STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Rhode Island

Renewable Energy Standard

Annual RES Compliance Report

For Compliance Year 2014

April 2016

Rhode Island Public Utilities Commission

89 Jefferson Boulevard

Warwick, RI 02888

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Executive Summary

Compliance Year 2014, from January 1, 2014 through December 31, 2014, was the eighth compliance year for the Rhode Island Renewable Energy Standard (RES).[1] Under R.I. Gen. Laws § 39-26-6, the Rhode Island Public Utilities Commission (PUC) is charged with implementing the RES and ensuring compliance by Obligated Entities.[2] In 2014, each Obligated Entity was required to obtain at least 8.5% of electrical energy (including line losses) sold to Rhode Island end-use customers from Eligible Renewable Energy Resources, with no less than 6.5 % of that obligation sourced from New Renewable Energy Resources.

This eighth Annual RES Compliance Report is intended to satisfy the statutory requirement in R.I. Gen. Laws § 39-26-6(f) for a filing on "the status of the implementation of the renewable energy standards in Rhode Island and other states." The legislation specifically requests a summary of the role of both renewable energy certificates (RECs) and alternative compliance payments (ACPs) in meeting the RES obligation as well as the amount of rate increases authorized to recover costs arising from implementation of the RES.

2014 RES Obligation and Compliance

The state's 2014 RES-obligated retail sales totaled 7,985,473 megawatt-hours of electrical energy (MWh).[3] As shown in Table E.1 below, the total minimum obligation to be satisfied by New Renewable Energy Resources was 519,067 MWh (6.5% of each Obligated Entity's retail sales).[4] The obligation to be satisfied by either Existing or New Renewable Energy Resources was 159,720 MWh (2.0% of each Obligated Entity's retail sales). Almost all (99.3%) of the combined new and existing resource obligation was met through retirement of Rhode Island-eligible RECs, with most of the remaining balance due to one Obligated Entity failing to comply with an outstanding obligation of 4,196 MWh[5], and the remaining balance met through ACPs. This marks the second year in a row that a non-regulated power producer filed for bankruptcy and did not comply with its renewable energy obligation. Thus, for the second year in a row, the Rhode Island RES was not met.

In 2014, New England Power Pool Generation Information System Certificates (NEPOOL GIS Certificates), also referred to more generally as RECs[6], were used to meet more than 99% of Rhode Island's New RES obligation. The total number of New RECs procured by Obligated Entities was 530,373, including 17,745 Certificates banked from Compliance Year 2012 or 2013 used to meet Compliance Year

2014 obligations. This represented a 2.2% surplus compared to the 2014 New RES obligation for all Obligated Entities. This surplus is down slightly from the 4.2% surplus for Compliance Year 2013, but still up significantly from the 6.1% deficit recorded in Compliance Year 2012 and the 26.3% deficit recorded in Compliance Year 2011. This surplus in New RECs reflects a sustained increase in regional renewable energy supply through the construction of additional

[1] Renewable Energy Certificates (RECs) are generated during a compliance year in real time, but trading runs from July through June. Thus, Compliance Year 2014 runs from July 2014 through June 2015.

[2] Per R.I. Gen. Laws § 39-26-2, Obligated Entities sell electrical energy to end-use customers in Rhode Island, including, but not limited to: non-regulated power producers and electric utility distribution companies. Block Island Power Company and Pascoag Utility District are specifically exempt.

[3] An individual Obligated Entity's load obligation is rounded to the nearest whole MWh.

[4] An individual Obligated Entity's New and Existing Renewable Energy obligation is rounded up to the nearest whole MWh.

[5] On July 30, 2014, an Obligated Entity indicated in its RES compliance filing to the PUC that it had filed for Chapter 11 Bankruptcy protection effective April 11, 2014. The PUC informed the RI Commerce Corporation of the outstanding ACP payment, and in September 2015 began procedures for non-compliance described in Section 9 of the RES rules. The PUC is aware that the same entity failed to comply with its renewable obligation in Massachusetts, and that agencies there have begun executing their non-compliance procedures.

[6] As explained on its website, NEPOOL GIS "issues and tracks certificates for each MWh of generation produced in the ISO New England control area, including imports from adjacent control areas, and all load served." The terms "GIS Certificate" and "Renewable Energy Certificate," or "REC," are often used interchangeably in the marketplace. REC is a more general term, while it is the settlement of GIS Certificates that substantiates RES compliance.

Table E.1: Composition of 2014 REC Compliance

	New RES Obligation	Existing RES Obligations
2014 Minimum Obligations [a]	519,067 Certificates	159,720 Certificates
GIS Certificates Retired for 2014 RI RES Compliance (MWh, %)	514,139 (99.05%) [b]	159,716 (99.99%)
RI RES Compliance by Alternative Compliance Payments (MWh, %, $)	732 MWh (0.14%) $48,429	4 MWh (0.01%) $265
Banked for Future Compliance	16,232 MWh	Not Applicable
Over-compliance / RECs Not Banked	0	63,803
Outstanding REC / ACP obligation (#, $)	4,196 $277,607	0 $0

a. See footnote 3 of the text.
b. This value includes the application of 17,745 banked RECs from Compliance Years 2012 and 2013 and represents the 2014 minimum obligation less the REC shortfall that should have been met through ACPs.

capacity and the retrofitting of existing resources throughout the NEPOOL region, as well as a significant increase in the quantity of RES-eligible imports during this period. An additional 16,232 New RECs (minted in 2014) were retired by Obligated Entities and banked for use toward compliance in either Compliance Year 2015 or 2016.

Nearly 100% of the State's 2014 Existing RES obligation was met through retiring RECs. Cumulatively, Obligated Entities combined to procure a net excess of 63,797 RECs above the 2014 Existing REC requirement, a 39.9% surplus. Banking of Existing RECs is not allowed under Rhode Island's Renewable Energy Standard Rules and Regulations.

Taken as a whole there was a New and Existing REC surplus among Obligated Entities. Taken individually, however, three Obligated Entities chose to comply, partially, by making ACPs totaling approximately $48,494 in lieu of retiring 732 New and 4 Existing RECs.[7] In addition, one Obligated Entity filed for Chapter 11 bankruptcy protection, and left an outstanding obligation of 4,196 New RECs with an ACP value of approximately $277,607. Disregarding the balance left by the bankruptcy proceeding, the ACP cost in Compliance Year 2014 held steady compared to the $56,393 in ACP cost paid in Compliance Year 2013, and is down substantially from $2.25 million in 2012 and $5.24 million in 2011.

Twenty-two load-serving entities had RES obligations during Compliance Year 2014.[8] Eighteen of these entities met their entire New and Existing RES obligations by retiring RECs, as compared to Compliance Year 2013 when only fourteen of twenty-two entities met their obligations entirely with RECs. Four competitive energy suppliers met a portion of their 2014 individual RES obligations by making ACPs to the Rhode Island Commerce Corporation. Not a single Obligated Entity complied entirely with ACPs, unlike in previous years. Eleven Obligated Entities utilized some of their authorized Banked Compliance in 2014, while eleven Obligated Entities banked RECs minted in 2014 for use in 2015 or 2016. This increased reliance on RECs—and decreased reliance on ACPs—by individual entities is further evidence that the 2013 and 2014 NEPOOL GIS REC market supply was less constrained than in previous compliance years.

2014 REC Resources

Most of the New RECs settled in 2014 were generated at facilities fueled by landfill gas (44.2%), followed by biomass (30.1%), wind (12.4%), hydro (8.3%), solar photovoltaic (3.0%), and digester gas (2.0%).[9] This

[7] In Compliance Year 2014, ACPs in lieu of both New and Existing RECs are valued at $66.16 per MWh.

[8] See Table 2 below for a complete list of load-serving entities filing Annual Compliance Reports.

[9] Not all of the RECs purchased, minted, and settled in Compliance Year 2014 were used to meet Compliance Year 2014 obligations. Some RECs were banked for use in Compliance Years 2015 and 2016. Additionally, this summary excludes voluntary REC purchases above and beyond the RES. Voluntary clean energy programs are summarized in Appendix 6 of this Report.

Figure E.1: Historical New RECs by Fuel Source

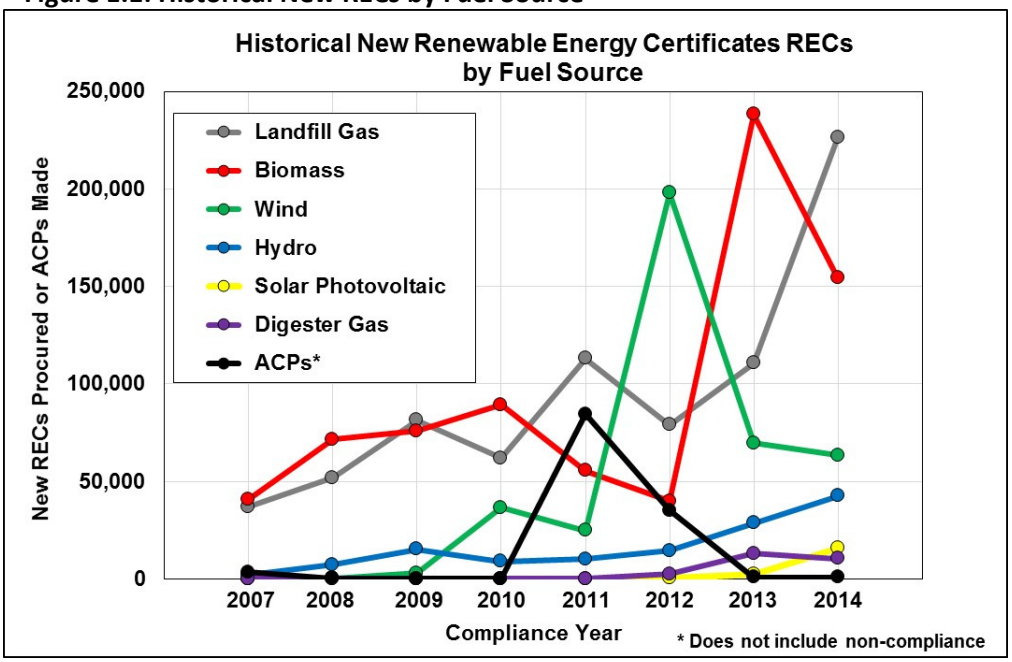
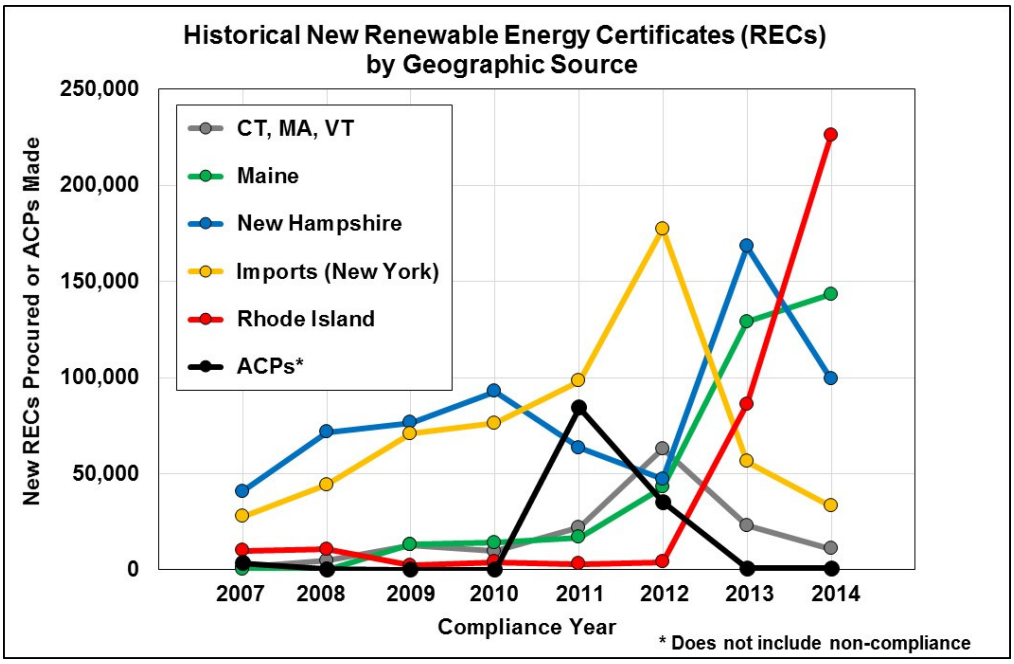


Figure E.2: Historical New RECs by Geographic Source



represents a decrease in reliance on biomass and a resurgence in reliance on landfill gas, with a notable increase in solar photovoltaic RECs (Figure E.1). In terms of location, most of the New RECs settled in 2014 were sourced from Rhode Island (44.1%), a significant increase from previous years, with the rest coming from Maine (28.0%); New Hampshire (19.3%); New York imports (6.5%); and Massachusetts, Vermont, and Connecticut (combined totaling 2.1% [Figure E.2]). As in all previous compliance years, all of the Existing RECs were generated at hydro facilities; this year the hydro facilities were located in Maine, Massachusetts, and New Hampshire.[10] Finally, twelve projects were approved as Renewable Energy Resources by the PUC

[10] Additional information on the composition of 2014 RES compliance by fuel type and geographic location is provided in Section III of this report.

since last year's Annual Report, bringing the current total to 170 resources approved as New, Existing, or partial New and partial Existing.[11]

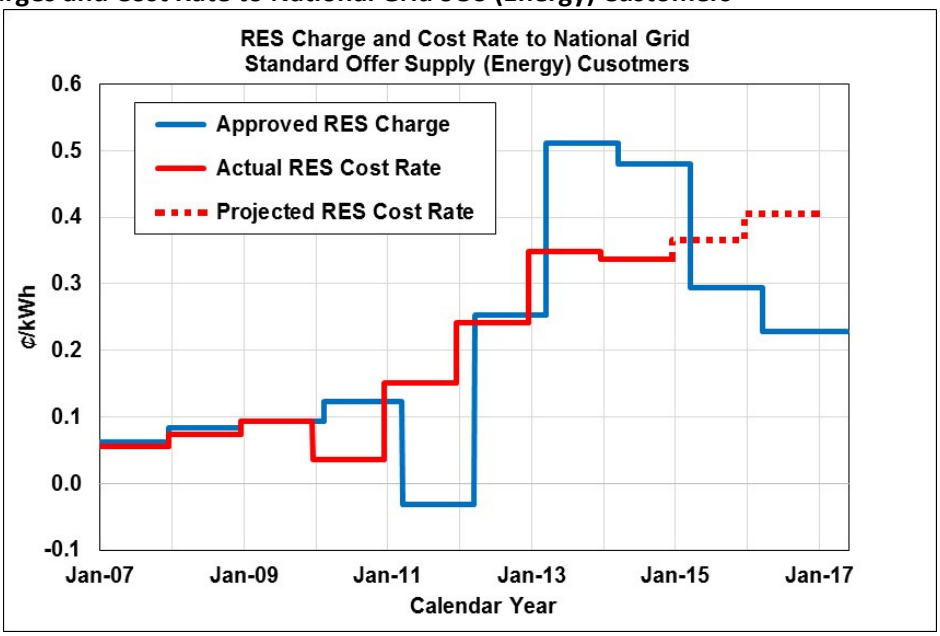
2014 Customer Charges

The Narragansett Electric Company d/b/a National Grid (National Grid) is the only Obligated Entity for which the PUC collects data on the charges to ratepayers for complying with the RES. [12] Early in a calendar year, National Grid proposes a charge designed to collect the costs of compliance during the upcoming compliance year, outstanding costs for the remainder of the current compliance year, and to true up any outstanding cumulative under- or over-collection made during previous compliance years. In April 2014 this charge to National Grid customers was reduced from $0.00512 per kWh to $0.00480 per kWh, caused mostly by a reduction of the factor used to correct for outstanding costs incurred in previous periods (Table E.2; Figure E.3). While this report focuses on Compliance Year 2014, it is noted that in April 2015, the RES charge was reduced again to $0.00294, reflecting both a decrease in the estimated cost of New REC compliance in 2015 and a change from an under-collection factor to an over-collection factor for previous periods. The charge was reduced again, slightly, effective April 1, 2016, due to an increase in the over-collection factor that is slightly greater than the projected increase in the Compliance Year 2016 cost factor.

Table E.2: Estimated Rate Impact for RES Compliance to Standard Offer Service Customers

Effective Date	Projected REC Procurement Cost (per kWh)	Adder for previous and current costs (per kWh)	Authorized RES Charge (per kWh)	Monthly/ Annual Cost to 500 kWh Ratepayer
April 2016 – Report Date	$0.00405	($0.00177)	$0.00228	$1.14/$13.68
April 2015 – March 2016	$0.00366	($0.00072)	$0.00294	$1.47/$17.64
April 2014 – March 2015	$0.00430	$0.00050	$0.00480	$2.40/$28.80
April 2013 – March 2014	$0.00371	$0.00141	$0.00512	$2.56 / $30.72

Figure E.3: RES Charges and Cost Rate to National Grid SOS (Energy) Customers



[11] See Appendix 1 for a list of resources. Additions of capacity attributable to certain upgrades to Existing resources can be counted as new.

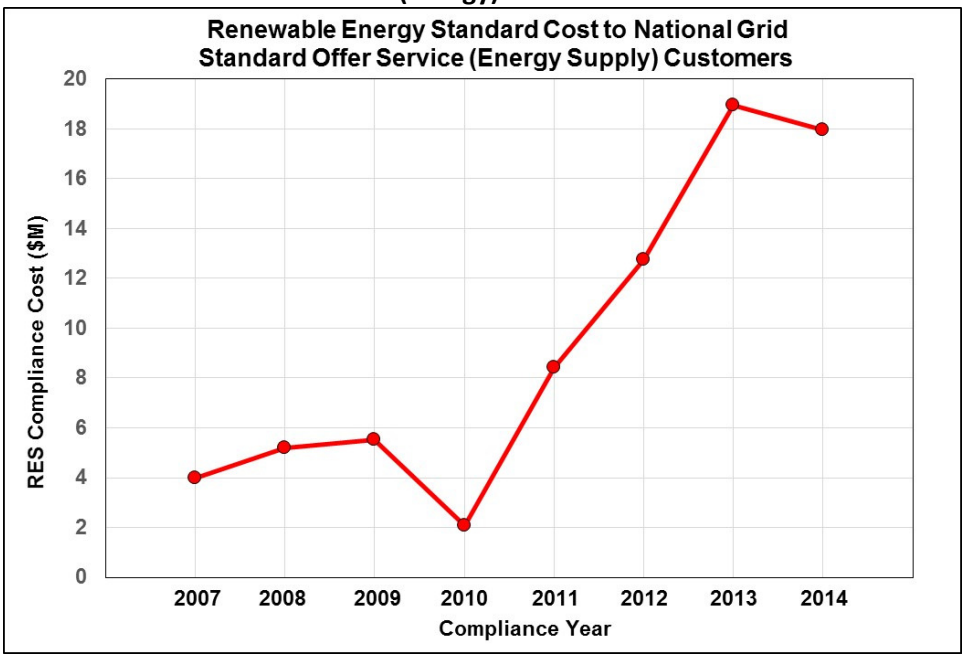
[12] The complete history of RES charges to National Grid's Standard Offer Service customers is provided below in Table 5.

