



STATE OF RHODE ISLAND

Rhode Island Renewable Energy Standard

Annual RES Compliance Report for Compliance Year 2018

September 2020

Rhode Island Public Utilities Commission

89 Jefferson Boulevard

Warwick, Rhode Island 02888

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Rhode Island Renewable Energy Standard

Annual Compliance Report for Compliance Year 2018

Executive Summary

Introduction

Compliance Year 2018, from January 1, 2018 through December 31, 2018, was the twelfth Compliance Year of the Rhode Island Renewable Energy Standard (RES).^{E1} 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.^{E2} In 2018, each Obligated Entity was required to obtain at least 13% of electrical energy (including line losses) sold to Rhode Island end-use customers from Eligible Renewable Energy Resources, with no less than 11% of that obligation sourced from New Renewable Energy Resources.

This twelfth Annual RES Compliance Report (Report) is intended to satisfy the requirement in R.I. Gen. Laws § 39-26-6(f) to report “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 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. This Report includes information about continuing and developing issues regarding the administration of the RES.

2018 RES Obligation and Compliance

The State’s 2018 RES-obligated retail sales totaled 7,914,524 megawatt-hours (MWh) of electrical energy, which was served by twenty-nine Obligated

Entities^{E3} including the Narragansett Electric Company. As shown in Table E.1 below, the total minimum obligation to be satisfied by New Renewable Energy Resources was 870,612 MWh (11% of each Obligated Entity’s retail sales).^{E4} The obligation to be satisfied by either Existing or New Renewable Energy Resources was 158,306 MWh (2.0% of each Obligated Entity’s retail sales). Almost all (97.2%) of the combined New and Existing resource obligation was met through retirement of Rhode Island-eligible NEPOOL GIS Certificates, also referred to more generally as Renewable Energy Certificates or RECs.^{E5}

The total number of New RECs held by Obligated Entities in Compliance Year 2018 was 921,870, which includes 65,356 RECs banked from Compliance Years 2017 and 2018. This is a 6.4% surplus of New RECs across all Obligated Entities. With this surplus in Compliance Year 2018, seventeen Obligated Entities combined to bank 74,738 RECs for use in Compliance Years 2019 or 2020. This total does not include 11,345 previously-banked RECs that may be used in Compliance Year 2019. This surplus reflects a sustained increase in regional renewable energy supply through the construction of additional capacity, the retrofitting of existing resources throughout the NEPOOL region, and a significant

^{E1} Renewable Energy Certificates (RECs) are generated during a Compliance Year in real time, but trading runs from July through June. Thus, trading and compliance for Compliance Year 2018 runs from July 2018 through June 2019.

^{E2} Per R.I. Gen. Laws § 39-26-2, Obligated Entities, including but not limited to non-regulated power producers and electric utility distribution companies, sell electrical energy to end-use customers in Rhode Island. The Block Island Power Company and the Pascoag Utility District are specifically exempt from the RES.

^{E3} An individual Obligated Entity’s load obligation is rounded to the nearest whole megawatt-hour (MWh). In some cases, an Obligated Entity includes multiple ISO-NE Asset Numbers under a single Compliance Filing.

^{E4} An individual Obligated Entity’s New and Existing obligation is rounded up to the nearest whole MWh.

^{E5} NEPOOL GIS refers to the New England Power Pool Generation Information System, which as explained on its website, “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 2018 RES Compliance

	New RES Obligation	Existing RES Obligation
2018 Minimum Obligations (MWh) ^a	870,612 MWh	158,306 MWh
GIS Certificates Retired for 2018 RI RES Compliance (MWh, %)	847,092 MWh, (97.3%) ^b	153,105MWh, (96.7%)
RI RES Compliance by Alternative Compliance Payments (MWh, \$)	188 MWh, \$12,964.48	0 MWh, \$0
Banked for Future Compliance	74,738 Certificates	Not Applicable
Over-compliance / RECs Not Banked	0 ^c	1,048 Certificates
Outstanding REC / ACP obligation	23,332	5,241
^a See note E3. ^b This value includes the application of 65,356 RECs banked from Compliance Years 2016 and 2017 plus the application of RECs minted and retired in Compliance Year 2018. ^c Banking is capped at 30% of an individual Obligated Entity's Compliance Year obligation for New RECs.		

increase in the quantity of RES- eligible imports during this period. Obligated Entities combined to procure a net excess of 1,048 RECs above the 2018 Existing or New REC requirement. Banking of Existing RECs is not allowed under Rhode Island's Renewable Energy Standard.

Taken as a whole, there was a New and Existing REC surplus among Obligated Entities. Taken individually, only two Obligated Entities chose to comply, partially, by making ACPs totaling \$12,964 in lieu of retiring 188 New RECs.^{E7} This continues a recent trend of relatively low total ACP costs paid by Obligated Entities. One Obligated Entity was sanctioned \$250 thousand for failure to comply by either retiring 28,573 RECs or making approximately \$1,970,394 in ACP payments.^{E8}

Obligated Entities' sustained reliance on RECs rather than ACPs, and their increased banking of RECs, is evidence that there was adequate supply of Rhode Island-eligible New RECs for Compliance Year 2018.

The PUC notes that information in this Report is based on the compliance filings filed with the PUC for Compliance Year 2018. As of the report date, National Grid has filed a petition to revise its 2018 compliance filing for Standard Offer Service customers because some of the company's RECs may have been incorrectly minted and retired. More information is provided below in Section VII.

^{E7} In Compliance Year 2018, Alternative Compliance Payments (ACPs) in lieu of both New and Existing RECs were valued at \$68.96 per MWh.

^{E8} See Section VII for more information on non-compliance.

2018 RES Resources

Most New RECs settled in 2018 were generated at wind-powered facilities (42.7%), followed by landfill gas (28.2%), biomass (12.2%), solar photovoltaic (10.3%), and hydroelectric (6.5%) facilities.^{E9} This represents a continued increase in reliance on wind (Figure E.1).^{E10} There was also a moderate but steady increase in reliance on solar photovoltaic resources.

In terms of location, most New RECs settled in 2018 were sourced from Rhode Island (49.2%), a slight increase compared to 2017 (Figure E.2). The remaining RECs came from New York (19.4%), Maine (19.4%), Vermont (5.9%), Massachusetts (3.0%), New Hampshire (2.3%), and Connecticut (0.7%). All Existing RECs were generated at hydroelectric facilities on Maine (68.1%), New Hampshire (24.5%), and Massachusetts (7.4%).

Finally, twenty-nine projects were approved as Renewable Energy Resources by the PUC since last year's Report. This represents 148 MW of incremental New or Existing RES-eligible capacity.^{E11}

^{E9} Not all the RECs purchased, minted, and settled in Compliance Year 2018 were used to meet Compliance Year 2018 obligations. Some RECs were banked for use in Compliance Years 2019 and 2020. Also, this summary excludes voluntary REC purchases above the RES. Voluntary clean energy programs are summarized in Appendix 4 of this Report.

^{E10} Additional information on the composition of 2018 RES compliance by fuel type and geographic location is provided in Section III of this Report.

^{E11} Visit <http://www.ripuc.ri.gov/utilityinfo/res.html> for a monthly status report on RES eligibility applications.

Figure E.1: Historical New RECs by Fuel Source

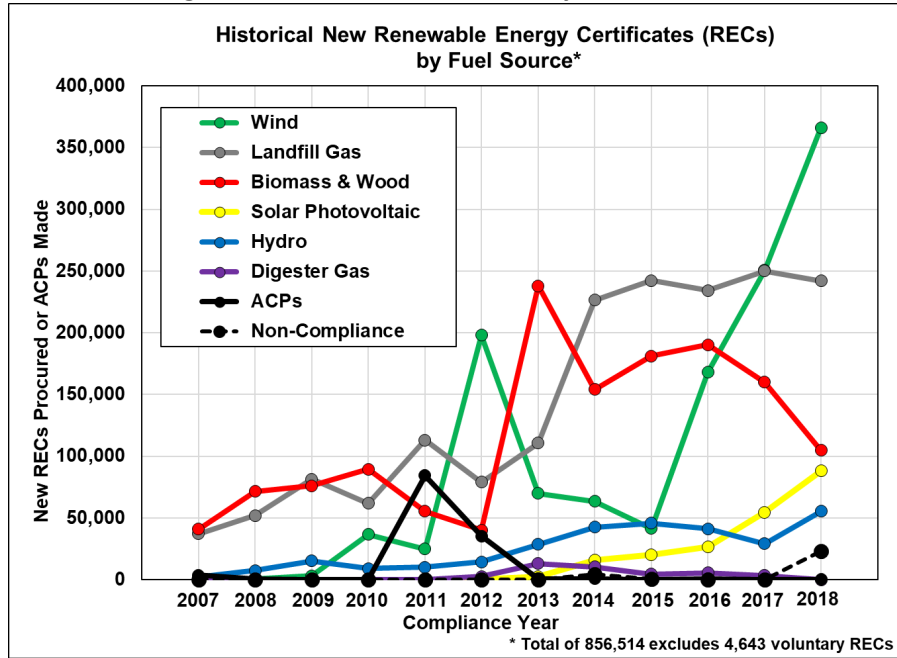
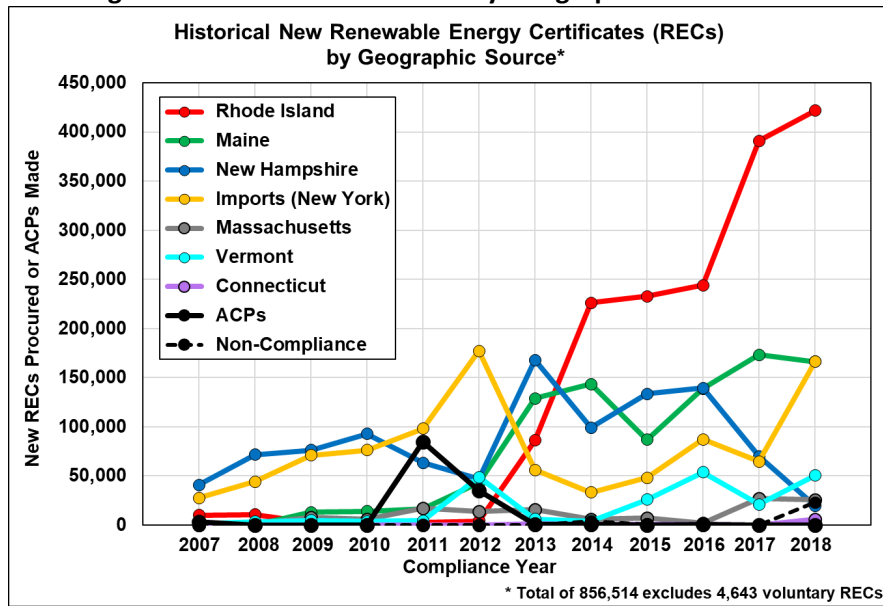


Figure E.2: Historical New RECs by Geographic Source



2018 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 electric ratepayers for complying with the RES.^{E12} 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.^{E13}

^{E12} The complete history of RES charges to National Grid’s Standard Offer Service customers is provided below in Section V, Table 4.

^{E13} National Grid typically files for a rate change to the Renewable Energy Standard Charge in late winter for effect on April 1st. Therefore, the timing of changes in the RES charge occurs three months into the Compliance Year, and three months before the REC trading year turns over.

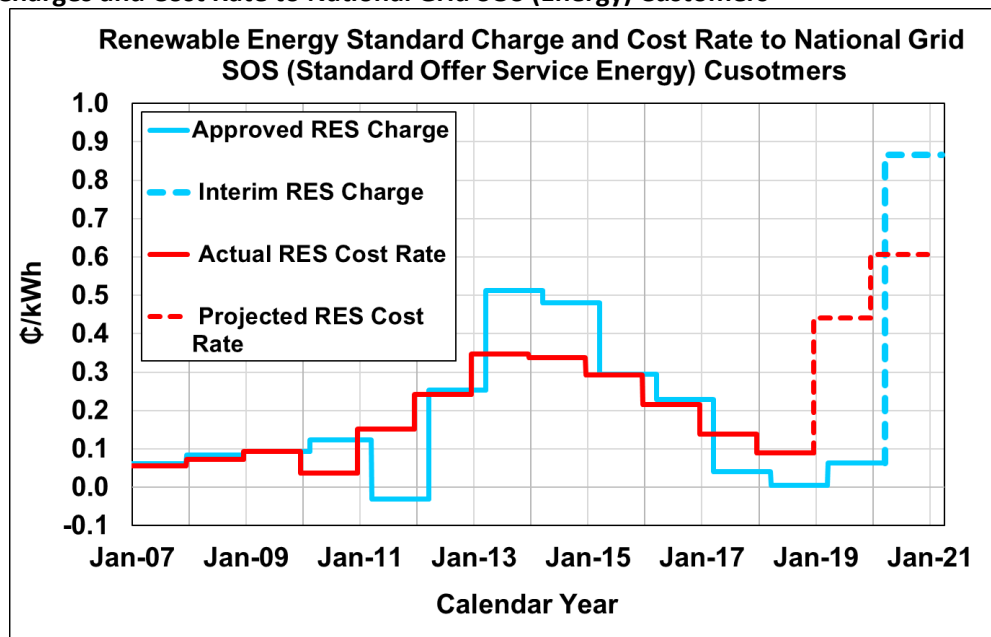
Table E.2: Estimated Rate Impact for RES Compliance to National Grid SOS (Energy) Customers

Effective Date	Initially-Projected REC Procurement Cost (per kWh) ^a	Adder for Previous- and Current-Year Costs (per kWh)	Authorized RES Charge (per kWh)	Monthly & Annual Charge to 500-kWh Ratepayer
April 2020 – Report Date	\$0.00606	\$0.00260	\$0.00866 ^b	\$4.33 \$51.96
April 2019 – March 2020	\$0.00183	(\$0.00120)	\$0.00063	\$0.32 \$3.78
April 2018 – March 2019	\$0.00190	(\$0.00186)	\$0.00004	\$0.02 \$0.24
April 2017 – March 2018	\$0.00264	(\$0.00224)	\$0.00040	\$0.20 \$2.40
April 2016 – March 2017	\$0.00405	(\$0.00117)	\$0.00288	\$1.44 \$17.28

^a The projected REC procurement cost is for current year costs. The projected compliance rate for Compliance Year 2018 was \$0.00190 per kWh and was collected from April 2018 through March 2019.

^b As of the date of this report the PUC had approved the proposed rate on an interim basis.

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



2018 Compliance Costs

National Grid is also the only Obligated Entity for which the PUC collects cost-of-compliance data.^{E14} To meet its 2018 New and Existing RES obligations, National Grid incurred \$3.91 million in compliance costs (Table E.3; Figure E.4).^{E15} This is a decrease of approximately 30.8% from the cost incurred to

comply with 2016 RES targets. Approximately \$3.2 million was charged to Standard Offer Service energy supply customers for purchases of RECs generated by projects in National Grid’s Long-term Contracting and Renewable Energy Growth programs in 2018,^{E16} although some of those RECs were banked for use in Compliance Years 2019 and 2020 and are not included in the \$3.91 million cost reported here.

^{E14} The complete history of RES cost to National Grid’s Standard Offer Service customers is provided below in Section V, Table 5.

^{E15} The \$3.91 million sum of New REC and Existing REC costs are based on communications with National Grid and may include the costs of RECs purchased and banked in previous Compliance Years that were used for Compliance Year 2018, among other minor factors.

