

Rhode Island Renewable Energy Standard

Annual Report Compliance Year 2020



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Rhode Island Public Utilities Commission

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Rhode Island Renewable Energy Standard

Annual Compliance Report for Compliance Year 2020

Executive Summary

Introduction

Compliance Year 2020, from January 1, 2020 through December 31, 2020, was the fourteenth 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 2020, each Obligated Entity was required to obtain at least 16% of electrical energy (including line losses) sold to Rhode Island end-use customers from Eligible Renewable Energy Resources, with no less than 14% of that obligation sourced from New (or Class I) Renewable Energy Resources.

This thirteenth 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.

^{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 2020 runs from July 2020 through June 2021.

^{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.

2020 RES Obligation and Compliance

The State’s 2020 RES-obligated retail sales totaled 7,528,108 megawatt-hours (MWh) of electrical energy, which was served by twenty-seven Obligated Entities^{E3} including the Narragansett Electric Company. As shown in Table E.1 below, the total minimum obligation to be satisfied by New (or Class I) Renewable Energy Resources was 1,053,949 MWh (14% of each Obligated Entity’s retail sales).^{E4} The obligation to be satisfied by either Existing (or Class II) or New Renewable Energy Resources was 150,579 MWh (2.0% of each Obligated Entity’s retail sales). Almost all (99.0%) 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}

It is important to note that the terms “New Energy Resources” (“New RECs”) and “Existing Renewable Energy Resources” (“Existing RECs”) have statutory meanings. “New” does not mean a resource recently added, nor does “Existing” mean all resources that were in existence prior to the Compliance Year. Rather, “New” is essentially defined in Rhode Island law as renewable units in service after December 31,

^{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.

1997.^{E6} “Existing” is defined as renewable units in service before December 31, 1997.^{E7}

The total number of New RECs retired by Obligated Entities in Compliance Year 2020 was 1,119,599, not including 166,659 RECs banked from Compliance Years 2018 and 2019. This is a 6.2% surplus of New RECs across all Obligated Entities. With this surplus in Compliance Year 2020, eleven Obligated Entities combined to bank 241,815 RECs for use in Compliance Years 2021 or 2021. This total does not include 954 previously-banked RECs that may be used in Compliance Year 2021. 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 increase in the quantity of RES-eligible imports during this period.

Taken as a whole, there was a New and Existing REC surplus among Obligated Entities. Six Obligated Entities chose to comply, partially, by making ACPs totaling \$49,390 in lieu of retiring 690 RECs.^{E8} This continues a recent trend of relatively low total ACP-

costs paid by Obligated Entities. Two Obligated Entities failed to comply with their RES obligations by either retiring 11,411 RECs or making approximately \$816,799 in ACP payments.^{E9}

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 2020. The market price for New RECs, however, increased in 2020 and continue to remain relatively high compared to prices in 2018 and 2019, which, as discussed below, indicates a tightening of the supply of New RECs in Rhode Island and the region.

The PUC notes that information in this Report is based on the compliance filings filed with the PUC. This report incorporates the effects of National Grid’s petition to revise its 2017 and 2018 Compliance Filings for Standard Offer/Last Resort Service ^{E10} customers because some of the RECs National Grid retired in those years were invalidly minted. More information is provided below in Section VII.

Table E.1: Composition of 2020 RES Compliance

	New RES Obligation	Existing RES Obligation
2020 Minimum Obligations (MWh) ^a	1,053,949 MWh	150,579 MWh
GIS Certificates Retired for 2020 RI RES Compliance (MWh, %)	1,043,340 MWh, (99.0%) ^b	149,087 MWh, (99.0%)
RI RES Compliance by Alternative Compliance Payments (MWh, \$)	627 MWh, \$44,880.66	63 MWh, \$4,446.54
Banked for Future Compliance	241,815 Certificates	Not Applicable
Over-compliance / RECs Not Banked	37 certificates ^c	1,798 Certificates
Outstanding REC / ACP obligation	9,982	1,429
^a See note E3.		
^b This value includes the application of 165,705 RECs banked from Compliance Years 2018 and 2019 plus the application of RECs minted and retired in Compliance Year 2020.		
^c Banking is capped at 30% of an individual Obligated Entity’s Compliance Year obligation for New RECs.		

^{E6} As stated in R.I.G.L. § 39-26-2(15), “New renewable energy resources’ means 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.”

