

# New England State and Federal Laws and Regulations and the Electric Power Sector

Northeast Energy and Commerce Association &  
Connecticut Power and Energy Society

New England Energy Conference and Exposition

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**New England States Committee on Electricity**

# Context

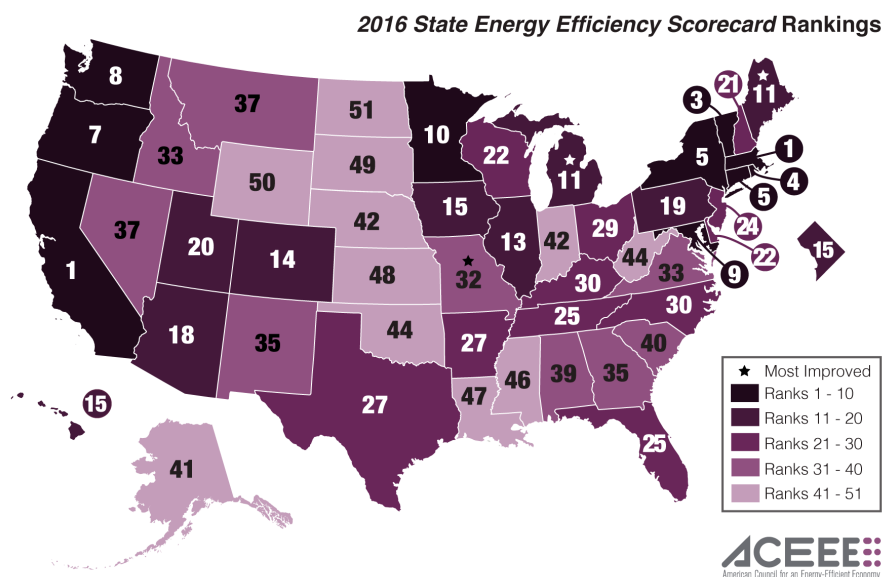
- This presentation is not an exhaustive list of every requirement of every states' or federal energy and environmental laws
- This presentation provides high-level, generally indicative information about current energy and environmental laws that influence the regional power system
- This does not represent and should not be interpreted to represent the views of NESCOE or any NESCOE Manager on any matter relative to state energy and environmental laws. It is simply a summary.

# Overview

- Demand for Electric Power ➡ Energy Efficiency
  - Federal Tax Incentives, Financial Assistance, and Appliance Standards
  - State System Benefits Charge
- Sources of Electric Power ➡ Renewable and Clean Energy Resources
  - Renewable Portfolio Standard
  - Net Metering
  - Long-Term Contracting
- Emissions from Electric Power Sector
  - Ambient Air Quality, Hazardous Air Pollutants, and Waste Water
    - Federal Standards
  - Greenhouse Gases
    - Regional Greenhouse Gas Initiative (RGGI)
- Other Laws and Regulations Affecting the Electric Power Sector

# Energy Efficiency – the “first” fuel

Installed measures (e.g., products, equipment, systems, services, practices and/or strategies) on end-use customer facilities that **reduce the total amount of electrical energy needed, while delivering a comparable or improved level of end-use service**. Such measures include, but are not limited to, the installation of more energy efficient lighting, motors, refrigeration, HVAC equipment and control systems, envelope measures, operations and maintenance procedures, and industrial process equipment. – *ISO-NE Tariff §1.2.2.*

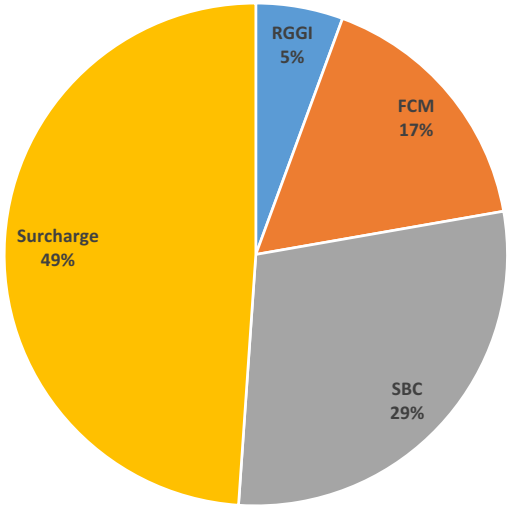


# Federal Incentives and Standards for Energy Efficiency

- Tax Credits
  - Residential Energy Efficiency Tax Credits (26 USC § 25C) (expired 12/31/16)
- Weatherization Assistance Program
- Appliance Standards