The current cost rate of the RES obligation to National Grid’s Standard Offer Service energy supply customers (Total RES Costs divided by Obligated Load)

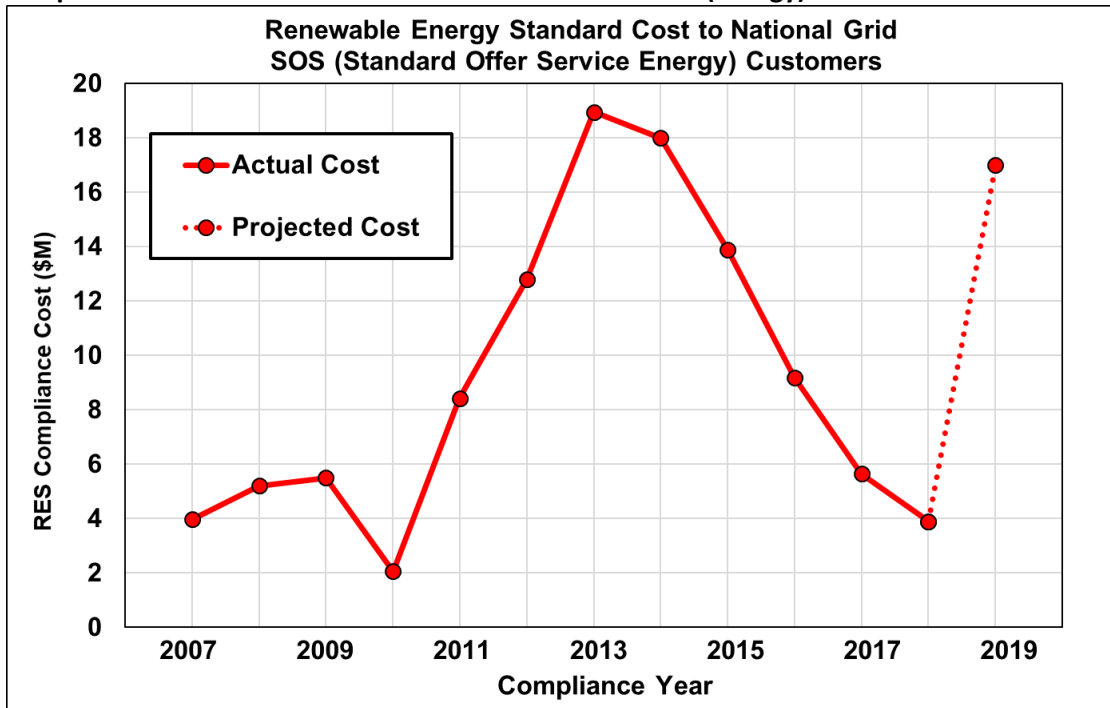
^{E16} R.I. Gen. Laws § 39-26.1, § 39-26.2, and § 39-26.6.

Table E.3: Summary of National Grid's RES Compliance Costs^a

Compliance Year	Total RES Costs (Millions)	New REC Costs (Millions)	Existing REC Costs (Millions)	ACP Costs (Millions)	Obligated Load (MWh)
2018	\$3.91	\$3.76	\$0.15	\$0	4,370,298
2017	\$5.65	\$5.53	\$0.12	\$0	4,097,802
2016	\$9.20	\$9.10	\$0.10	\$0	4,282,268
2015	\$13.88	\$13.80	\$0.08	\$0	4,773,192
2014	\$18.00	\$17.93	\$0.07	\$0	5,317,349

^a See note E16.

Figure E.4: Compliance Costs to National Grid Standard Offer Service (Energy) Customers



was approximately \$0.00089 per kWh in Compliance Year 2018. This continues a steady decrease that began in Compliance Year 2014 driven by decreasing total compliance costs (Figure E.3). Information filed by National Grid with the PUC indicates compliance costs will sharply increase for Compliance Year 2019.

The decrease in compliance cost to National Grid likely reflected an increasing supply in Rhode Island-eligible New RECs relative to demand for these RECs. This reasoning is supported by a reported surplus in New RECs retired by Obligated Entities and a low reliance on ACPs in Compliance Year 2018.^{E17}

^{E17} Future resolution of the issues raised in National Grid's Petition to Amend its 2017 and 2018 Annual Compliance will not change this general conclusion.

It must be noted that this data only represents expenses incurred by Standard Offer Service customers of National Grid, accounting for approximately 55.2% of all retail energy served statewide in 2017. The remaining 44.8% of statewide electric load is serviced by competitive energy 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. It also should be noted that National Grid bears no market risk because the utility passes all savings and expenses resulting from changes in the REC market onto Standard Offer Service customers and distribution customers. In contrast, other Obligated Entities (non-regulated competitive energy suppliers) may assume the REC market risk rather than pass it onto their customers dollar-for-dollar. Finally, in

addition to the costs enumerated above, the Commission incurred at least \$130,000 in expenses related solely to the administration of the RES for Compliance Year 2018.

2018 Conclusions

This analysis concludes that (1) the Rhode Island RES continues to operate successfully, (2) retail energy suppliers are, on a whole, able to comply with the RES, and (3) the supply of eligible RECs is adequate.

In 2018, the cost of the RES certainly decreased for National Grid Standard Offer Service customers and may have decreased for customers of competitive energy suppliers. However, there is evidence that compliance costs are likely to sharply increase in the next few Compliance Years.

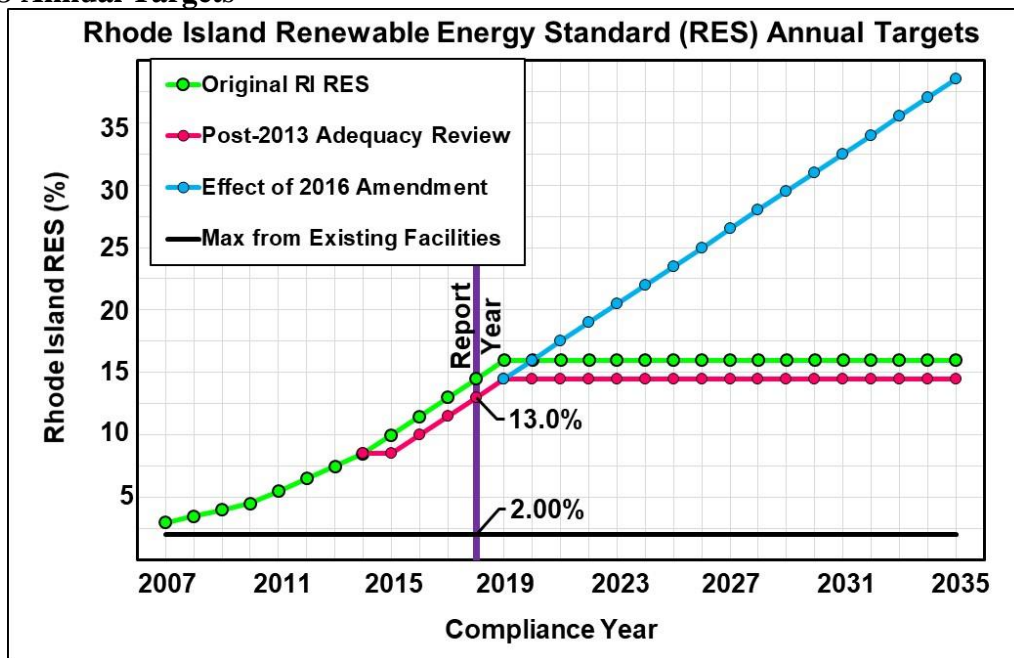
The number of Rhode Island-eligible generating units continues to grow, including facilities located within the State, as does the number of new renewable energy projects throughout the region and adjacent control areas. It appears that the supply of Rhode Island-eligible New RECs will continue to grow, and that Obligated Entities will be able to source RECs in a balanced marketplace over the next few years, with sustained and minor reliance on ACPs. However, it is important to note that 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 or decrease the number of resources that enter the marketplace. As a result, it is difficult to predict in which years supply will balance with demand and in which years a gap between the two will exist.

I. Introduction to the Renewable Energy Standard

The Rhode Island Renewable Energy Standard (RES) was enacted in 2004 via Chapter 39-26 of Rhode Island General Laws and requires the State’s retail electricity providers (referred to as Obligated Entities), excluding Pascoag Utility District and Block Island Power Company, to supply a defined proportion of their annual retail electricity sales from Eligible Renewable Energy Resources. The Rhode Island Public Utilities Commission (PUC) is the state agency that regulates and administers the RES. The PUC is required to report annually on the RES, as is provided in this document.

Legislative and regulatory actions have altered the annual RES requirement since its original passage in 2004 (Figure 1). The original RES target was 16.0% renewable energy by 2019, remaining in effect thereafter, unless and until the PUC determined that the standard was no longer necessary.¹ Subsequently, in 2013, the PUC conducted a statutory review of the adequacy of renewable energy supplies and, because of that investigation, ordered a delay in the 1.5% increase in Compliance Year 2015. This decision resulted in a revised final target of 14.5% renewable energy in 2019.² In 2016, the RES statute was amended to require annual increases of 1.5%, to continue from 2020 through 2035, resulting in a final target of 38.5% renewable energy.³ Per the RES statute, the PUC conducted an adequacy review beginning in December of 2018. In that review the PUC found that there is likely to be adequate renewable energy supply to meet the RES increase in Compliance Year 2020 and maintained the scheduled RES increase.⁴

Figure 1. RES Annual Targets



¹ P.L. 2016, ch. 144, § 1 and P.L. 2016, ch. 155, § 1 deleted R.I. Gen. Laws § 39-26-4(a)(5), which previously provided: “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.” For P.L. 2016, ch. 155, § 1, see <http://webserver.rilin.state.ri.us/PublicLaws/law16/law16155.htm>.

² This review was mandated by R.I. Gen. Laws § 39-26-6(d). This section of the law was amended by P.L. 2016, ch. 144, § 1 and P.L. 2016, ch. 155, § 1. See also note 1.

³ R.I. Gen. Laws §§ 39-26-1 to 10, as amended, do not explicitly maintain an RES proportion in 2036 and thereafter.

⁴ For additional information, refer to materials filed in Commission Docket No. 4903 at: [http://www.ripuc.ri.gov/eventsactions/docket/4903-RESAdequacy-Ord23381%20\(1-4-19\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4903-RESAdequacy-Ord23381%20(1-4-19).pdf)

Compliance Year 2018 was the twelfth compliance year for Rhode Island’s RES.⁵ The RES required all Obligated Entities to obtain at least 13% of electricity sold in 2018 to Rhode Island end-use customers (inclusive of certain losses) from Eligible Renewable Energy Resources. No more than 2.0% of the total 13% could have been sourced from Existing Renewable Energy Resources,⁶ thus a minimum of 11% must have been obtained from New Renewable Energy Resources⁷ (Table A5 in Appendix 5).

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 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 annually to the Governor, the Speaker of the House, and the President of the Senate “the status of the implementation of the renewable energy standards in Rhode Island and other states.” The annual Reports must also include “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 the certification maintained) to participate in the RES program. An up-to-date status of all approved and pending eligibility applications can be found on the PUC website at www.ripuc.ri.gov/utilityinfo/res.html

All Renewable Energy Resources must also establish and maintain an account with the New England Power Pool 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 megawatt-hour (MWh) of electrical energy production generated within, or imported into, the ISO New England (ISO-NE) control area, which includes Rhode Island. A single GIS Certificate for one MWh of eligible renewable energy generation is also commonly known as a Renewable Energy Certificate (REC).⁸ The REC 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. RECs used for RES compliance are created or imported, and later retired, exclusively through the NEPOOL GIS. This aspect of

⁵ January 1, 2018 through December 31, 2018.

⁶ The RES law states: “For each obligated entity and in each compliance year, the amount of retail electricity sales used to meet obligations under this statute that are derived from existing renewable-energy resources shall not exceed two percent (2%) of total retail electricity sales.” R.I. Gen. Laws § 39-26-4(b). The term “existing renewable-energy resources” is defined in as: “generation units using eligible renewable energy resources and first going into commercial operation before December 31, 1997.” R.I. Gen. Laws § 39-26-2(9).

⁷ The term “new renewable energy resources is defined as: “generation units using eligible renewable energy resources and first going into commercial operation after December 31, 1997; or the incremental output of generation units using eligible renewable energy resources that have demonstrably increased generation in excess of ten percent (10%) using eligible renewable energy resources through capital investments made after December 31, 1997; but in no case involve any new impoundment or diversion of water with an average salinity of twenty (20) parts per thousand or less.” R.I. Gen. Laws § 39-26-2(15).

⁸ As explained on its website, NEPOOL GIS “issues and tracks certificates for each megawatt-hour (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.

compliance, submission of annual compliance filings, and the Annual Report aid in the PUC's mission to ensure that RECs used to satisfy the RES obligations have not been used to satisfy another obligation in Rhode Island or any other jurisdiction. In this way, the PUC guards against any "double counting" of RECs.

II. Compliance Year 2018: Obligation and Sources of Compliance

The information in this section of the Report is based on the compliance filings filed with the PUC for Compliance Year 2018. As of the report date, National Grid has filed a petition to revise its 2018 compliance filing for Standard Offer Service customers.⁹ More information is provided below in Section VII.

Rhode Island’s actual 2018 RES-obligated retail sales totaled 7,914,524 MWh of electrical energy. As a result, the total obligation for 2018 was 921,870 MWh (i.e., 13%). Of the 13% obligation, the aggregate minimum amount of RECs that needed to be sourced from “New Renewable Energy Resources” was 870,612 MWh (i.e., 11.0%), while the aggregate maximum amount of RECs that could have been source from “Existing Renewable Resources” (i.e., units that went into operation prior to December 31, 1997) was 158,306 MWh (i.e., 2%).¹⁰ Obligated Entities were required to meet the RES either through the purchase and retirement of NEPOOL GIS RECs¹¹ 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 2018, the ACP rate was \$68.96 per MWh of obligation.¹² The rate is the same for both New and Existing RES obligations. Additional information regarding ACP rates is found in Appendix 1.

Table 1: Obligated Entities Submitting 2018 RES Compliance Filings to the PUC

Distribution Utilities	
The Narragansett Electric Company d/b/a National Grid	
Competitive Retail Energy Suppliers (Non-regulated power producers)	
Agera Energy, LLC	ENGIE Retail, LLC d/b/a Think Energy
Ambit Northeast, LLC	First Point Power, LLC
Archer Energy, LLC	Liberty Power Holdings, LLC
Calpine Energy Solutions, LLC	Mint Energy, LLC
Champion Energy Marketing, LLC	Moore Energy, LLC
Clearview Energy	NextEra Energy Services Rhode Island, LLC
Constellation New Energy, Inc.	North American Power and Gas, LLC
Devonshire Energy, LLC	Public Power, LLC
Direct Energy Business, LLC	SmartEnergy Holdings, LLC
Direct Energy Business Marketing, LLC	South Jersey Energy Company
Direct Energy Services, LLC	Town Square Energy, LLC
Discount Power, Inc. (BP Energy Company)	TransCanada Power Marketing, Ltd. (EDF Energy Services, LLC)
EDF Energy Services, LLC	Viridian Energy, LLC
ENGIE Resources, LLC	XOOM Energy Rhode Island, LLC

⁹ National Grid “Petition to Revise 2017 and 2018 Renewable Energy Standard Compliance Filings,” June 2, 2017 filed in PUC Docket No. 5041. [http://www.ripuc.ri.gov/eventsactions/docket/5041-NGrid-RES-Petition\(7-2-20\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5041-NGrid-RES-Petition(7-2-20).pdf). An investigation into National Grid’s compliance through 2019 is ongoing.

¹⁰ Note that the total New and Existing RES obligations are slightly higher than 11.0% and 2.0% of total obligated retail sales due to rounding protocols for individual Obligated Entities.

¹¹ RECs are issued about seven months after they are generated. Thus, January 2018 RECs are issued June 15, 2018. Because of this lag, trading for 2018-vintage RECs and the costs incurred by Obligated Entities for Compliance Year 2018 continued through June 15, 2019.

¹² See <http://www.ripuc.ri.gov/utilityinfo/RES-ACPRate.pdf>.

