

2011 RPS Review:

Public Stakeholder
Kick-off Meeting

Public Utilities Commission
2/14/2011



Today's Agenda

Background

Process & Timeline

CESA: RPS National Overview

NH Baseline Data

Categories & Workshops

Questions



Renewable Portfolio Standard (RPS)

- Renewable Energy Act 2007, a.k.a, RPS Law
- Purpose to increase use of clean, renewable power generation by utilities
- Establishes portfolio requirements for new (Class I & II) and existing (Class III & IV) sources.
- Requirements ramp up to 24% by 2025

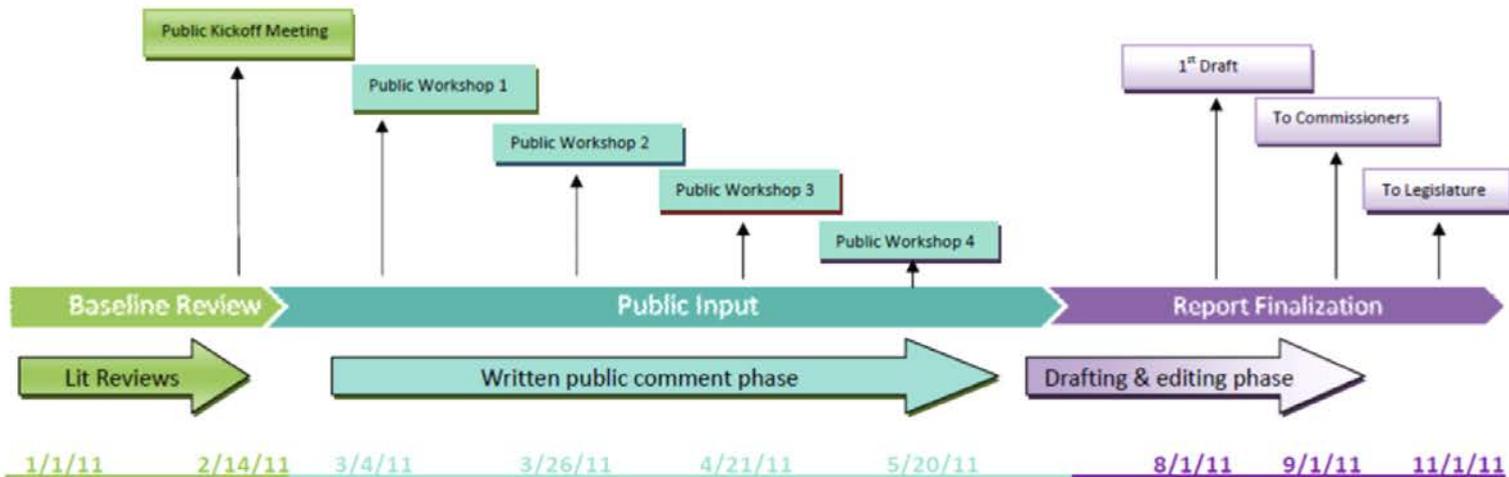


RSA 362-F: 5 Commission Review & Report Due November 2011

- I. *Adequacy or potential adequacy of sources to class requirements;*
- II. *The class requirements of all sources in light of existing and expected market conditions;*
- III. *Potential for addition of a thermal energy component;*
- IV. *Increasing the class requirements relative to classes I and II beyond 2025;*
- V. *Possible introduction of any new classes such as an energy efficiency class or the consolidation of existing ones;*
- VI. *Timeframe and manner in which new renewable class I and II sources might transition to existing renewable sources and how new and existing sources requirements might be adjusted;*
- VII. *Evaluation of the benefits and risks of using multi-year purchase agreements for REC (with purchased power), in consideration of the restructuring policy principles of RSA 374-F:3;*
- VIII. *Alternative methods for renewable portfolio standard compliance, such as competitive procurement through a centralized entity; and*
- IX. *Distribution of the renewable energy fund.*