^{E7} R.I.G.L. § 39-26-2(9).

^{E8} In Compliance Year 2020, Alternative Compliance Payments (ACPs) in lieu of both New and Existing RECs were valued at \$71.58 per MWh.

^{E9} See Section VII for more information on non-compliance.

^{E10} Standard Offer/Last Resort Service refers to the energy supply commodity provided by National Grid and regulated by the PUC. All National Grid distribution customers have the option of taking supply service from a competitive market supplier or through National Grid’s Standard Offer/Last Resort Service.

Figure E.1: Historical New RECs by Fuel Source

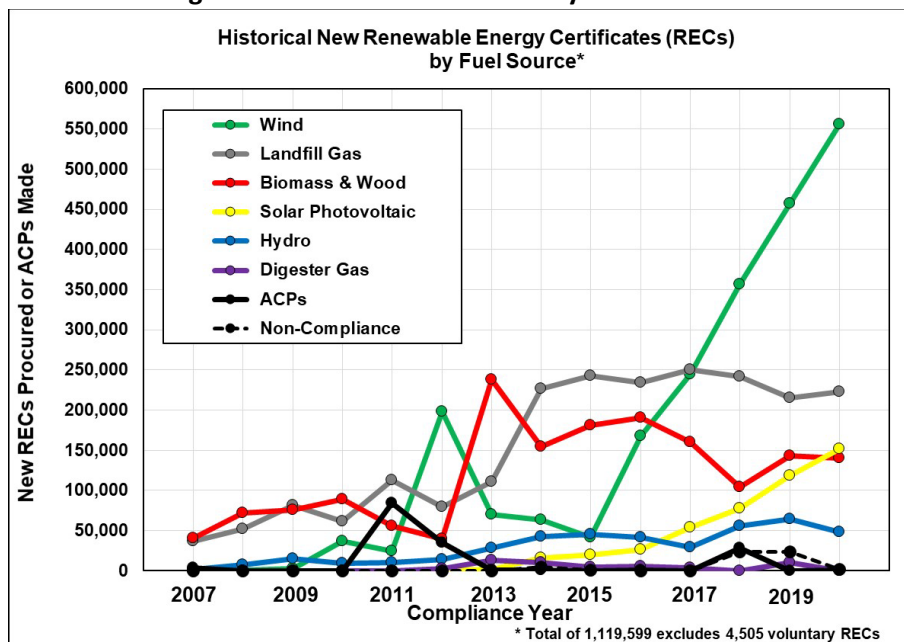
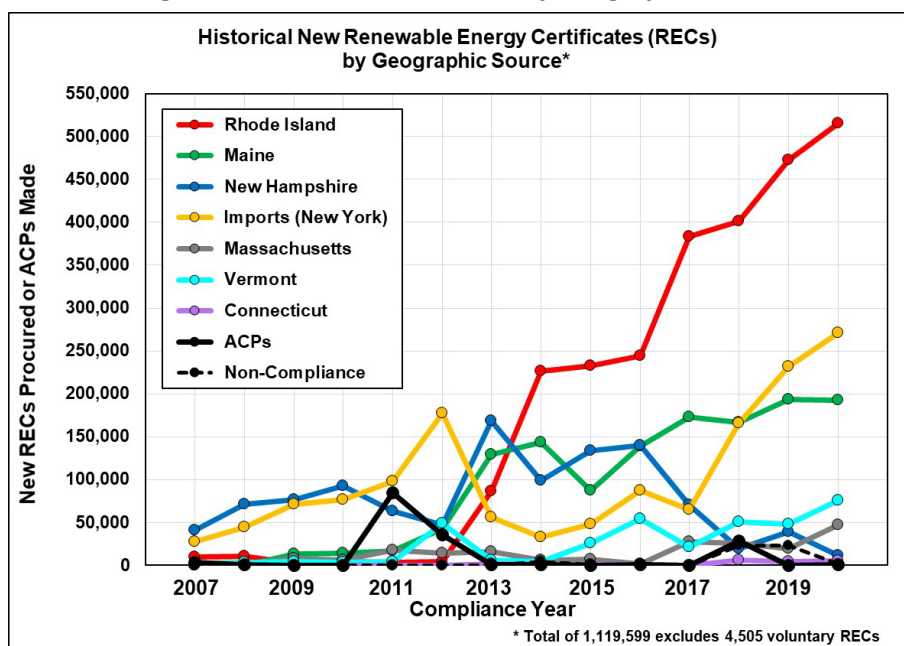