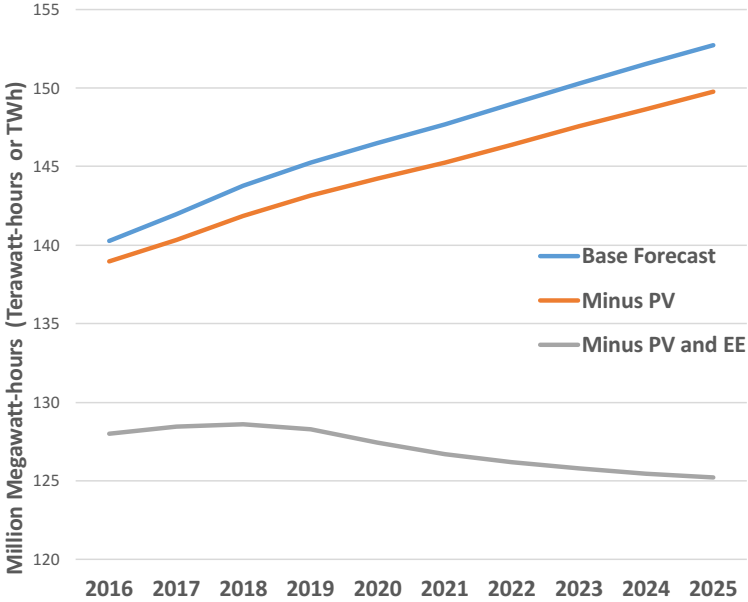
# System Benefit Charge

Forecasted Average Annual Energy Efficiency Budgets,  
by Funding Source 2020-2025 ~ \$1 Billion per Year  
New England Region Wide



Source: ISO-NE 2016 Energy Efficiency Forecast

Forecasted Annual Energy Demand,  
After Impact of Solar PV and Energy Efficiency  
New England Region Wide



Source: ISO-NE 2016 Capacity Energy Loads and Transmission Report

# Renewable Resources

Common Technologies	State	Additional Technologies or Restrictions
<ul style="list-style-type: none"> <li>• Wind</li> <li>• Solar Photovoltaic (PV)</li> <li>• Small Hydro</li> <li>• Landfill Gas</li> <li>• Biomass (MA: subject to eligibility requirements)</li> <li>• Anaerobic Digestion</li> <li>• Geothermal</li> <li>• Solar Thermal</li> <li>• Ocean Thermal</li> <li>• Wave</li> <li>• Tidal</li> </ul>	<b>Maine</b>	Municipal Solid Waste (“MSW”) with recycling, cogeneration, “useful thermal energy”
	<b>Massachusetts</b>	Fuel cells with Renewable fuels, MSW
	<b>Connecticut</b>	Hydro <5 MW, sustainable biomass, MSW, fuel cells, energy efficiency and combined heat and power (“CHP”), large-scale hydro (only if shortfall in Class I resources, capped at 5% in 2020)
	<b>Rhode Island</b>	Fuel cells only with renewable fuels
	<b>Vermont</b>	Large Hydro
	<b>New Hampshire</b>	Geothermal, no fuel cells

# Federal Incentives for Renewable Energy

- Residential Renewable Energy Tax Credits
  - Solar Thermal and PV installed before 12/31/21
  - Fuel Cell, Small Wind, Geothermal (expired 12/31/16)
- Production Tax Credit
- Investment Tax Credit
- Modified Accelerated Cost Recovery System
- Grants
- Loan Guarantees

