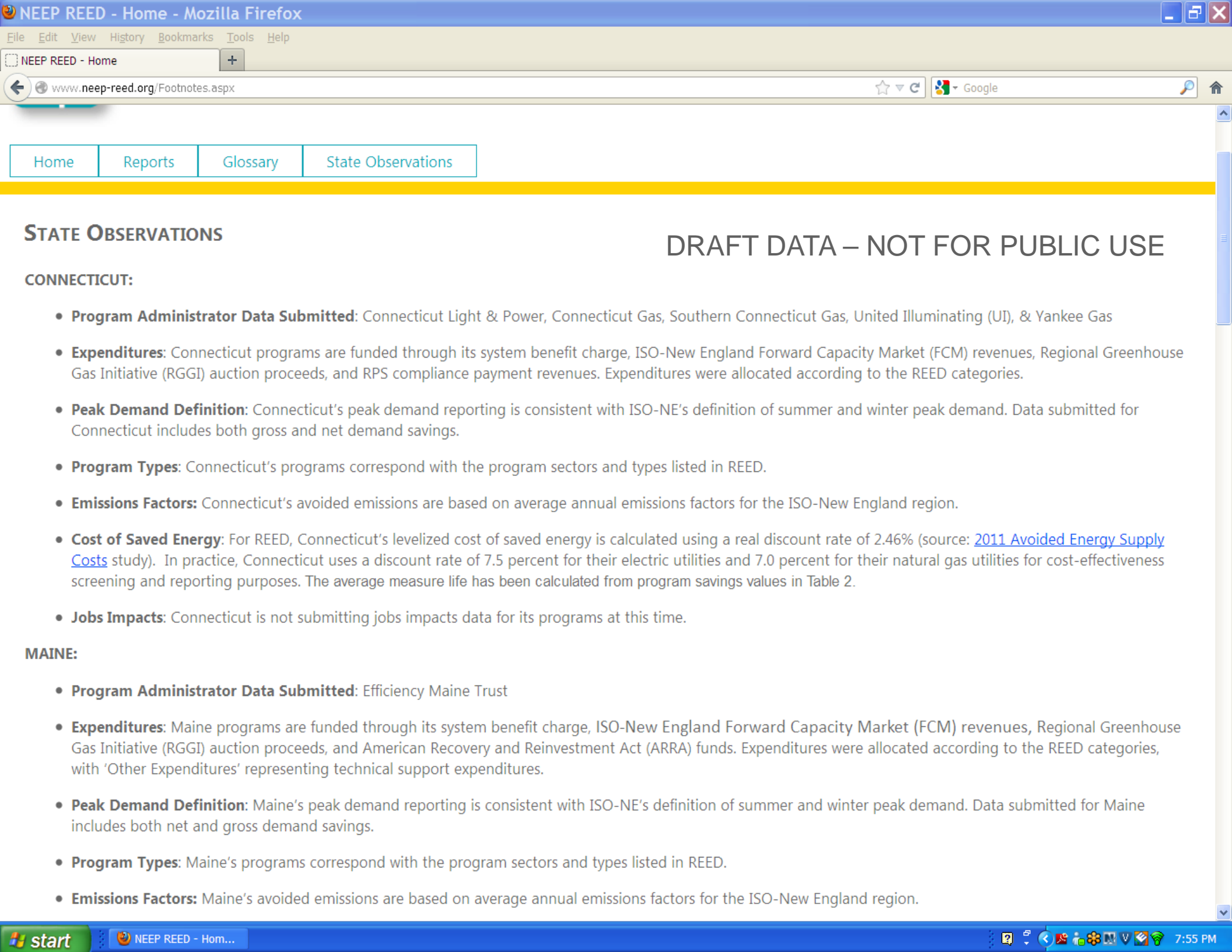
Year of ReportDate

- 2009
- 2010
- 2011
- 2012

Review and Approval of Reported Data

For each state, the savings and cost information reported have been reviewed and/or approved by:

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STATE OBSERVATIONS

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CONNECTICUT:

- **Program Administrator Data Submitted:** Connecticut Light & Power, Connecticut Gas, Southern Connecticut Gas, United Illuminating (UI), & Yankee Gas
- **Expenditures:** Connecticut programs are funded through its system benefit charge, ISO-New England Forward Capacity Market (FCM) revenues, Regional Greenhouse Gas Initiative (RGGI) auction proceeds, and RPS compliance payment revenues. Expenditures were allocated according to the REED categories.
- **Peak Demand Definition:** Connecticut's peak demand reporting is consistent with ISO-NE's definition of summer and winter peak demand. Data submitted for Connecticut includes both gross and net demand savings.
- **Program Types:** Connecticut's programs correspond with the program sectors and types listed in REED.
- **Emissions Factors:** Connecticut's avoided emissions are based on average annual emissions factors for the ISO-New England region.
- **Cost of Saved Energy:** For REED, Connecticut's levelized cost of saved energy is calculated using a real discount rate of 2.46% (source: [2011 Avoided Energy Supply Costs](#) study). In practice, Connecticut uses a discount rate of 7.5 percent for their electric utilities and 7.0 percent for their natural gas utilities for cost-effectiveness screening and reporting purposes. The average measure life has been calculated from program savings values in Table 2.
- **Jobs Impacts:** Connecticut is not submitting jobs impacts data for its programs at this time.

MAINE:

- **Program Administrator Data Submitted:** Efficiency Maine Trust
- **Expenditures:** Maine programs are funded through its system benefit charge, ISO-New England Forward Capacity Market (FCM) revenues, Regional Greenhouse Gas Initiative (RGGI) auction proceeds, and American Recovery and Reinvestment Act (ARRA) funds. Expenditures were allocated according to the REED categories, with 'Other Expenditures' representing technical support expenditures.
- **Peak Demand Definition:** Maine's peak demand reporting is consistent with ISO-NE's definition of summer and winter peak demand. Data submitted for Maine includes both net and gross demand savings.
- **Program Types:** Maine's programs correspond with the program sectors and types listed in REED.
- **Emissions Factors:** Maine's avoided emissions are based on average annual emissions factors for the ISO-New England region.



THANK YOU!

For more information, please contact:

Cecily McChalicher, REED Manager,
cmcchalicher@neep.org

Julie Michals, EM&V Forum Director,
jmichals@neep.org

Regional EM&V Forum
Northeast Energy Efficiency Partnerships
91 Hartwell Ave Lexington, MA 02421
P: 781.860.9177 www.neep.org