Figure E.2: Historical New RECs by Geographic Source



2020 RES Resources

Most New RECs settled in 2020 were generated at wind facilities (49.7%), followed by landfill and other renewable gas (20.0%), solar photovoltaic (13.6%), biomass (11.7%), hydroelectric (4.3%), and wood

(0.8%) facilities.^{E11} This continues a notable increase in reliance on wind resources and solar resources (Figure E.1).^{E12} In terms of location, most New RECs settled in 2020 were sourced from Rhode Island (46.0%), with an increase in Rhode Island RECs compared to 2020

^{E11} Not all the RECs purchased, minted, and settled in Compliance Year 2020 were used to meet Compliance Year 2020 obligations. Some RECs were banked for use in Compliance Years 2021 and 2022. Also, this summary excludes voluntary REC purchases above the RES. Voluntary

clean energy programs are summarized in Appendix 4 of this Report.

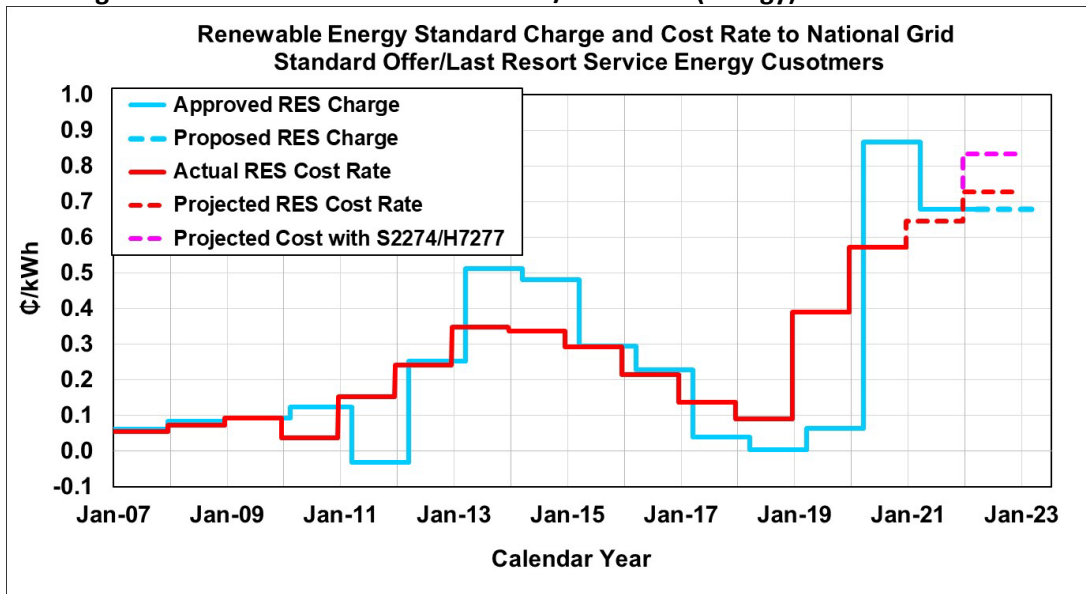
^{E12} Additional information on the composition of 2020 RES compliance by fuel type and geographic location is provided in Section III of this Report.

Table E.2: Estimated Rate Impact for RES Compliance to National Grid SO/LR Service (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 2021 – Future Filing	\$0.00728	(\$0.00007)	\$0.00721	\$3.61 \$43.26
April 2021 – March 2022	\$0.00678	(\$0.00013)	\$0.00665	\$3.33 \$39.90
April 2020 – March 2021	\$0.00606	\$0.00260	\$0.00866	\$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

^a The projected REC procurement cost is for current year costs. The projected compliance rate for Compliance Year 2019 was \$0.00183 per kWh and was collected from April 2019 through March 2020.

Figure E.3: RES Charges and Cost Rate to National Grid SO/LR Service (Energy) Customers



(Figure E.2). The remaining RECs came from New York (24.2%), Maine (17.2%), Vermont (6.8%), Massachusetts (4.2%), New Hampshire (1.1%), and Connecticut (0.5%). All Existing RECs were generated at hydroelectric facilities in Maine (93.5%), New Hampshire (5.6%), Massachusetts (1.2%) and Rhode Island (0.03%).