Table E.3: Summary of National Grid's 2014 REC Compliance Costs [a]

Compliance Year	Total RES Costs (Millions)	New REC Costs (Millions)	Existing REC Costs (Millions)	ACP Costs (Millions)	Obligated Load (MWh)
2014	$17.95	$17.93	$0.07	N/A	5,317,349
2013	$18.96	$18.9	$0.06	N/A	5,541,409
2012	$12.8	$12.75	$0.05	N/A	5,272,388

a. These figures are based on communications with National Grid employees. Summation of these costs may not match the reported total costs, which were based on National Grid filings cited in footnote 15 of the text.

Figure E.4: Compliance Costs to National Grid SOS (Energy) Customers



2014 Compliance Costs

National Grid is also the only Obligated Entity for which the PUC collects cost-of-compliance data.[13] The expense that National Grid incurred to comply with the RES decreased for the first time since 2010, dropping from $18.96 million in 2013 to $17.95 million in 2014, or approximately 5.3% (Table E.3; Figure E.4).[14] Approximately $12.95 million (72%) of that expense was for purchases of RECs generated by projects in National Grid's Long-term Contracting programs.[15] This decreased compliance cost to National Grid may reflect an increasing supply in Rhode Island-eligible RECs, which was also described above in relation to a surplus in New RECs retired by Obligated Entities and a low reliance on ACPs in Compliance Year 2014. The current cost rate of the RES obligation to National Grid's Standard Offer Service energy customers (Total RES Costs divided by Obligated Load) was approximately 0.338¢/kWh in Compliance Year 2014, down slightly from last year (Figure E.3). The decrease marks the end of an approximately 0.10¢/kWh increase every compliance year since 2010. National Grid, however, projects the cost rate to resume increasing again, first to 0.366¢/kWh in 2015 and then to 0.405¢/kWh in 2016 as illustrated by the dashed segment of the cost rate line in Figure E.2.

It must be noted that this data only represents expenses incurred by Standard Offer Service

[13] The complete history of RES cost to National Grid's Standard Offer Service customers is provided below in Table 6.

[14] See National Grid filings in Docket N0. 4490. For underlying data see filings at www.ripuc.org/eventsactions/docket/4490-NGrid-RES-Reconciliation_2-23-15.pdf and at www.ripuc.org/eventsactions/docket/4490-NGrid-SOS-Reconcile-Q3-2015(10-30-15).pdf

[15] R.I. Gen. Laws § 39-26.1 and § 39-26.2.

customers of National Grid, accounting for approximately 66.6% of all retail load statewide in 2014. The remaining 33.4% of statewide electric load is serviced by competitive suppliers for whom the PUC does not have access to compliance cost data. A REC surplus would potentially lower compliance costs to other Obligated Entities. Further, there is market information that indicates that prices for Rhode Island-eligible RECs and for RECs eligible to meet other New England states' renewable portfolio standards remained stable or decreased throughout the Compliance Year 2014 trading period.[16] It should also be noted that National Grid passes unpredicted savings and expenses resulting from changes in the REC market onto Standard Offer Service customers and distribution customers. Other Obligated Entities (non-regulated competitive energy suppliers) may pass some of the REC market risk to their company's profits and losses rather than pass it onto their customers dollar-for-dollar. Finally, in addition to the costs enumerated above, the Commission incurred approximately $95 thousand in expenses related solely to the administration of the RES for Compliance Year 2014.

2014 Conclusions

This analysis concludes that the Rhode Island RES continues to operate successfully. One caveat to this conclusion is that for two years in a row, a non-regulated power producer (i.e., a competitive supplier) declared bankruptcy, failed to comply with its RES obligation, and caused the State to miss its full RES target. The growth in cost of the RES to ratepayers has likely slowed, and has certainly slowed for National Grid Standard Offer Service customers, but is expected to continue rising in future compliance years.

The number of Rhode Island-eligible generating units continues to grow, including facilities located within the State, as does the number of new renewable energy projects proposed throughout the region and adjacent control areas. The PUC remains cautiously optimistic that the supply of Rhode Island-eligible New RECs will continue to grow and that Obligated Entities will be able to source RECs in a balanced marketplace over the next several years, with sustained minor reliance on ACPs. However, economic conditions, various permitting and interconnection issues, uncertainty over the long-term availability of federal incentives, availability of long-term contracting for renewable projects, and other factors that impact investment decisions all have the potential to delay the large pipeline of projects currently under development. As a result, it is difficult to predict in which years supply will balance with demand, and in which a gap between the two will exist.

[16] See, e.g., http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=5 and references therein. Last accessed February 11, 2016.

I. Introduction to the Renewable Energy Standard

The Rhode Island Renewable Energy Standard (RES) was enacted in 2004 via R.I. Gen. Laws §§ 39-26-1 to 10 and requires the state's retail electricity providers (referred to as Obligated Entities), excluding Pascoag Utility District and Block Island Power Company, to supply 14.5%[17] of their retail electricity sales from eligible renewable energy resources by 2019. The RES remains in effect (at 2019 levels) in 2020 and each year thereafter, unless and until the Rhode Island Public Utilities Commission (PUC) determines that the standard is no longer necessary.

Compliance Year 2014 was the eighth compliance year for Rhode Island's RES.[18] The RES required all Obligated Entities to obtain at least 8.5% of electricity sold in 2014 to Rhode Island end-use customers (inclusive of losses) from Eligible Renewable Energy Resources. No more than 2.0% could be from Existing Renewable Energy Resources and a minimum of 6.5% must have been obtained from New Renewable Energy Resources (see Table 1).

Table 1: RES Targets, by compliance year, for both new and existing resources

Compliance Year	Total Target percentage	Minimum percentage from New Renewable Energy Resources	Percentage from *either* Existing *or* New Renewable Energy Resources
2007	3.0%	1.0%	2.0%
2008	3.5%	1.5%	2.0%
2009	4.0%	2.0%	2.0%
2010	4.5%	2.5%	2.0%
2011	5.5%	3.5%	2.0%
2012	6.5%	4.5%	2.0%
2013	7.5%	5.5%	2.0%
2014	8.5%	6.5%	2.0%
2015[a]	8.5%	6.5%	2.0%
2016[a]	10.0%	8.0%	2.0%
2017[a]	11.5%	9.5%	2.0%
2018[a]	13.0%	11.0%	2.0%
2019[a]	14.5%	12.5%	2.0%
2020 and thereafter [a, b]	14.5%	12.5%	2.0%

[a] After conducting a review pursuant to R.I. Gen. Laws Sec. 39-26-6(d), in Docket No. 4404, the PUC delayed implementation of the scheduled 1.5% increase in 2015. This resulted in a delay of all subsequent increases for a period of one year

[b] R.I. Gen. Laws § 39-26-4(a)(5) states, "In 2020 and each year thereafter, the minimum renewable energy standard established in 2019 shall be maintained…."

Additional design elements of the RES were developed through a stakeholder process and adopted via the Rules and Regulations Governing the Implementation of a Renewable Energy Standard, which first became effective on December 7, 2005. Revised RES Regulations became effective on July 25, 2007. The RES Regulations require, among other provisions, that all Obligated Entities submit annual compliance filings to

[17] Following the Commission's decision on Docket No. 4404, to delay the 1.5% increase in New RES in 2015 to 2016, will establish a maximum RES target of 14.5% in 2019 (12.5% New and 2.0% Existing). This 14.5% target will remain in effect in 2020 and each year thereafter, unless and until the PUC determines that the standard is no longer necessary.

[18] January 1, 2014 through December 31, 2014.

the PUC. This report is based on an aggregated summary of these compliance filings and is intended to satisfy the reporting requirements related to the enabling legislation at §39-26-6(f), which directs the PUC to:

> Report, by February 15, 2006, and by February 15 each year thereafter, to the governor, the speaker of the house and the president of the senate on the status of the implementation of the renewable energy standards in Rhode Island and other states, and which report shall include in 2009, and each year thereafter, the level of use of renewable energy certificates by eligible renewable energy resources and the portion of renewable energy standards met through alternative compliance payment.

The RES statute defines eligible New and Existing Renewable Energy Resources at §39-26-5. All Renewable Energy Resources must be certified by the PUC (and maintain this certification) in order to participate in the RES program. Lists of New and Existing Renewable Energy Resources currently certified by the PUC are provided as Appendices 1 and 2, respectively. An up-to-date status of all approved and pending eligibility applications can be found on the PUC website at www.ripuc.org/utilityinfo/res.html.

All Renewable Energy Resources must also establish and maintain an account with the NEPOOL Generation Information System (NEPOOL GIS). NEPOOL GIS maintains a record of each generator's monthly production, as well as the generator's descriptive characteristics such as generator location, fuel type, and actual emissions. One GIS Certificate is created for each MWh of energy production generated within, or imported into, the ISO New England (ISO-NE) control area, which encompasses Rhode Island. A single GIS Certificate for one MWh of eligible renewable energy generation is also commonly known as a Renewable Energy Certificate (REC).[19] The GIS Certificate is the currency used to demonstrate compliance with the RES, as well as mandatory renewable energy requirements in other states, and voluntary renewable energy transactions throughout the ISO-NE control area. Through the use of GIS Certificates, which are created and transferred exclusively within the NEPOOL GIS, and the annual submission of RES compliance reports, the PUC ensures that a GIS Certificate used for RES compliance has not also been used to satisfy another obligation in Rhode Island or any other jurisdiction. In this way, the PUC rules guards against any "double counting" of RECs.

[19] As explained on its website, NEPOOL GIS "issues and tracks certificates for each MWh of generation produced in the ISO New England control area, including imports from adjacent control areas, and all load served." The terms "GIS Certificate" and "Renewable Energy Certificate," or "REC," are often used interchangeably in the marketplace. While REC is the more general term used to denote a generator's descriptive characteristics (i.e. fuel type, vintage and geographic location) it is the settlement of GIS Certificates within the Obligated Entity's NEPOOL GIS account that substantiates RES compliance.

II. Compliance Year 2014: Obligation and Sources of Compliance

Rhode Island's actual 2014 RES-obligated retail sales totaled 7,985,473 megawatt-hours of electrical energy (MWh). As a result, the aggregate minimum New RES obligation (6.5%) was 519,067 MWh, while the aggregate New or Existing RES obligation (2.0%) was 159,720 MWh.[20] Obligated Entities were required to meet the RES either through the purchase and retirement of NEPOOL GIS Renewable Energy Certificates (RECs)[21] or through the provision of Alternative Compliance Credits, obtained by making Alternative Compliance Payments (ACPs) to the Rhode Island Commerce Corporation. The Rhode Island Commerce Corporation sets these funds aside in the Renewable Energy Development Fund, established under R.I. Gen. Laws § 39-26-7, to support investments in renewable energy. In 2014, the ACP rate was $66.16 per MWh of obligation. The rate is the same for both New and Existing RES obligations. See Appendix 3 for additional information regarding ACPs.

Table 2: Obligated Entities Submitting 2014 REC Compliance Filings to the PUC

Distribution Utilities	
The Narragansett Electric Company d/b/a National Grid	
Competitive Retail Providers (Non-regulated power producers)	
Ambit Northeast, LLC	Liberty Power Holdings, LLC
Consolidated Edison Solutions, Inc.	Mint Energy, LLC
Constellation New Energy, Inc.	Moore Energy, LLC
Constellation Energy Services, Inc.	NextEra Energy Services Rhode Island, LLC (Gexa Energy LLC)
Devonshire Energy, LLC	Noble Americas Gas and Power Corp.
Direct Energy Business, LLC	North American Power and Gas
Hess Energy Marketing, LLC[a] Hess Corporation[a]	South Jersey Energy Company
First Point Power, LLC	TransCanada Power Marketing, LLC
Glacial Energy of New England, Inc.	Westerly Hospital Energy Company LLC
Gulf Oil Limited Partnership	XOOM Energy, LLC
[a] Loads tracked and accounted for separately, but both are subsidiaries of Direct Energy Business Marketing.	

In total, twenty-two entities submitted RES Compliance Filings to the PUC including National Grid and twenty-one competitive electricity providers, as shown in Table 2. Notably, one entity, Glacial Energy of New England, Inc., submitted an RES Compliance Filing, but failed to cover its full obligation.[22] Appendix 4 lists

[20] Note that the total New and Existing RES obligations are slightly higher than 6.5% and 2.0% of total obligated retail sales due to rounding protocols for individual Obligated Entities.

[21] As explained on its website, NEPOOL GIS "issues and tracks certificates for each MWh of generation produced in the ISO New England control area, including imports from adjacent control areas, and all load served." The terms "GIS Certificate" and "Renewable Energy Certificate," or "REC," are often used interchangeably in the marketplace. While REC is the more general term used to denote a generator's descriptive characteristics (i.e. fuel type, vintage and geographic location) it is the settlement of GIS Certificates within the Obligated Entity's NEPOOL GIS account that substantiates RES compliance. RECs are issued about seven months after they are generated. Thus, January 2014 RECs are issued June 15, 2014. Because of this lag, trading for 2014-vintage RECs and the costs incurred by Obligated Entities for Compliance Year 2014 continued through June 15, 2015.

[22] One Obligated Entity had an outstanding obligation of 4,196 New RECs. On July 30, 2014, the Company indicated in its RES compliance filing to the PUC that it had filed for Chapter 11 Bankruptcy protection effective April 11, 2014. The PUC informed the RI Commerce Corporation of the outstanding ACP payment, and in September 2015 began procedures for non-compliance described in Section 9 of the RES rules. Their portion of the total Rhode Island load (4,196 MWh) was not met through ACP or REC procurement. The PUC is aware of the same non-compliance in Massachusetts associated with the same company, and that Massachusetts has begun executing its non-compliance procedures.

all entities from whom Compliance Filings were received and provides a detailed summary of RES compliance for National Grid Company along with a more limited summary for competitive retail electricity providers.

Table 3: Summary of 2014 REC Compliance

Results for Compliance Year 2014		**(MWh)***
A	**2014 RES Obligated Retail Sales**	7,985,473
A.1	National Grid	5,317,349
A.2	Competitive Suppliers (21 in total submitting filings)	2,668,123
New RES Obligations and New Renewable Energy Certificates		
B	**Total 2014 New RECs Settled in Rhode Island****	**530,373**
B.1	2014 New RECs Purchased	512,628
B.2	Banked 2012 and 2013 New RECs Applied	17,745
C	**New RES Obligations (6.5% of "A")**	519,067
C.1	Banked RECs Applied to 2014 New Obligations (from B.2)	17,745
C.2	2014 New RECs Applied to 2014 New Obligations (Subset of B.1)	496,394
C.3	Alternative Compliance Payment Credits Applied to 2014 New RES Obligations	732
C.4	Outstanding Obligation (RECs or ACPs)	4,196
D	**Banked RECs Available for Compliance Year 2015 or 2016**	
D.1	Remaining RECs Available after Meeting New RES Obligations	16,234
D.2	2014 New RECs applied to 2014 Existing RES Obligations	2
D.3	RECs banked for future use in Compliance Years 2015 or 2016	16,232
D.4	2014 New RECs purchased above 30% banking cap (not eligible for banking)	0
Existing RES Obligations and Existing Renewable Energy Certificates		
E	**Existing RES Obligations (2.0% of "A")**	159,720
E.1	2014 Existing RECs applied to 2014 Existing RES Obligations	159,714
E.2	2014 New RECs applied to 2014 Existing RES Obligations (from D.2)	2
E.3	Alternative Compliance Payment Credits Applied to 2014 Existing RES Obligations	4
E.4	Outstanding Obligation (RECs or ACPs)	0
F	**Total 2014 Existing RECs Settled in Rhode Island[1]**	**223,517**
F.1	2014 Existing and New RECs applied to 2014 Existing RES Obligations (E.1 plus E.2)	159,716
F.2	2014 Existing RECs purchased above 2014 RES Obligations (not eligible for banking)	63,803

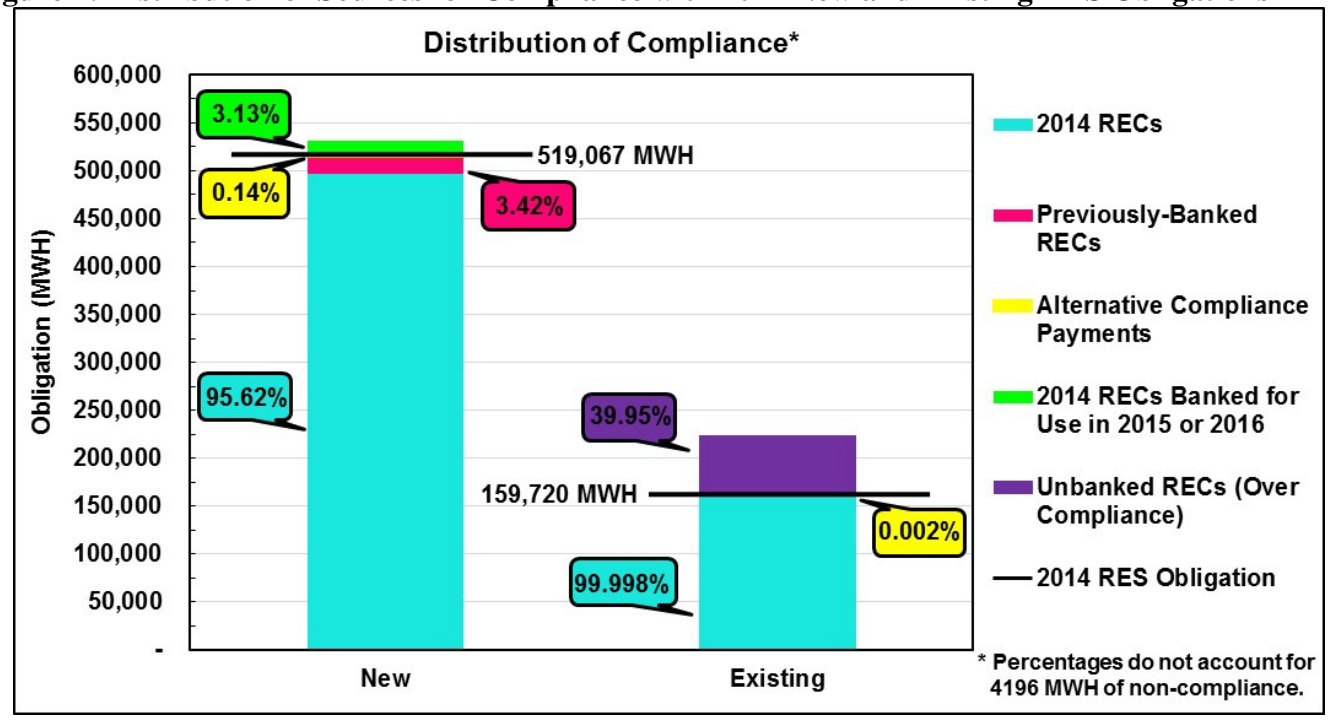
* Values may not be additive due to rounding protocol with individual Obligated Entities.