Table 2: Summary of 2018 RES Compliance

Results for Compliance Year 2018		(MWh)^a
A	2018 RES Obligated Retail Sales	7,914,524
A.1	National Grid	4,370,298
A.2	Competitive Suppliers (28 total)	3,544,226
New RES Obligations and New Renewable Energy Certificates		
B	Total 2018 New RECs Settled in Rhode Island^b	921,870
B.1	2018 New RECs Purchased	856,514
B.2	Banked 2016 and 2017 New RECs Applied	65,356
C	New RES Obligations (11% of “A”)	870,612
C.1	Banked RECs Applied to 2018 New Obligations (from B.2)	65,356
C.2	2018 New RECs Applied to 2018 New Obligations (subset of B.1)	781,736
C.3	Alternative Compliance Payment Credits Applied to 2018 New RES Obligations	188
C.4	Outstanding Obligation (RECs or ACPs)	23,332
D	Banked RECs Available for Compliance Year 2019 or 2020	
D.1	Remaining RECs Available after Meeting New RES Obligations (B – B.2 – C.2)	74,778
D.2	2018 New RECs Applied to 2018 Existing RES Obligations	40
D.3	2018 RECs Banked for Future Use in Compliance Years 2019 or 2020 (D.1 – D.2)	74,738 ^c
D.4	2018 New RECs Purchased above 30% Banking Cap (not eligible for banking)	0
Existing RES Obligations and Existing Renewable Energy Certificates		
E	Existing or New RES Obligations (2.0% of “A”)	158,306
E.1	2018 Existing RECs Applied to 2018 Existing RES Obligations	153,025
E.2	2018 New RECs Applied to 2018 Existing RES Obligations (from D.2)	40
E.3	Alternative Compliance Payment Credits Applied to 2018 Existing RES Obligations	0
E.4	Outstanding Obligation (RECs or ACPs)	5,241
F	Total 2018 Existing RECs Settled in Rhode Island	154,073
F.1	2018 Existing and New RECs Applied to 2018 Existing RES Obligations (E.1 plus E.2)	153,065
F.2	2018 Existing RECs Purchased above 2018 RES Obligations (not eligible for banking)	1,048
<p>a. Values may not be additive due to rounding protocol with individual Obligated Entities.</p> <p>b. Includes previously-banked and newly-minted RECs and excludes RECs purchased on behalf of end-use customers for voluntary clean energy programs. <i>See</i> Appendix 4 for details on RECs purchased for voluntary programs.</p> <p>c. This figure represents newly-banked RECs. It does not include 11,345 previously-banked RECs that were not used for compliance in 2018 and may still be used for compliance in 2019, but after which they will expire.</p>		

In total, twenty-nine entities were obligated to submit RES Compliance Filings to the PUC, including National Grid and twenty-eight competitive retail energy suppliers (competitive suppliers), as shown in Table 1. Appendix 2 lists all entities from which Compliance Filings were received and provides a detailed summary of RES compliance for National Grid along with a more limited summary for competitive suppliers

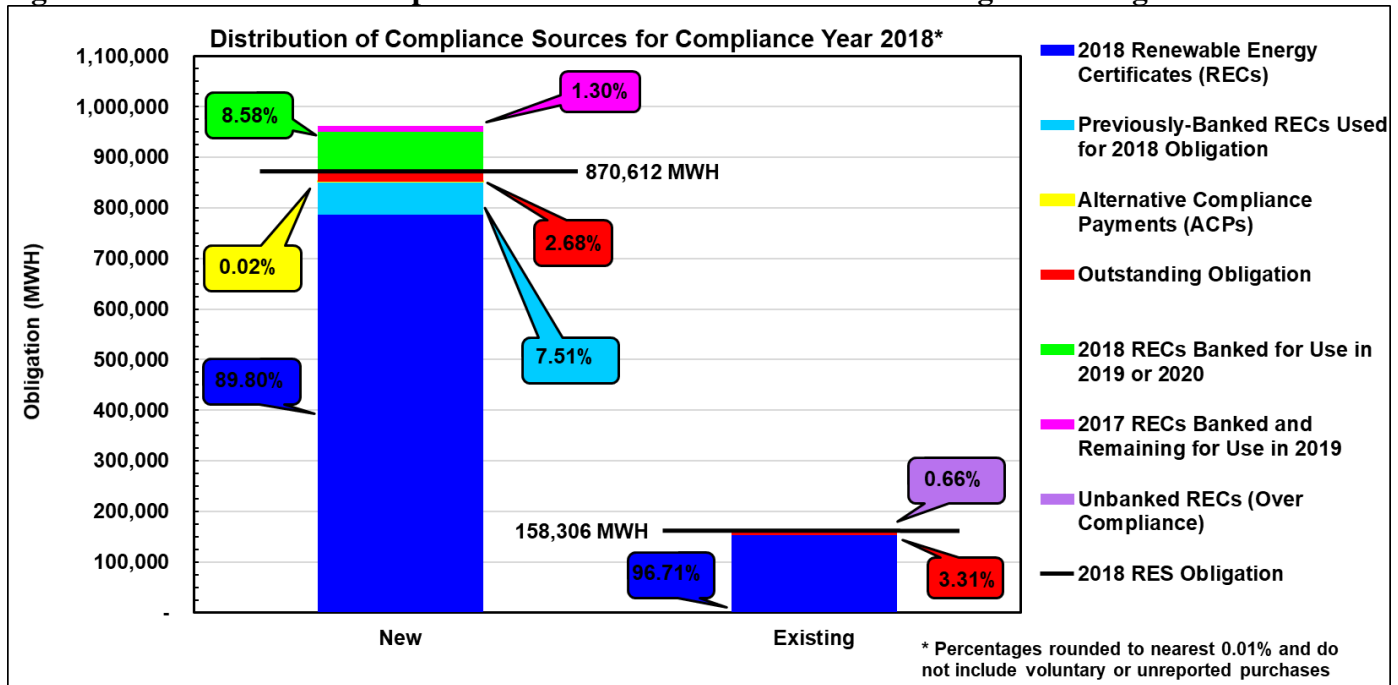
Twenty-seven of these entities met their entire RES obligation by retiring RECs.¹³ Two competitive suppliers met a portion of their 2018 RES obligation by making ACPs to the Rhode Island Commerce

¹³ These twenty-seven includes one entity that submitted a compliance filing, as required, but served no load in 2017 and therefore had no obligation.

Corporation, and one competitive supplier failed to comply with a portion of its RES obligation. Twenty-four Obligated Entities utilized some of their Banked Compliance to meet their 2018 obligation. Seventeen Obligated Entities banked RECs minted in 2018 for use in 2019 or 2020. The number of Obligated Entities choosing to bank RECs decreased from Compliance Year 2017 when twenty-four entities banked New RECs. A breakdown of compliance by the numbers is presented in Table 2.

For Compliance Year 2018, RECs were used to meet 97.3% of Rhode Island’s New RES obligation (Figure 2). The total number of New RECs retired by Obligated Entities was 921,870, including 65,365 RECs banked from Compliance Year 2016 or 2017. Of that total, 74,738 New RECs (minted in 2018) were banked for use toward compliance in either Compliance Year 2019 or 2020.¹⁴ The total RECs retired represents a 6.4% surplus compared to the 2018 New RES obligation for all Obligated Entities and is down from the 9.6% and 8.9% surpluses for Compliance Years 2017 and 2016, respectively. This continued surplus in New RECs to meet increasing demand 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 2: Distribution of Compliance Sources for 2018 New and Existing RES Obligations



Approximately 96.7% of the State’s 2018 Existing or New RES obligation was met through retiring RECs (Figure 2), with one Obligated Entity failing to comply with all its Existing or New RES obligation.¹⁵ A total of ten suppliers retired cumulatively 1,048 more Existing RECs than was necessary to meet their combined obligations.¹⁶ Unlike New RECs, banking of Existing RECs is not allowed under Rhode Island’s Renewable Energy Standard Rules and Regulations.

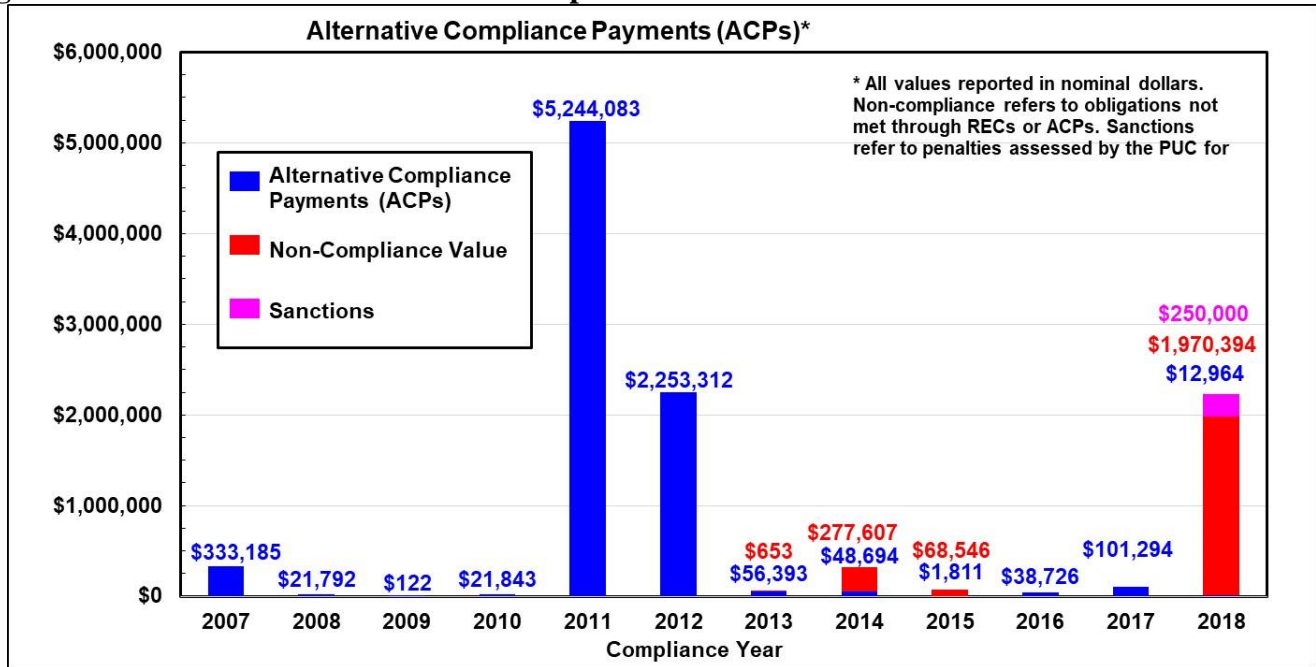
¹⁴ Banking is capped at 30% of an Obligated Entity’s Compliance Year obligation for New RECs.

¹⁵ Section VII contains more information on this instance of non-compliance.

¹⁶ It is possible that these companies injudiciously over-procured RECs or they purchased these RECs intentionally for some other purpose.

Taken as a whole, there was a New and Existing REC surplus among Obligated Entities. Taken individually, two Obligated Entities chose to comply, partially, by making ACPs totaling approximately \$12,964 in lieu of retiring 188 New RECs.¹⁷ This continues a recent trend of relatively low total ACP costs paid by Obligated Entities (Figure 3). Notably one obligated entity failed to fully comply with its RES obligation, filed for bankruptcy protection, and left a balance valued at approximately \$1,970,394 in unpaid ACPs. This Obligated Entity was fined \$250 thousand for its failure; more information on this event is provided in Section VII. As a settlement of Agera’s bankruptcy proceeding the Commerce Corporation collected \$82,755 against its claim for the full remaining ACP amount of \$1, 970,394.08.

Figure 3: Total Annual ACPs and Non-Compliance Value



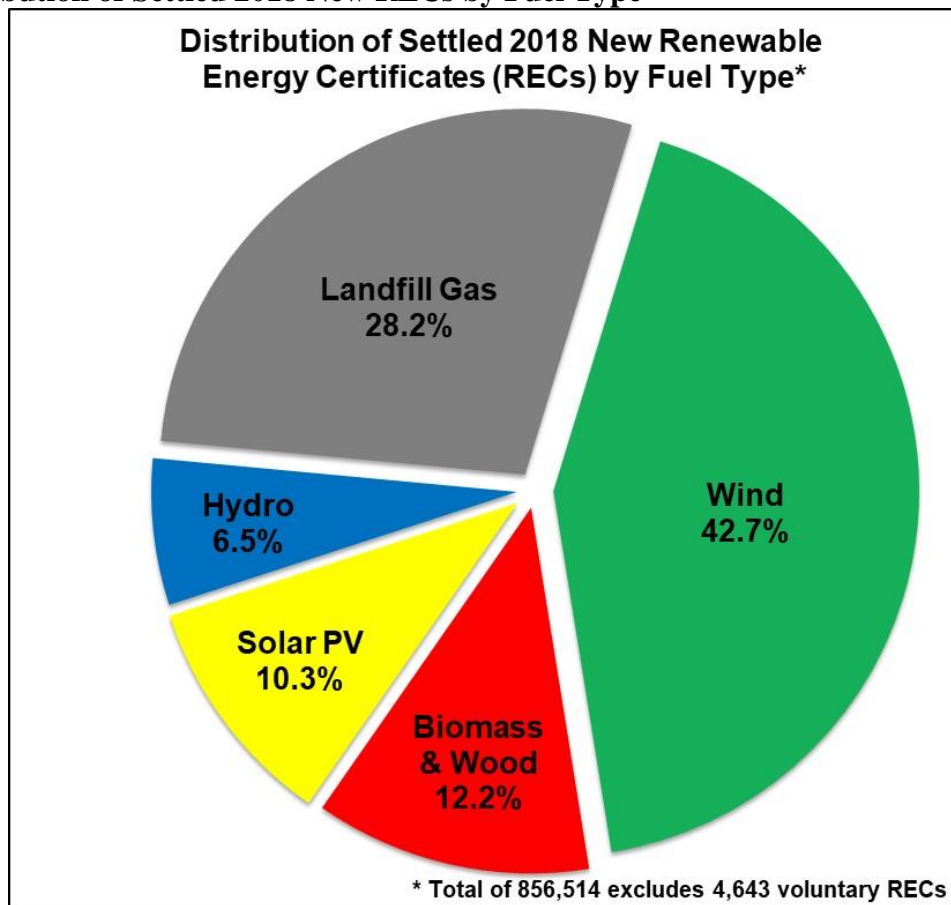
¹⁷ In Compliance Year 2018, ACPs in lieu of both New and Existing RECs are valued at \$68.96 per MWh.

III. 2018 RES Compliance by Fuel Type and Geographic Location

The information in this section of the Report is based on the compliance filings filed with the PUC for Compliance Year 2018. As of the report date, National Grid has filed a petition to revise its 2018 compliance filing for Standard Offer Service customers.¹⁸ More information is provided below in Section VII.

New RECs minted, purchased, and settled in Compliance Year 2018 were generated by five types of renewable energy generators: wind, landfill gas, biomass, solar photovoltaic, and hydroelectric (Figure 4).¹⁹ For the second year in a row most of the New RECs were generated by wind-powered facilities (42.7%), and this share sourced from wind RECs is up from 33.5% in Compliance Year 2017. The remaining New RECs were generated by landfill gas (28.2%), biomass (12.2%), solar photovoltaic (10.3%), and hydroelectric (6.5%). In terms of resource location, most of the New RECs settled in 2018 were sourced from Rhode Island (49.3%) with the rest coming from New York (19.4%), Maine (19.4%), Vermont (5.9%), Massachusetts (3.0%), and New Hampshire (2.3%), and Connecticut (0.7%) (Figure 5).

Figure 4: Distribution of Settled 2018 New RECs by Fuel Type

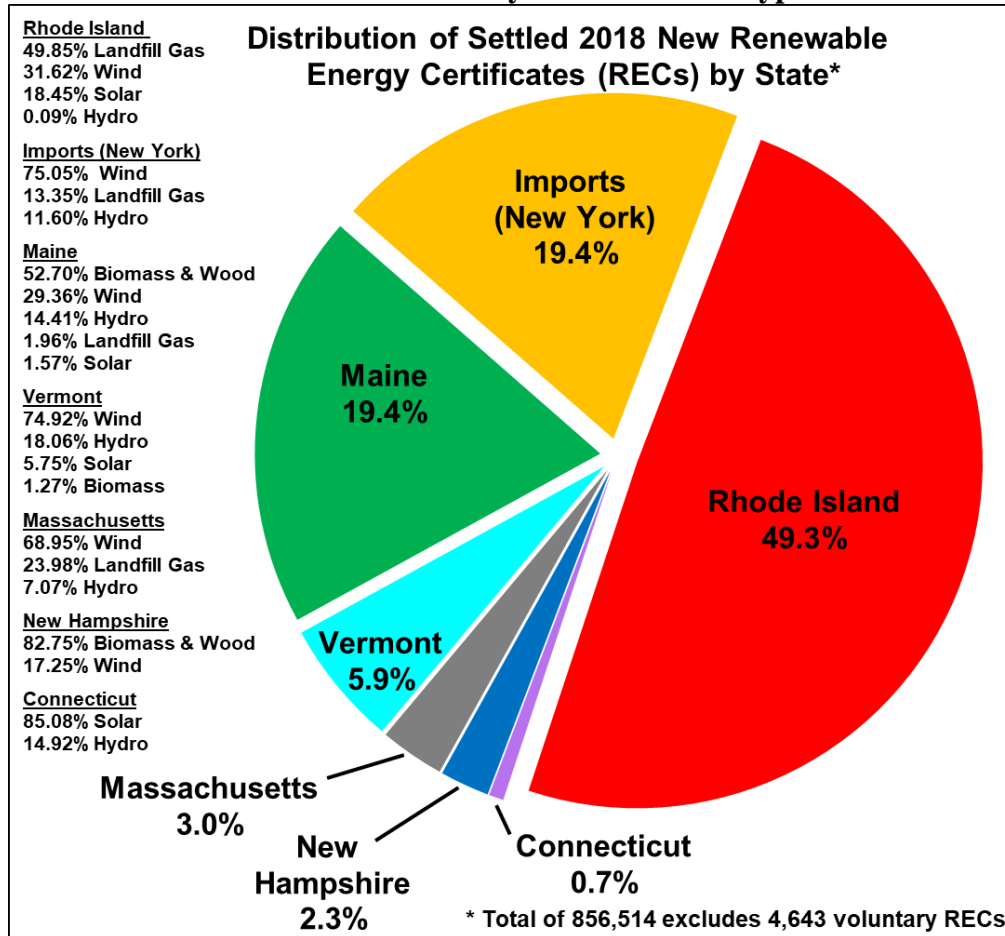


¹⁸ National Grid “Petition to Revise 2017 and 2018 Renewable Energy Standard Compliance Filings,” June 2, 2017 filed in PUC Docket No. 5041. [http://www.ripuc.ri.gov/eventsactions/docket/5041-NGrid-RES-Petition\(7-2-20\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5041-NGrid-RES-Petition(7-2-20).pdf).