Finally, sixty-three projects were approved as Renewable Energy Resources by the PUC since the previous Report. This represents 410.5 MW AC of incremental New RES-eligible capacity.^{E13}

^{E13} for a monthly status report on RES applications visit <https://rhodeislandres.com/wp-content/uploads/2022/02/RES-Application-Status-Tracking-2.1.2022.pdf>.

^{E14} See Section V for the history of RES charges to National Grid’s Standard Offer/Last Resort Service customers.

2020 Customer Charges

National Grid is the only Obligated Entity for which the PUC collects data on the charges to electric ratepayers for complying with the RES.^{E14} Early in each 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.^{E15}

^{E15} National Grid typically files for a rate change to the RES Charge with effect on April 1st. Thus, changes in the RES charge occur three months into the Compliance Year, and three months before the REC-trading year turns over.

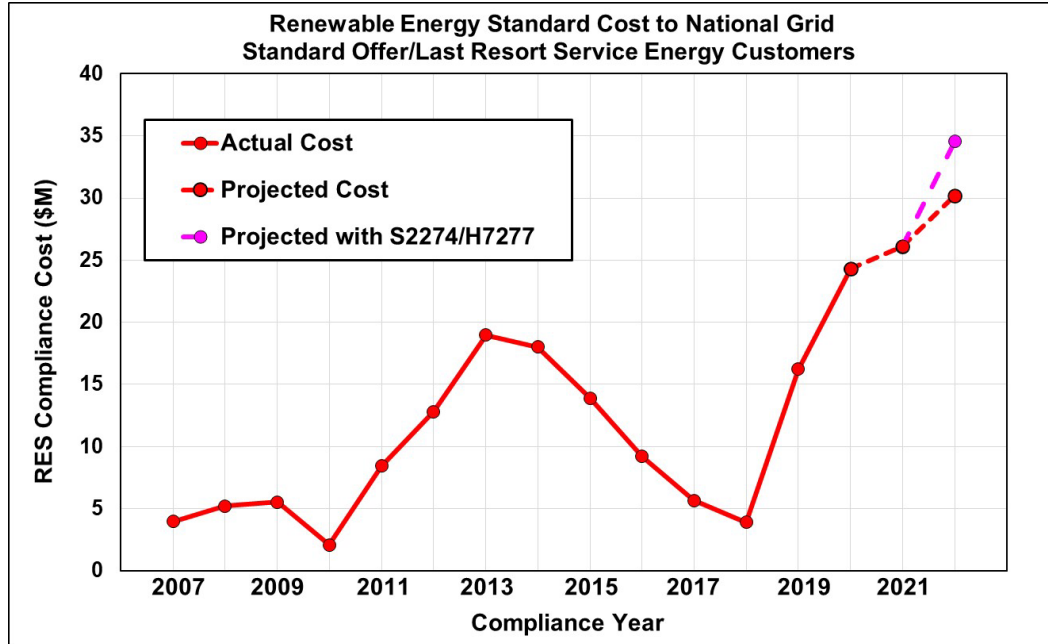
Table E.3: Summary of National Grid's RES Compliance Costs^a

Compliance Year	Total RES Costs (Millions)	New REC Costs (Millions)	Existing REC Costs (Millions)	ACP Costs (Millions)	Obligated Load (MWh)
2020	\$24.29	\$24.20	\$0.09	\$0	4,245,056
2019	\$16.22	\$16.12	\$0.10	\$0	4,170,969
2018	\$3.91	\$3.76	\$0.15	\$1.92 ^b	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

^a See note E16.

^b This ACP was caused by a REC reporting error after the Compliance Year ended. See Section VII for a full discussion.

Figure E.4: Compliance Costs to National Grid SO/LR Service (Energy) Customers



2020 Compliance Costs

National Grid is also the only Obligated Entity for which the PUC collects cost-of-compliance data.^{E16} To meet its 2020 New and Existing RES obligations, National Grid incurred \$24.29 million in compliance costs (Table E.3; Figure E.4).^{E17} This is an increase of approximately 49.9% from the cost incurred to comply with 2020 RES targets. Approximately \$24.20 million was charged to Standard Offer/Last Resort Service energy supply customers for purchases of RECs generated by projects in National Grid's Long-term Contracting and Renewable Energy Growth programs in 2020,^{E18} although some of those RECs

were banked for use in Compliance Years 2021 and 2022 and are not included in the \$24.29 million total cost reported here.