** Does not include RECs purchased on behalf of end-use customers for voluntary clean energy programs. See Appendix 6 for details on RECs purchased for voluntary programs.

Eighteen of these entities met their entire RES obligation by retiring RECs, as compared to Compliance Year 2013 when only fourteen of twenty-two entities met their obligations entirely with RECs. Four competitive energy suppliers met a portion of their 2014 individual RES obligations by making ACPs to the Rhode Island Commerce Corporation; no Obligated Entities complied entirely with ACPs. Eleven Obligated Entities utilized some of their Banked Compliance, while eleven Obligated Entities banked RECs minted in 2014 for use in 2015 or 2016. A breakdown of compliance by the numbers is presented in Table 3.

For Compliance Year 2014 RECs were used to meet more than 99% of Rhode Island's New RES obligation (Figure 1). The total number of New RECs procured by Obligated Entities was 530,373, including 17,745 Certificates banked from Compliance Year 2012 or 2013 used to meet Compliance Year 2014 obligations and 16,232 New RECs (minted in 2014) that were retired by Obligated Entities and banked for use toward compliance in either Compliance Year 2015 or 2016. This represented a 2.2% surplus compared to the 2014 New RES obligation for all Obligated Entities. This surplus is down slightly from the 4.2% surplus for Compliance Year 2013, but still up significantly from the 6.1% deficit recorded in Compliance Year 2012 and the 26.3% deficit recorded in Compliance Year 2011. This surplus in New RECs reflects a sustained increase in regional renewable energy supply through the construction of additional capacity and the retrofitting of existing resources throughout the NEPOOL region, as well as a significant increase in the quantity of RES-eligible imports during this period.

Figure 1: Distribution of Sources for Compliance with 2014 New and Existing RES Obligations



Nearly 100% of the State's 2014 Existing RES obligation was met through retiring RECs (Figure 1). In total Obligated Entities combined to procure an excess of 63,797 RECs above the 2014 Existing REC requirement, a 39.9% surplus.[23] Unlike New RECs, banking of Existing RECs is not allowed under Rhode Island's Renewable Energy Standard Rules and Regulations.[24]

Taken as a whole there was a New and Existing REC surplus among Obligated Entities. Taken individually, however, three Obligated Entities chose to comply, partially, by making ACPs totaling approximately $48,494 in lieu of retiring 732 New and 4 Existing RECs.[25] In addition, one Obligated Entity, Glacial Energy of New England, Inc., filed for Chapter 11 bankruptcy protection, and left an outstanding obligation of 4,196 New RECs with an ACP value of approximately $277,607. Disregarding the balance left by the bankruptcy

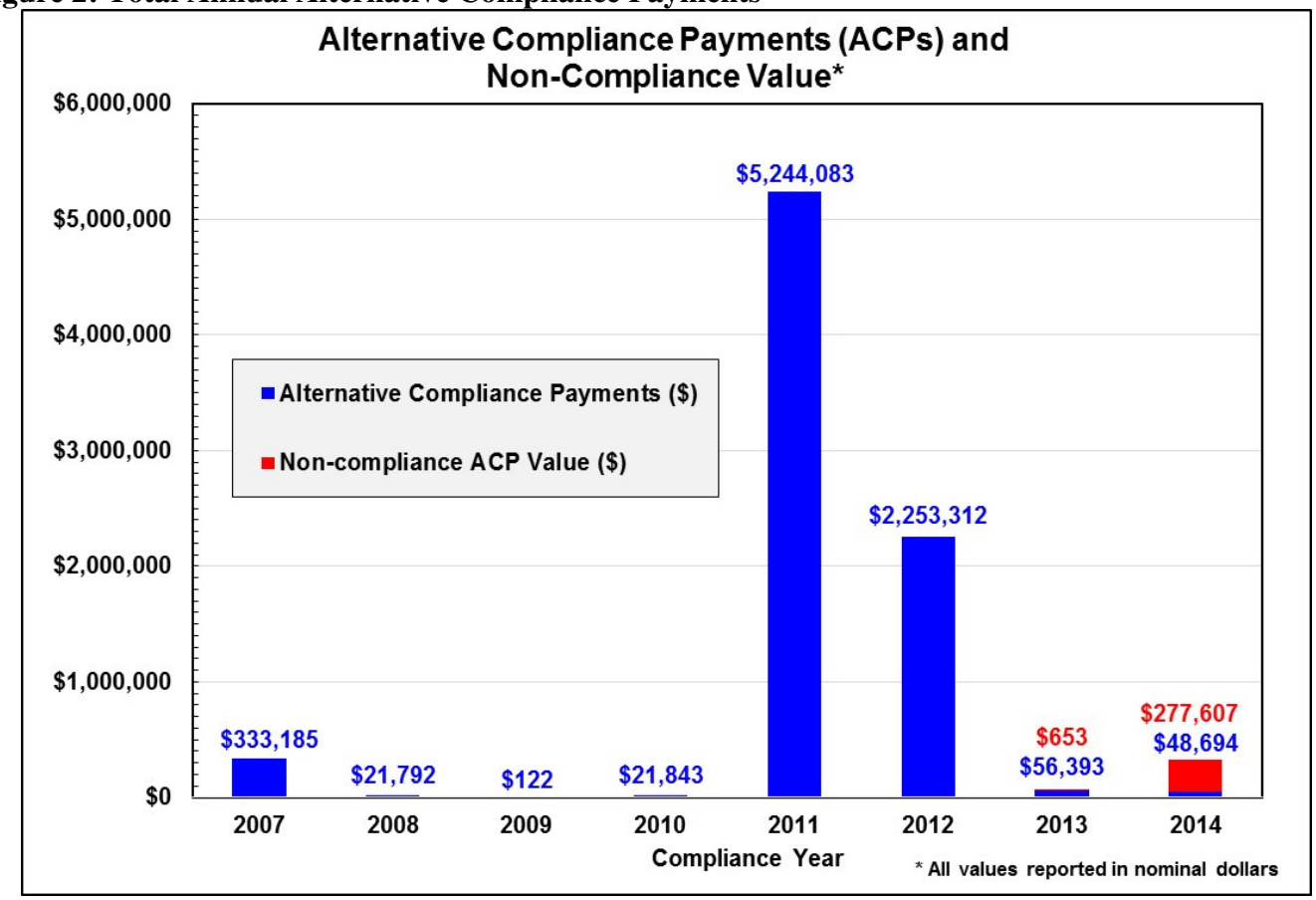
[23] The number represents the combined excess of all Obligated Entities (68,803) less the combined shortfall of all Obligated Entities (6).

[24] National Grid was not one of these entities. It is possible that these companies injudiciously over-procured RECs or they purchased them intentionally for some other purpose.

[25] In Compliance Year 2014, ACPs in lieu of both New and Existing RECs are valued at $66.16 per MWh.

proceeding, the ACP cost in Compliance Year 2014 held steady compared to the $56,393 in ACP cost paid in Compliance Year 2013, and is down substantially from $2.25 million in 2012 and $5.24 million in 2011 (Figure 2).

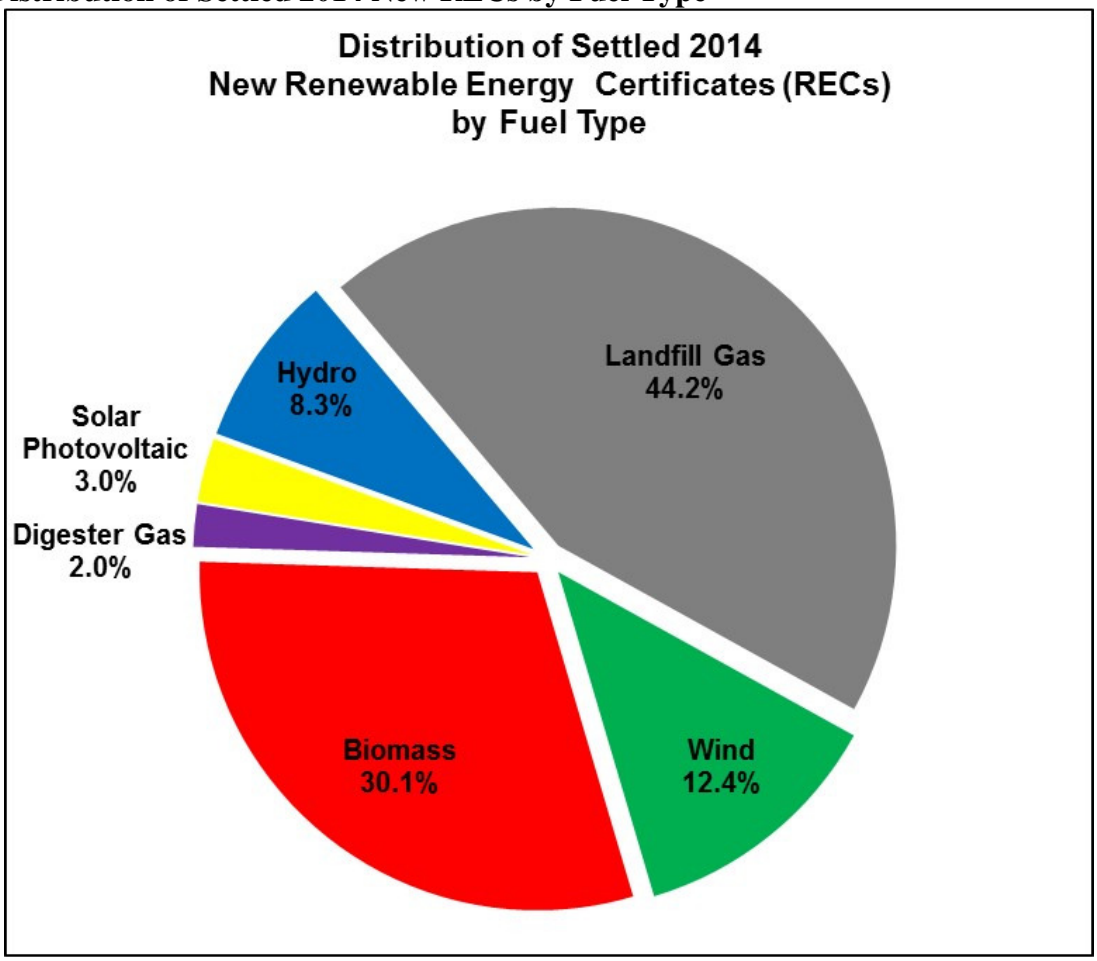
Figure 2: Total Annual Alternative Compliance Payments



III. 2014 RES Compliance by Fuel Type and Geographic Location

In 2014, New and Existing RECs minted, purchased, and settled in Compliance Year 2014 were generated by six types of renewable energy generators: biomass, digester gas, hydroelectric, landfill gas, solar photovoltaic, and wind.[26] Most of the New RECs settled in 2014 were generated at facilities fueled by landfill gas (44.2%), followed by biomass (30.1%), wind (12.4%), hydro (8.3%), solar photovoltaic (3.0%), and digester gas (2.0% [Figure 3]). In terms of location, most of the New RECs settled in 2014 were sourced from Rhode Island (44.1%) with the rest coming from Maine (28.0%); New Hampshire (19.3%); New York imports (6.5%); and Massachusetts, Vermont, and Connecticut (2.1% combined [Figure 4]). Compared to Compliance Year 2013, there was a significant increase in New RECs generated from landfill gas resources, which has not been the leading resource of New RECs since Compliance Year 2011 (Figure 5). Simultaneously, there was an increase in New RECs sourced from Rhode Island, which has never ranked higher than third as a source for New RECs (Figure 6).

Figure 3: Distribution of Settled 2014 New RECs by Fuel Type



The change in REC geographic distribution are largely driven by a single project, the Rhode Island LFG Genco, LLC landfill gas generation plant in Johnston, Rhode Island (Genco Plant). Pursuant to R.I. Gen.

[26] Not all of the RECs purchased, minted, and settled in Compliance Year 2014 were used to meet Compliance Year 2014 obligations. Some RECs were banked for use in Compliance Years 2015 and 2016, while others were purchased in excess of the obligation. This summary of New and Existing REC resources excludes RECs retired for the purpose of substantiating renewable energy claims associated with end-use customer voluntary purchases above and beyond the RES. Voluntary clean energy programs are summarized in Appendix 6 of this Report.

Laws § 39-26.1-9, the Genco Plant owners executed a power purchase agreement (PPA) in May 2010 with National Grid.[27] The plant achieved commercial operation in May 2013 and was subsequently approved by the PUC as a Rhode Island-eligible renewable energy resource on June 11, 2013.[28] Thus, the Genco Plant's first full year of operation was Compliance Year 2014, during which National Grid would have expected the plant's annual energy output to be 239,016.6 MWh.[29] The PPA included the sale of RECs generated from the Genco Plant to National Grid, all of which were in turn were sold to Standard Offer Service energy supply customers to help meet National Grid's 2014 RES obligation.[30] Therefore the plant was expected to produce approximately 47% of the 512,628 New RECs retired in Compliance Year 2014. In actuality, approximately 41% of the New RECs were sourced from landfill gas facilities in Rhode Island, most of which are presumed to have come from the Genco Plant.[31]

The rise in New RECs generated by landfill gas facilities sourced from Rhode Island was accompanied with a fall in the number and share of New RECs from biomass facilities in Maine and, in particular, New Hampshire (Figures 4, 5, and 6). Approximately 18% of all New RECs settled in 2014 came from biomass facilities in New Hampshire (Figure 4); this is down significantly from 2013 when approximately 36% of all New RECs settled came from biomass facilities in New Hampshire.[32]

Compliance Year 2014 also had a sustained decrease in reliance (as in 2013) on wind-generated New RECs compared to two years ago when wind was the primary source of New RECs in Compliance Year 2012 (Figure 5). This two-year decrease is likely associated with a continued decrease in reliance on New York Imports; in 2012, New RECs generated by wind imported from New York accounted for more RECs than any other source, at 35% of all New RECs settled in that compliance year.

Additionally, there is a continued and steady increase in New RECs generated from hydroelectric facilities throughout the region, and a sharp rise in solar photovoltaic New RECs sourced from Rhode Island. The latter is primarily the direct result of National Grid's statutory long-term contracting programs,[33] rather than a direct result of the RES.

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[27] The statute exempted the project from PUC review and approval under certain project conditions that were indeed met by the proposed project. The statute required certain certification of the PPA by the Division of Public Utilities and Carriers, the Department of Administration, the Commerce Corporation (formerly the Economic Development Corporation), and the Office of Energy Resources, all of which were issued in July 2010. The PPA can be found at http://www.ripuc.org/eventsactions/docket/D-10-36-NGrid-PPA-LFG(6-7-10).pdf.

[28] PUC Amended Effective Date Pursuant to Order No. 21165, http://www.ripuc.org/eventsactions/docket/4201-PUC-LFGGenco-AmendedEffectiveDate(10-4-13).pdf.

[29] See for example National Grid Long-Term Contracting for Renewable Energy Recovery Factor Docket No. 4535, Attachment 1 at 2, http://www.ripuc.org/eventsactions/docket/4535-NGrid-LTCRER_Factor(11-17-14).pdf

[30] In Compliance Year 2014, National Grid filed an RES compliance plan that included using all RECs from all contracts signed pursuant to R.I. Gen. Laws § 39-26.1 and § 39-26.2 to meet the RES obligation for Standard Offer Service customers. See National Grid 2014 Standard Offer Service Procurement Plan 2014 Renewable Energy Standard Procurement Plan Docket No. 4393, Schedule 7, http://www.ripuc.org/eventsactions/docket/4393-NGrid-SOS-RES-Procurements(3-1-13).pdf

[31] In Compliance Year 2014, the only other RES-eligible landfill gas facilities located in Rhode Island were Johnston Landfill Expansion Phases I and II, also located in Johnston, RI, with 2.4 MW and a 6 MW nameplate capacity, respectively. This report does not investigate to whom RECs from these facilities, if any, were sold or transferred.

[32] Rhode Island Renewable Energy Standard Annual RES Compliance Report for Compliance Year 2013, February 2013. Full report at http://www.ripuc.org/utilityinfo/RES-2013-AnnualReport.pdf.

[33] R.I. Gen. Laws § 39-26.1 and § 39-26.2.