Review Process & Timeline



RPS REVIEW TIMELINE



The Status of State RPS Efforts: Observations & Trends

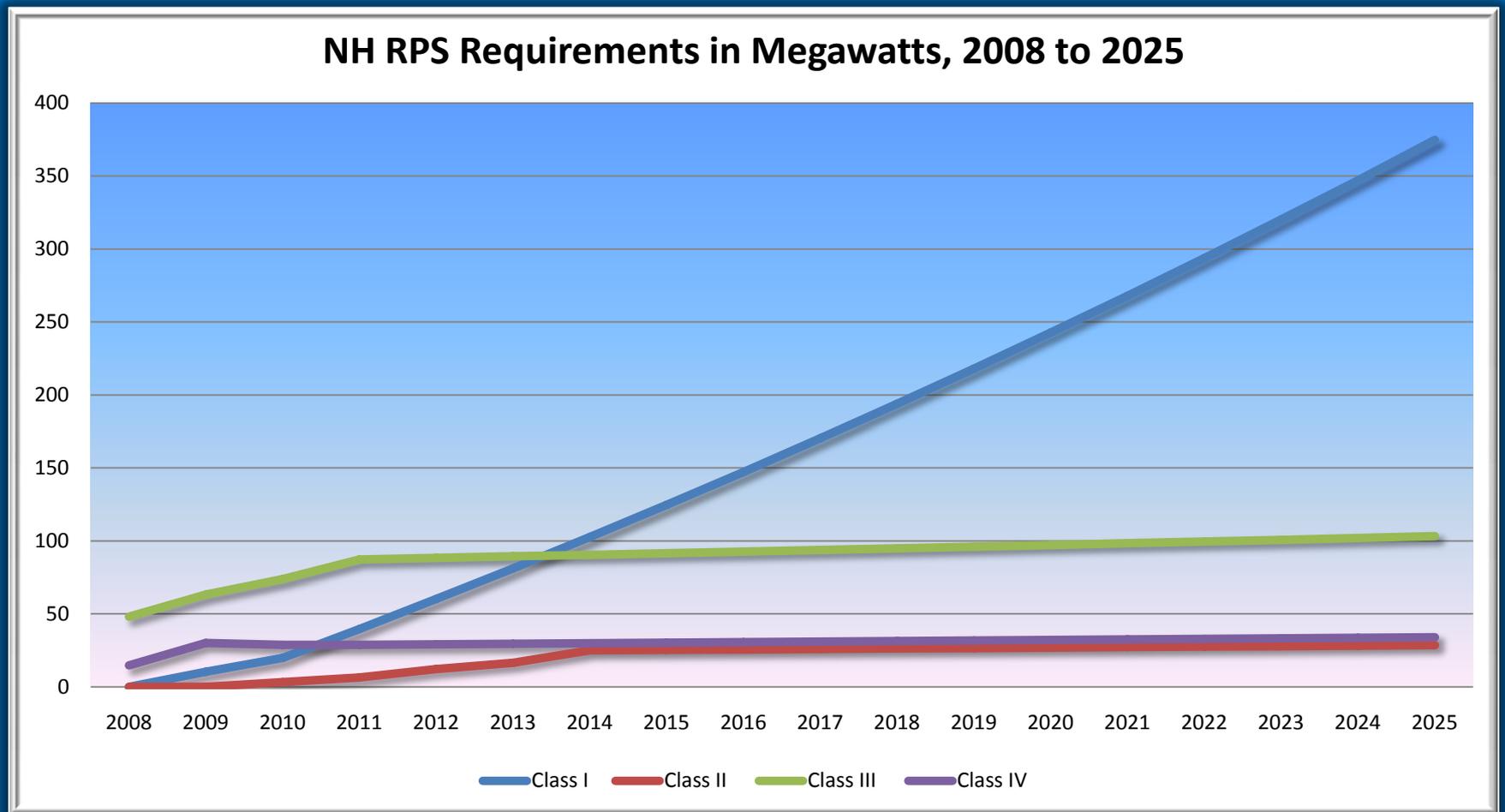
Mark Sinclair

Clean Energy States Alliance

February 14, 2011



NH Baseline Data: RPS Requirements



NH Baseline Data: ACP Rates

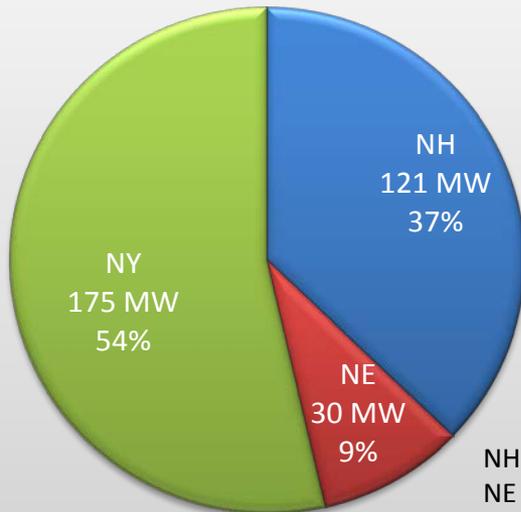
Inflation Adjusted Alternative Compliance Payment per Megawatt-hour

Class	2008	2009	2010	2011
Class I	\$58.58	\$60.92	\$60.93	\$62.13
Class II	\$153.84	\$159.98	\$160.01	\$163.16
Class III	\$28.72	\$29.87	\$29.87	\$30.46
Class IV	\$28.72	\$29.87	\$29.87	\$30.46



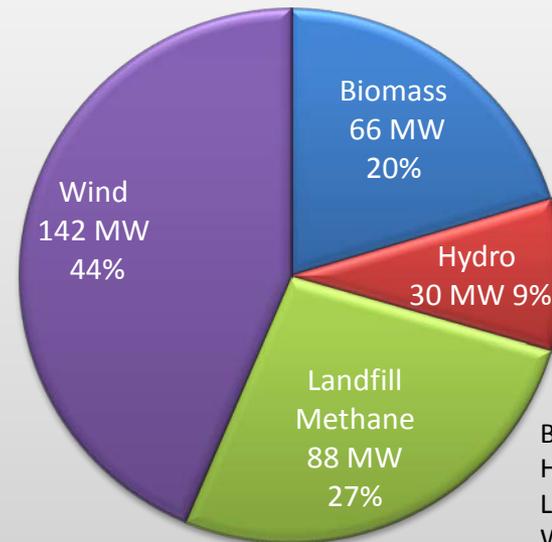
NH Baseline Data: Class I Sources

Total Capacity (MW) of Class I Sources by Location



NH Facilities: 16
 NE Facilities: 11
 NY Facilities: 13
 Total Facilities: 40
 Total Capacity: 326 MW

Total Capacity (MW) of Class I Sources by Type

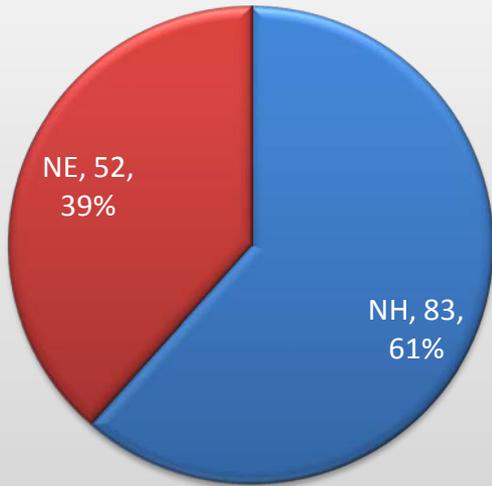


Biomass Facilities: 2
 Hydro Facilities: 4
 LFG Methane: 20
 Wind Facilities: 14
 Total Facilities: 40
 Total Capacity: 326