¹⁹ Not all of the New RECs purchased and settled in Compliance Year 2018 were used to meet Compliance Year 2018 obligations. Some RECs were banked for use in Compliance Years 2019 and 2020, while others were purchased in excess of the obligation. This summary of New resources excludes RECs retired for the purpose of substantiating renewable energy claims associated with voluntary purchases to serve clean energy choices of end-use customers above and beyond the RES. Voluntary clean energy programs are summarized in Appendix 6 of this Report.

In Compliance Year 2018 the resource type with the largest gain in New RECs was wind, adding an additional 115,555 New RECs over the number retired in Compliance Year 2017 (Figure 6). To put this amount in perspective, it represents 86% of the incremental New RECs needed in Compliance Year 2018 compared to meet the increase in the RES from Compliance Year 2017. The next largest increase was from solar photovoltaic (solar PV) resources, up 33,798 RECs from Compliance Year 2017. This increase puts the use of solar PV RECs on par with biomass RECs, the use of which decreased greatly in Compliance Year 2018. Meanwhile, New RECs obtained from facilities located in Rhode Island increased, although not as sharply as the increase in Compliance Year 2017.

Figure 5: Distribution of Settled 2018 New RECs by State and Fuel Type



The surge of New RECs sourced from wind resources was largely driven by increased imports from New York and Vermont (103,400 and 35,723 more New wind RECs compared to Compliance Year 2017, respectively), whereas wind RECs from other locations held about even with Compliance Year 2017.

The increase in New solar PV RECs was primarily driven by the output of resources in Rhode Island, with an increase of 35,276 (or 83%) compared to Compliance Year 2017. The proliferation of these resources is being driven by National Grid’s statutory long-term contracting and feed-in tariff programs,²⁰ as well as traditional rooftop and remote net metering projects. These programs are expected to continue the increase in Rhode Island-eligible solar PV resources, but it is not known if those resources’ RECs will be sold and

²⁰ R.I. Gen. Laws § 39-26.1, § 39-26.2, and § 39-26.6.

retired for compliance in Rhode Island, sold to and retired in other states by entities fulfilling renewable compliance obligations in other states, or used for some other purpose.

Figure 6: Historical New RECs by Fuel Source

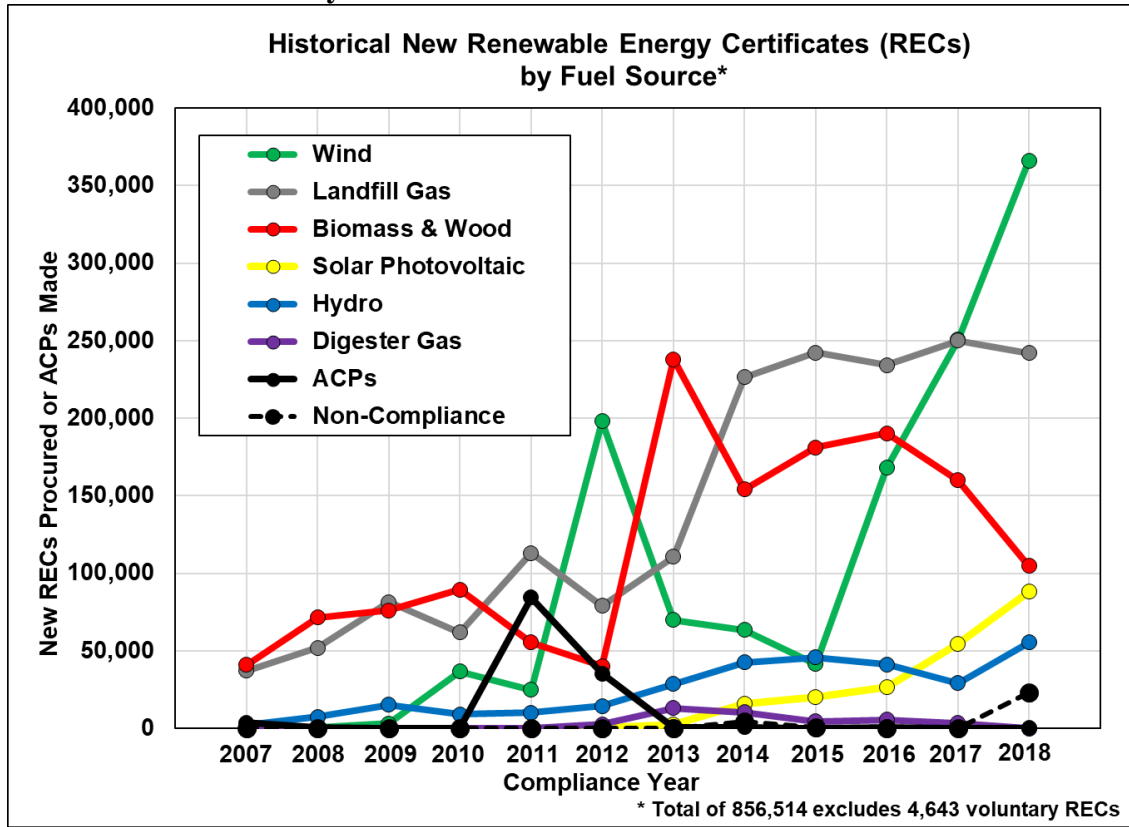
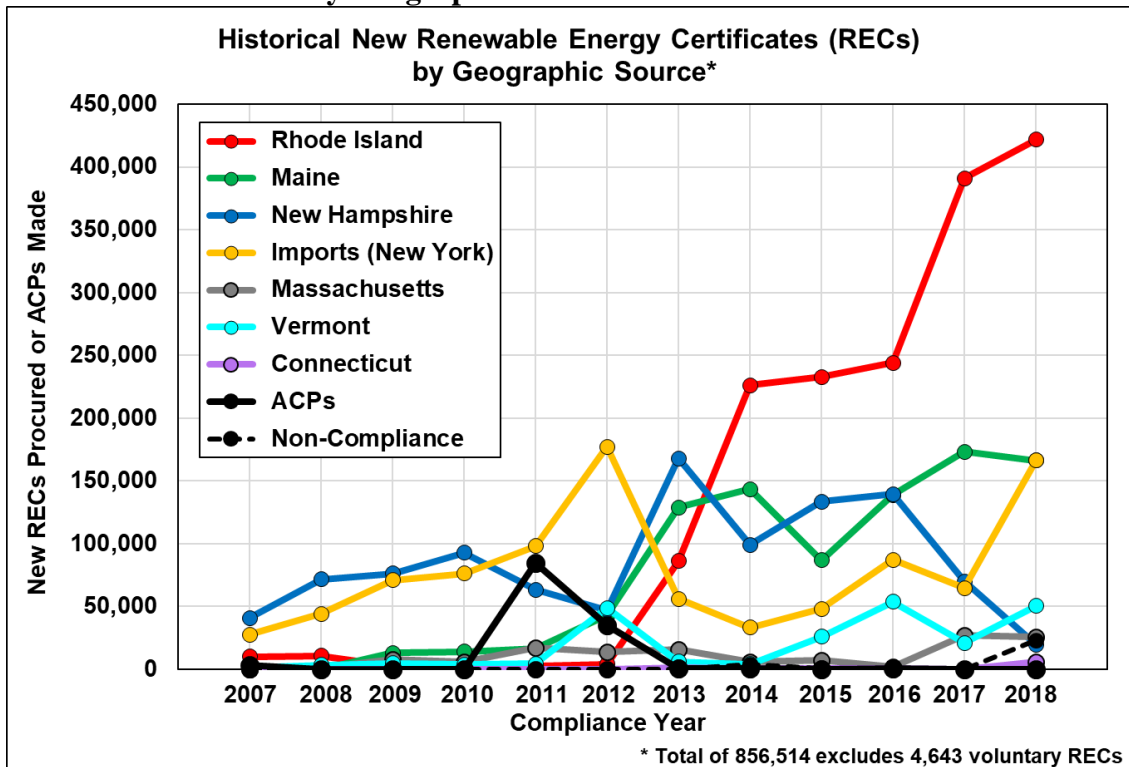


Figure 7: Historical New RECs by Geographic Source



Altogether, the historical view of the number of New RECs procured from all jurisdictions is presented in Figure 6, along with ACPs for comparison. 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 continued reliance on RECs from Rhode Island and a sustained lack of reliance on ACPs in Compliance Year 2018.

In Compliance Year 2018, all the Existing RECs purchased and settled were generated by hydroelectric facilities. This year, the Existing hydroelectric RECs were sourced from Maine (68.1%), New Hampshire (24.5%), Massachusetts (7.4%).²¹

²¹ These percentages include reported purchases for voluntary programs and over-compliance.

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 2035. At § 39-26-4(a)(3), the enabling legislation provides for an additional one percent (1.0%) 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 2035, resulting in a final target of 38.5% renewable energy, with a similar requirement that the PUC periodically determine the adequacy of supply.²²

The way the PUC fulfills the requirement to determine supply adequacy, as well as the timing and implications of the PUC’s decision-making authority, is articulated in the RES Regulations under § 39-26-6(d). In a January 2010 Order for Docket No. 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.²³ In a February 2014 Order for Docket No. 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 the 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% (with an additional 2.0% to come from Existing or New RECs). Additional information on this proceeding and the PUC’s complete Order can be found at the PUC website.²⁴ In 2016, the RES statute was amended to require annual increases of 1.5% to continue from 2020 through 2035, resulting in a final target of 38.5% renewable energy. Per the RES statute, the PUC conducted an adequacy review beginning in December of 2018. In that review the PUC found that there is likely to be adequate renewable energy supply to meet the RES increase in Compliance Year 2020 and maintained the scheduled RES increase.²⁵

The percentage targets shown above in Figure 1 (see Section I) and in the calculated future RES obligations shown below in Table 3 are adjusted to reflect the PUC’s one-year delay of the 1.5% increase to Compliance Year 2015 and the RES amendments of 2016 that increase the targets through 2035. 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 ISO-NE’s 2019 Capacity, Energy, Loads, and Transmission (CELT) Report²⁶ and exempted load, including some wholesale transmission losses, as well as both Pascoag Utility District and Block Island Power Company retail sales.²⁷

²² R.I. Gen. Laws §§ 39-26-1 to 10, as amended, does not explicitly maintain a RES proportion in 2036 and thereafter.

²³ For additional information, refer to materials filed in Commission Docket No. 4050 at: <http://www.ripuc.ri.gov/eventsactions/docket/4050page.html>

²⁴ For additional information, refer to materials filed in Commission Docket No. 4404 at: <http://www.ripuc.ri.gov/eventsactions/docket/4404page.html>. In particular, Commission Report and Order No. 21353 can be viewed at: http://www.ripuc.ri.gov/eventsactions/docket/4404-RES-Adequacy-Ord21353_2-10-14.pdf.

²⁵ For additional information, refer to materials filed in Commission Docket No. 4903 at: http://www.ripuc.ri.gov/eventsactions/docket/4903-RESAdequacy-Ord23381_1-4-19.pdf

²⁶ ISO-NE 2019 CELT Forecast Data. See tab 2C, column K NET. ISO-NE 2018 Forecast Data File, available at https://www.iso-ne.com/static-assets/documents/2019/04/forecast_data_2019.xlsx.

²⁷ The analysis includes an assumption that 2.78% of the forecasted load served in Rhode Island is exempted from the RES in all future years, including the energy used by Block Island Power Company and Pascoag Utility District customers.

Table 3: Forecast of RES Compliance Year Obligations for New and Existing Resources

Compliance Year	Actual/Forecasted RES-Obligated Retail Sales^a (MWhs)	Minimum MWhs from New Renewable Energy Resources^b (per Figure 1 targets)^c	MWhs from <i>either</i> New <i>or</i> Existing Renewable Energy Resources^b (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	162,469
2013 (Actual)	8,193,979	450,678	163,891
2014 (Actual)	7,985,473	519,067	159,720
2015 (Actual) ^d	8,018,905	521,243	160,392
2016 (Actual)	7,954,467	636,372	159,103
2017 (Actual)	7,741,800	735,485	154,850
2018 (Actual)	7,914,524	870,612	158,306
2019	7,519,000	940,000	150,000
2020 ^e	7,444,000	1,042,000	149,000
2021	7,305,000	1,132,000	146,000
2022	7,240,000	1,231,000	144,000
2023	7,165,000	1,326,000	143,000
2024	7,129,000	1,426,000	142,000
2025	7,061,000	1,518,000	141,000
2026	7,038,000	1,619,000	140,000
2027	7,041,000	1,725,000	140,000
2028 ^f	7,096,000	1,845,000	141,000

^a Based on 2019 ISO-NE CELT forecast and assumes 2.78% of load exempted from RES obligation in future years.

^b 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.

^c The annual targets are also listed in Table A5 of Appendix 5.

^d 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.

^e The RES was amended in 2016 to continue with a 1.5% increase annually from 2020 to 2035.

^f The 2019 ISO-NE CELT forecast ends in 2028.

V. Authorized Rate Increases and RES Compliance Costs

The information in this section of the Report is based on the compliance filings filed with the PUC for Compliance Year 2018. As of the report date, National Grid has filed a petition to revise its 2018 compliance filing for Standard Offer Service customers.²⁸ More information is provided below in Section VII.

Per R.I. Gen. Laws § 39-26-6(b), the PUC is required to authorize rate recovery by electric distribution companies for prudent incremental costs arising from the RES, including the purchase of RECs, the payment of ACPs, required payments to support the NEPOOL GIS, assessments made for the Renewable Energy Development Fund pursuant to R.I. Gen. Laws § 39-26-7(c), and the incremental costs of complying with energy source disclosure requirements. To track the recovery of these costs, R.I. Gen. Laws § 39-26-6(f) requires that the annual Report includes the amount of rate increases authorized pursuant to subsection (b), described above. The only electric distribution company that qualifies as an Obligated Entity is National Grid, as the statutory definition of “Obligated Entity” specifically excludes Block Island Power Company and the Pascoag Utility District.²⁹

Regarding National Grid’s rates, it is important to note that in Compliance Year 2018 the company has two types of distribution customers: customers who get their energy supply from National Grid’s Standard Offer Service and customers who get their energy supply from a competitive supplier. Only Standard Offer Service customers pay National Grid’s charges related to RES compliance; customers of competitive suppliers pay RES compliance costs through those competitive suppliers’ charges. These Standard Offer Service customers accounted for approximately 55.2% of the energy used in Rhode Island in 2017. RES compliance costs (and related rates) of competitive suppliers for providing the remaining 44.8% of energy is unknown.

Early in each calendar year, National Grid proposes a RES charge designed to collect the costs of RES compliance for Standard Offer Service customers 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.³⁰ The reconciling nature of this charge ensures that when compliance costs are lower than National Grid anticipates, the over-collections are returned to ratepayers. Symmetrically, when compliance costs are higher than anticipated, National Grid can recover under-collections.