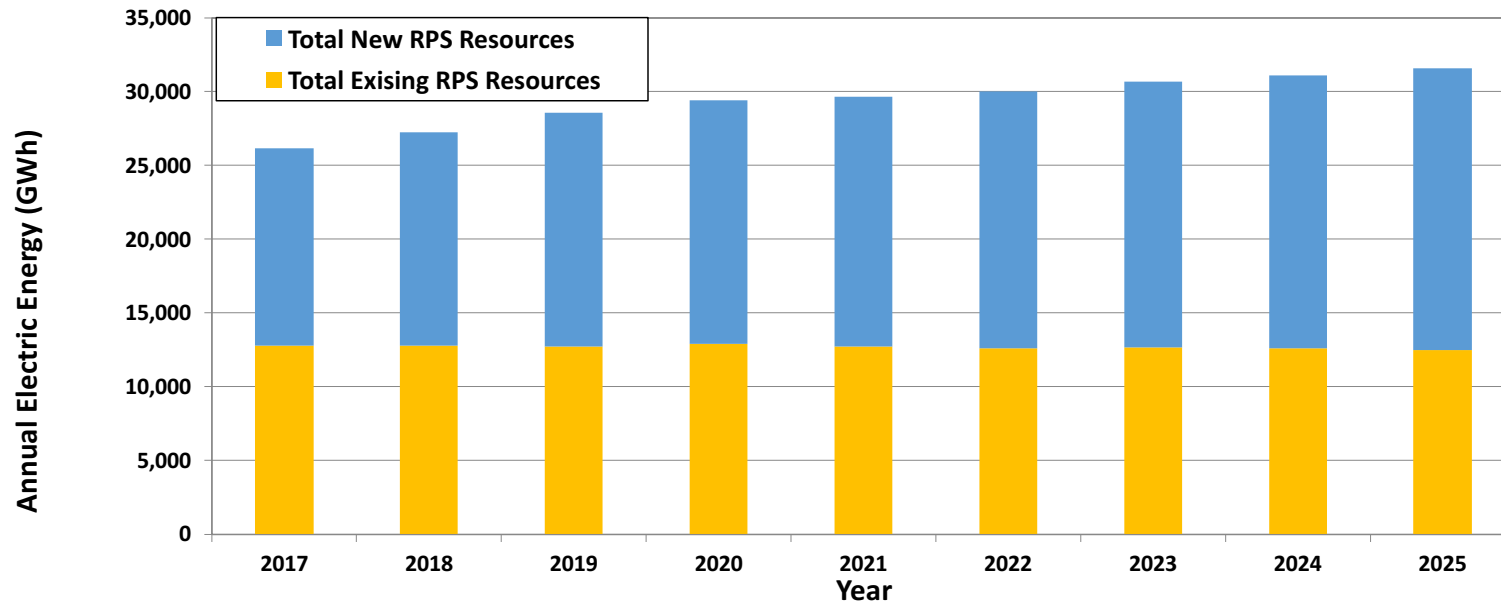


# Renewable Portfolio Standard

		2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Connecticut</b>										
	Class I	15.5%	17.0%	19.5%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
	Class II	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
	Class III	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
<b>Maine</b>										
	Class I	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
	Class II	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
<b>Massachusetts</b>										
	Class I	12.0%	13.0%	14.0%	15.0%	16.0%	17.0%	18.0%	19.0%	20.0%
	Class IIa	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%
	Class IIb	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
<b>New Hampshire</b>										
	Class I	7.8%	8.7%	9.6%	10.5%	11.4%	12.3%	13.2%	14.1%	15.0%
	Class II	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
	Class III	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
	Class IV	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
<b>Rhode Island</b>										
	Existing	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	New	9.5%	11.0%	12.5%	14.0%	15.5%	17.0%	18.5%	20.0%	21.5%
<b>Vermont</b>										
	Standard	54.0%	53.4%	52.8%	56.2%	55.6%	55.0%	58.4%	57.8%	57.2%
	Distributed Gen.	1.0%	1.6%	2.2%	2.8%	3.4%	4.0%	4.6%	5.2%	5.8%