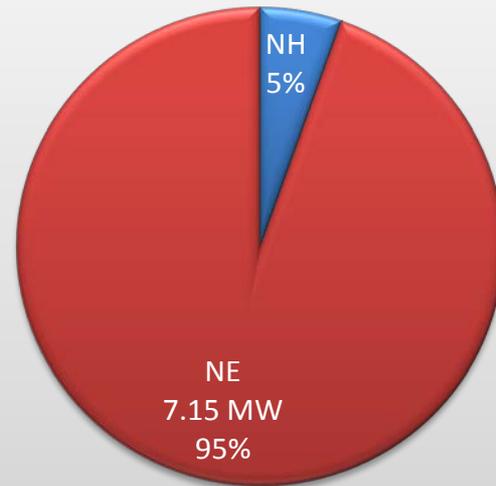
NH Baseline Data: Class II Sources

Number of Class II Sources by Location



Total Facilities: 135

Total Capacity (MW) of Class II Sources by Location

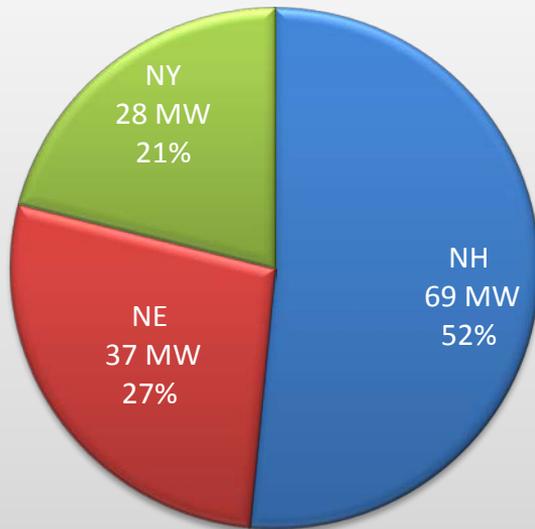


Total Capacity: 7.56 MW



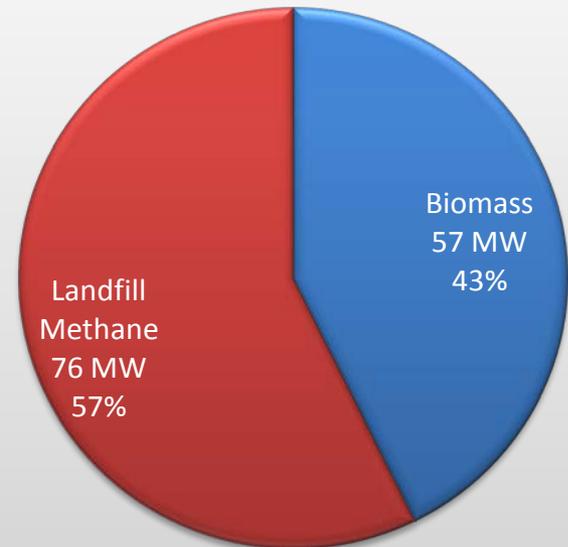
NH Baseline Data: Class II Sources

Total Capacity (MW) of Class III Sources by Location



NH Facilities: 7
NE Facilities: 6
NY Facilities: 6
Total Facilities: 19
Total Capacity: 133 MW

Total Capacity (MW) of Class III Sources by Type

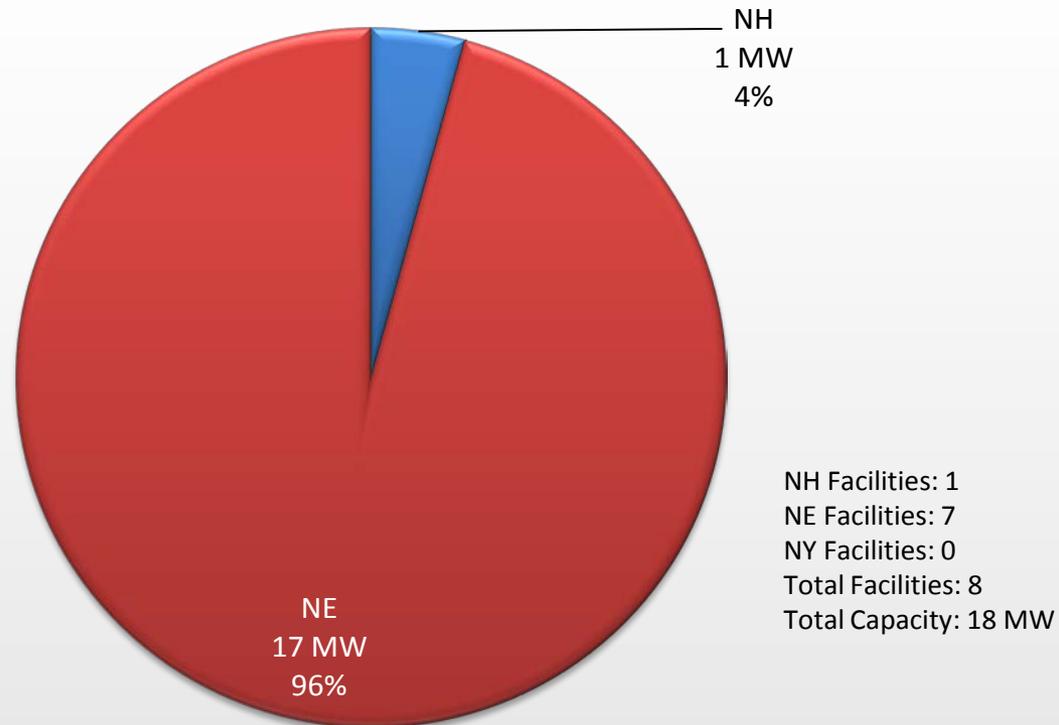


Biomass Facilities: 3
LFG Facilities: 16
Total Facilities: 19



NH Baseline Data: Class IV Sources

Total Capacity (MW) of Class IV Sources by Location



New Hampshire Specific RPS Developments/Concerns: Observations

- The majority of Class I (63%) and Class II (95%) eligible capacity is not located in NH.
- Excess supply of Class I RECs resulting in a decrease in the market value of Class I RECs below the value of Class III & IV RECs.
- Currently, there is a shortage of Class IV RECs.