Figure 4: Distribution of Settled 2014 New RECs by State and Fuel Type

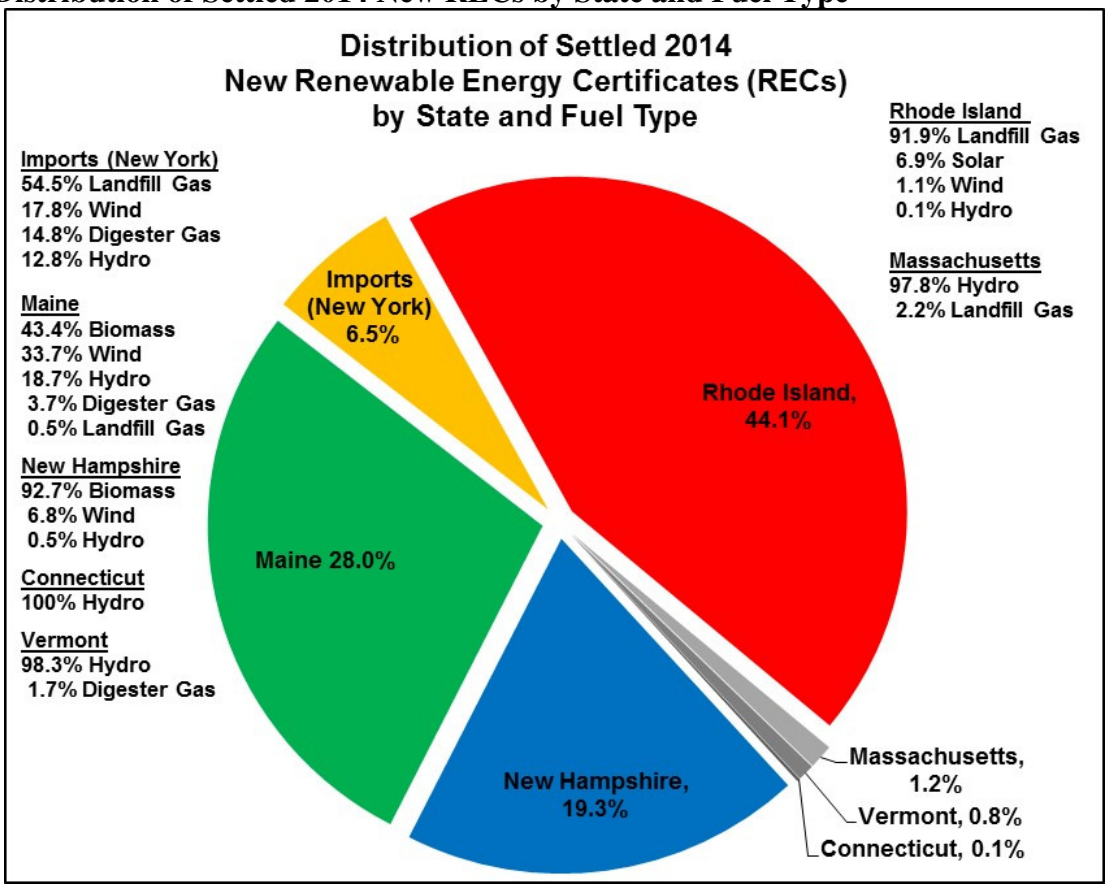
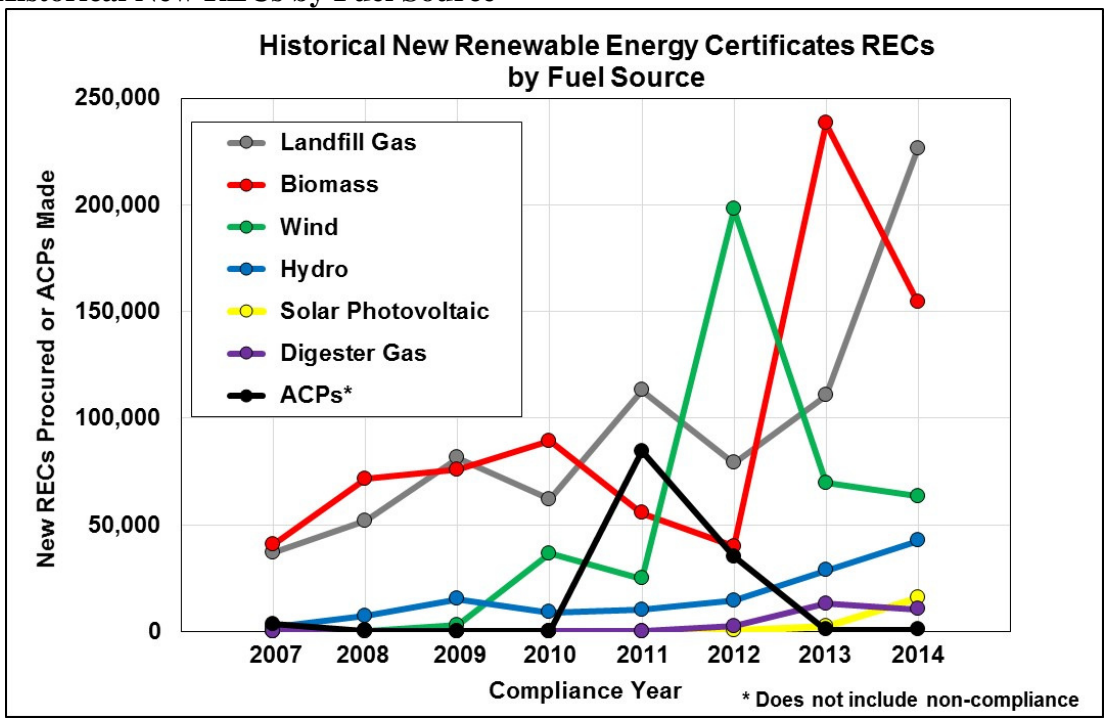
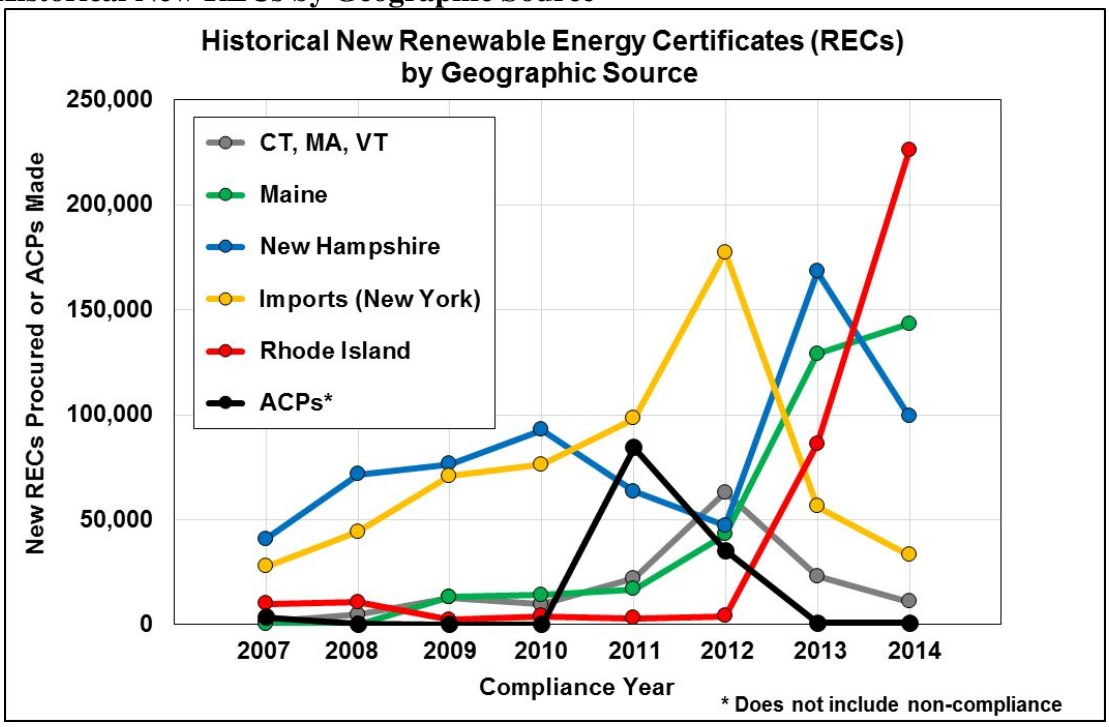


Figure 5: Historical New RECs by Fuel Source



Altogether, the historical view of the amount of New RECs procured from all jurisdictions is presented in Figure 6, along with ACPs for comparison.[34] While this chart does not show exactly which RECs were used for compliance and which were banked for future compliance, this view does help illustrate the sharp increase in the procurement of RECs from Rhode Island and a sustained lack of reliance on ACPs in Compliance Year 2014.

Figure 6: Historical New RECs by Geographic Source



Finally, as in all previous compliance years, all of the Existing RECs minted, purchased, and settled in Compliance Year 2014 were generated at hydroelectric facilities. This year, the Existing RECs were sourced from Maine (48.4%), New Hampshire (35.7%), and Massachusetts (15.9%).[35] This marks a change from the previous two compliance years, during which a significant fraction of Existing RECs were procured from hydroelectric facilities in Vermont as well as Maine, New Hampshire, and Massachusetts[36].

[34] Appendix 5 contains additional information of historical data for the distribution of New and Existing RECs by fuel type and location for 2007 through 2014.

[35] These percentages include purchases for voluntary programs and over-compliance.

[36] Appendix 5 contains additional information of historical data for the distribution of New and Existing RECs by fuel type and location for 2007 through 2014.

IV. Renewable Energy Standard – Future Obligations

The RES enabling legislation at §39-26-4 establishes annual targets for both New and Existing RES obligations through 2019. At § 39-26-4(a)(3), the enabling legislation provides for an "additional one percent (1%) of retail electricity sales in each of the following compliance years 2011, 2012, 2013, 2014, provided that the commission has determined the adequacy, or potential adequacy, of renewable energy supplies to meet these percentage requirements." At § 39-26-4(a)(4), the legislation provides for an additional 1.5% per year through 2019 with the same PUC requirement to determine the adequacy of supply. Finally, at § 39-26-4(a)(5), the enabling legislation states that in "2020 and each year thereafter, the minimum renewable energy standard established in 2019 shall be maintained unless the commission shall determine that such maintenance is no longer necessary for either amortization of investments in new renewable energy resources or for maintaining targets and objectives for renewable energy."

The manner in which the PUC fulfilled the requirement to determine supply adequacy, as well as the timing and implications of the PUC's decision-making authority, is clearly articulated in the RES Regulations under § 39-26-6(d). By statute, the PUC was directed to determine on or before January 1, 2014 the adequacy or potential adequacy of renewable energy supplies to meet the increase in the RES targets scheduled for 2015.

In a January 2010 Order for Docket 4050, the PUC determined that adequate renewable energy supplies existed to meet the RES target increase scheduled for 2011. Additional information on this proceeding and the PUC's complete Order can be found at the PUC website.[37] In a February 2014 Order for Docket 4404, the PUC determined there was potential inadequacy of renewable energy supply to meet the target increase of 1.5% scheduled for 2015. The result of this determination was to delay this scheduled increase in the RES by a period of one year, thereby capping the escalation of the New RES target at 12.5% rather than 14.0%. Additional information on this proceeding and the PUC's complete Order can be found at the PUC website.[38]

The percentage targets shown in Table 1 earlier in this report, and the calculated future RES obligations in Table 4 below, are adjusted to reflect the PUC's one-year delay of the original 2015 1.5% RES increase to Compliance Year 2016 and the resulting New RES target cap of 12.5%. The quantity (in MWhs) of future years' RES obligations are estimated by multiplying the forecasted value of total obligated sales in Rhode Island by the RES target for each year. The forecast of Rhode Island's obligated sales is based on the Forecast Data File of the ISO-NE's 2015 Capacity, Energy, Loads, and Transmission ("CELT") Report[39] and exempted load, including both Pascoag Utility District and Block Island Power Company retail sales.[40]

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[37] For additional information, refer to materials filed in Commission Docket 4050 at: www.ripuc.org/eventsactions/docket/4050page.html

[38] For additional information, refer to materials filed in Commission Docket 4404 at: http://www.ripuc.org/eventsactions/docket/4404page.html. In particular, Commission Report and Order No. 21353 can be viewed at: http://www.ripuc.org/eventsactions/docket/4404-RES-Adequacy-Ord21353_2-10-14.pdf.

[39] ISO-NE 2015 CELT Forecast Data: See tab 2, column X– GROSS-PV-PDR, Gross Energy in GWh less Behind-the-Meter PV and Passive Demand Resources.

[40] Historical exemptions for Block Island and Pascoag can be found at http://www.eia.gov/electricity/data/eia826/. Here we assume exempted load is 2.75% in all future years.

Table 4: Forecast of RES MWh, by Compliance Year, for both New and Existing Resources

Compliance Year	Actual/Forecasted RES-Obligated Retail Sales[5] (MWhs)	Minimum MWhs from New Renewable Energy Resources (per Table 1 targets)	MWhs from *either* New *or* Existing Renewable Energy Resources (2.0%)
2007 (Actual)	8,335,706	83,357	166,715
2008 (Actual)	8,279,006	124,190	165,584
2009 (Actual)	7,910,112	158,212	158,212
2010 (Actual)	8,242,937	206,082	164,866
2011 (Actual)	8,157,796	285,531	163,165
2012 (Actual)	8,123,025	365,545[1]	162,469[1]
2013 (Actual)	8,193,979	450,678	163,891
2014 (Actual)	7,985,473	519,067	159,720
2015[2]	*7,927,000*	*515,000*	*159,000*
2016[2]	*7,839,000*	*627,000*	*157,000*
2017[2]	*7,805,000*	*741,000*	*156,000*
2018[2]	*7,727,000*	*850,000*	*155,000*
2019[2]	*7,645,000*	*956,000*	*153,000*
2020[2,3]	*7,562,000*	*945,000*	*151,000*
2021[2,3]	*7,497,000*	*937,000*	*150,000*
2022 [2,3]	*7,444,000*	*931,000*	*149,000*
2023 [2,3]	*7,411,000*	*926,000*	*148,000*
2024 [2,3,4]	*7,379,000*	*922,000*	*148,000*

[1]Please note that the total New and Existing RES obligations are slightly higher than the % New and % Existing of total obligated retail sales due to rounding protocols for individual Obligated Entities.
[2]After conducting a review pursuant to R.I. Gen. Laws § 39-26-6(d), in Docket No. 4404, the PUC delayed implementation of the scheduled 1.5% increase in 2015. This resulted in a delay of all subsequent increases for a period of one year.
[3]Duration of continuation after 2020 is subject to PUC determination.
[4]The 2015 ISO-NE CELT forecast ends in 2024.
[5] Assumes 2.75% of load exempted from RES obligation in future years.

V. Authorized Rate Increases and RES Compliance Costs

R.I. Gen. Laws § 39-26-6(f) states that the annual report shall include "the amount of rate increases authorized pursuant to subsection (b)" where subsection (b) of R.I. Gen. Laws § 39-26-6 reads that the PUC shall "[a]uthorize rate recovery by electric distribution companies of all prudent incremental costs arising from the implementation of this chapter, including, without limitation, the purchase of NE-GIS certificates, the payment of alternative compliance payments, required payments to support the NE-GIS, assessments made pursuant to §39-26-7(c) and the incremental costs of complying with energy source disclosure requirements." The only electric distribution company that qualifies as an Obligated Entity is National Grid, as the definition of "Obligated Entity" in Section 3.25 of the RES Rules and Regulations specifically excludes Block Island Power Company and the Pascoag Utility District.

Table 5: Estimated Rate Impact for RES Compliance to Standard Offer Service Customers

Effective Date	Projected REC Procurement Cost (per kWh)	Adder for previous and current costs (per kWh)	Authorized RES Charge (per kWh)	Monthly/ Annual Cost to 500 kWh Ratepayer
April 2016 – Report Date	$0.00405	($0.00177)	$0.00228	$1.14/$13.68
April 2015 – Report Date	$0.00366	($0.00072)	$0.00294	$1.47/$17.64
April 2014 – March 2015	$0.00430	$0.00050	$0.00480	$2.40/$28.80
April 2013 – March 2014	$0.00371	$0.00141	$0.00512	$2.56 / $30.72
April 2012 – March 2013	$0.00209	$.00044	$0.00253	$1.265 / $15.18
April 2011 – March 2012	$0.00064	($0.00095)	($0.00031)	($0.156) / ($1.86)
March 2010 – March 2011	$0.00095	$0.00028	$0.00123	$0.615 / $7.38
January 2009 – February 2010	$0.00105	($0.00012)	$0.00093	$0.465 / $5.58
2008	$0.00084	*	$0.00084	$0.42 / $5.04
2007	$0.00062	N/A	$0.00062	$0.31 / $3.72

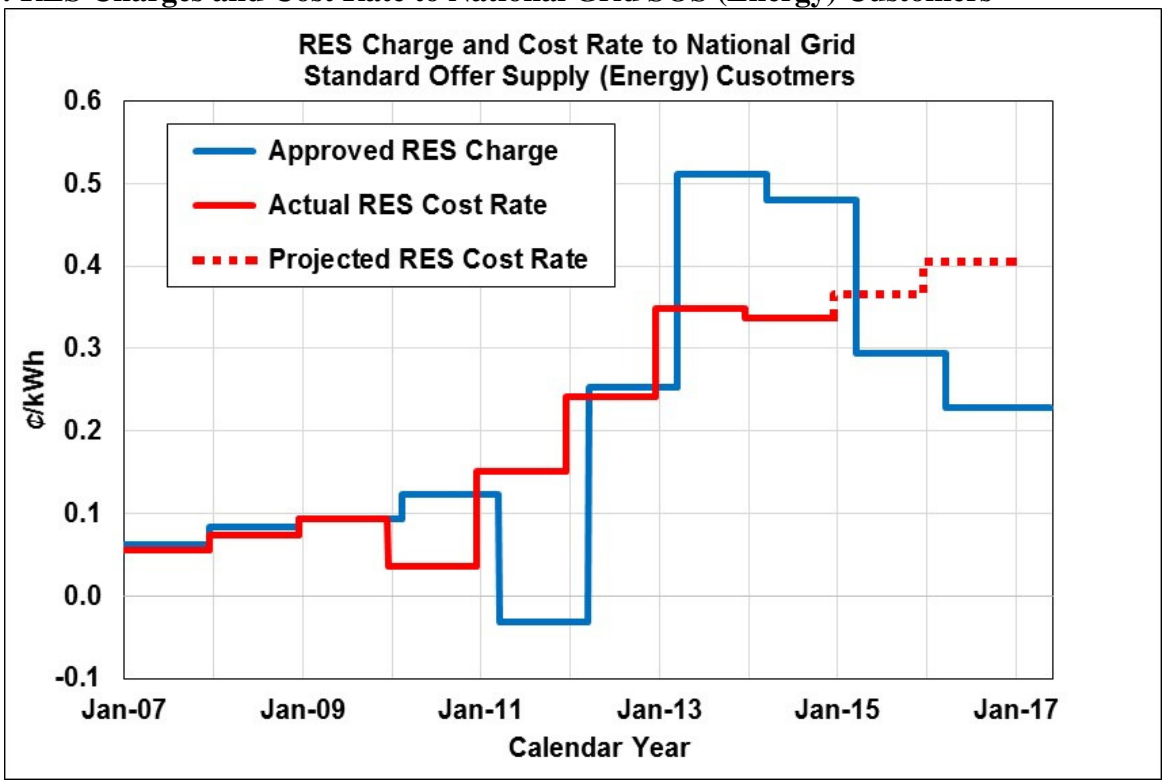
**In 2008 a specific RES reconciliation charge was not proposed in the RES Charge filing. Reconciliation of over- or under-collection would have occurred through Standard Offer Service and Last Resort Service reconciliation filings.*

Early in a calendar year, National Grid proposes a RES charge designed to collect the costs of compliance during the upcoming compliance year, outstanding costs for the remainder of the current compliance year, and to true up any outstanding cumulative under- or over-collection made during previous compliance years.[41] The reconciling nature of this charge ensures that when compliance costs are lower than anticipated over-collections are returned to ratepayers, and when compliance costs are higher than anticipated the electric distribution company can recover under-collections. Table 5 provides data on the authorized RES charge (per

[41] National Grid typically files for rate change to the Renewable Energy Charge in late winter for effect on April 1st. Therefore the timing of changes in the RES charge occurs three months before the REC trading year turns over.

kWh) billed to National Grid's customers from 2007 through the report date, as well as the cost to a 500-kWh Residential Class ratepayer by month and year (see also the blue line on Figure7). Projected cost for the upcoming compliance year (mostly controlled by New REC cost rather than Existing REC cost) is found in the second column; the reconciliation factor for previous compliance years is found in the third column. The charge of $0.00480 per kWh, effective April 1, 2014 through March 31, 2015 comprises a $0.00430 per kWh factor for projected costs for Compliance Year 2014 and a $0.00050 reconciliation factor for a cumulative under-collection of remaining costs for previous years, including remaining costs for Compliance Year 2013.