Table 4 provides data on the authorized RES charge (in dollars per kWh) billed to National Grid’s Standard Offer Service customers from 2007 through this Report date, as well as the total charges to a 500-kWh Residential Class ratepayer by month and year (*see also* the blue line on Figure 8). The factors of the approved charge are based on projected market conditions, anticipated REC pricing, estimates of electricity consumption, and estimates of market share, among other prudent considerations. Projected cost for the upcoming compliance year (mostly controlled by cost to procure New RECs rather than the cost to procure Existing RECs) is found in the second column; the reconciliation factor for previous compliance years is

²⁸ National Grid “Petition to Revise 2017 and 2018 Renewable Energy Standard Compliance Filings,” June 2, 2017 filed in PUC Docket No. 5041. [http://www.ripuc.ri.gov/eventsactions/docket/5041-NGrid-RES-Petition\(7-2-20\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5041-NGrid-RES-Petition(7-2-20).pdf).

²⁹ R.I. Gen. Laws § 39-26-2(16).

³⁰ National Grid typically files for rate change to the Renewable Energy Standard Charge in late winter for effect on April 1st. Therefore the timing of changes in the RES charge occurs three months into the Compliance Year, and three months before the REC trading year turns over. For the 2018 example, *see here*: http://www.ripuc.ri.gov/eventsactions/docket/4692-NGrid-RESReconciliation2018_2-27-18.pdf.

found in the third column. The charge of \$0.00004 per kWh, effective April 1, 2018 through March 31, 2019, comprises a \$0.00190 per kWh factor for projected costs for Compliance Year 2018 and a negative \$0.00186 reconciliation factor for a cumulative over-collection of costs for previous years, including costs for Compliance Year 2017 (*see* the yellow row in Table 4).

Table 4: Estimated Rate Impact of RES Compliance to National Grid SOS (Energy) Customers

Effective Date	Initially-Projected REC Procurement Cost (per kWh) ^a	Adder for Previous- and Current-Year Costs (per kWh)	Authorized RES Charge (per kWh)	Monthly & Annual Charge to 500-kWh Ratepayer
April 2020 – Report Date	\$0.00606	\$0.00260	\$0.00866 ^b	\$4.33 \$51.96
April 2019 – March 2020	\$0.00183	(\$0.00120)	\$0.00063	\$0.32 \$3.78
April 2018 – March 2019	\$0.00190	(\$0.00186)	\$0.00004	\$0.02 \$0.24
April 2017 – March 2018	\$0.00264	(\$0.00224)	\$0.00040	\$0.20 \$2.40
April 2016 – March 2017	\$0.00405	(\$0.00117)	\$0.00288	\$1.44 \$17.28
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
April 2012 – March 2013	\$0.00209	\$0.00044	\$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	^c	\$0.00084	\$0.42 \$5.04
2007	\$0.00062	N/A	\$0.00062	\$0.31 \$3.72

^a The projected REC procurement cost is for current year costs; i.e., the projected compliance rate for Compliance Year 2017 was \$0.00264/kWh and was collected from April 2017 through March 2018.

^b As of the date of this report the PUC had approved the proposed rate on an interim basis.

^c 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.

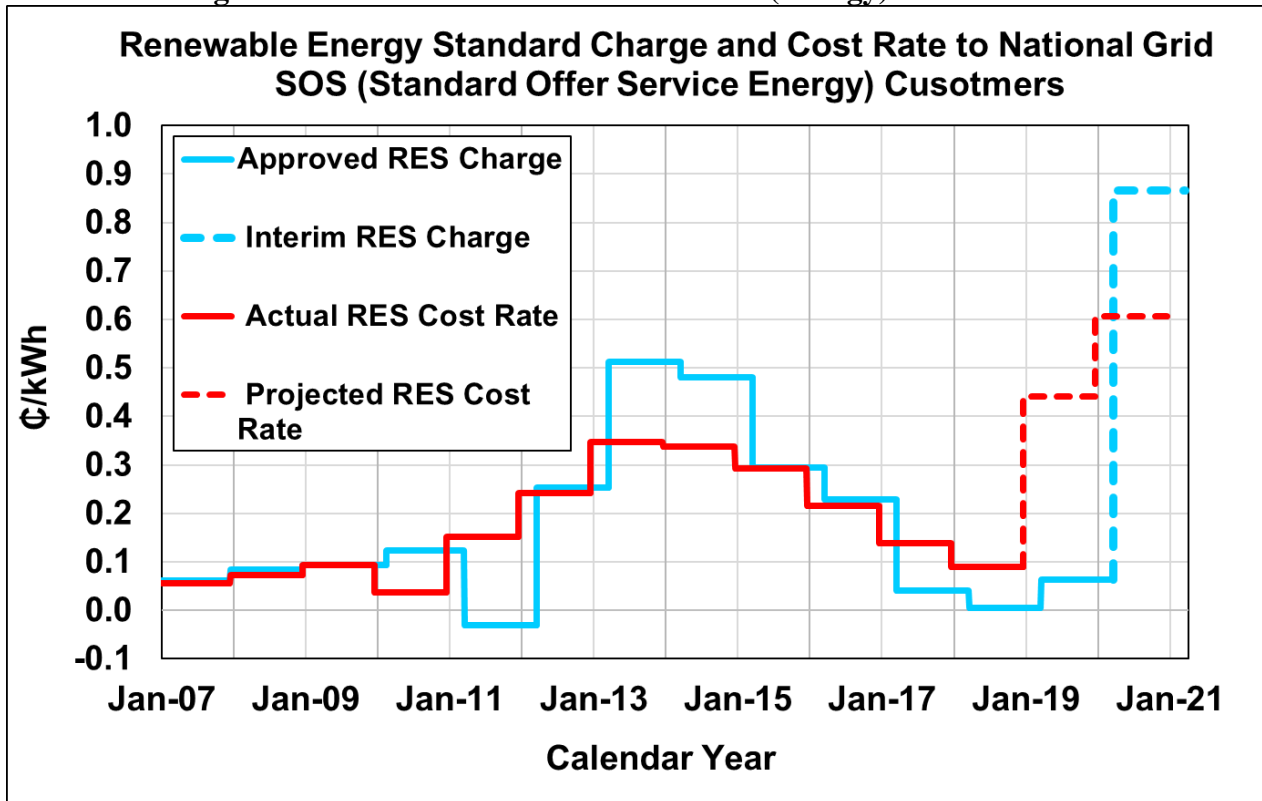
While this Report focuses on Compliance Year 2018, it should be noted that in April 2019, the RES charge was increased to \$0.00063 per kWh, mostly due to a smaller reconciliation factor for overcollection in previous years.³¹ In February 2020, National Grid filed to increase the factor to \$.00866 per kWh for affect

³¹ National Grid’s “Docket 4809 - 2019 Renewable Energy Standard (RES) Charge and Reconciliation,” Attachment 1, [http://www.ripuc.ri.gov/eventsactions/docket/4809-NGrid-RES_Reconciliation_\(PUC_2-27-19\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4809-NGrid-RES_Reconciliation_(PUC_2-27-19).pdf).

April 1, 2020³²—by far the largest RES charge in history. This greater-than-ten-fold increase in the RES charge is due in part to a large increase in the reconciliation factor for under collections in previous years. The more significant change, however, is the projected increase in the cost of new compliance (i.e., New and Existing REC procurement to meet the increasing RES obligation), which National Grid projects will cost \$0.00606 per kWh. To add context, the current RES charge represents approximately 10% of the total current Standard Offer Service charge (\$0.08299) National Grid’s energy supply customers see on their bills. Due to the state of emergency caused by the COVID-19 pandemic, the PUC did not vote to approve or deny the proposed rate, but rather approved the proposed rate on an interim basis subject to further review and a hearing.

National Grid executed its proposed REC procurement plan for Compliance Year 2018. Based on the data reported below in Table 5 and in Appendix 2 Table A2, for Compliance Year 2018, National Grid procured Rhode Island-eligible New RECs at an average price of approximately \$7.82 per New REC.³³ This is below National Grid’s February 2018 projection of \$15.83 per New REC³⁴ and well below the ACP level of \$68.96. National Grid’s most recent estimate of New REC prices is up significantly to an average cost of \$40.08 per New REC in Compliance Year 2020.³⁵

Figure 8: RES Charges and Cost Rate to National Grid SOS (Energy) Customers



³² National Grid’s “Docket 4935 2020 Renewable Energy Standard (RES) Charge and Reconciliation,” Attachment 1, [http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-RES-Filing\(2-27-2020\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-RES-Filing(2-27-2020).pdf).

³³ This average cost includes only the costs of RECs retired to meet compliance in Compliance Year 2018. Thus, this includes RECs minted and banked in Compliance Years 2017 and 2016 for use in Compliance Year 2018, but this excludes the costs of RECs minted and banked in Compliance Year 2018 for use in Compliance Years 2019 and 2020.

³⁴ National Grid’s “Docket 4692 - 2018 Renewable Energy Standard (RES) Charge and Reconciliation”, Attachment 1, http://www.ripuc.ri.gov/eventsactions/docket/4692-NGrid-RESReconciliation2018_2-27-18.pdf.

³⁵ National Grid’s “Docket 4935 2020 Renewable Energy Standard (RES) Charge and Reconciliation,” Attachment 1, [http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-RES-Filing\(2-27-2020\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-RES-Filing(2-27-2020).pdf).

For Compliance Year 2018, most of the RECs National Grid purchased to fulfill the RES obligation incurred by their Standard Offer Service customers were from renewable generation projects that have long-term renewable energy power purchase agreements (PPAs) with National Grid pursuant to R.I. Gen. Laws § 39-26.1 and § 39-26.2. National Grid also uses RECs generated by projects enrolled in the Renewable Energy Growth Program (RE Growth Program) feed-in tariff (R.I. Gen. Laws § 39-26.6). As part of these programs, project owners receive a contract or tariff price payment from National Grid, and National Grid receives the projects' energy and REC generation.³⁶

Importantly, the costs of these programs' projects are paid for by charges to all National Grid's distribution customers, which includes both Standard Offer Service customers and competitive supply customers. Thus, simply retiring these RECs on behalf of Standard Offer Service customers would deprive competitive supply customers of the value of the RECs from these programs (for which they are also charged).

To prevent this inequity, each quarter National Grid collects market data regarding New REC prices in the Rhode Island-eligible market and uses that to provide an estimated market value for the RECs from the PPAs and RE Growth Program. This estimated market rate is then charged to Standard Offer Supply energy customers for the RECs generated by the PPA and RE Growth Program resources that quarter. Meanwhile, the revenue from that charge to Standard Offer Service customers is used to offset the cost of the PPAs and RE Growth Program to benefit all National Grid's distribution customers.³⁷

Table 5: Summary of National Grid's RES Compliance Costs, 2007 through 2018

Compliance Year	Total RES Costs (Millions)^a	New REC Costs (Millions)^a	Existing REC Costs (Millions)^a	ACP Costs (Millions)	Obligated Load (MWh)
2018	\$3.91	\$3.76	\$0.15	\$0	4,370,298
2017	\$5.65	\$5.53	\$0.12	\$0	4,097,802
2016	\$9.20	\$9.10	\$0.10	\$0	4,282,268
2015	\$13.88	\$13.80	\$0.08	\$0	4,773,192
2014	\$18.00	\$17.93	\$0.07	\$0	5,317,349
2013	\$18.96	\$18.90	\$0.06	\$0	5,541,409
2012	\$12.80	\$12.75	\$0.05	\$0	5,272,388
2011	\$8.43	\$3.85	\$0.05	\$4.53	5,554,272
2010	\$2.07	\$2.02	\$0.05	\$0	5,695,951
2009	\$5.51	\$5.28	\$0.22	\$0	5,902,667
2008	\$5.21	\$5.02	\$0.19	\$0	7,123,559
2007	\$3.97	\$3.79	\$0.19	\$0	7,177,538

^aTotal RES costs reported here are based on data provided by National Grid to PUC staff. These values represent the funds expended by National Grid in a given Compliance Year. The costs associated with banked RECs are incurred and included in the Compliance Year during which the RECs are used for compliance, rather than the year in which the RECs are procured and retired.

³⁶ Some PPAs and all RE Growth Program arrangements include transfer of the project's capacity value from the project to National Grid.

³⁷ The remaining over- or under-recovery for these PPAs is then reconciled through a charge to all National Grid distribution ratepayers. Distribution customers are all electric customers in National Grid's territory; Standard Offer Supply customers are the subset of distribution customers that buy their energy supply from National Grid rather than from a competitive supplier.

National Grid's remaining REC needs are purchased through a request-for-proposal procurement process approved annually by the PUC through a docketed proceeding.³⁸ 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. To meet its 2018 New and Existing RES obligations, National Grid incurred \$3.91 million in compliance costs (Table 5; Figure 9).³⁹ This is a decrease of approximately 30.8% from the cost incurred to comply with 2017 RES targets (\$5.65 million). This decrease in compliance cost to National Grid likely reflects an increasing supply in Rhode Island-eligible New RECs relative to demand for these RECs in Compliance Year 2018. As described above in Section II, this reasoning is supported by the reported surplus in New RECs retired by Obligated Entities and a low reliance on ACPs in Compliance Year 2018. Based on National Grid data,⁴⁰ the PUC estimates the cost to Standard Offer Service customers for Compliance Year 2019 will sharply increase to approximately \$17 million.

The actual cost rate of compliance for National Grid's Standard Offer Service customers was lower than originally projected. The final cost rate of the 2018 RES obligation to National Grid's Standard Offer Service energy customers, calculated as 2018 Total RES Costs divided by Obligated Load reported in Table 5,⁴¹ was approximately \$0.00089/kWh in Compliance Year 2018, whereas National Grid's original projection was \$0.00190/kWh (Table 4). This continues a steady decrease that began in Compliance Year 2014 (*see* the red line on Figure 7).

Notably, National Grid originally projected 2019 RES costs would be \$0.00183/kWh, but newer National Grid cost⁴² and usage⁴³ data signals that the final Compliance Year 2019 cost rate may be nearer to \$0.00440/kWh, which is illustrated by the first dashed segment of the cost rate line (drawn in red) in Figure 8.⁴⁴ As noted above, National Grid projects the cost rate will continue to increase in Compliance Year 2020 to \$0.00606/kWh (Figure 8 and Table 4).

Notably, National Grid's most recent public information projects that the company will have more New RECs supplied through long-term renewable energy contracts (PPAs) and the RE Growth Program than their projected annual New REC obligation.⁴⁵ National Grid's most recent and current RES Procurement

³⁸ *See, e.g.*, National Grid's "2018 Renewable Energy Standard Procurement Plan Docket No. 4692", [http://www.ripuc.ri.gov/eventsactions/docket/4692-NGrid-2018-RES-ProcurementPlan\(3-1-17\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4692-NGrid-2018-RES-ProcurementPlan(3-1-17).pdf).

³⁹ This value is based on communications with National Grid and may include the costs of RECs purchased and banked in an earlier Compliance Year that were later used for compliance in Compliance Year 2017, among other minor factors. *See also* note ^a in Table 5.

⁴⁰ National Grid's "Docket 4935 2020 Renewable Energy Standard (RES) Charge and Reconciliation," Attachment 2 at 1, [http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-RES-Filing\(2-27-2020\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-RES-Filing(2-27-2020).pdf).

⁴¹ Cost rate, as defined here, is not the same as the price of New RECs since the total cost also includes cost for Existing RECs and since RECs are only required for 13% of the total Obligated Load of Standard Offer Service customers.

⁴² National Grid's "Docket 4935 2020 Renewable Energy Standard (RES) Charge and Reconciliation," Attachment 2 at 1, [http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-RES-Filing\(2-27-2020\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-RES-Filing(2-27-2020).pdf).