The cost rate of the RES compliance to National Grid's Standard Offer/Last Resort Service energy supply customers (total RES costs divided by Obligated Load) was approximately \$0.00572/kWh in Compliance Year 2020. This increase in actual cost rate is comparable to the increase in 2019 and is significantly larger than the previous history of the RES (Figure E.3). Information filed by National Grid

^{E16} The complete history of RES cost to National Grid's Standard Offer/Last Resort Service customers is provided below in Section V, Table 5.

^{E17} The \$24.29 million sum of New 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 2020, among other minor factors.

^{E18} R.I. Gen. Laws § 39-26.1, § 39-26.2, and § 39-26.6.

with the PUC indicates compliance costs will increase more slowly in Compliance Years 2021 and 2022.

The sustained increase in compliance cost to National Grid likely reflects that increasing demand for Rhode Island-eligible New RECs is similar to, or greater than, the increase in supply of these RECs. This reasoning does not contradict the reported surplus in New RECs retired by Obligated Entities and a low reliance on ACPs in Compliance Year 2020, but rather reveals that more complicated conditions exist in the regional REC market today and in 2019 than in 2018 and earlier.

It must be noted that this data only represents expenses incurred by National Grid's Standard Offer/Last Resort Service customers, accounting for approximately 56.4% of all retail energy served statewide in 2020. The remaining 43.6% of statewide electric load is serviced by competitive energy suppliers for whom the PUC does not have compliance cost data. Other Obligated Entities also are likely experiencing sustained increases in compliance costs in 2019 and 2020. 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/Last Resort 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 approximately \$132,000 in expenses related solely to the administration of the RES for Compliance Year 2020.

2020 Conclusions

This analysis concludes that (1) the Rhode Island RES continues to operate successfully, (2) retail energy suppliers are, as a whole, able to comply with the RES, and (3) the supply of eligible New RECs is adequate but potentially not increasing as quickly in 2019 and 2020 as the increase in demand.

In 2020, the cost of the RES certainly increased for National Grid Standard Offer/Last Resort Service customers and may have increased for customers of competitive energy suppliers. There is evidence that compliance costs will continue to increase, even as

some states in the region reduce the value of their ACPs, which tend to cap the maximum cost of compliance.

The number of Rhode Island-eligible generating units continues to grow, including facilities located within the State, region, and neighboring 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. Of particular note is the siting and operation of large facilities, such as offshore wind farms, any one of which would represent a significant portion of the supply needed to meet the region's annual increase in demand for new RECs. The timing of these facilities' commercial operation could create volatility in New (or Class I) REC prices in the coming years. As a result, it is difficult to predict in which Compliance Years supply will balance with demand and in which years a gap between the two will exist.

Finally, the balance of supply and demand will depend on changes in demand that are driven by changes in electricity use and changes in regional energy standards like Rhode Island's RES. At the time of this Report, the Rhode Island General Assembly is considering legislation to increase the RES to 100% by 2030. The PUC notes that a decision to move Rhode Island to a 100% RES will have a significant impact on both Rhode Island and the region's demand for New (or Class I) RECs, and the PUC cannot project the full scope and nature of that impact, although it is highly likely to increase compliance costs locally. 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.