# Renewable Portfolio Standard

Total projected RPS targets (all classes) for New England, 2017 to 2025, in GWh

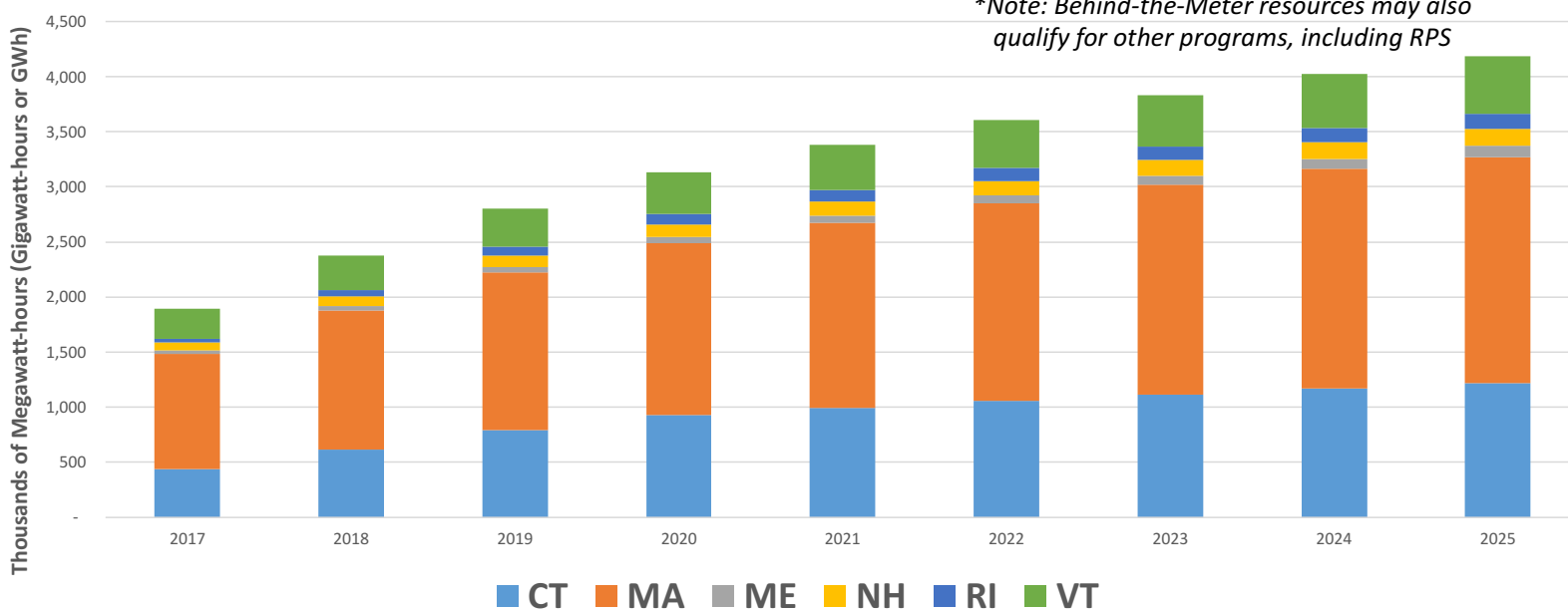


Sources: 2017 ISO New England CELT Report and PAC RPS Spreadsheet

# Net Metering

## Forecasted Energy from Behind-the-Meter Solar PV Resources, GWh

*\*Note: Behind-the-Meter resources may also qualify for other programs, including RPS*



Source: 2017 ISO New England Solar PV Forecast

# Long-Term Contracts

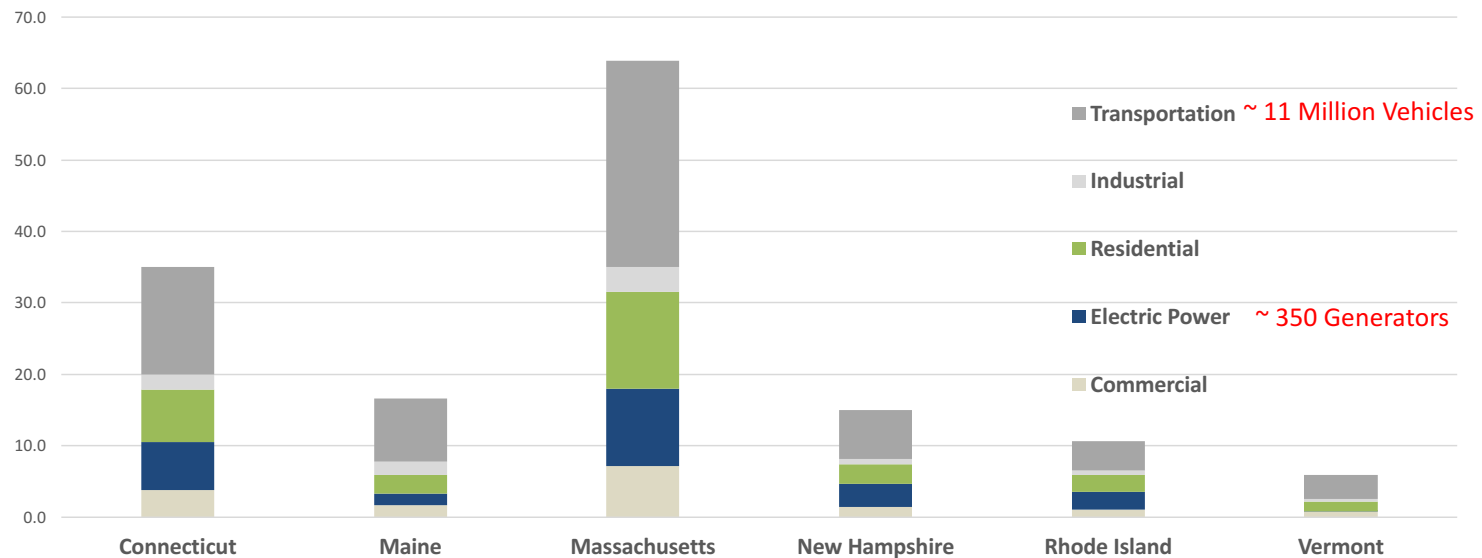
- Three-State Clean Energy Request for Proposals (RFP)
  - Entities from three of the New England States - Connecticut, Massachusetts, and Rhode Island - have jointly issued a Request for Proposals (RFP) from private developers of clean energy and transmission. The three States are leveraging their collective authority in a joint procurement to open the possibility of procuring large-scale projects that no one state could procure alone.
  - **Connecticut**
    - *2,750 GWh per year of Qualified Clean Energy under Section 1(c) of Public Act 15-107*
    - *1,375 GWh per year of Qualified Clean Energy under Section 7 of Public Act 13-303; and*
    - *1,100 GWh of Class I Qualified Clean Energy Under Section 6 of Public Act 13-303*
  - **Massachusetts**
    - *817 GWh per year of Class I Qualified Clean Energy under Section 83(a) of the Green Communities Act, as amended*
    - *Additional Qualified Clean Energy of an undefined amount, so long as bids for such are in the form of the Delivery Commitment Model, for contributing to achievement of the goals of the Massachusetts 2008 Global Warming Solutions Act (GWSA)*
  - **Rhode Island**
    - *Qualified Clean Energy of an undefined amount, sought by Narragansett only in the form of the Delivery Commitment Model, for contributing to the goals of Chapter 31 of Title 39 of the General Laws of Rhode Island, the Affordable Clean Energy Security Act (“Chapter 39-31”)*
- Connecticut Small Resources Clean Energy RFP
  - *2,750 GWh per year of Qualified Clean Energy under Section 1(b) of Connecticut Public Act 15-107*
    - *Passive Demand Resources (i.e., energy efficiency), Class I < 20 MW, Class III, Energy Storage*
  - *\*\*Note: Several states have already procured clean energy resources via long term contract under these and other existing state energy procurement authorities\*\**