New Hampshire Specific RPS Developments/Concerns: Questions

- How should NH encourage development of in-state Class II sources?
- Are the Class I and Class II REC requirements adequate?
- Should the RPS have a thermal and/or energy efficiency component?
- Should NH consider an alternative to utility procurement of RECs?



Review :

9 Items grouped into 4 Categories

Category 1: Class Requirements

- Adequacy of current/potential resources
- Class 1 and 2 beyond 2025
- Transition of new sources into existing sources

Category 2: New Classes

- Energy Efficiency Class
- Thermal Energy Class

Category 3: RPS Compliance

- Multi-year procurement agreements
- Competitive Procurement through Central Agency

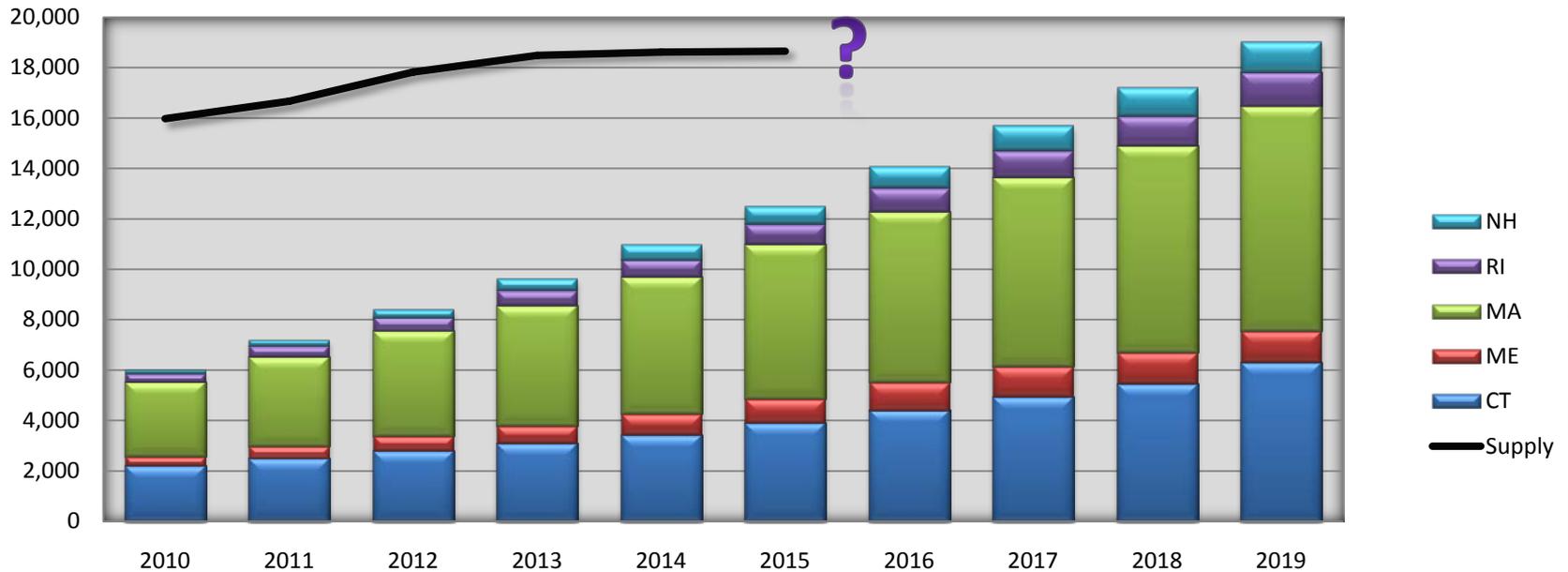
Category 4: Distribution of REF

- Fund Distribution to Date



New England Class I RPS Requirements by State

New England Class I RPS Requirements in GWH, 2010 to 2019



Supply Data Source: NEPOOL-GIS and ISO Interconnection Queue

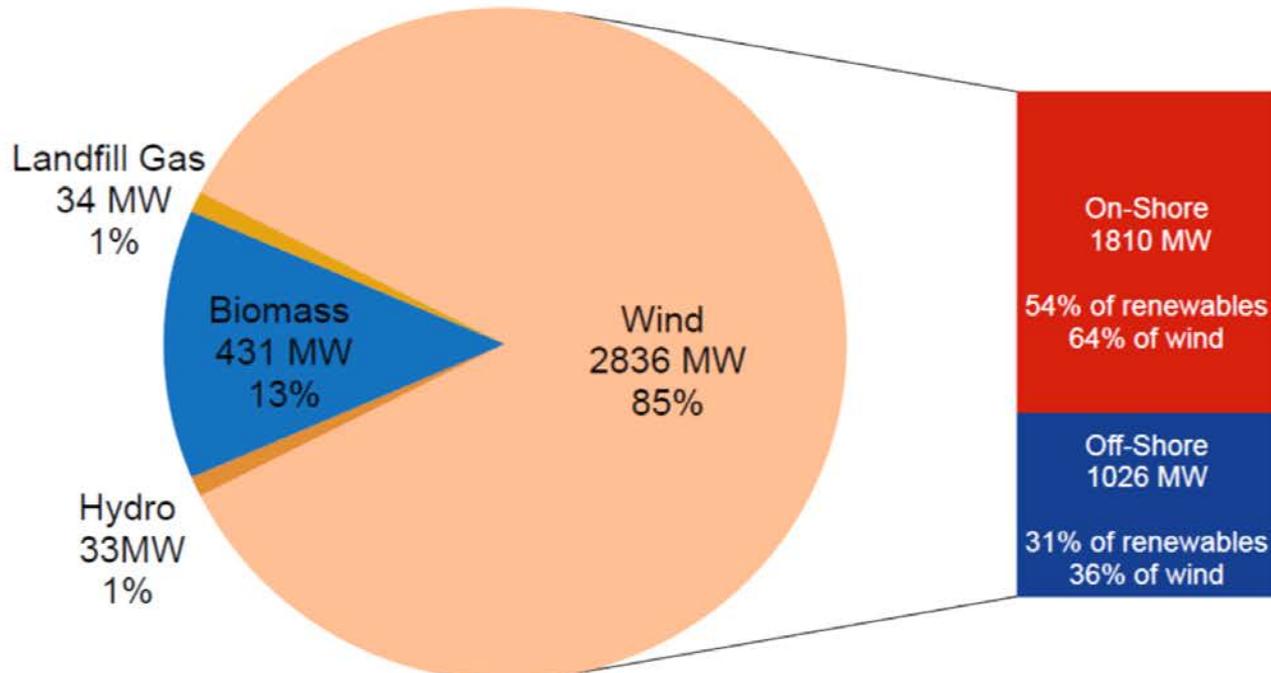


Proposed Renewable Projects in New England

Renewable Projects Proposed by Fuel Type

+3,300 MW of Renewables in ISO Queue, Wind dominant fuel

MW Renewables, February 2011 Queue by Fuel Type



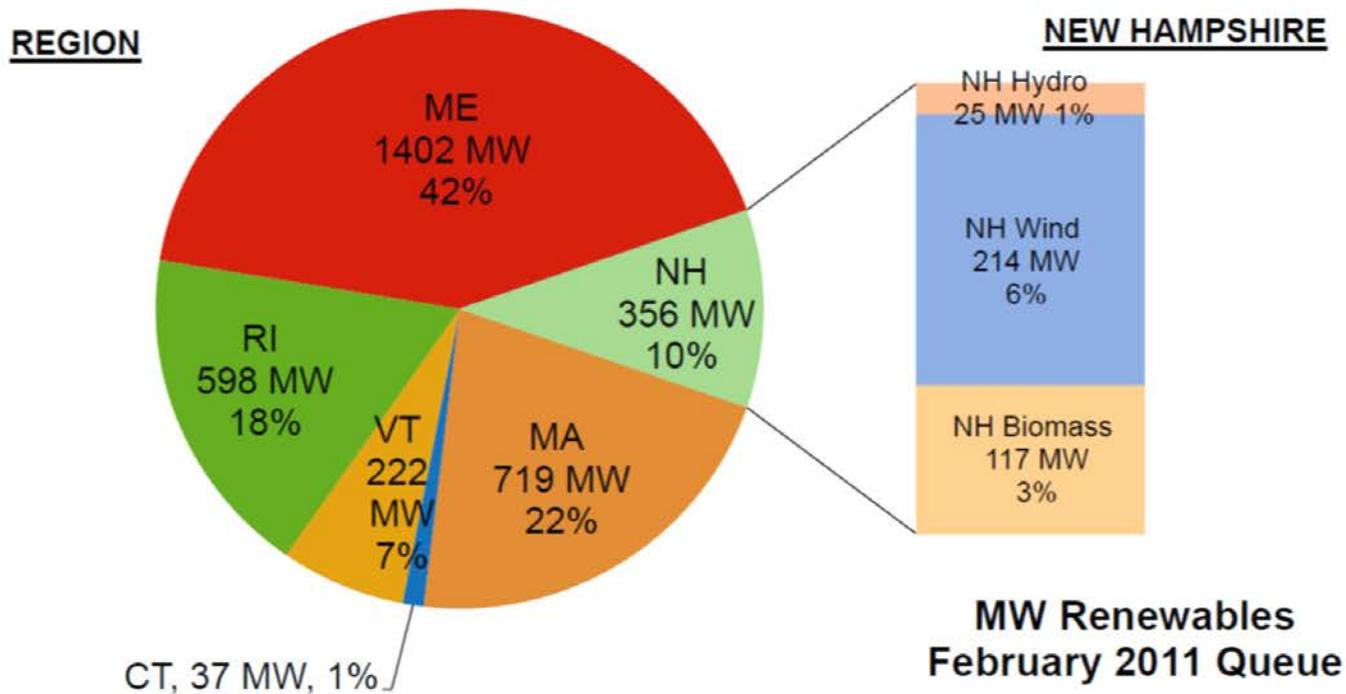
Includes: Landfill Gas, Hydro, Wind, Solar and Biomass. Pump Storage projects in the ISO Queue are not included.