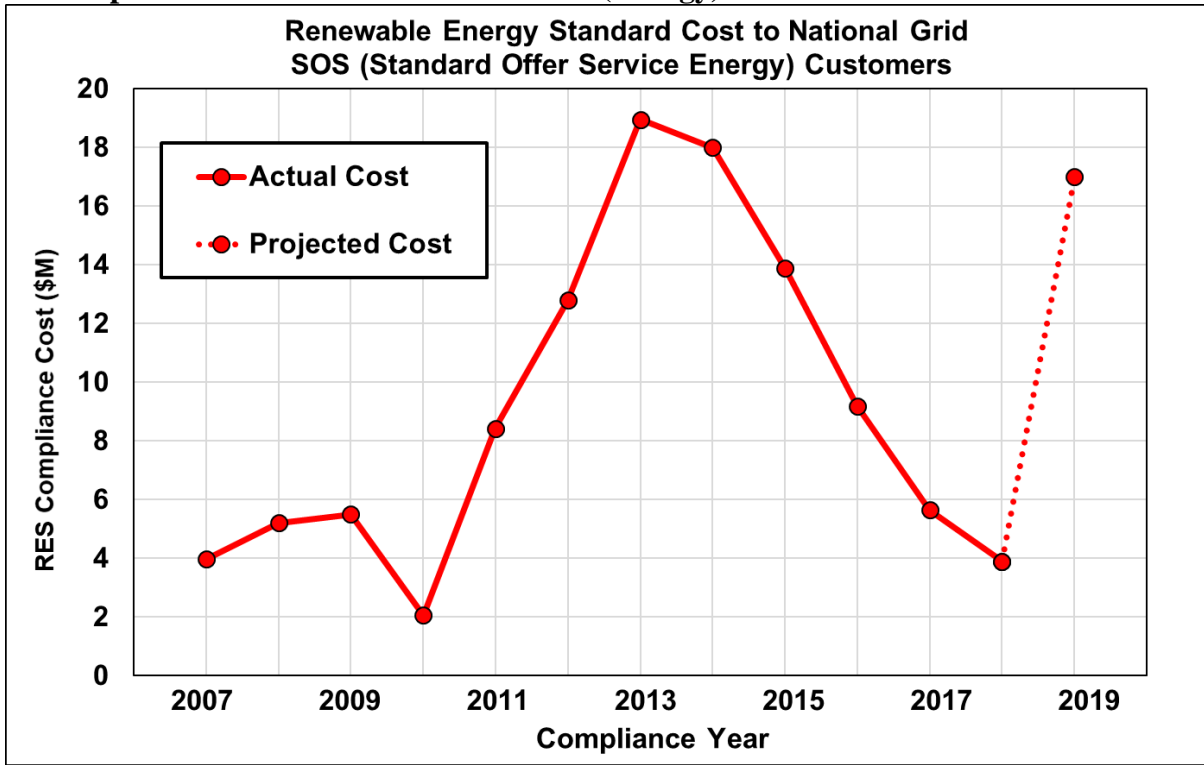
⁴³ National Grid's "Docket 4809 - 2019 Renewable Energy Standard (RES) Charge and Reconciliation," Attachment 1 at 2, [http://www.ripuc.ri.gov/eventsactions/docket/4809-NGrid-RES Reconciliation \(PUC 2-27-19\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4809-NGrid-RES Reconciliation (PUC 2-27-19).pdf).

⁴⁴ As of the filing and Report date, National Grid may still be incurring costs for compliance in Compliance Year 2018.

⁴⁵ National Grid's "2020 Renewable Energy Standard Procurement Plan Docket No. 4935" at 3, [http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-RES%20Procurement Plan \(3-1-19\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-RES%20Procurement Plan (3-1-19).pdf).

Plans include the option to sell RECs into the regional market should the amount of RECs from the contracts and RE Growth Program exceed the company’s obligation and banking allowance.⁴⁶

Figure 9: Compliance Costs to National Grid SOS (Energy) Customers



It is again noted that the data in this section of the report only represents expenses incurred by Standard Offer Service customers of National Grid, accounting for approximately 55.2% of all obligated retail energy use in 2017. Competitive energy suppliers served the remaining 44.8% of obligated energy use, and the PUC does not have access to compliance costs for these Obligated Entities.⁴⁷ Lacking data from these businesses, it can still be presumed that a possible surplus for New RECs among all Obligated Entities would potentially lower compliance costs to competitive energy suppliers. It also is noted that National Grid bears no market risk because the utility passes all savings and expenses resulting from changes in the REC market onto Standard Offer Service customers and distribution customers through compulsory reconciliations. Competitive energy suppliers, on the other hand, may assume some of the REC market risk rather than pass it onto their customers dollar-for-dollar. Finally, in addition to the costs enumerated above, the Commission incurred at least \$130,000 in expenses related solely to the administration of the RES for Compliance Year 2018.

⁴⁶ Per R.I. Gen. Laws § 39-26-6(a)(3)(ii), banking of excess compliance in a compliance year is allowed for two subsequent compliance years and is capped at 30% of the current compliance year’s obligation.

⁴⁷ The share of obligated energy served by competitive suppliers increased from 33.4% in 2014, to 40.5% in 2015, to 46.2% in 2016, to 47% in 2017.

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.

All six New England states have active Renewable Energy Standards (RES, as known in Rhode Island and Vermont) or Renewable Portfolio Standards (RPS, as known in Massachusetts, Connecticut, New Hampshire, and Maine). Each of the established RES programs (referring to both RES and RPS programs) has multiple classes⁴⁸ that are used to differentiate each state’s compliance obligations (and programmatic objectives) by technology, vintage, emissions, or other characteristics. Class I requirements (equivalent to Rhode Island’s “New” RES 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 RES requirements⁴⁹ generally focus on supply that was in operation prior to the creation of the applicable state’s RES program. Compliance targets set minimum obligations for the purchase of energy from certified sources. New/Class I targets are intended to spur new development and construction. Existing/Class II/III/IV targets are generally intended to provide enough incentive to maintain economic viability within the existing renewable energy fleet.

In addition to distinguishing between New and Existing renewable energy obligations, some RES programs include specific requirements for solar, biomass, hydroelectric, combined heat and power (CHP), waste-to-energy, thermal resources, or energy efficiency. These technology-specific requirements are implemented differently, by state. In Massachusetts, the solar obligation has historically been calculated annually and subtracted from the Class I requirement. This is referred to as a carve-out. New Hampshire’s solar requirement was not implemented as a carve-out; it stands alone as the Class II obligation. Connecticut has a Class III requirement for conservation and load management resources, as well as CHP. Massachusetts has two Class II requirements. One is specific to Waste-to-Energy facilities, while the other is intended for existing resources more generally. Massachusetts also has an Alternative Energy Portfolio Standard (APS) for CHP, flywheel storage, coal gasification, and efficient steam technologies.

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

Massachusetts

Massachusetts has New England’s longest-running RES. The Massachusetts Class I RES increases each year – implicitly until reaching 100%. Class I targets have historically increased at 1% per year, though legislation enacted in 2018 established 2% annual increases for the 2020 through 2029, inclusive. One percent annual increases resume thereafter. Since its inception in 2002, the Massachusetts Class I market has experienced periods of shortage, equilibrium, and surplus – producing a wide range of REC prices, Alternative Compliance Payment (ACP) collections, and aggregate compliance costs. Due to unequal distribution of RECs and banking, some Obligated Entities hold surpluses even during times of overall

⁴⁸ Referred to as “Tiers” in Vermont.

⁴⁹ Including Class II in Massachusetts, Connecticut, and Maine; Class III and Class IV in New Hampshire; ; Tier 1 in Vermont; and Existing in Rhode Island.

market equilibrium or shortage, while others make ACPs. Table 6 summarizes aggregate Massachusetts Class I ACPs from 2005 to 2016⁵⁰.

The Massachusetts Department of Energy Resources (MA DOER) also administers the Class I solar carve-out. Eligible facilities generate SRECs for ten years (which are used to demonstrate compliance with the carve-out) and generate Class I RECs thereafter. MA DOER established an SREC successor program, known as the Solar Massachusetts Renewable Target (SMART) in 2017. SMART is a declining-block incentive program for an additional 1,600 MW of solar facilities. In 2019, rapid subscription triggered a program review once qualified capacity reached 400 MW. As a result of this review, DOER doubled program capacity from 1,600 to 3,200 MW. SMART is not a carve-out; eligible facilities generate Class I RECs.

In June 2020, MA DOER issued regulations to implement a Clean Peak Energy Standard. The regulations require a minimum percentage of retail electricity sales during peak hours to come from “clean peak resources,” which include new Class I resources, existing Class I or Class II resources paired with energy storage, and demand response resources.

Biomass resources meeting efficiency and sustainability requirements are currently eligible under Class I and Class II. A 2019 RPS Regulatory Review proposed relaxing the efficiency requirement if more stringent fuel requirements were met. The review also proposes capping the ACP at \$70/MWh.

Other legislative efforts in Massachusetts have focused on long-term renewable energy contracting through the regulated distribution utilities. Massachusetts has thus far contracted for 1,600 MW of offshore wind, and 9.45 million MWh of hydroelectric generation through its Section 83C and 83D procurements, respectively. The contracted projects are under development and face an array of siting and permitting challenges. In addition, MA DOER conducted a study to assess the impacts of procuring additional offshore wind, and recommended the state procure an additional 1,600 MW of offshore wind by 2035. The volume of offshore wind ultimately delivered will have a material impact on the long-term REC supply and demand balance for MA Class I.

Connecticut

Connecticut had its first RES compliance year in 2004. Due to differences between its RES eligibility standards compared to the rest of the region (Connecticut does not have a vintage requirement, except for hydroelectric, which must be run-of-river post July 1, 2003), Connecticut has historically had access to a larger pool of eligible supply. As RES targets increase over time, however, new supply is required to fulfill New England’s aggregate obligations, leaving all states to compete for marginal supply. This has led to a convergence in regional REC prices over the last several years, including CT Class I. Competition notwithstanding, regional Class I markets have been characterized by equilibrium or modest surpluses in recent years. As a result, ACPs made for compliance in Connecticut have decreased significantly since their peak in 2012, as reported in Table 6.

In May 2018, Connecticut enacted Public Act 18-50, which increased the Class I RPS requirements 1.5% per year between 2019 and 2022 and 2% per year thereafter, resulting in a 40% Class I requirement by 2030. The Act reduces the Class I Penalty Payment from \$55/MWh to \$40/MWh starting in 2021. The Act

⁵⁰ MA has not yet published a 2017 or 2018 compliance report; the most recent data available are from 2016.

also expands Class I eligibility to include zero-emission waste heat generators and any run-of-river hydroelectric facilities relicensed by FERC after January 1, 2018.⁵¹

Connecticut has also issued renewable energy procurements in the last several years, and the Connecticut Department of Energy and Environmental Protection (CT DEEP) retains additional procurement authority for up to approximately 16 percent of total load from renewable energy or other sources. Connecticut issued a Zero Carbon Energy RFP in July 2018 for up to 12 million MWh of zero-carbon energy and associated environmental attributes pursuant to its authority under Public Act 17-3. CT PURA approved the contracts from selected projects in November 2019. Most of the energy procured will be from the Millstone and Seabrook nuclear power stations, but CT DEEP also selected a 100 MW expansion of the Revolution Wind offshore wind project and nine solar projects, each 15-20 MW and located throughout New England. In addition, Connecticut announced the selection of the 804 MW Park City Wind project in response to its offshore wind RFP, which was issued pursuant to legislation passed in the 2019 session.

Connecticut's RES and procurements are closely tied to its Integrated Resource Plan (IRP) process, which as required by law, is issued every two years to assess future energy and capacity needs and to develop a plan for meeting those needs. The most recent draft IRP contemplates establishing a Renewable Thermal component to the RES and possible pathways to achieve 100% zero carbon target for the electric sector by 2040, in line with an Executive Order from Governor Lamont.

Maine

Maine's first Class I RES⁵² compliance year was 2008. Maine has broader Class I eligibility criteria than the other New England states, resulting in ample supply to fill Class I demand. Beginning in 2011, the certification of refurbished biomass projects (not eligible elsewhere) caused a sharp decline in both Maine Class I REC prices and ACP collections, as shown in Table 6.

In recent years, Maine has supported both new "community-based" renewable energy projects and existing biomass projects through several competitive, long-term contracting programs. In 2019 Maine enacted legislation to expand its RES. Chapter 477 of 2019, passed as LD 1494, sets an overall goal of obtaining 80% of the state's electric consumption from renewable sources by 2030 and 100% by 2050, holds the Class I target at 10% indefinitely, and establishes a new Class IA category with the same eligibility requirements as Class I, but excluding resources that were not operating for two successive years after September 2015. This "Class IA" requirement starts at 2.5% of load in 2020 and increases to 40% by 2030. Class IA is incremental to the Class I and Class II requirements. Large customers can opt out of the requirements (but are then precluded from selling Class I RECs). The law established a category of "Qualified Hydroelectric Output" as eligible for Class I or IA for in-state hydroelectric projects operating before 2019, shifting some hydroelectric resources from Class II to Class I. Chapter 477 requires the Maine Public Utilities Commission (PUC) to issue two solicitations by 2021 for energy *or* RECs from Class IA resources totaling 14% of load. The PUC set the ACP at the statutory maximum of \$50/MWh.

New Hampshire

New Hampshire's first Class I compliance year was 2009. In 2017, New Hampshire's RES statute was amended to increase the ACP for Class III facilities in compliance years 2017, 2018 and 2019 from \$45 to \$55. For 2020 the ACP will drop to \$35, increasing with inflation thereafter.

⁵¹ The use of post-1/1/2018 FERC re-licensed hydro for RPS compliance is capped at 1% of CT load.

⁵² 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.

In 2018, the New Hampshire Public Utilities Commission initiated an investigation and stakeholder process to consider forward-looking adjustments to the RES. The process resulted in a PUC Report to the legislature in November 2018. The legislature is considering a bill in the 2020 session that would increase Class I requirements from 15% to 31.5% by 2025 and Class II requirements from 0.7% to 18.7% by 2040.

Table 6: Summary of New England States' RES ACP/Penalty Payment Collections

Year	MA (\$M)	CT (\$M)	RI (\$M)	ME (\$M)	NH ^a (\$M)	VT (\$M)
2005	\$19.6	\$0.0	NA	NA	NA	NA
2006	\$17.8	\$3.5	NA	NA	NA	NA
2007	\$0.6	\$0.1	\$0.333	NA	NA	NA
2008	\$0.1	\$0.1	\$0.022	\$0.7	NA	NA
2009	\$0.0	\$0.05	\$0.0001	\$0.3	\$0.0	NA
2010	\$0.2	\$3.0	\$0.022	\$0.3	\$0.03	NA
2011	\$6.6	\$22.0	\$5.24	\$0.05	\$2.2	NA
2012	\$16.4	\$39.0	\$2.25	\$0.002	\$3.0	NA
2013	\$2.1	\$31.0	\$0.056	\$0.004	\$14.0	NA
2014	\$0.4	\$7.0	\$0.049	\$0.2	\$0.9	NA
2015	\$0.6	\$2.0	\$0.002	\$0.003	\$1.2	NA
2016	\$0.02	\$1.4	\$0.038	\$0	\$1.2	NA
2017	^b	\$0.2	\$0.101	\$0	\$2.2	\$0.0 ^c
2018	-	\$3.1	\$0.263 ^d	-	\$1.7	\$0.0 ^e

^a Includes Class I and Class I Thermal ACP

^b MA has not yet published a 2017 or 2018 compliance report; the most recent data available are from 2016.

^c The Vermont Department of Public Service's 2019 Report on the Renewable Energy Standard describes a single \$10 payment for one Tier 1 REC. See [https://publicservice.vermont.gov/sites/dps/files/documents/2019 Annual Report on the RES.pdf](https://publicservice.vermont.gov/sites/dps/files/documents/2019%20Annual%20Report%20on%20the%20RES.pdf) for more information.

^d This figure includes \$12,964 in ACPs and \$250,000 in penalties assessed for non-compliance.

^e The DPS 2020 Report on the Renewable Energy Standard is not yet available. Compliance filings indicate all utilities met their requirements with RECs.

Vermont

Vermont's RES has both Total Renewable Energy and Distributed Renewable Generation requirements. The minimum obligation for Total Renewable Energy is 55.0% of each retail electricity provider's electricity sales during the year beginning on January 1, 2017, increasing to 75.0% on January 1, 2032. The target will maintain at 75.0% thereafter. It is expected that this obligation can be met with existing resources. For Distributed Renewable Generation, which more closely resembles RI's "New" RES obligation, the minimum obligation is set at 1.0% for the year beginning January 1, 2017, increasing to 10.0% on January 1, 2032 and thereafter. The Distributed Renewable Generation obligation must be satisfied by eligible renewable energy facilities under five MW and interconnected to Vermont's distribution system.