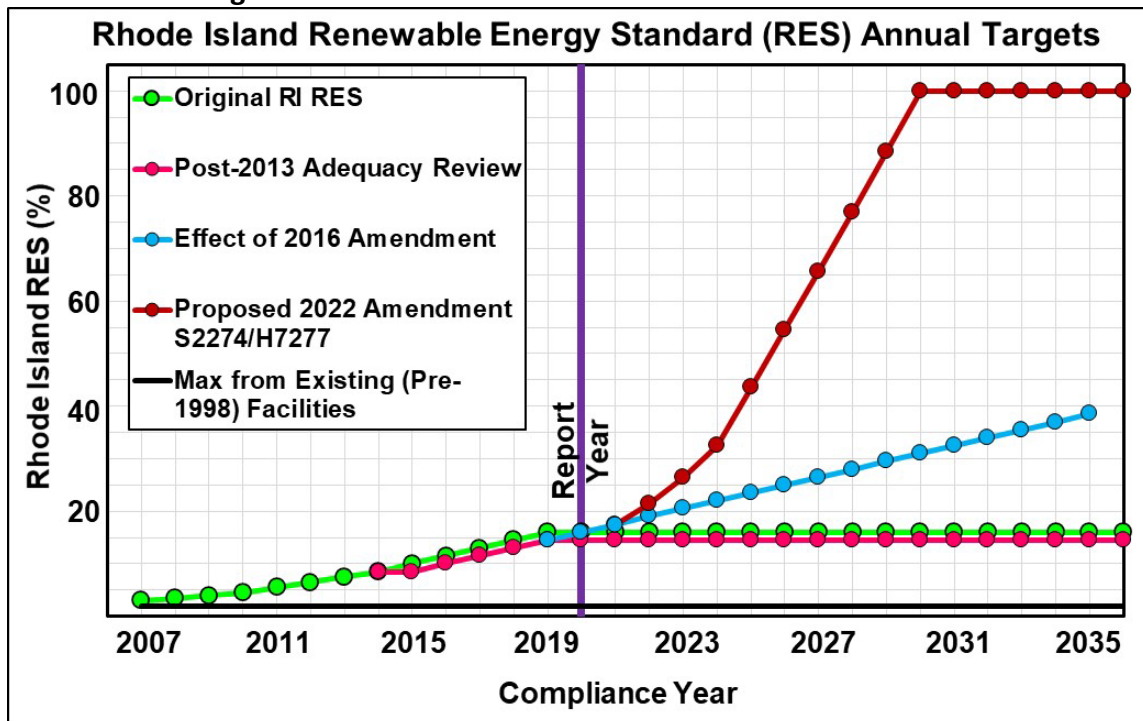
Rhode Island Renewable Energy Standard

Annual Compliance Report for Compliance Year 2020

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.

Figure 1. RES Annual Targets



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%

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>.

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 At the time of this Report, both the Rhode Island Senate and House of Representatives are considering legislation to increase the RES to 100% by 2030, depicted on Figure 1 for reference.⁵

Compliance Year 2020 was the fourteenth compliance year for Rhode Island's RES.⁶ The RES required all Obligated Entities to obtain at least 16.0% of electricity sold in 2020 to Rhode Island end-use customers (inclusive of certain losses) from Eligible Renewable Energy Resources. No more than 2.0% of the total 16.0% could have been sourced from facilities certified to have begun operating before December 31, 1997, known as Existing Renewable Energy Resources.⁷ Thus a minimum of 14.0% must have been obtained from facilities certified to have begun operating after December 31, 1997, known as New Renewable Energy Resources (Table A5 in Appendix 5).⁸ Other jurisdictions have different names for analogous vintage requirements. Massachusetts, for example, refers to a nearly identical resource vintage delineation of New and Existing resources as Class I and Class II resources, respectively. The region's classes and obligations, as well as how they relate to Rhode Island RES, is discussed more in Section VI.

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."

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)

⁵ For Senate bill S 2274, see <http://webserver.rilin.state.ri.us/billtext22/senatetext22/S2274.htm> for House bill H 7277, see <http://webserver.rilin.state.ri.us/billtext22/housetext22/H7277.htm>.

⁶ January 1, 2020 through December 31, 2020.

⁷ 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).

⁸ 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). These resources are analogous to what the general market and some jurisdictions refer to as "Class I" resources.

The RES statute defines the renewable resource technologies which are eligible to be claimed as 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 <https://rhodeislandres.com/application-status-report>.

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).⁹ 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 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.

⁹ 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.

II. Compliance Year 2020 Obligation and Sources of Compliance

Rhode Island’s RES-obligated retail sales in 2020 totaled 7,528,108 MWh of electrical energy. As a result, the total obligation for 2020 was 1,204,528 MWh (i.e., 16.0%). Of the 16.0% obligation, the aggregate minimum amount of RECs that needed to be sourced from “New” Renewable Energy Resources was 1,053,949 MWh (i.e., 14.0%), 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 152,049 MWh (i.e., 2.0%).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 2020, the ACP rate was \$71.58 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 Required to Submit 2020 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	Moore Energy, LLC
Champion Energy Services, LLC	MP2 Energy NE, LLC
Clearview Electric, Inc.	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 Services, LLC	Sunwave USA Holdings, Inc.
Discount Power, Inc.	Town Square Energy, LLC
EDF Energy Services, LLC	Viridian Energy, LLC
ENGIE Resources, LLC	XOOM Energy Rhode Island, LLC

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

¹⁰ Note that the total New and Existing RES obligations are slightly different from 14.0% 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 2020 RECs are issued June 15, 2020. Because of this lag, trading for 2020-vintage RECs and the costs incurred by Obligated Entities for Compliance Year 2020 continued through June 15, 2021.