# Long-Term Contracts

- Massachusetts' Act to Promote Energy Diversity, St. 2016, c. 188
  - Section 83 D
    - Electric distribution companies are required to jointly and competitively solicit proposals for **Clean Energy Generation** not later than April 1, 2017; and, provided that reasonable proposals have been received, shall enter into cost-effective long-term contracts for Clean Energy Generation for an annual amount of electricity equal to approximately 9,450,000 MWh by December 31, 2022:
      - Firm service hydroelectric generation;
      - New Class 1 RPS-eligible resources firmed up with firm service hydro electric generation; or
      - New Class 1 RPS-eligible resources
  - Section 83 C
    - Electric distribution companies are required to jointly and competitively solicit proposals for **Offshore Wind Energy Generation**; and, provided that reasonable proposals have received, shall enter into cost-effective long-term contracts for Offshore Wind Energy Generation equal to approximately 1,600 MW of aggregate nameplate capacity by June 30, 2027

# Carbon Dioxide Emissions Reduction

Energy Related Carbon Dioxide Emissions,  
by Sector 2014



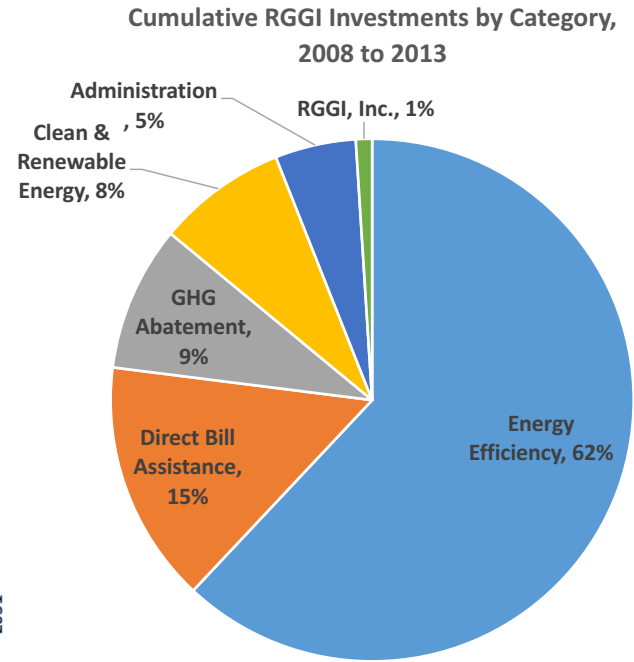
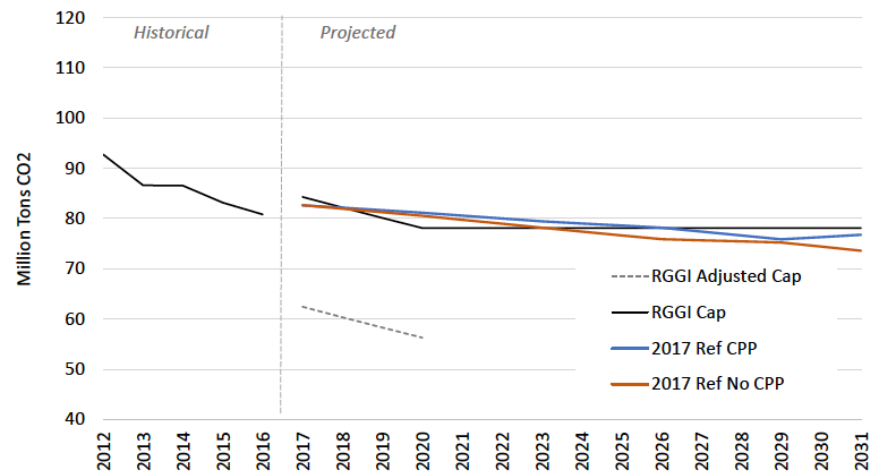
Sources: U.S. Energy Information Administration, U.S. Department of Transportation, ISO New England

# Carbon Dioxide Emissions Reduction

	Power Sector	Economy-Wide	Legal Authorities
<b>Connecticut</b>	Regional Greenhouse Gas Initiative (RGGI):  2.5% per year until 2020	10% below 1990 levels by 2020 80% below 2001 levels by 2050	Conn. Gen. Stat. §§ 22a-200a and 22a-200c
<b>Maine</b>		10% below 1990 levels by 2020	38 Me. Rev. Stat. ch. 3-A and 3-B
<b>Massachusetts</b>		25% below 1990 levels by 2020 80% below 1990 levels by 2050	Mass. Gen. Laws ch. 21A § 22 and ch. 21N § 3
<b>New Hampshire</b>		n/a	N.H. Rev. Stat. Ann. § 125:O
<b>Rhode Island</b>		10% below 1990 levels by 2020 45% below 1990 levels by 2035 80% below 1990 levels by 2050	R.I. Gen. Laws §§ 42-6.2-2, 42-17.12(19), 23-23, and 23-82
<b>Vermont</b>		40% below 1990 levels by 2030 80-95% below 1990 levels by 2050	30 V.S.A. § 255 2016 Comprehensive Energy Plan

# Regional Greenhouse Gas Initiative (RGGI)

RGGI CO2 Emissions – 2017 Program Review, Draft Reference Case Results



Source: [www.RGGI.org](http://www.RGGI.org)



# Other Initiatives

- Green Banks
  - Connecticut Green Bank
  - Rhode Island Infrastructure Bank
  - Vermont Economic Development Authority
- Grid Modernization
- Storage
  - Massachusetts Energy Storage Initiative
- Electric Vehicles
  - New England Governors – Eastern Canadian Premiers’ 2014 Resolution: five percent (5%) fleet market share penetration of alternative fuel vehicles by 2020
  - Four New England States joined the 2013 State Zero-Emissions Vehicle Program Memorandum of Understanding:
    - Massachusetts: 300,000 by 2025
    - Connecticut: 150,000 by 2025
    - Rhode Island: 43,000 by 2025
    - Vermont: 18,000 by 2025

## Finally, a word on FERC Order 1000

- On May 1<sup>st</sup>, [NESCOE provided a transmittal](#) to ISO-NE regarding transmission needs driven by state and federal Public Policy Requirements. The transmittal includes memoranda by each New England State.
- NESCOE carefully considered the input that ISO-NE Planning Advisory Committee members provided regarding state or federal policy-driven transmissions needs.
- NESCOE did not request that ISO-NE initiate a Public Policy Transmission Study in the current planning cycle. NESCOE determined that at this time and for the reasons articulated in the submission there are no state or federal PPRs “driving transmission needs relating to the New England Transmission System”.

# Questions?

For more information visit [nescoe.com](https://www.nescoe.com)