Summary Projection of Regional RES Targets and Demand

In aggregate, New England's RES targets and the associated demand for renewable energy are projected to increase over the next ten years. Table 7 provides a summary of "New" RES targets throughout New England. Table 8 provides an estimate of the corresponding gigawatt-hours (GWh) of "New" RES demand through 2028. The forecasted RES obligations are based upon ISO-NE's forecast of Annual Energy Net of

Behind-the-Meter PV and Passive Demand Resources, found in their 2019 CELT Report,⁵³ and adjusted to exclude an estimate of public or other utilities and load exempted from the states' RES obligations. For example, both Pascoag Utility District and Block Island Power Company have been removed from the RES forecast.

Massachusetts and Connecticut represent the majority of New England's RES demand through 2028 (Figure 10). In 2018, these two states accounted for 44.4% and 33.9% of demand, respectively. Rhode Island represented 6.4% of the region's 2018 New/Class I RES demand (Figure 11). By 2028, the allocation of New Renewable RES demand across the region is projected as follows: Massachusetts – 43.7%; Connecticut – 28.7%; Rhode Island – 5.6%; New Hampshire – 4.5%; Vermont – 1.1%; and Maine – 16.4% (Figure 12).

Table 7: Projection of New England States' New RES Demand (%)

2018	13.0%	17.0%	11.0%	1.6%	10.0%	7.5%
2019	14.0%	19.5%	12.5%	2.2%	10.0%	8.2%
2020	16.0%	21.0%	14.0%	2.8%	12.5%	8.9%
2021	18.0%	22.5%	15.5%	3.4%	15.0%	9.6%
2022	20.0%	24.0%	17.0%	4.0%	18.0%	10.3%
2023	22.0%	26.0%	18.5%	4.6%	21.0%	11.0%
2024	24.0%	28.0%	20.0%	5.2%	25.0%	11.9%
2025	26.0%	30.0%	21.5%	5.8%	29.0%	12.8%
2026	28.0%	32.0%	23.0%	6.4%	33.0%	12.8%
2027	30.0%	34.0%	24.5%	7.0%	37.0%	12.8%
2028	32.0%	36.0%	26.0%	7.6%	41.0%	12.8%

^a New Hampshire RES obligation is presented **net** of renewable thermal carve-out

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

Year	MA Class I	CT Class I	RI New	VT DG	ME Class I	NH Class I	Total
2018	6,033	4,607	870	90	1,198	796	13,595
2019	6,206	5,011	940	114	1,175	849	14,295
2020	7,479	5,661	1,042	152	1,512	980	16,828
2021	8,252	5,994	1,132	181	1,823	1,055	18,438
2022	9,087	6,359	1,231	209	2,214	1,139	20,239
2023	9,898	6,847	1,326	236	2,607	1,222	22,136
2024	10,762	7,370	1,426	264	3,143	1,333	24,298
2025	11,572	7,848	1,518	290	3,675	1,436	26,338
2026	12,444	8,355	1,619	316	4,226	1,444	28,404
2027	13,357	8,878	1,725	342	4,795	1,455	30,553
2028	14,381	9,457	1,845	371	5,400	1,475	32,930

⁵³ The ISO-NE 2019 CELT Report is available at: <http://www.iso-ne.com/system-planning/system-plans-studies/celt>. Additional data can be found in the ISO-NE 2019 Forecast Data File, available at https://www.iso-ne.com/static-assets/documents/2019/04/forecast_data_2019.xlsx.

Figure 10: Forecast of New England States' New or Class I RES Obligations (GWh)

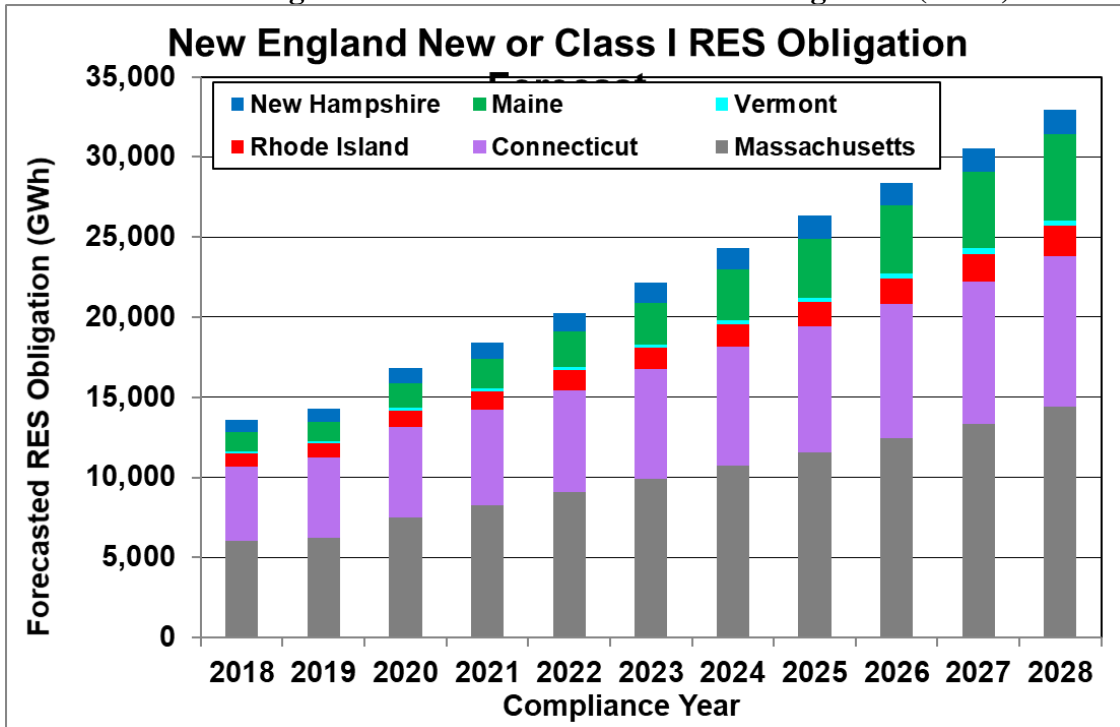


Figure 11: 2018 Aggregate New England New or Class I RES Demand

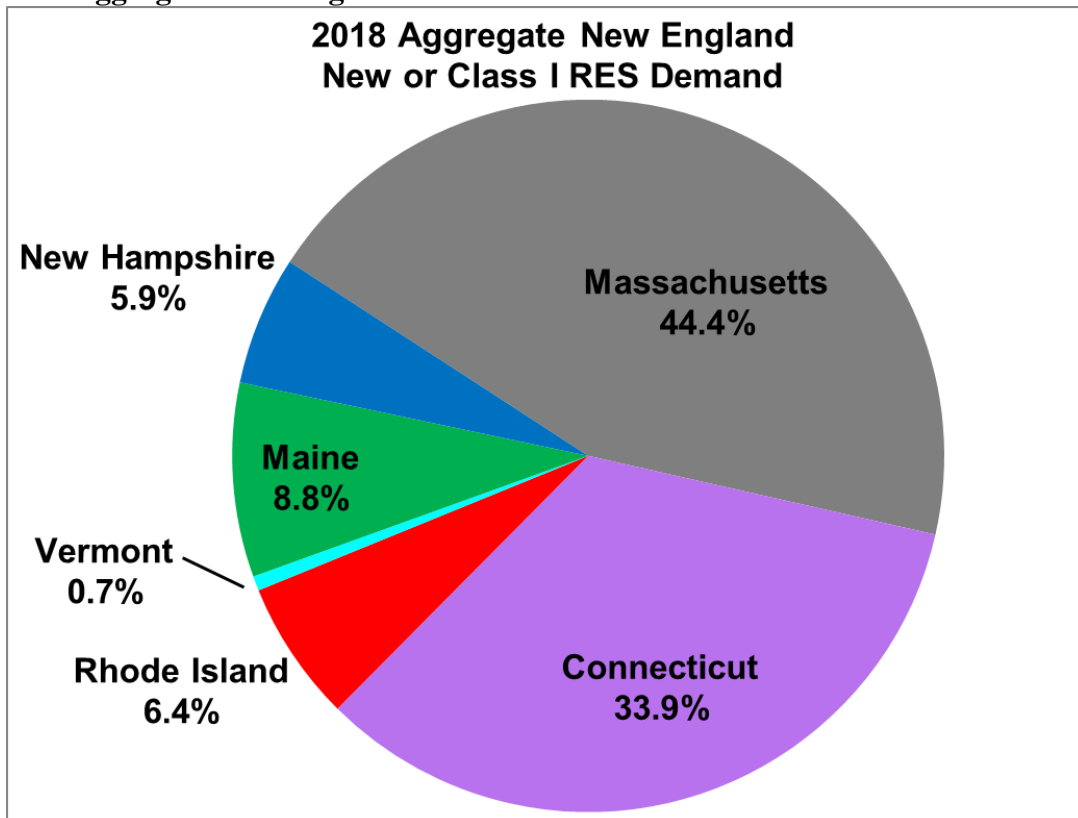
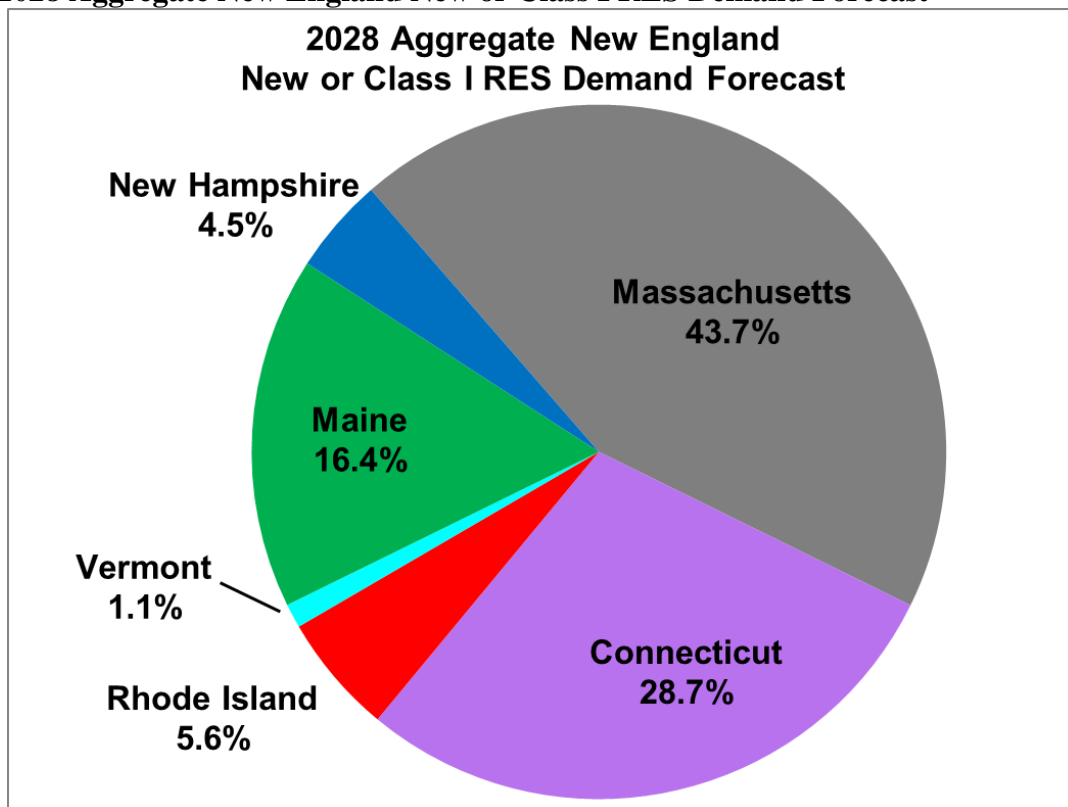


Figure 12: 2028 Aggregate New England New or Class I RES Demand Forecast



VII. Continuing and Developing Issues Related to the RES

This section of the Report describes important issues that the PUC has identified, worked on, and in some cases, resolved, in its role of administering and regulating the RES. The issues here are particularly relevant to the time since the last Report was published but may span multiple Compliance Years.

Non-Compliance

In Compliance Year 2018, the Rhode Island RES program experienced the first known instance of an Obligated Entity's failure to comply with its RES Obligation since 2015. In its 2018 Annual Compliance Filing, Agera Energy, LLC (Agera) indicated that it was neither retiring RECs nor making ACPs to comply with its RES obligation. Agera was contacted by PUC staff to correct some issues with its filing. In that correspondence, PUC staff applied some banked RECs to Agera's outstanding obligation and noted that, since the trading deadline had passed, Agera had until August 16, 2019 to provide an ACP to the Commerce Corporation and refile its compliance filing with the PUC. Agera refiled the compliance filing correct some issues with the filing but did not make an ACP transfer to Commerce Corporation. At the time, the PUC granted protective treatment of Agera's filing. It is now public information filed in Agera's bankruptcy proceeding that Agera failed to pay an ACP valued at \$1,970,394.08.⁵⁴ From this information, at an ACP rate of \$68.96 per megawatt-hour, it is easily calculated that Agera missed its obligation by 28,573 megawatt-hours.

Because of this failure, only 2.1% of the energy Agera sold to its customers was supplied by renewable resources (or covered by ACPs) compared to the 13% required by law. Furthermore, in 2018, Agera was the fourth largest competitive supplier active in Rhode Island and served a significant amount of load. Because Agera's share of the total energy supplied in Rhode Island was significant, Rhode Island, on a whole, only had 12.6% compliance with the RES, compared to the 13% required by law. The PUC notes that Agera failed to make even greater ACPs in at least six other states, with the failure to comply in Massachusetts valued almost \$44 million. It is the PUC's understanding that Agera had significant municipal aggregation contracts in Massachusetts during Compliance Year 2018, which would account for, in part, the much larger obligation Agera held in Massachusetts compared to Rhode Island.

For its failure to comply, the PUC penalized Agera \$250 thousand,⁵⁵ equal to the full amount of financial security Agera had posted to the Division of Public Utilities and Carriers (Division) in order to engage in competitive retail energy sales in Rhode Island.⁵⁶ After the financial security was demanded in full, Agera was no longer in compliance with the Division's Rules required for selling retail energy in Rhode Island. Upon remittance, the PUC transferred the \$250 thousand to the Commerce Corporation. Per PUC rules, the penalty does not remedy Agera's 2018 Obligation.⁵⁷ The State of Rhode Island remained engaged in

⁵⁴ See, for example, http://www.ripuc.ri.gov/eventsactions/docket/D_19_26_Bank.pdf.

⁵⁵ See the PUC's Order 23659 in Docket 4964 – Agera Energy, LLC Renewable Energy Standard Compliance. http://www.ripuc.ri.gov/eventsactions/docket/4964-AgeraEnergy-Ord23659_8-28-2019.pdf.

⁵⁶ Competitive Suppliers must post financial security in the amount of \$250 thousand pursuant to the Division's Rules Applicable to Nonregulated Power Producers 815-RICR-30-05. http://www.ripuc.ri.gov/rulesregs/divrules/Rules_Applicatate_NPP.pdf. Financial security for competitive suppliers was required by the 2016 amendments to R.I. Gen. Laws § 39-1-27.1(c)(9). The same section provides that security can be forfeited for failure to comply with the Division's rules applicable to competitive suppliers and for failure to comply with the RES. The PUC notes that the amount of the financial security is capped by law at \$500 thousand.

⁵⁷ R.I. Gen. Laws § 39-26-6(e) provides that the PUC

Establish sanctions for those obligated entities that, after investigation, have been found to fail to reasonably comply with the commission's regulations. No sanction or penalty shall relieve or diminish an obligated entity from liability for

Agera's bankruptcy proceeding and the Commerce Corporation collected \$82,755 as a settlement of its claim for the full remaining ACP amount of \$1, 970,394.08.

As a final note, because of the timing of the RES compliance filings, Agera is known to have served retail energy in Rhode Island during Compliance Year 2019. Agera will again fail to comply in Compliance Year 2019, causing Rhode Island to miss its RES mandated target for the fifth time in seven years.

National Grid Mistaken Use of Ineligible RECs

On July 2, 2020, National Grid filed a Petition to Revise its 2017 and 2018 RES Compliance Filings (the Petition).⁵⁸ In its petition, National Grid stated that between the second quarter of 2017 and third quarter of 2019, National Grid erroneously reported the output of certain facilities participating in one of the renewable generation incentive programs (the RE Growth Program) twice to NEPOOL-GIS, thereby double-generating RECs from these facilities. National Grid further explains that this error caused the minting of 72,968 RECs that should not have been minted (7,106 in 2017; 20,684 in 2018; and 45,178 in 2019).