Proposed Renewable Projects by State

Renewable Projects Proposed by State

NH has mix of hydro, biomass and wind proposed

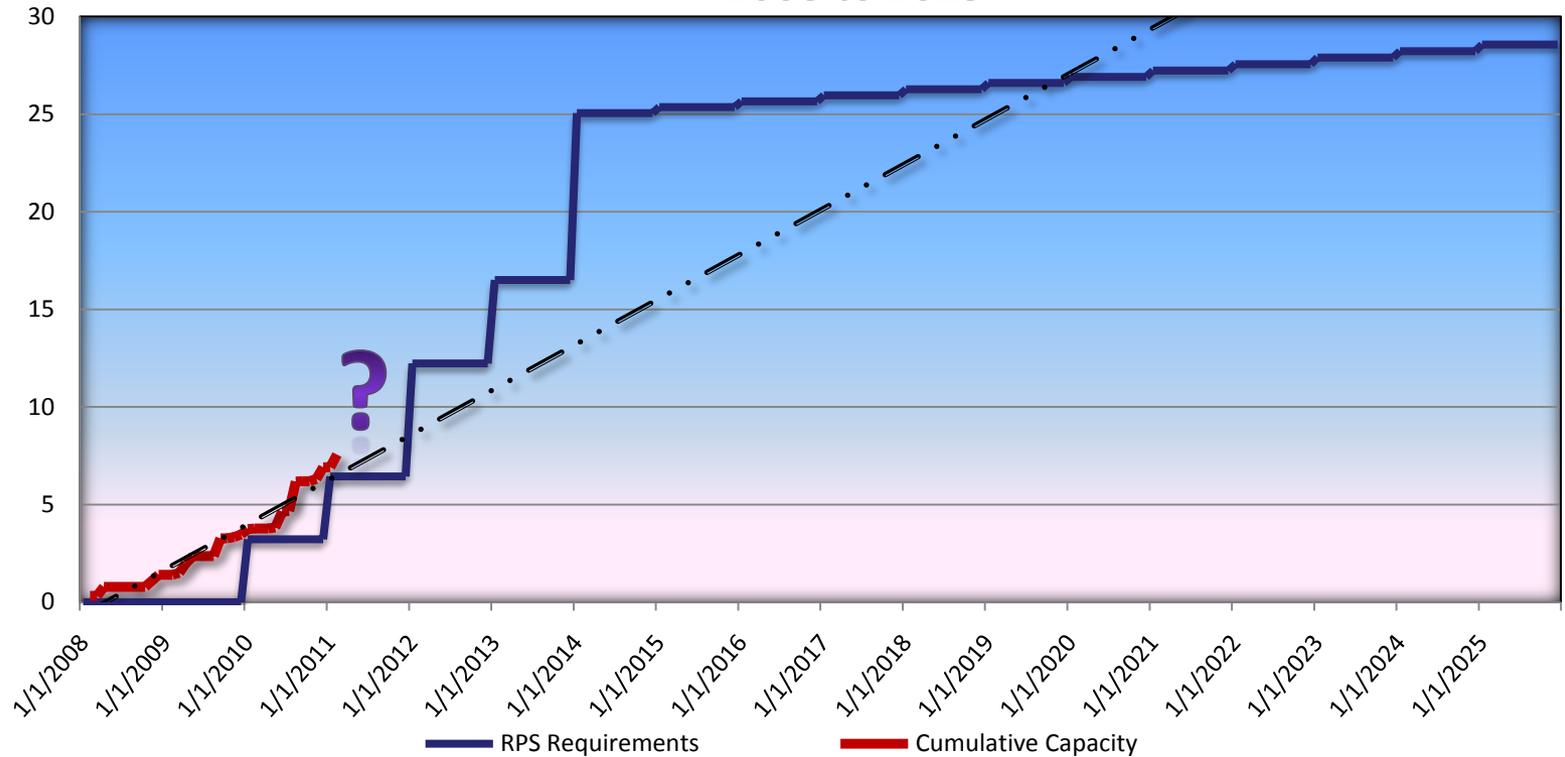


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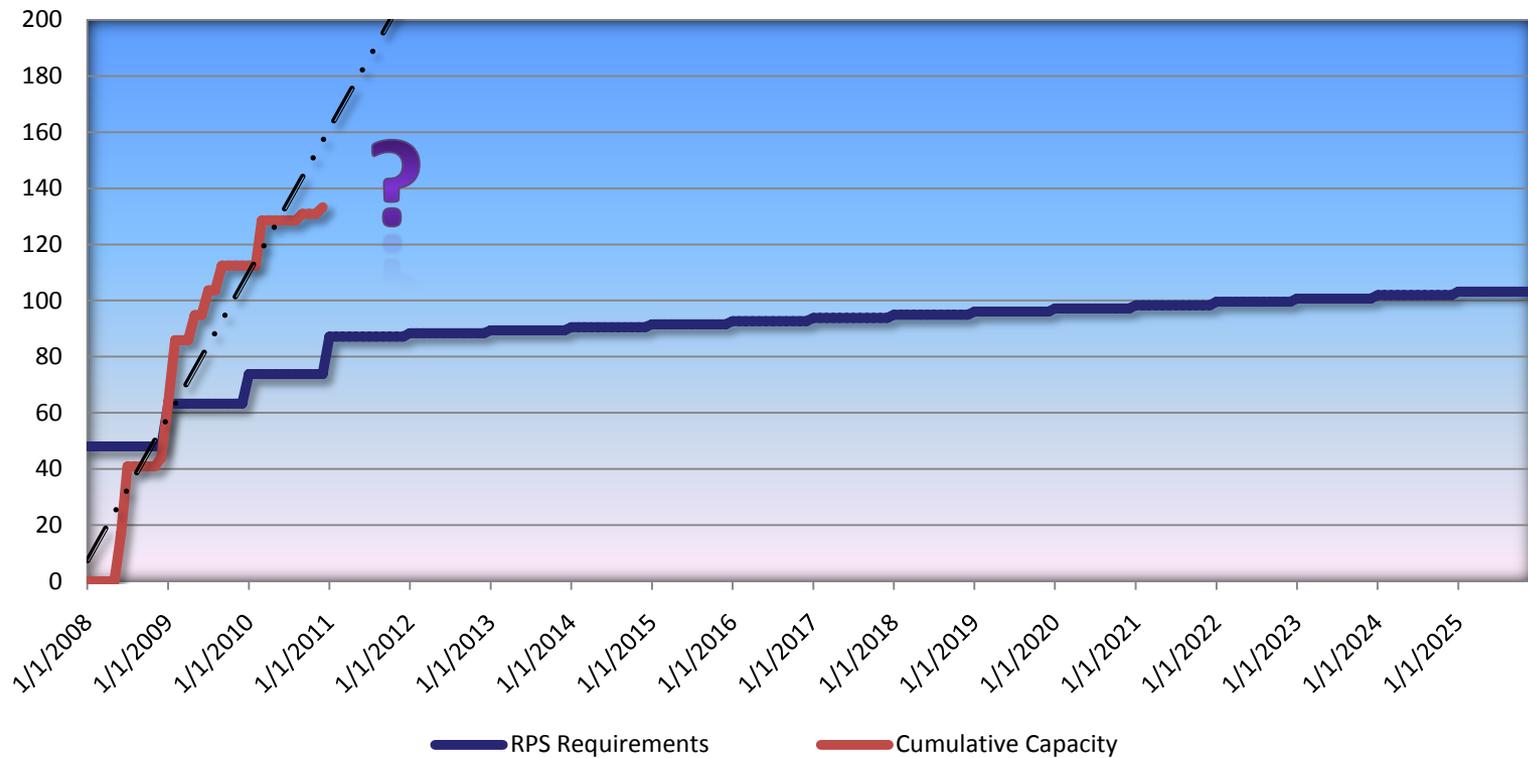
Category 1-Class Requirements: Class II