Figure 7: RES Charges and Cost Rate to National Grid SOS (Energy) Customers



The factors of the approved charge were based on projected market conditions, anticipated REC pricing, estimates of electricity consumption, and estimates of market share, among other prudent considerations.[42] In particular, National Grid's filing assumed New RECs would trade at an average price of $62 per REC in Compliance Year 2014.

Most of the RECs National Grid actually purchased were from renewable generation projects that had a power purchase agreement (PPA) to sell all attributes, including energy; capacity; and RECs, to National Grid pursuant to R.I. Gen. Laws § 39-26.1 and § 39-26.2. The PPAs typically do not include a specific price for the RECs, but rather a bundled prices for all products purchased through the contract. Each quarter National Grid collects spot market data regarding New REC prices in the Rhode Island-eligible market and uses that to provide an estimated spot market value for the RECs procured through the PPAs. This estimated spot market rate for the RECs is charged to Standard Offer Supply energy customers, and the revenue from that charge is used to offset the cost of the PPAs to National Grid distribution customers.[43] National Grid's

[42] For additional information, refer to National Grid's "2013 Renewable Energy Standard Charge and Reconciliation" at http://www.ripuc.org/eventsactions/docket/4393-NGrid-RES-Reconciliation-Filing(2-20-14).pdf.

[43] The remaining over- or under-recovery for these PPAs is then reconciled through a charge to all National Grid distribution ratepayers.

remaining REC needs are purchased through a request-for-proposal procurement process approved annually by the PUC through a docketed proceeding.[44]

National Grid successfully executed its proposed REC procurement plan in for compliance year 2014. During the trading year RI eligible New REC prices dropped from just over $63 to well under $50,[45] as compared to the forecasted REC price of $62 and the ACP level of $66.16. By the end of the 2014 compliance year, [46] National Grid's estimated price for New RECs dropped to $52.75 and remained relatively stable throughout 2015. [47]

While this report focuses on Compliance Year 2014, it is noted here that in April 2015, the RES charge was reduced again to $0.00294 per kWh. The large decrease reflects both a decrease in the estimated cost of New REC compliance in 2015 and a change from an under-collection factor to an over-collection factor for previous periods, caused in part by the National Grid's projected costs being higher than actual costs, discussed above. The charge was reduced again, slightly, effective April 1, 2016, due to an increase in the over-collection factor that is slightly greater than the projected increase in the Compliance Year 2016 cost factor.

Table 6: Summary of National Grid's REC Compliance Costs, 2007 - 2014

Compliance Year	Total RES Costs (Millions)	New REC Costs (Millions)	Existing REC Costs (Millions)	ACP Costs (Millions)	Obligated Load (MWh)
2014[48]	$17.95	$17.93	$0.07	N/A	5,317,349
2013	$18.96	$18.9	$0.06	N/A	5,541,409
2012	$12.8	$12.75	$0.05	N/A	5,272,388
2011	$8.43	$3.85	$0.05	$4.53	5,554,272
2010	$2.07	$2.02	$0.05	N/A	5,695,951
2009	$5.51	$5.28	$0.22	N/A	5,902,667
2008	$5.21	$5.02	$0.19	N/A	7,123,559
2007	$3.97	$3.79	$0.19	N/A	7,177,538

In addition to RES charges and rate impacts, a more accurate and complete picture of compliance costs includes REC procurement expenses, since these reflect actual costs rather than projected costs and reconciliations. In order to meet its 2014 New and Existing RES obligations, National Grid incurred $17.95 million in compliance costs (Table 6; Figure 8). This represented a decrease of 5.3% from those costs incurred to comply with 2013 RES targets ($18.96 million)[49] and an increase from 2012 costs ($12.8 million).[50]

[44] See National Grid 2014 Standard Offer Service Procurement Plan 2014 Renewable Energy Standard Procurement Plan Docket No. 4393, Schedule 7, http://www.ripuc.org/eventsactions/docket/4393-NGrid-SOS-RES-Procurements(3-1-13).pdf

[45] See, for example http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=5 and references therein. Last accessed February 11, 2016.

[46] National Grid would continue to incur costs for the 2014 obligation year until end of the trading period, which is June 15, 2015.

[47] For additional information, refer to National Grid's "2014 Renewable Energy Standard Charge and Reconciliation" at: http://www.ripuc.org/eventsactions/docket/4490-NGrid-RES-Reconciliation_2-23-15.pdf.

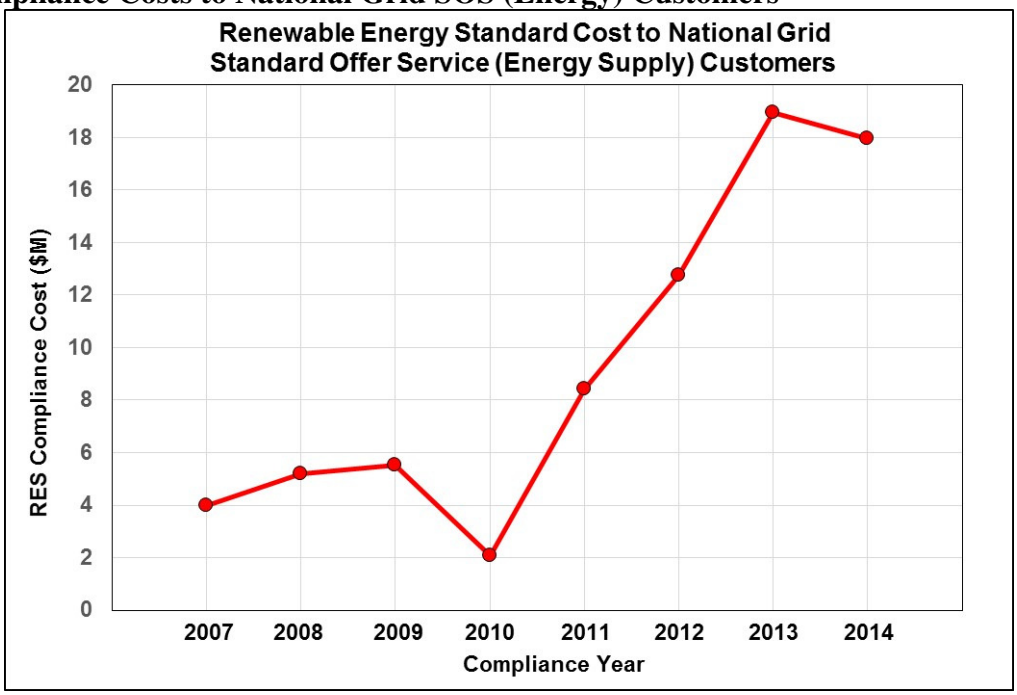
[48] The 2014 New and Existing REC costs reported in Table 6 are based on communications with National Grid employees. Summation of these costs may not match the reported total costs, which were based on National Grid filings cited in footnote 14.

[49] At a high level, the slight decrease in compliance costs between 2014 and 2013 is attributed to a decrease in REC market prices and adequate renewable generation.

[50] Reported in National Grid filings in Docket 4490. For underlying data see filings at www.ripuc.org/eventsactions/docket/4490-NGrid-RES-Reconciliation_2-23-15.pdf and at www.ripuc.org/eventsactions/docket/4490-NGrid-SOS-Reconcile-Q3-2015(10-30-15).pdf

Approximately $12.95 million of the $17.95 million expense (72%) was for purchases of RECs through National Grid's PPAs described above. This decrease in compliance cost to National Grid may reflect an increasing supply in RI-eligible RECs, which was also described above in relation to a surplus in New RECs retired by Obligated Entities and a low reliance on ACPs in Compliance Year 2014.

Figure 8: Compliance Costs to National Grid SOS (Energy) Customers



The current cost rate of the RES obligation to National Grid's Standard Offer Service energy customers, calculated as Total RES Costs divided by Obligated Load, was approximately 0.338 ¢/kWh in Compliance Year 2014, down slightly from last year (see the red line on Figure 7). The decrease marks the end of an approximately 0.10 ¢/kWh increase every compliance year since 2010. National Grid, however, projects the cost rate to resume increasing again, first to 0.366 ¢/kWh in 2015 and then to 0.405 ¢/kWh in 2016, as illustrated by the dashed segment of the cost rate line (drawn in red) in Figure 7.

It must be noted that this data only represents expenses incurred by Standard Offer Service customers of National Grid, accounting for approximately 66.6% of all retail load statewide in 2014. The remaining 33.4% of statewide electric load is serviced by competitive suppliers for whom the PUC does not have access to compliance cost data. A REC surplus would potentially lower compliance costs to other Obligated Entities. Further, there is market information that indicates that prices for Rhode Island-eligible RECs and for RECs eligible to meet other New England states' renewable portfolio standards remained stable or decreased throughout the Compliance Year 2014 trading period.[51] It should also be noted that National Grid passes unpredicted savings and expenses resulting from changes in the REC market onto Standard Offer Service customers and distribution customers. Other Obligated Entities (non-regulated competitive energy suppliers) may pass some of the REC market risk to their company's profits and losses rather than pass it onto their customers dollar-for-dollar. Finally, in addition to the costs enumerated above, the Commission incurred approximately $95 thousand in expenses related solely to the administration of the RES for Compliance Year 2014.

[51] See, e.g., http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=5 and references therein. Last accessed February 11, 2016.

VI. Renewable Energy Standard Implementation in New England

The RES enabling legislation requests a report on "*the status of the implementation of the renewable energy standards in Rhode Island and other states"* [emphasis added]. This section provides an update on the implementation of similar programs in the other five New England states.

With the June 2015 passage of Act 56 in Vermont, all six New England states now have active Renewable Energy Standards (also known as RES as enacted RI & VT) or Renewable Portfolio Standards (also known as RPS as enacted in MA, CT, NH & ME). Each of the established RPS programs has multiple classes – also referred to as tiers in some cases – which are used to differentiate the compliance obligations associated with each state's programmatic objectives. Class I requirements (equivalent to Rhode Island's "New" obligation) focus on supply that has either been constructed after a specified date or which meets maximum emissions thresholds, as well as other eligibility criteria. "Existing" requirements[52] generally focus on supply that was in operation prior to the creation of the applicable state's RPS program, and compliance targets are generally intended to provide the minimum amount of additional revenue believed to be necessary to keep these existing renewable energy facilities in operation. To this end, RPS requirements for existing resources are intended to maintain the current fleet rather than spur the development of new generating facilities.

In addition to distinguishing between New and Existing renewable energy obligations, New England RPS program classes include requirements for solar, biomass, hydroelectric, combined heat and power, waste-to-energy, thermal resources and energy efficiency.

In Massachusetts, the solar obligation is calculated annually and subtracted from the Class I requirement. This is referred to as a solar "carve-out."[53] New Hampshire's solar requirement stands alone and is referred to as its Class II obligation. Connecticut has a Class III requirement for conservation and load management resources, as well as combined heat and power (CHP). In addition to its primary Class II requirement, Massachusetts also has a secondary Class II requirement dedicated to Waste-to-Energy (WTE), as well as an Alternative Energy Portfolio Standard (APS) for CHP, flywheel storage, coal gasification and efficient steam technologies. Connecticut also has incentive programs for zero and low emission distributed energy systems as well as a residential solar rebate program. While not explicitly within the RPS, these new programs effectively create solar and fuel cell "carve-outs" within the Connecticut RPS. Vermont's RES includes a Class 1 obligation for existing resources and a Class 2 obligation specified for distributed generation interconnected to the state's distribution system.

The remainder of this section focuses exclusively on the class or portion of each state's RPS requirement that is most analogous to Rhode Island's New Resources requirement, including the interaction between these classes and other classes in certain limited circumstances.

Massachusetts has New England's longest-running RPS. The MA Class 1 market has experienced periods of shortage (2004 to 2006, and 2011 to 2013), and periods of approximate equilibrium (2007 to 2010). Due to unequal distribution of RECs and banking, some Obligated Entities held surpluses during these years, while others made ACPs. The following table summarizes aggregate MA Class 1 ACPs from 2004 to 2013.

[52] Including Class II in MA, CT and ME; Class III in NH; Class IV in NH; Class 1 in VT; and "Existing" in RI.

[53] Massachusetts is currently drafting a regulation that would create a separate long-term carve-out to support new emerging technologies.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Class 1 ACPs	$13.6M	$19.6M	$17.8M	$620K	$70K	$0	$240K	$6.6M	$16.4M	$10.2M

The Massachusetts Department of Energy Resources ("DOER") also administers a Class 1 solar carve-out, which is expected to yield at least 1,600 MW of installed solar by late 2016 or early 2017 that is eligible to generate Solar Renewable Energy Certificates, known as SRECs. All SRECs generated under the program will count towards the Class I RPS target.

DOER is also implementing a legislative mandate for long-term renewable energy contracts with newly developed, small and emerging renewable energy technologies that are qualified as Class I resources. The mandate is for 0.4% of distribution company load from 2013 through 2016. Eligible technologies include biogas, biomass, hydrokinetic energy, emerging run-of-river hydroelectric, fuel cells, small-scale or emerging wind technologies, solar thermal electric, and geothermal electric technologies. It is assumed that the majority of this obligation will be fulfilled by anaerobic digesters.

In addition, Massachusetts, Connecticut and Rhode Island have partnered on a three-state procurement intended to contribute to the satisfaction of RPS obligations as cost effectively as possible. The Request for Proposals (RFP) was issued in November 2015; responses were due at the end of January 2016, and successful bidders are expected to be selected between April and July 2016.

Connecticut had its first RPS compliance year in 2004. Due to variations in its RPS eligibility standards compared to the rest of the region (CT does not have a vintage requirement), Connecticut has historically had access to a larger pool of eligible supply. As RPS targets increase over time, however, new supply is required to fulfill New England's aggregate obligations, and Connecticut competes for supply with all other states. In 2010, as the regional market began to trend towards REC shortage, the differential between Connecticut's Penalty Payment (Connecticut did not formally adopt the term ACP), which are fixed at $55/MWh, and the other New England states' ACPs ($67.07 in 2015 and escalating each year with the Consumer Price Index) caused available RECs to seek higher value markets outside of Connecticut (when eligibility allowed), leaving Connecticut load-serving entities to rely on alternative compliance mechanisms to fulfill their RPS obligations. Connecticut Class 1 Penalty Payments are summarized below:

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Class 1 ACPs	$0	$0	$3.5M	$115K	$60K	$47K	$3M	$22M	$39M	$31M

Pursuant to Public Act 13-303 (which made several changes to the RPS that were described in the 2013 Compliance Report), the Connecticut Public Utilities Regulatory Authority (PURA) concluded an investigation into whether RECs generated from resources eligible for Vermont's Sustainably Priced Energy Enterprise Development (SPEED) program and used toward Connecticut Class I RPS compliance constituted "double-counting." PURA found that RECs generated to date in Vermont should not be disqualified from use toward CT Class 1 compliance because the SPEED requirement in effect at the time was not set up to measure compliance until 2017. The risk for future years has been eliminated now that Vermont has adopted a RES, which will become effective in 2017.

Maine's first compliance year for its Class 1 RPS[54] requirement was 2008. While Maine's eligibility requirements provided for ample supply to meet the early year RPS targets, an uneven distribution of REC ownership and banking led to ACPs. Beginning in 2011, the certification of refurbished biomass projects (whose RPS eligibility is unique to Maine) caused a sharp decline in ACPs.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Class 1 ACPs	NA	NA	NA	NA	$693K	$319K	$319K	$54K	$2K	$4K

Looking ahead, the Maine Class 1 REC market appears as though it may be poised for material change. After several years of significant surplus, a decline in the state's pulp and paper industry – and electricity production from associated biomass projects – is accelerating the pace at which supply and demand balance. When demand exceeds supply, Maine will begin to compete with other New England RPS markets for RECs to fulfill its Class 1 obligation.

New Hampshire's first compliance year for Class I was 2009. Market surpluses prevented the need for ACPs until 2010. Beginning in 2011, NH ACPs increased dramatically. Rather than a Class I shortage, however, these ACPs were due to shortages in the Class III market – owing to the fact that NH Class III generators (all biomass facilities) are also eligible for CT Class I and elected to sell into the CT market in order to realize a greater REC premium.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Class 1 ACPs	NA	NA	NA	NA	NA	$0	$26K	$19M	$9M	$17M

In April 2015, the NHPUC again ordered the Class III RPS target reduced to 0.5% in order to stem a tide of ACPs. The revised target is in effect through 2016, and is currently scheduled to revert to its original 8% thereafter.

It is also important to note that, similar to Connecticut, New Hampshire's ACP rate has been well below those of other New England states' ACPs ($55.75 in 2015 for Class I vs. $67.07 in 2015 and escalating each year with the Consumer Price Index) causing any uncontracted RECs to seek higher value markets outside of New Hampshire (when eligibility allows) and leaving New Hampshire's load-serving entities to rely on alternative compliance mechanisms to fulfill their RPS obligations.