¹² See <https://rhodeislandres.com/wp-content/uploads/2022/02/RES-ACPRate.pdf>.

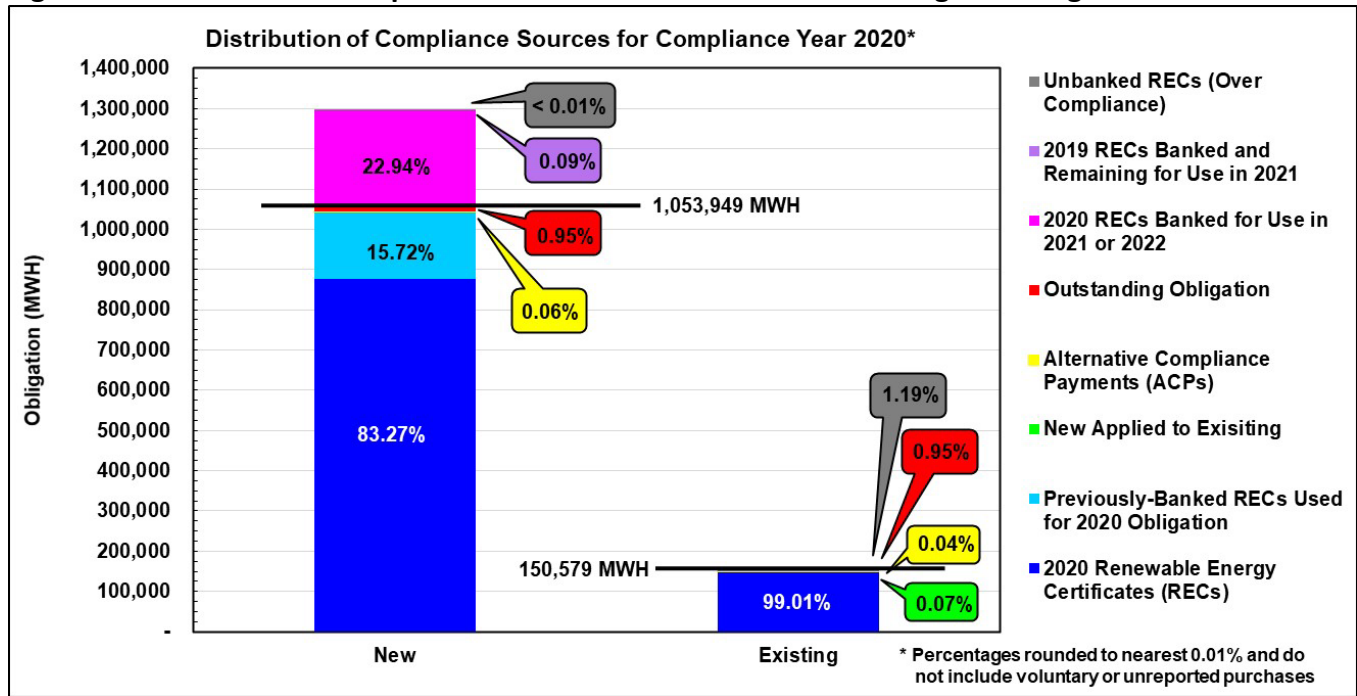
Table 2: Summary of 2020 RES Compliance

Results for Compliance Year 2020		(MWh)^a
A	2020 RES Obligated Retail Sales	7,528,108
A.1	National Grid	4,245,056
A.2	Competitive Suppliers (26 total)	3,283,052
New RES Obligations and New Renewable Energy Certificates		
B	Total New RECs Held for Compliance in Rhode Island (Excluding Reported Voluntary)^b	1,286,258
B.1	2020 New RECs Purchased	1,119,599
B.2	Banked 2018 and 2019 New RECs Held	166,659
C	New RES Obligations (14.0% of "A")	1,053,949
C.1	Banked RECs Applied to 2020 New Obligations (subset of B.2)	165,705
C.2	2020 New RECs Applied to 2020 New Obligations (subset of B.1)	877,635
C.3	Alternative Compliance Payment Credits Applied to 2020 New RES Obligations	627
C.4	Outstanding Obligation (RECs or ACPs)	9,982
D	Banked RECs Available for Compliance Year 2021 or 2022	
D.1	Remaining 2020 New RECs Available after Meeting New RES Obligations (B1 – C.2)	241,964
D.2	2020 New RECs Applied to 2020 Existing RES Obligations	112
D.3	2020 New RECs Purchased above 30% Banking Cap (not eligible for banking)	37
D.4	2020 RECs Banked for Future Use in Compliance Years 2021 or 2022 (D.1 – D.2 – D3)	241,815
Existing RES Obligations and Existing Renewable Energy Certificates		
E	Existing or New RES Obligations (2.0% of "A")	150,579
E.1	2020 Existing RECs Applied to 2020 Existing RES Obligations	148,975
E.2	2020 New RECs Applied to 2020 Existing RES Obligations (from D.2)	112
E.3	Alternative Compliance Payment Credits Applied to 2020 Existing RES Obligations	63
E.4	Outstanding Obligation (RECs or ACPs)	1,429
F	Total 2020 Existing RECs Settled in Rhode Island (Excluding Reported Voluntary)	150,773
F.1	2020 Existing and New RECs Applied to 2020 Existing RES Obligations (E.1 plus E.2)	149,087
F.2	2020 Existing RECs Purchased above 2020 RES Obligations (not eligible for banking)	1,798
<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. See Appendix 4 for details on RECs purchased for voluntary programs.</p> <p>c. This figure represents newly-banked RECs. It does not include 954 previously-banked RECs that were not used for compliance in 2020 and may still be used for compliance in 2021, but after which they will expire.</p>		

Nineteen of these entities met their entire RES obligation by retiring RECs. Six competitive suppliers met a portion of their 2020 RES obligation by making ACPs to the Rhode Island Commerce Corporation, and two competitive suppliers failed to comply with all of their RES obligation. Fourteen Obligated Entities utilized some of their Banked Compliance to meet their 2020 obligation. Eleven Obligated Entities banked RECs minted in 2020 for use in 2021 or 2022. The number of Obligated Entities choosing to bank RECs decreased slightly from Compliance Year 2019 when sixteen entities banked New RECs. A breakdown of compliance by the numbers is presented in Table 2.¹³