To provide some context to the National Grid's admission of error, it is helpful to understand how National Grid manages the RECs it obtains from the RE Growth Program. Under the program, National Grid pays PUC-authorized incentives to certain distributed generation projects. In exchange, the utility receives title to the RECs from the participating projects in order to offset the cost of the RE Growth Program to its distribution customers.⁵⁹ Specifically, National Grid takes title to the RECs generated by participants' facilities, which the Company resells in the market at prevailing market prices.⁶⁰ The revenue from resales lowers the total net program costs. To simplify this process for the many thousands of owners of small RE Growth Program facilities from whom National Grid receives RECs, National Grid maintains a single PUC-approved solar aggregation.⁶¹ Because of their size, however, larger facilities are individually registered in the NEPOOL-GIS. National Grid stated in its Petition that while some of these larger facilities were correctly registered in the NEPOOL-GIS, they also were erroneously included in the small solar aggregation

fulfilling any shortfall in its compliance obligation; provided, however, that no sanction shall be imposed if compliance is achieved through alternative compliance payments.

This section of the law does not fully address the problems encountered with Agera. The PUC had no practical way of enforcing this provision of the law once Agera filed for bankruptcy and was granted the right to continue operations in all states where it was licensed. This is despite the fact that Agera was incurring new RES obligations for Compliance Year 2019 that were unlikely to be addressed through the bankruptcy proceeding, since that Compliance Year data could only be collected in July 2020 (the PUC can now advise that Agera did not comply with its Compliance Year 2019 obligation). While the Division can rescind a license for cause after a hearing, which would have ended the continuing growth of Agera's non-compliance, the Division could not cancel Agera's authorization to conduct business in Rhode Island once Agera filed for bankruptcy. Furthermore, Agera's unmet compliance presents no barrier to Agera's principles from conducting future retail energy business in Rhode Island, since the Division, in granting licenses to competitive energy suppliers (nonregulated power producers), arguably does not have the right to deny an application based on the identity of the principles. Rather, R.I. Gen. Laws § 39-1-27.1(c) provides for a simple registration requirement.

⁵⁸ National Grid "Petition to Revise 2017 and 2018 Renewable Energy Standard Compliance Filings," June 2, 2017 filed in PUC Docket No. 5041. [http://www.ripuc.ri.gov/eventsactions/docket/5041-NGrid-RES-Petition\(7-2-20\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5041-NGrid-RES-Petition(7-2-20).pdf).

⁵⁹ For small facilities in the RE Growth Program, National Grid only receives title to the facilities' RECs; for large facilities, National Grid receives title to the facilities' RECs, energy, and capacity.

⁶⁰ National grid also sells the any energy and capacity products that it takes title to from large facilities, to the extent that such products can be sold product, and this also reduces the total net program costs.

⁶¹ PUC Order 22015 in Docket No. 4536-C National Grid's Application for Certifying the Renewable Energy Growth Small Scale Solar Aggregation as an Eligible Renewable Energy Source. http://www.ripuc.ri.gov/eventsactions/docket/4536C-NGrid-Ord22015_7-31-15.pdf.

total at the same time, resulting in a double-counting of some RECs. National Grid stated that the error was not detected earlier because generation from larger facilities was a relatively small fraction of the aggregation's output, owing to few large facilities enrolled in the RE Growth Program becoming operational before 2019.

The PUC dismissed the Petition (without prejudice to the utility to refile) because the proposal made by National Grid in the Petition to remedy the error was not yet ripe for review, as it merged compliance issues with ratemaking issues. In the coming months, the PUC will conduct an investigation to gain a full understanding of the double-counting of RECs, related impacts, and appropriate resolutions. The PUC will provide updated information in a future RES Annual Report.

VIII. Conclusion

Based upon the PUC's analysis of regulated utility data; competitive supplier data; and general market trends, the supply of, and demand for, Rhode Island-eligible New RECs were in equilibrium for the Compliance Year 2018, with a possibility that there was an oversupply of New RECs. The evidence for equilibrium or oversupply was manifested in several ways. First, there was low reliance on ACPs for RES compliance as in Compliance Year 2017. There also was a continued and significant increase in the banking of New RECs. Finally, there was a decrease in compliance costs for National Grid, which serves 55.2% of the obligated energy use and which was able to bank a significant number of RECs for future Compliance Years. It should be noted, however, that demand for RECs across the region is increasing, as states expand their renewable portfolio targets, and this regional demand could drive up compliance costs in Rhode Island. Projected costs for National Grid to comply in Compliance Years 2019 and 2020 are up significantly compared to costs for Compliance Year 2018.

Additionally, the increase of New Renewable Energy Resources has likely contributed to stabilizing and lowering compliance costs, and this trend continues today. Since the last RES Report, in Rhode Island alone the PUC has approved or conditionally approved twenty-nine renewable energy facilities for RES certification with the RES eligibility designation of "New," which will add RECs in them market. These generators combined for approximately 148 MW of additional certified New nameplate capacity that are eligible to contribute to meeting the RES targets in Compliance Years 2019 and 2020.

The PUC believes that the RES and similar programs throughout New England, combined with important renewable financing programs, will continue to spur renewable energy development in the region. It is important to note, however, that the continued availability of access to renewable energy financing are important to sustaining the growth of renewable resources that produce the new RECs used for complying with the increasing RES obligation. Based on recent policies established and revised within Rhode Island, the State remains in a good position to support local and regional renewable energy resource growth. These policies include long-term contracting statutes, the Renewable Energy Growth program, net metering, and cooperative long-term contracting initiatives between Massachusetts, Connecticut, and Rhode Island.

The PUC regards Compliance Year 2018 a relative success because the resources available in the regional marketplace, particularly increased wind and solar PV resources, were able to meet REC demand for Compliance Year 2018 and allow a significant share of Obligated Entities the opportunity to bank RECs for future Compliance Years. Although one competitive supplier (Agera) failed to meet its RES obligation, this action is likely related to other energy and energy-related market conditions, and not the specifically to the unavailability of Rhode Island-eligible RECs, the value of which represented a relatively small fraction of the liability Agera was unable to manage across the nation. Furthermore, although National Grid's Petition to revise its Compliance Year 2018 compliance filing indicates a significant irregularity in RES compliance, it appears from the representations made in the National Grid Petition that this was related to a reporting error, and not to market conditions or problems with the RES framework in Rhode Island.

Finally, the PUC notes that current market data indicates a multi-year increase in REC prices across New England that may be related to a tightening of supply relative to 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: 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. 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, the RES Rules states that the PUC will publish the ACP rate by January 31 of each Compliance Year. For Compliance Year 2018, the ACP rate was \$68.96 per MWh of obligation.

Table A1.1: Historical Rhode Island 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
2015	\$67.07
2016	\$67.00
2017	\$67.71
2018	\$68.96

Connecticut, Maine, Massachusetts, and New Hampshire all have similar ACP mechanisms. The Table below shows the 2018 ACP rates used by other New England states for the various REC classes defined in each state.

Table A1.2: Regional ACP Rates for Compliance Year 2018

2018 ACP Rates	CT	NH	MA	ME	VT
Class I	\$55	\$56.54	\$68.95	\$68.87	\$10.00
Class II	\$55	\$56.54	\$28.30	N/A	\$60.00
Class III	\$31	\$55.00	N/A	N/A	N/A
Class IV	N/A	\$28.00	N/A	N/A	N/A

Appendix 2: Rhode Island RES 2018 Compliance Summary

Table A2: 2018 Compliance Summary by Obligated Entity ⁶²

Obligated Entity	Retail Sales (from filing)	RES Obligations (MWh)		NEPOOL GIS Certificates				Alternative Compliance Payments		Banked "New" RECs for Future Compliance
	Load (MWh)	"New" Obligation (Raw)	2.0% "Existing" Obligation	"New" RECs	Banked from 2016 or 2017	Total "New" RECs	"Existing" RECs	"New" (MWh)	"Existing" (MWh)	RECs Eligible for 2019 or 2020
Distribution Companies										
Narragansett Electric Company	4,370,298	480,733	87,406	477,589	7,787	485,376	87,406	0	0	0
Competitive Suppliers										
Ambit Northeast, LLC										
Archer Energy, LLC										
First Point Power, LLC										
Clearview Energy										
Town Square Energy, LLC										
Agera Energy, LLC										
Discount Power, Inc.										
Calpine Energy Solutions, LLC										
Champion Energy Marketing, LLC										
ConEd										
Constellation NewEnergy, Inc.										
CNE										
Constellation NewEnergy, Inc. (Inclusive of Constellation NewEnergy, Inc., ConEd, CNE, and Constellation Energy Services)										
Constellation Energy Services (CES)										
Devonshire Energy LLC										
Direct Energy Services, LLC										
Direct Energy Business, LLC (Inclusive of two load assets)										
Direct Energy Business Marketing, LLC										
EDF Energy Services, LLC										
Engie Resources, LLC										
ENGIE Retail, LLC d/b/a Think Energy										
Liberty Power Holdings LLC										
Mint Energy LLC										
Moore Energy, LLC										
NextEra Energy Services Rhode Island, LLC										
North American Power and Gas, LLC										
Public Power, LLC										
SmartEnergy Holdings, LLC										
South Jersey Energy Company										
EDF Energy Services, LLC										
Viridian Energy, LLC										
XOOM Energy Rhode Island, LLC										
Competitive Supplier Subtotal	3,544,226	389,879	70,900	383,568	57,569	441,137	66,667	188	0	74,738
Totals	7,914,524	870,612	158,306	861,157	65,356	926,513	154,073	188	0	74,738

⁶² The limited competitive supplier data presented in Appendix 2 is a result of the Commission's confidential treatment of competitive energy suppliers' filings. Information within this Report regarding competitive energy suppliers is presented in a summarized fashion to avoid the potential identification of proprietary business activities.

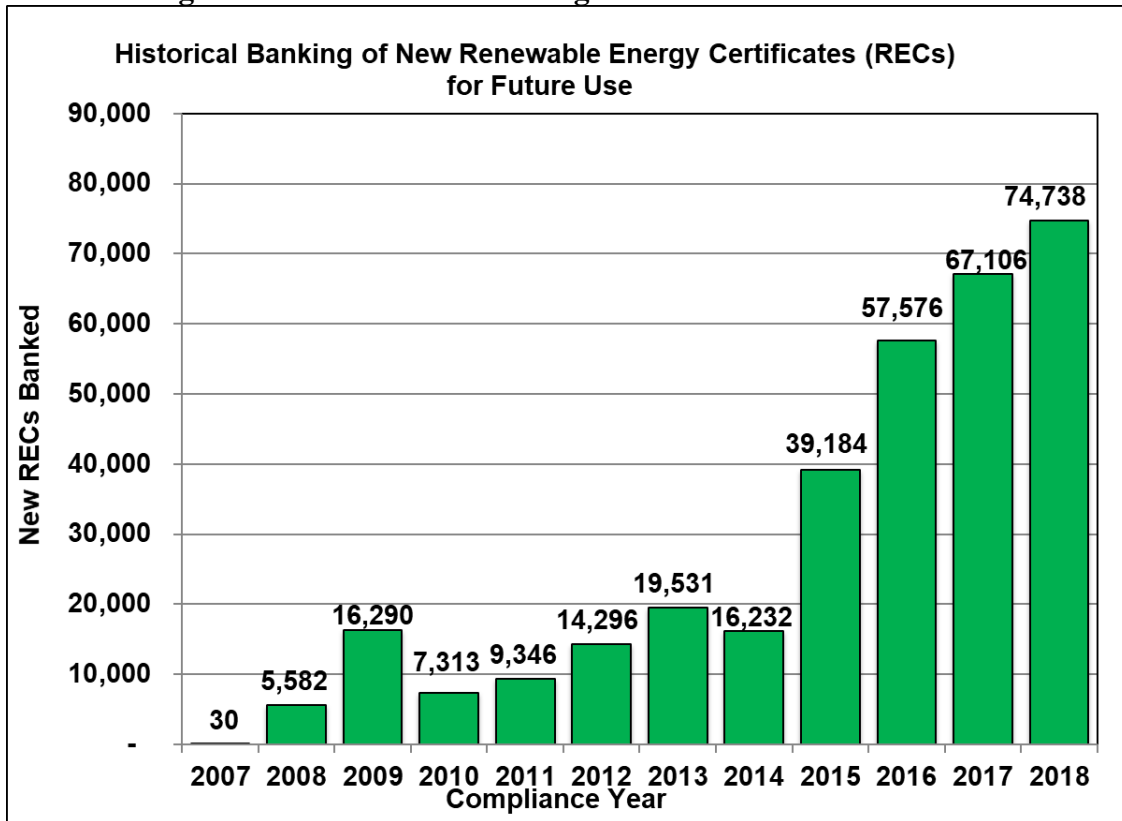
Appendix 3: Historical Use of ACPs and Banking

The charts below provide additional detail on the breakdown of New and Existing RECs purchased by Rhode Island’s Obligated Entities for the period 2007-2018.

Table A3.1: 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	48,694
2015	18	1,207	9	604	27	1,811
2016	576	38,592	2	134	578	38,726
2017	0	0	1496	101,294	1496	101,294
2018	188	12,964	0	0	188	12,964

Figure A3.1: Historical Banking of New RECs for Future Use



Appendix 4: 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.⁶³ National Grid’s “GreenUp” program is just one example.

For Compliance Year 2018, National Grid reported the purchase of Rhode Island eligible 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 National Grid and competitive supplier customers.

Table A4.1 History of Voluntary REC Purchases on Behalf of Rhode Island Customers

Voluntary New RECs	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	5,350	7,480	6,642	3,750	689	111	513	502	964	1,692	4,643
<i>National Grid</i>	5,161	6,833	4,366	1,474	689	111	513	502	964	1,692	4,643
<i>All Competitive Suppliers</i>	189	647	2,276	2,276	0	0	0	0	0	0	0
Voluntary Existing RECs	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	7,624	2,603	0	0	538	2,181	119	718	759	1,007	4
<i>National Grid</i>	7,624	2,603	0	0	338	1,181	119	718	759	1,007	0
<i>All Competitive Suppliers</i>	0	0	0	0	200	1,000	0	0	0	0	4

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.

It is noted that National Grid only reports RECs retired by GreenUp suppliers on behalf of GreenUp customers that are Rhode Island-eligible. Most of the RECs retired by GreenUp suppliers to meet sales to GreenUp customers in Rhode Island are from facilities that do not have Rhode Island RES certification, and

⁶³ By comparison, the RES is referred to as the “mandatory” or “compliance” renewable energy market.

therefore are not eligible to be used for RES compliance. Since these RECs are not Rhode Island-eligible RECs they are excluded from the totals in Table A4.1.

Appendix 5: Current RES Annual Targets

Table A5: RES Compliance Year Targets for New and Existing Resources

Compliance Year	Total Target percentage	Minimum percentage from New Renewable Energy Resources	Percentage from <i>either</i> 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	10.0%	8.0%	2.0%
2017	11.5%	9.5%	2.0%
2018	13.0%	11.0%	2.0%
2019	14.5%	12.5%	2.0%
2020 ^b	16.0%	14.0%	2.0%
2021	17.5%	15.5%	2.0%
2022	19.0%	17.0%	2.0%
2023	20.5%	18.5%	2.0%
2024	22.0%	20.0%	2.0%
2025	23.5%	21.5%	2.0%
2026	25.0%	23.0%	2.0%
2027	26.5%	24.5%	2.0%
2028	28.0%	26.0%	2.0%
2029	29.5%	27.5%	2.0%
2030	31.0%	29.0%	2.0%
2031	32.5%	30.5%	2.0%
2032	34.0%	32.0%	2.0%
2033	35.5%	33.5%	2.0%
2034	37.0%	35.0%	2.0%
2035 ^c	38.5%	36.5%	2.0%

^a After conducting a review pursuant to R.I. Gen. Laws Sec. 39-26-6(d) (prior to the 2016 amendment), 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 was amended to extend an annual 1.5% increase from 2020 through 2035.

^c R.I. Gen. Laws §§ 39-26-1 to 10, as amended, does not explicitly maintain a RES proportion in 2036 and thereafter.