Vermont In June 2015, Vermont passed Act 56, which established the state's new Renewable Energy Standard and Energy Transformation (also known as RESET) program. This RES has both Total Renewable Energy and Distributed Renewable Generation requirements. The minimum obligation for Total Renewable Energy is 55% of each retail electricity provider's electricity sales during the year beginning January 1, 2017, increasing to 75% on January 1, 2032; the target will maintain at 75% thereafter. It is expected that this obligation can be met with existing resources, particularly in early years. For Distributed Renewable Generation, which more closely resembles the New Resources requirement of the Rhode Island RES, the minimum obligation is set at 1% for the year beginning January 1, 2017, increasing to 10% on January 1, 2032 and thereafter. Until the RES is implemented, Vermont utilities will be allowed to sell the Renewable Energy Credits associated with their electricity purchases to Obligated Entities in other New England states.

[54] Maine has had an "Existing" RPS requirement since 2000. An abundance of qualifying in-state supply has enabled the state to easily satisfy this requirement each year.

Table 7: Summary of New England States' New Renewable RPS Targets (%)

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022
MA Class I	9.0%	10.0%	11.0%	12.0%	13.0%	14.0%	15.0%	16.0%	17.0%
CT Class I	11.0%	12.5%	14.0%	15.5%	17.0%	19.5%	20.0%	20.0%	20.0%
RI-New[55]	6.5%	6.5%	8.0%	9.5%	11.0%	12.5%	12.5%	12.5%	12.5%
VT DG	0.0%	0.0%	0.0%	1.0%	1.6%	2.2%	2.8%	3.4%	4.0%
ME Class I	7.0%	8.0%	9.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
NH Class I[56]	4.6%	5.4%	5.6%	6.4%	7.2%	8.0%	8.8%	9.6%	10.4%

Table 7 provides a summary of RPS targets throughout New England, while Table 8 provides an estimate of the corresponding GWh RPS demand through 2022. The forecasted RPS obligations are based upon ISO-NE's forecast of Annual Energy Net of Behind the Meter PV and Passive Demand Resources, found in their 2015 CELT Report[57] and adjusted to exclude an estimate of public or other utilities exempted from state RPS obligations. For example, both Pascoag Utility District and Block Island Power Company have been removed from the forecast of Rhode Island REC demand.

Table 8: Projection of New England States' New Renewable RPS Demand (GWh)

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022
MA Class I	4,331	4,884	5,384	5,857	6,312	6,770	7,229	7,693	8,167
CT Class I	3,130	3,646	4,127	4,652	5,143	5,570	5,993	5,970	5,957
RI New	518	515	627	741	850	956	945	937	931
VT DG	-	-	-	58	94	127	160	192	224
ME Class I	843	922	1,040	1,160	1,167	1,160	1,154	1,149	1,146
NH Class I	493	584	612	708	804	899	994	1,090	1,188
Total	**9,315**	**10,551**	**11,790**	**13,175**	**14,370**	**15,482**	**16,475**	**17,032**	**17,612**

As can be seen in Figures 9 and 10, Massachusetts and Connecticut represent the majority of New England's RPS demand through 2022. In 2014, these two states accounted for 46% and 34% of demand, respectively. Rhode Island represented 6% of the region's 2014 New Renewable RES demand (Rhode Island accounted for about 6.5% of all electrical energy use in New England during 2014). By 2022, the allocation of New Renewable RES demand across the region is projected as follows: Massachusetts – 46%; Connecticut – 34%; Maine – 7%; New Hampshire – 7%; Rhode Island –5%; and Vermont - 1% (Figure 11).

[55] After conducting a review pursuant to R.I. Gen. Laws § 39-26-6(d), in Docket 4404, the PUC delayed implementation of the scheduled 1.5% increase of the minimum RES percentage from New Renewable Energy Resources in 2015. This resulted in a delay of all subsequent increases for a period of one year.

[56] Beginning in 2013, a set percentage of the annual NH Class 1 incremental demand must come from qualifying renewable producing useful thermal energy. The set percentage is 0.4% in 2014, 0.6% in 2015, 1.3% in 2016, increasing annually thereafter by 0.1% from 2017 through 2023. As a result, the renewable electricity obligation is reduced. The net RPS requirement for electric power is shown here.

[57] The ISO-NE 2015 CELT Report is available at: http://www.iso-ne.com/system-planning/system-plans-studies/celt

Figure 9: Forecast of New England States' New RES Obligations

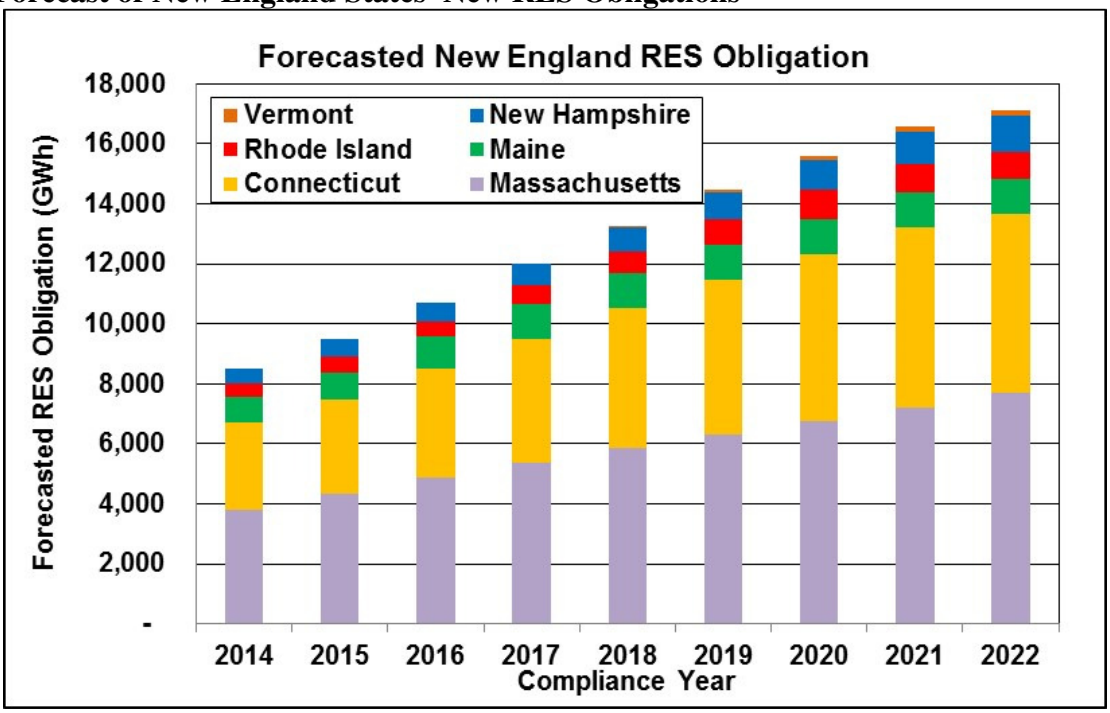


Figure 10: 2014 Composition of Aggregate RES Demand in New England

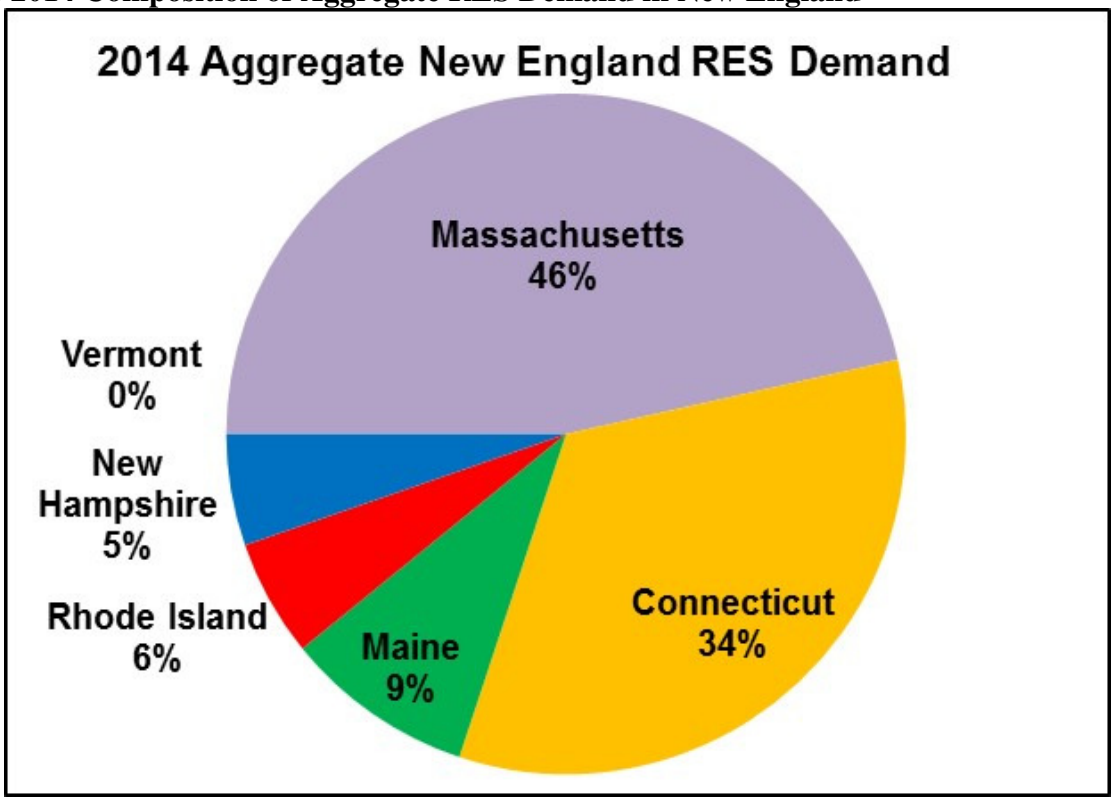
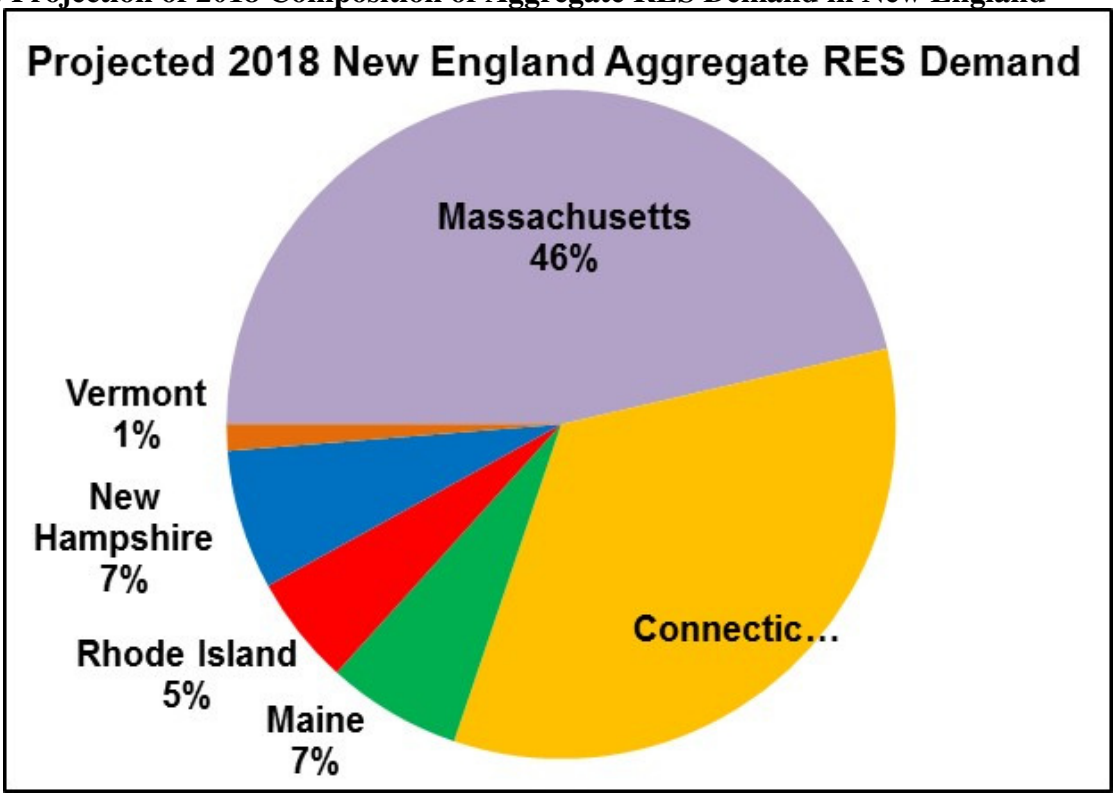


Figure 11: Projection of 2018 Composition of Aggregate RES Demand in New England



VII. Conclusion

Based upon the PUC's analysis of regulated utility data; competitive supplier data; and general market trends, the supply of, and demand for, New RECs were in near equilibrium for the Compliance Year 2014. The evidence for near equilibrium manifested through the dramatically reduced reliance on ACPs for RES compliance – which represented just 0.14% of the 2014 obligation. In addition, the number of 2014 RECs banked for future compliance (16,636) greatly exceeded the total of ACPs (732), suggesting that while the ability to bank may be unevenly distributed among market participants, the market as a whole is well balanced As new capacity comes on-line and renewable energy imports increase, there is potential for this trend to continue into a mild market surplus. The balance has potentially slowed the growth in RES cost to ratepayers, and National Grid reports a $17.95 million cost for Compliance Year 2014, down approximately $1 million from Compliance Year 2013. An increased rate of growth in cost is expected to return in future compliance years.

The PUC is concerned that, regardless of the improved market supply of renewable energy to meet the RES-mandated demand, obligated entities may fail to comply because of other financial issues. Compliance Year 2014 is the second year in a row during which the full RES target was technically not met because a non-regulated power producer filed for bankruptcy protection and failed to comply with their RES obligation.

The number of facilities and the amount of potential generation certified under the Rhode Island RES also continues to increase. Since the last Renewable Energy Standard Annual Report the PUC has approved or conditionally approved twelve renewable energy facilities for RES certification – eleven New and one unit with partial "New" and partial "Existing" eligibility. These generators combined for almost 100 MW of additional certified New and Existing nameplate capacity. As of this report, 170 qualified renewable energy resource facilities have been approved or conditionally approved under the Rhode Island RES, accounting for over 2,000 MW of renewable energy nameplate capacity certified as New or Existing. Growth should continue as new policy initiatives supporting the renewable energy industry take hold, and local and regional economic conditions improve. The PUC will continue to examine and report on these trends in future compliance reports.

The success of the state's Renewable Energy Standard and growth in the number of qualified renewable energy facilities since 2007 leaves the PUC cautiously optimistic that the RES and similar programs throughout New England will continue to spur renewable energy development in the region. It is important to note, however, that the continued availability of long-term contracts – for both large-scale and distributed resources – and access to renewable energy financing are important to sustaining regional RPS success. Based on recent policies established and revised within Rhode Island the state remains in good position to support local and regional resource growth. These policies include long-term contracting statutes, the Renewable Energy Growth program, and cooperative long-term contracting initiatives between Massachusetts, Connecticut, and Rhode Island.

The PUC regards Compliance Year 2014 a success and the resources available in the marketplace as sufficient to meet RES demand. In the coming year, the PUC will continue to monitor the regional renewable energy marketplace and the state's continued ability to achieve its established targets in a just and reasonable manner.

Appendix 1: Certified New Renewable Energy Resources

The following pages list generating units that have been *approved* by the Rhode Island Public Utilities PUC, either in whole or in part, as New Renewable Energy Resources (as of January 31, 2016). To view the most current RES applications status report, please visit: www.ripuc.org/utilityinfo/res.html.

Table A1: Approved New Renewable Energy Resources as of January 31, 2016

Unit Name	Location: City, State	Fuel Type	Nameplate Capacity (MW)	% of output approved as New	Year Approved
The following generators are located within ISO-NE:					
Johnston Landfill Expansion Phase 1	Johnston, RI	LFG	2.4	100%	2007
Johnston Landfill Expansion Phase 2	Johnston, RI	LFG	6	100%	2007
Pawtucket Hydropower	Pawtucket, RI	Hydro	1.35	47%	2007
Portsmouth Abbey Wind Rurbine	Portsmouth, RI	Wind	0.67	100%	2007
North Hartland Hydroelectric Project	Hartland, VT	Hydro	4.664	25.60%	2007
Schiller Station Unit 5	Portsmouth, NH	Biomass	50	100%	2007
Pioneer Hydro Electric Co., Inc.	Ware, MA	Hydro	1.6	50.40%	2007
Coventry Landfill Units 1 - 3	Coventry, VT	LFG	4.8	100%	2008
Coventry Landfill Unit 4 & 5	Coventry, VT	LFG	3.2	100%	2008
Attleboro Energy - QF	Attleboro, MA	LFG	1.5	100%	2008
Pepperell Hydro	East Pepperell, MA	Hydro	1.92	53.20%	2008
Woronoco Hydro	Russell, MA	Hydro	2.7	37.40%	2008
Quarry Energy Project	Quincy, MA	LFG	0.6	100%	2008
UNH Power Plant	Durham, NH	LFG	4.6	100%	2009
Portsmouth Wind	Portsmouth, RI	Wind	1.5	100%	2009
Lempster Wind	Lempster, NH	Wind	24	100%	2009
Pine Tree Landfill	Hampden,ME	LFG	3.17	100%	2009
Fitchburg Landfill	Westminster, MA	LFG	4.8	100%	2009
Crossroads	Norridgewock,ME	LFG	3.2	100%	2009
Thundermist Hydopower	Woonsocket, RI	Hydro	1.1	25.90%	2009
Seaman Energy LLC	Gardner, MA	LFG	1.62	100%	2010
Bay Center	Providence, RI	Solar	0.02	100%	2010
Rhode Island LFG Genco*	Johnston, RI	LFG	33.4	100%	2010
Stetson Wind Farm	Stetson Mountain, ME	Wind	57	100%	2011
Stetson II Wind Farm	Stetson Mountain, ME	Wind	25.5	100%	2011
Toray Solar #1	North Kingstown, RI	Solar	0.405	100%	2011
Sheffield Wind Plant	Sheffield, VT	Wind	40	100%	2012
Putts Bridge Project	Ludlow, MA	Hydro	3.9	19.19%	2012
Red Bridge Project	Wilbraham, MA	Hydro	4.5	20.06%	2012
Berkshire Wind Power	Lanesborough, MA	Wind	15	100%	2012
Record Hill Wind	Roxbury, ME	Wind	50.6	100%	2012
Granite Reliable Wind Project	Coos County, NH	Wind	99	100%	2012
Sandywoods Farm 275kW Vergnet Turbine	Tiverton, RI	Wind	0.275	100%	2012
Orono B Hydroelectric Project*	Orono, ME	Hydro	3.75	100%	2012
Exeter Agri-Energy	Exeter, ME	Biomass	0.98	100%	2012
Ipswich Wind I	Ipswich, MA	Wind	1.6	100%	2012
* Conditionally approved.					
Shading indicates newly approved facility since last compliance report					