Forecasted Class II REC Requirements and Supply in Megawatts, 2008 to 2025

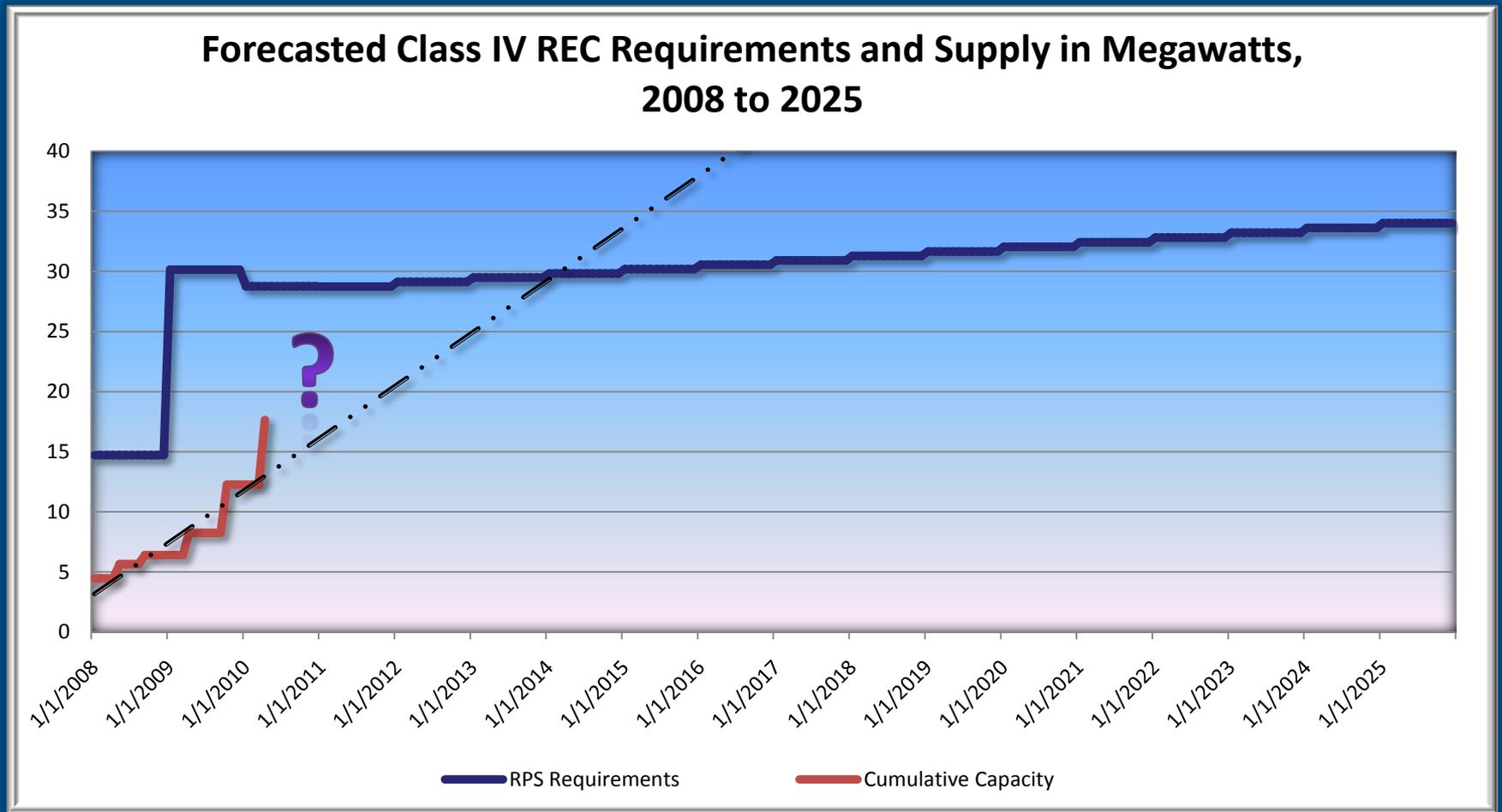


Category 1-Class Requirements: Class III

Forecasted Class III REC Requirements and Supply in Megawatts, 2008 to 2025



Category 1-Class Requirements: Class IV



Category 2 -New Classes: Thermal

- Examples: Combined Heat & Power (CHP), flywheel technologies and fuel cells.
- CHP- captures and utilizes heat that is normally wasted.
- Achieve total system efficiencies of 60% to 80%
- Reduced emissions (CO₂, NO_x, SO₂), grid congestion and costs and increased reliability.
- AZ, CO, HI, MA, MI, NC, NV, OH, PA, WA



Category 2 – New Classes: EE

- Measureable energy efficiency as an RPS requirement
- May be counted as energy savings from projected load or baseline load
- May include reduction targets in both energy and peak demand (capacity)
- May be technology specific or widely open—include savings from building codes, demand response (DR), etc.