Table A1: Approved New Renewable Energy Resources as of January 31, 2016 (Continued)

Unit Name	Location: City, State	Fuel Type	Nameplate Capacity (MW)	% of output approved as New	Year Approved
The following generators are located within ISO-NE:					
Ice House Partners, Inc.	Ayer, MA	Hydro	0.28	100%	2013
Hopkinton Hydro Project	Contocook, NH	Hydro	0.25	42.75%	2013
Kingdom Community Wind	Lowell, VT	Wind	63	100%	2013
WED NK GREEN	North Kingstown, RI	Wind	1.5	100%	2013
Georgia Mountain Community Wind	Milton, VT	Wind	10	100%	2013
Narragansett Bay Commission Field's Point Wind Turbines	Providence, RI	Wind	4.5	100%	2013
Camelot Wind	Plymouth, MA	Wind	1.5	100%	2013
Newport Hydro	Newport, VT	Hydro	4	22%	2013
ACP Solar I	Middletown, RI	Solar	0.49	100%	2013
West Greenwich Solar	West Greenwich, RI	Solar	2.158	100%	2013
North Hartland Bypass Flow Turbine	North Hartland, VT	Hydro	0.138	100%	2013
Covanta West Enfield	West Enfield, ME	Biomass	27.2	80%	2013
Wyre Wynd Hydroelectric Project	Jewett City, CT	Hydro	2.78	20%	2013
CMS Solar	Jamestown, RI	Solar	0.1283	100%	2013
Comtram Cable Plant	Cumberland, RI	Solar	0.49838	100%	2013
Pemwigas-Indeck Alexandria	Alexandria, NH	Biomass	15.2	100%	2013
Verso Bucksport LLC-TG5	Bucksport, ME	Biomass	24	100%	2013
CCI New England 500 kW (DC) Solar PV	Portsmouth, NH	Solar	0.498	100%	2013
West Davisville Solar	North Kingstown, RI	Solar	2	100%	2013
Forbes Street Solar	Riverside, RI	Solar	3	100%	2013
Orange #1 and Orange #2 (Mini-Watt Hydro)	Orange, MA	Hydro	0.455	37%	2013
Burgess Biopower	Berlin, NH	Biomass	76.5	100%	2014
Dean's Warehouse I	Cumberland, RI	Solar	0.4992	100%	2014
Re-Migio	Providence, RI	Solar	0.29185	100%	2014
Dean's Warehouse II	Cumberland, RI	Solar	0.4999	100%	2014
Little Bag	Providence, RI	Solar	1.4997	100%	2014
CCI New England 181 kW (DC) Solar PV	West Warwick	Solar	0.181	100%	2014
Maplehurst Farm Methane	Greensboro, VT	Biogas	0.15	100%	2014
Golden Ale Realty LLC 406 kW (DC) Solar PV	Cranston, RI	Solar	0.406	100%	2014
West Charleston Hydro	West Charleston, VT	Hydro	0.675	100%	2014
All American Solar, LLC	North Kingstown, RI	Solar	0.33	100%	2014
Richmond Solar	Richmond, RI	Solar	0.499	100%	2014
T.E.A.M. Inc. Solar	Woonsocket, RI	Solar	0.128	100%	2014
Steere Electric, LLC	Chepachet, RI	Solar	0.0918	100%	2014
Newport Vineyard and Winery LLC	Middletown, RI	Solar	0.0518	100%	2014
Troy Hydro Project	Troy, VT	Hydro	0.816	100%	2014
NextSun Energy North Smithfield	Smithfield, RI	Solar	0.85	100%	2014
SER Solar Facility 23 Appian Way	Smithfield, RI	Solar	0.05247	100%	2014
* Conditionally approved.					
Shading indicates newly approved facility since last compliance report					

Table A1: Approved New Renewable Energy Resources as of January 31, 2016 (Continued)

Unit Name	Location: City, State	Fuel Type	Nameplate Capacity (MW)	% of output approved as New	Year Approved
The following generators are located within ISO-NE:					
Saddleback Ridge Wind, LLC	Carthage, ME	Wind	34.2	100%	2015
Missisquoi River Hydro	North Troy, VT	Hydro	0.22	100%	2015
Barker Mills Lower Project *	Auburn, ME	Hydro	1.5	100%	2015
Johnston Solar I	Johnston, RI	Solar	1.375	100%	2015
North Kingstown Solar I	North Kingstown, RI	Solar	0.495	100%	2015
Steels Pond Hydro Project	Antrim, NH	Hydro	0.3	100%	2015
National Grid RE Growth Small Scale Solar Aggregation	Rhode Island	Solar	12	100%	2015
Athens Energy LLC *	Athens, ME	Biomass	8.5	100%	2015
Covanta Jonesboro	Jonesboro, ME	Biomass	27.5	59%	2015
Jericho Power	Berlin, NH	Wind	12.05	100%	2015
CC&C of Middletown	Middletown, RI	Solar	0.0689	100%	2016
Vermont Tissue Mill Dam Hydroelectric	Bennington, VT	Hydro	0.36	100%	2016
* Conditionally approved.					
Shading indicates newly approved facility since last compliance report					

Table A1: Approved New Renewable Energy Resources as of January 31, 2016 (Continued)

Unit Name	Location: City, State	Fuel Type	Nameplate Capacity (MW)	% of output approved as New	Year Approved
The following generators are located in control areas adjacent to ISO-NE:					
Higley Hydro	Colton, NY	Hydro	6.2	100%	2006
Colonie	Cohoes, NY	LFG	4.8	100%	2007
Model City	Youngstown, NY	LFG	5.6	100%	2007
Modern	Youngstown, NY	LFG	6.4	100%	2007
DANC	Rodman, NY	LFG	4.8	100%	2007
Mill Seat Landfill	Bergen, NY	LFG	6.4	100%	2008
Chaffee Landfill	Chaffee, NY	LFG	4.8	100%	2008
Hyland Landfill	Angelica, NY	LFG	4.8	100%	2008
Clinton Landfill	Morrisonville, NY	LFG	4.8	100%	2008
High Acres I	Fairport, NY	LFG	3.2	35.80%	2009
High Acres II	Fairport, NY	LFG	6.4	100%	2009
Madison County	Canastota, NY	LFG	1.6	100%	2009
Cohocton & Dutch Hill Wind Farm	Cohocton, NY	Wind	125	100%	2011
Synergy Biogas, LLC	Wyoming, NY	Biomass	1.426	100%	2012
Steuben Landfill	Bath, NY	LFG	3.2	100%	2013
Noble Altona Windpark	Altona, NY	Wind	97.5	100%	2013
Noble Wethersfield	Bliss, NY	Wind	126	100%	2013
Noble Chateaugay	Churubusco, NY	Wind	106.5	100%	2013
Gouldtown Development	Lyondsdale, NY	Hydro	2	100%	2013
Howard Wind Farm	Hornell, NY	Wind	55.35	100%	2013
Noble Clinton Windpark I	Churubusco, NY	Wind	100.5	100%	2014
Noble Ellenburg Windpark	Churubuso, NY	Wind	81	100%	2014
Noble Bliss Windpark	Bliss, NY	Wind	100.5	100%	2014
* Conditionally approved.					
Shading indicates newly approved facility since last compliance report					

Appendix 2: Certified Existing Renewable Energy Resources

The following pages list generating units that have been *approved* by the Rhode Island Public Utilities PUC, either in whole or in part, as Existing Renewable Energy Resources (as of January31, 2016). To view the most current RES status report, please visit: www.ripuc.org/utilityinfo/res.html.

Table A2: Approved Existing Renewable Energy Resources as of January31, 2016

Unit Name	Location: City, State	Fuel Type	Nameplate Capacity (MW)	% of output approved as Existing	Year Approved
The following generators are located within ISO-NE:					
Hosiery Mills	Hillsboro, NH	Hydro	1.2	100%	2007
Kelley's Falls	Manchester, NH	Hydro	0.45	100%	2007
Mascoma	West Lebanon, NH	Hydro	1.5	100%	2007
Salmon Falls	South Berwick, ME	Hydro	1.2	100%	2007
Pontook Hydro	Dummer, NH	Hydro	10.8	100%	2007
Fife Brook	Florida, MA	Hydro	10	100%	2007
Pawtucket Hydropower	Pawtucket, RI	Hydro	1.35	53.0%	2007
North Hartland Hydro	Hartland, VT	Hydro	4.664	74.4%	2007
Blackstone Hydro Associates	Central Falls, RI	Hydro	0.818	100%	2007
McIndoes Station	McIndoe Falls, VT	Hydro	10.63	100%	2007
Lower Deerfield Stations	Conway, Shelburne Falls, Buckland, MA	Hydro	19.5	100%	2007
Deerfield Unit 5	Florida, MA	Hydro	13.99	100%	2007
Sherman Station	Rowe, MA	Hydro	6.237	100%	2007
Searsburg Station	Wilmington, VT	Hydro	4.96	100%	2007
Pioneer Hydro Electric Co., Inc.	Ware, MA	Hydro	1.6	49.6%	2007
Wells River	Boltonville, VT	Hydro	1.318	100%	2007
Penacook Upper Falls	Boscawen, NH	Hydro	3.67	100%	2007
Dodge Falls	Bath, NH	Hydro	5.76	100%	2007
Nashua Hydro Associates	Nashua, NH	Hydro	1.1	100%	2007
Briar Hydro Assoc - Rolfe Canal	Penacook, NH	Hydro	5.58	100%	2007
Penacook Lower Falls	Boscawen, NH	Hydro	4.69	100%	2007
Benton Falls Associates	Benton, ME	Hydro	4.468	100%	2007
Springfield Power	Springfield, NH	Biomass	16	100%	2008
Lower Lamoille Composite Hydro	Milton, VT	Hydro	16.85	100%	2008
Middlebury Composite Hydro	Leicester, VT	Hydro	6.4	100%	2008
North Rutland Composite Hydro	Rutland, VT	Hydro	5.6	100%	2008
Putnam Hydro	Putnam, CT	Hydro	0.575	100%	2008
Pepperell Hydro	East Pepperell, MA	Hydro	1.92	46.8%	2008
Woronoco Hydro	Russell, MA	Hydro	2.7	62.6%	2008
Williams Project	Solon, ME	Hydro	14.8	100%	2009
Monty Project	Lewiston, ME	Hydro	27	100%	2009
Cataract Project	Saco, ME	Hydro	6.65	100%	2009
Hiram Project	Baldwin, ME	Hydro	10.9	100%	2009
North Gorham Project	Gorham, ME	Hydro	2.25	100%	2009
Shawmut Project	Shawmut, ME	Hydro	8.1	100%	2009
Skelton Project	Dayton, ME	Hydro	16.8	100%	2009
Shading indicates newly approved facility since last compliance report					

Table A2: Approved Existing Renewable Energy Resources as of January31, 2016

Unit Name	Location: City, State	Fuel Type	Nameplate Capacity (MW)	% of output approved as Existing	Year Approved
The following generators are located within ISO-NE:					
Weston Project	Skowhegan, ME	Hydro	13.4	100%	2009
Brunswick Project	Brunswick, ME	Hydro	19	100%	2009
Bar Mills Project	Hollis, ME	Hydro	4	100%	2009
Bonny Eagle Project	Hollis, ME	Hydro	7.2	100%	2009
West Buxton Project	Buxton, ME	Hydro	7.9	100%	2009
Deer Rips Project	Auburn, ME	Hydro	7	100%	2009
Gulf Island Project	Lewiston, ME	Hydro	23.4	100%	2009
Androscoggin Project	Lewiston, ME	Hydro	3.6	100%	2009
Thundermist Hydropower	Woonsocket, RI	Hydro	1.1	74.1%	2009
Boatlock	Holyoke, MA	Hydro	2.9	100%	2010
Beebe Holbrook	Holyoke, MA	Hydro	0.516	100%	2010
Chemical	Holyoke, MA	Hydro	1.6	100%	2010
Riverside 4-7	Holyoke, MA	Hydro	3.04	100%	2010
Riverside 8	Holyoke, MA	Hydro	4	100%	2010
Skinner	Holyoke, MA	Hydro	0.3	100%	2010
Valley Hydro	Holyoke, MA	Hydro	0.79	100%	2010
Harris Energy	Holyoke, MA	Hydro	2.421	100%	2010
HG&E Hydro/Cabot 1-4	Holyoke, MA	Hydro	3.056	100%	2010
Aziscohos Project	Lincoln Plantation, ME	Hydro	7.5	100%	2010
Hydro Keenebec Project	Waterville, ME	Hydro	15.4	100%	2010
Brassua Project	Rockwood, ME	Hydro	4.2	100%	2010
Crescent	Russell, MA	Hydro	1.5	100%	2011
Glendale	Stockbridge, MA	Hydro	0.7	100%	2011
Bath Electric Hydro	Bath, NH	Hydro	0.4	100%	2012
Putts Bridge Project	Ludlow, MA	Hydro	3.9	80.81%	2012
Red Bridge Project	Wilbraham, MA	Hydro	4.5	79.94%	2012
Hopkinton Hydro Project	Contocook, NH	Hydro	0.25	57%	2013
Highate Falls Unit #5	Highgate, VT	Hydro	0.572	100%	2013
Newport Hydro	Newport, VT	Hydro	4	78%	2013
Highgate Falls	Highgate, VT	Hydro	11.392	100%	2013
Enosburg Hydro	Enosburg Falls, VT	Hydro	0.975	100%	2013
Barton Hydro	Barton, VT	Hydro	1.4	100%	2013
Covanta West Enfield	West Enfield, ME	Biomass	27.2	20%	2013
Wyre Wynd Hydroelectric Project	Jewett City, CT	Hydro	2.78	80%	2013
Wolcott Hydro #1	Wolcott, VT	Hydro	0.815	100%	2013
Orange #1 and Orange #2 (Mini-Watt Hydro)	Orange, MA	Hydro	0.455	63%	2013
H.K. Sanders	Morristown, VT	Hydro	1.8	100%	2014
Morrisville Plant#2	Morristown, VT	Hydro	1.8	100%	2014
Cadys Falls	Morristown, VT	Hydro	1.3	100%	2014
Covanta Jonesboro	Jonesboro, ME	Biomass	27.5	41%	2015
The following generators are located in control areas adjacent to ISO-NE:					
High Acres I	Fairport, NY	LFG	3.2	64.2%	2009
Shading indicates newly approved facility since last compliance report					

Appendix 3: Alternative Compliance Payments

Section 7.3 of the Rhode Island Rules and Regulations Implementing a Renewable Energy Standard (RES Rules) permits Obligated Entities to meet the RES either through the purchase and retirement of NEPOOL GIS Certificates or through the provision of Alternative compliance payments (ACPs), obtained by making payment to the Rhode Island Commerce Corporation, now known as the Rhode Island Commerce Corporation. The Rhode Island Commerce Corporation sets these funds aside in the Renewable Energy Development Fund to support renewable energy development. The ACP rate is the same for both New and Existing obligations.

Section 3.2 of the RES Rules states that ACPs must be made at a rate of $50 per MWh of renewable energy obligation, in 2003 dollars, adjusted annually by the annual change in the United States Bureau of Labor Statistics' Consumer Price Index. Additionally, Section 7.9 of the Rules states that the PUC will publish the ACP rate by January 31 of each Compliance Year. For Compliance Year 2014, the ACP rate was $66.16 per MWh of obligation.

Table A3.1: Historical ACP Rate

Compliance Year	ACP Rate
2007	$57.12
2008	$58.58
2009	$60.92
2010	$60.93
2011	$62.13
2012	$64.02
2013	$65.27
2014	$66.16

Connecticut, Maine, Massachusetts, and New Hampshire all have similar ACP mechanisms – although New Hampshire passed legislation in 2012 to adjust the 2013 ACP downward to $55.00 with subsequent escalations of only one-half of the Consumer Price Index thereafter. The Table below shows the 2014 ACP rates used by other New England states for the various REC classes defined in each state.

Table A3.1: Regional ACP Rates for Compliance Year 2014

2014 ACP Rates	CT	ME	MA	NH
Class I	$55	$66.16	$66.16	$55.37
Class II	$55	N/A	$27.16	$55.37
Class III	$31	N/A	N/A	$31.93
Class IV	N/A	N/A	N/A	$26.86

Appendix 4: Rhode Island RES 2014 Compliance Summary[58]

Table A4: 2014 Compliance Summary by Obligated Entity

Obligated Entity	Retail Sales (from filing)	RES Obligations (MWh)		NEPOOL GIS Certificates					Alternative Compliance Payments		Banked "New" RECs for Future Compliance
	Load (MWh)	6.5% "New" Obligation	2.0% "Existing" Obligation	"New" RECs	Banked from 2012 or 2013	Total "New" RECs	"Existing" RECs	"New" Applied to Existing	"New" (MWh)	"Existing" (MWh)	RECs Eligible for 2015 or 2016
Inputs											
Distribution Companies											
Narragansett	5,317,349	345,628	106,347	344,117	2,166	346,283	106,347	0	0	0	655
Competetive Suppliers											
Ambit Northeast, LLC											
First Point Power (BP Energy Company)											
ConEdison Solutions											
Constellation NewEnergy, Inc.											
Constellation Energy Services, Inc.											
Devonshire Energy, LLC											
Direct Energy Business, LLC											
Direct Energy Business Marketing											
Hess Energy Marketing LLC											
Hess Corporation											
Gexa Energy, LLC (Next Era)											
Glacial Energy of New England, Inc.1											
Gulf Oil Limited Partnership											
Liberty Power Holdings LLC											
Mint Energy, LLC											
Moore Energy, LLC											
Noble Americas Gas & Power Corp.											
North American Power and Gas (BP Energy Company)											
South Jersey Energy Co. (Halifax American Operating Co. and Emera Energy)											
TransCanada Power Marketing Ltd.											
Westerly Hospital Energy Company LLC (Freedom Energy Logistics, LLC)											
XOOM Energy, LLC											
subtotal	2,668,124	173,439	53,373	168,511	15,579	184,090	117,170	2	732	4	15,577
Totals	7,985,473	519,067	159,720	512,628	17,745	530,373	223,517	2	732	4	16,232

[58] Please note that data for individual competitive suppliers is confidential and not subject to public release. The limited competitive supplier data presented in Appendix 4 is a result of the Commission's confidential treatment of their filings. Thus, competitive supplier information within this report is only presented in a summarized fashion to avoid the potential identification of proprietary business activities.

Appendix 5: Historical Breakdown of Compliance Sources

The charts below provide additional detail on the breakdown of New and Existing RECs purchased by Rhode Island's Obligated Entities for the period 2007-2014.

Table A5.1: Historic Utilization of Alternative Compliance Payments (ACPs)

	New		Existing		Total	
	MWh	$	MWh	$	MWh	$
2007	3,563	203,519	227	12,966	**3,790**	**$216,485**
2008	295	17,281	77	4,511	**372**	**$21,792**
2009	1	61	1	61	**2**	**$122**
2010	192	11,699	166	10,114	**358**	**$21,813**
2011	84,402	5,243,896	3	186	**84,405**	**$5,244,083**
2012	35,195	2,253,184	2	128	**35,197**	**$2,253,312**
2013	803	52,412	61	3,981	**864**	**$56,393**
2014	732	48,429	4	265	**736**	**$48694**

Figure A5.1: Historical New REC Source by Fuel Type

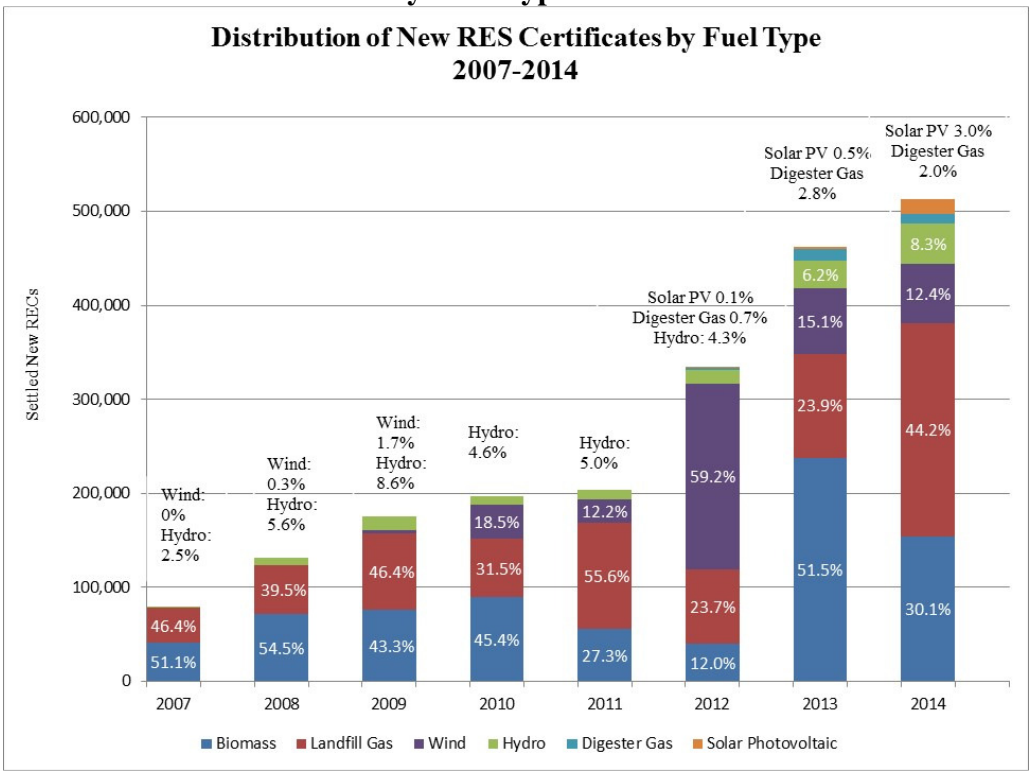


Figure A5.2: Historical New REC Source by Location

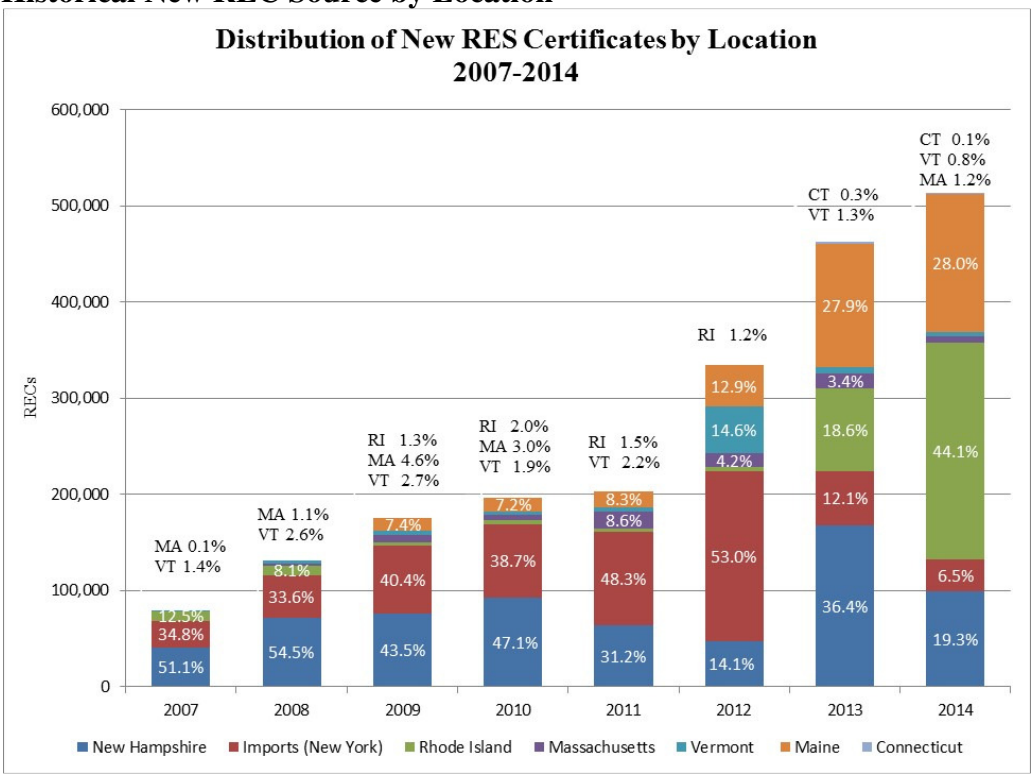


Figure A5.3: Historical Existing REC Source by Fuel Type

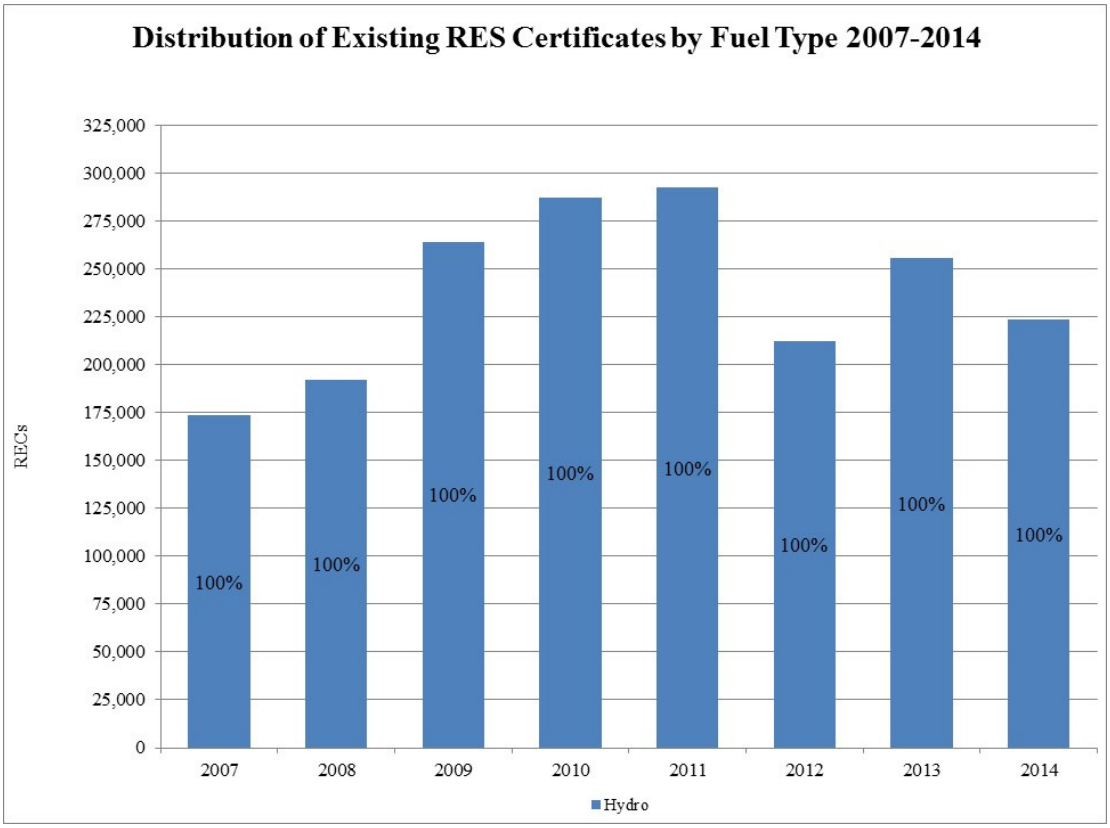


Figure A5.4: Historical Existing REC Source by Location

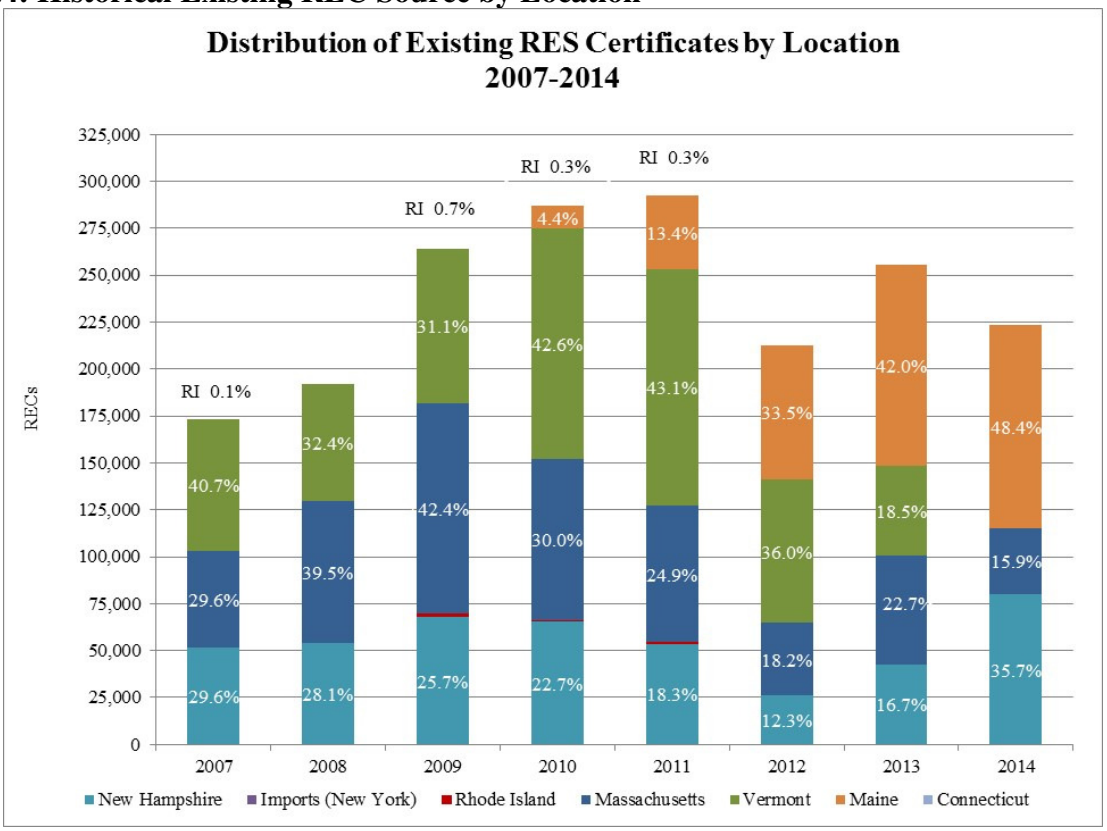
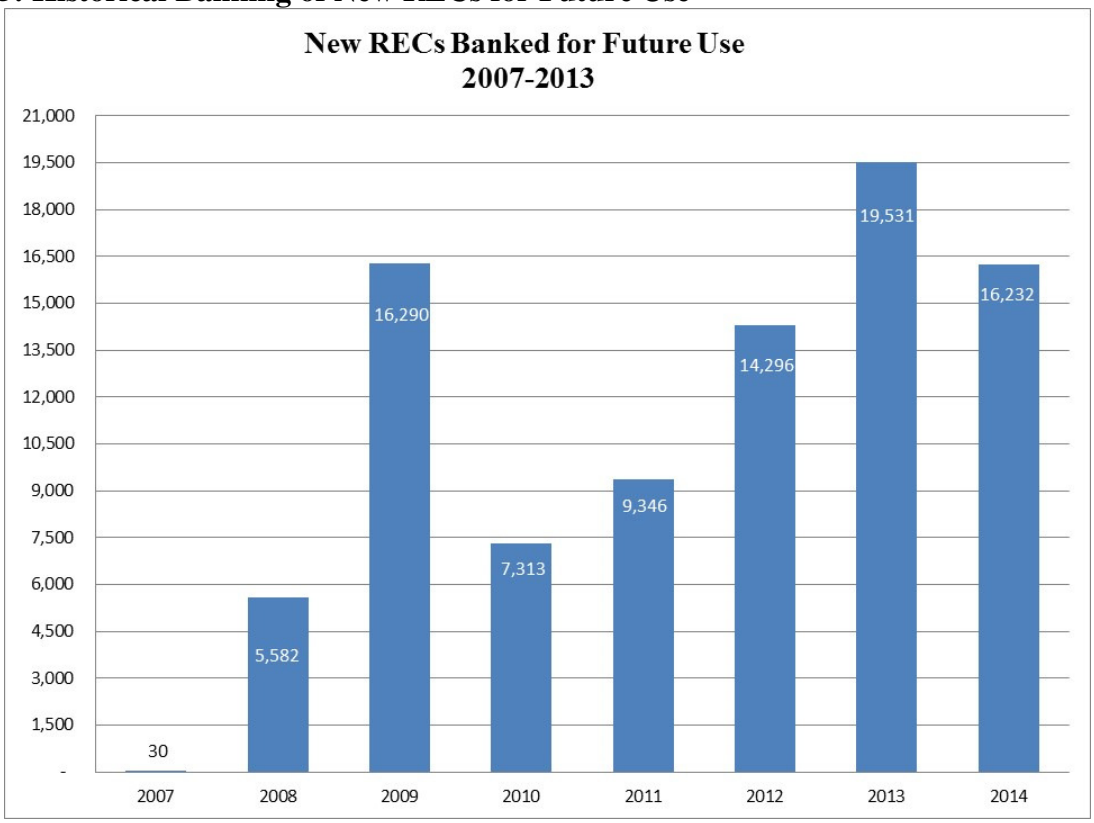


Figure A5.5: Historical Banking of New RECs for Future Use



Appendix 6: Voluntary Clean Energy Programs

As a competitive retail electricity market, Rhode Island provides load serving entities with the opportunity to offer customized electric supply options to both their existing and prospective retail customers. One example of such an offer is for the voluntary purchase of renewable energy resources above and beyond the state's minimum RES requirements. Collectively, the offers of such products are known as voluntary clean energy programs or as the voluntary green power market.[59] National Grid's "GreenUp" program is just one example.

For Compliance Year 2014, National Grid reported the purchase of RECs on behalf of end-use customers as part of voluntary clean energy programs. The table below provides a summary of the quantities of voluntary REC purchases made on behalf of customers.

Table A6.1 History of Voluntary REC Purchases on Behalf of RI Customers

New RECs		**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
A	Total New RECs settled in Rhode Island on behalf of end-use customers for voluntary clean energy programs	**5,350**	**7,480**	**6,642**	**3,750**	**689**	**111**	**513**
A.1	*New Voluntary RECs – National Grid*	*5,161*	*6,833*	*4,366*	*1,474*	*689*	*111*	*513*
A.2	*New Voluntary RECs – All Competitive Suppliers*	*189*	*647*	*2,276*	*2,276*	*0*	*0*	*0*
Existing RECs		**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
B	Existing RECs settled in Rhode Island on behalf of end-use customers for voluntary clean energy programs	**7,624**	**2,603**	***0***	***0***	***538***	***2,181***	***119***
B.1	*Existing Voluntary RECs – National Grid*	*7,624*	*2,603*	*0*	*0*	*338*	*1,181*	*119*
B.2	*Existing Voluntary RECs – Competitive Suppliers*	*0*	*0*	*0*	*0*	*200*	*1,000*	*0*

The NEPOOL GIS Certificate, or REC, is the currency used to demonstrate compliance not only with the mandatory RES, but also with voluntary renewable energy transactions. Through the use of GIS Certificates, which are created and transferred exclusively within the NEPOOL GIS, and the annual submission of RES compliance reports, the PUC ensures that a NEPOOL GIS Certificate used for RES compliance has not also been used to satisfy another obligation in Rhode Island or any other jurisdiction. For example, National Grid hosts voluntary renewable energy programs in both Rhode Island and Massachusetts. The use of NEPOOL GIS Certificates and the annual review of RES Compliance Reports ensure that each MWh of renewable energy production is used to meet only one obligation. This prohibition on double-counting is codified at Section 7.10(iii)(e) of the RES Rules, which states:

[59] By comparison, the RES is referred to as the "mandatory" or "compliance" renewable energy market.

> Assurances satisfactory to the [PUC] that the New or Existing Renewable NEPOOL GIS Certificates have not otherwise been, nor will be, sold, retired, claimed or represented as part of electrical energy output or sales, or used to satisfy obligations in jurisdictions other than Rhode Island.

While voluntary markets represent only a small fraction of NEPOOL GIS Certificates, it is nonetheless important to the integrity of both programs that all certificates are tracked and settled appropriately.