Category 2 – New Classes: EE

21 States have Energy Efficiency Resource Standards

NE: Interim Energy Plan stresses multi-sector EE improvements

KS: Voluntary utility programs

OK: PSC approved quick-start utility EE & DR programs

MN: 1.5% annual savings based on prior-3 years average, to 2015

IA: 5.4% energy savings by 2020 - 1.5% annual

MI: 1% annual energy savings as a percent of from prior year's sales

IL: reduce energy use 2% by 2015 and peak 0.1% from prior year

OH: 22% energy savings by 2025 (from 2009); reduce peak 8% by 2018

KY: proposed RPS-EE to offset 18% of projected 2025 demand

ME: 30% energy savings; 100 MW peak electric reduction by 2020

VT: 11% energy reductions by 2011 (2% annual); administered by Efficiency VT

MA: 25% of electric load from DSR, EE by 2020: capacity and energy

NY: reduce electric use 15% by 2015 from levels projected in 2008

CT: 4% energy savings (1.5% annual) & 10% peak reduction by 2010 (from '07)

RI: reduce 10% of 2006 sales by 2022

NJ: proceeding on Energy Master Plan to reduce consumption, peak

DE: Sustainable Energy Utility charged with 30% energy reduction by 2015

PA: reduce consumption 3%, peak 4.5% by 2013 as percent of 2009-10 sales

MD: reduce per capita electricity use and peak 15% by 2015 from 2007

VA: reduce electric use 10% by 2022 (from '06)

WV: EE & DR earn one credit for each MWh conserved in the 25% by 2025 A&RES

NC: EE to meet up to 25% of RPS to 2011

TVA: reduce energy consumption 25% and cut peak 1,400 MW by 2012 (from '08) in 7-state territory ★

WA: pursue all cost-effective conservation: ~ 10% by 2025

OR: IOU 2008 goals 34 MW; administered by Energy Trust OR

CA: 8% energy savings; 4,885 MW peak reduction by 2013 (from '04)

ID: Energy Plan set conservation, DR, EE as priority resources

NV: EE up to 25% of RPS: ~ 5% electric reduction by 2015

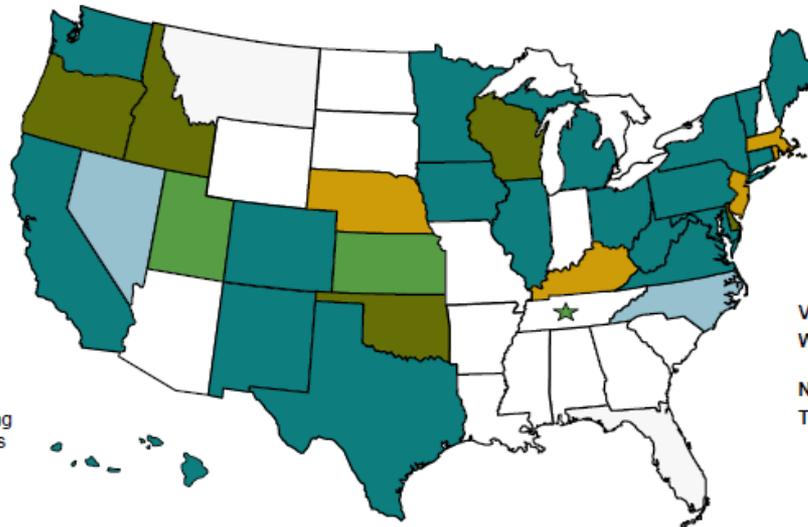
UT: EE earns incentive credits in RE goal

CO: 11.5% energy savings by 2020: ~ 3,669 GWh (from '08)

NM: 10% retail electric sales savings by 2020 (from '05)

TX: 20% of load growth by 2010, using average growth rate of prior 5 years

HI: 30% electricity reduction: ~ 4,300 GWh by 2030 (from '09)



Updates at: <http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-eeps.pdf>

- EE as part of an RPS law or rule
- EERS by regulation or law (stand-alone)
- Voluntary standards (in or out of RPS)
- EERS pending regulations, proposed, or studied
- Other EE entity, rule, or procurement order

* TVA is a Public Power Authority – this is not a state action.

Abbreviations: A&RES – Alternative & Renewable Energy Standard; DR - demand response; DSR – demand-side resources; EE - energy efficiency; E&G: electric and gas utilities; RPS: Renewable Portfolio Standard;

Sources: ACEEE, DOE- EERE, EPA, Institute for Electricity Efficiency (IEE); Regulatory Assistance Project, State regulatory and legislative sites, State Efficiency Agency reports, trade press



Category 3: RPS Compliance Alternatives

- NH Statute does not prescribe a specific methodology.
- Three alternative are:
 - State Agency Central Procurement (IL, NY)
 - Competitive Procurement (MA)
 - Reverse Auction (CA)



Category 4: Renewable Energy Fund (REF)

- REF was created as a component of the RPS law, HB 873, enacted in 2007 (RSA 362-F:10)
- Purpose is to support thermal and electrical renewable energy initiatives
- RPS law establishes renewable energy portfolio requirements for electric service providers
- ACP's are sole source of revenue for REF



Category 4: REF Revenue

- Received annually, July 1, with RPS compliance report
- Fund revenues in 2008 = \$4.48 million
- Fund revenues in 2009 = \$1.34 million

Where do the funds go?...



REF Programs & Opportunities for Ratepayers

- Residential PV/Wind Rebate Program
- Residential Solar Hot Water Rebate Program
- Residential Wood Pellet Heating System Rebate Program
- Commercial & Industrial PV/SHW Rebate Program
- Request for Proposals
(March 2011)



Contacts & Stakeholder Input

- Email Comments to NHPUC:
 - rpsreview@puc.nh.gov
 - Insert “RPS Review” in subject heading
- Comments, Updates and Report will be posted on the following website:
 - <http://www.puc.nh.gov/Sustainable%20Energy/SustainableEnergy.htm>
- Questions: maureen.reno@puc.nh.gov or kate.epsen@puc.nh.gov