¹³ One Obligated Entity that banked RECs in 2019 did not serve retail load in 2020, and therefore was not required to submit a compliance filing. Subject to review, this entity may maintain those banked RECs for use in 2021 should it have an obligation in that Compliance Year.

Figure 2: Distribution of Compliance Sources for 2020 New and Existing RES Obligations



For Compliance Year 2020, New RECs were used to meet 98.9% of Rhode Island’s New RES obligation (Figure 2). The total number of New RECs Obligated Entities had available to meet the New RES obligation was 1,286,258, including 166,659 New RECs banked from Compliance Year 2018 or 2019. Of that total, 1,119,599 New RECs that were minted in 2020 were retired for compliance in Rhode Island, 241,815 of which were banked for use toward compliance in either Compliance Year 2020 or 2021. Notably, one Obligated Entity purchased 37 more New RECs than the maximum allowable amount it could bank for future years.¹⁴ The total New RECs retired represents a 6.2% surplus compared to the 2020 New RES obligation for all Obligated Entities, similar to the 6.1% and 6.4% surpluses for Compliance Years 2019 and 2018, respectively. The total New RECs available to meet the 2020 RES obligation including banked RECs, however, represents a 22.0% surplus. This continued surplus in New RECs to meet increasing demand likely 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.

Approximately 99.0% of the State’s 2020 Existing or New RES obligation was met through retiring RECs (Figure 2), with two Obligated Entities failing to comply with all their Existing or New RES obligation.¹⁵ A total of seven suppliers retired cumulatively 1,798 more Existing RECs than was necessary to meet their combined obligations (excluding reported voluntary purchases).¹⁶ Unlike New RECs, banking of Existing RECs is not allowed under Rhode Island’s Renewable Energy Standard Rules and Regulations.

Taken as a whole, there was a New and Existing REC surplus among Obligated Entities, although six Obligated Entities chose to comply, partially, by making ACPs totaling approximately \$49,390 in lieu of retiring 690 RECs¹⁷. This continues a recent trend of relatively low total ACP costs paid by Obligated Entities (Figure 3). Notably, there

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

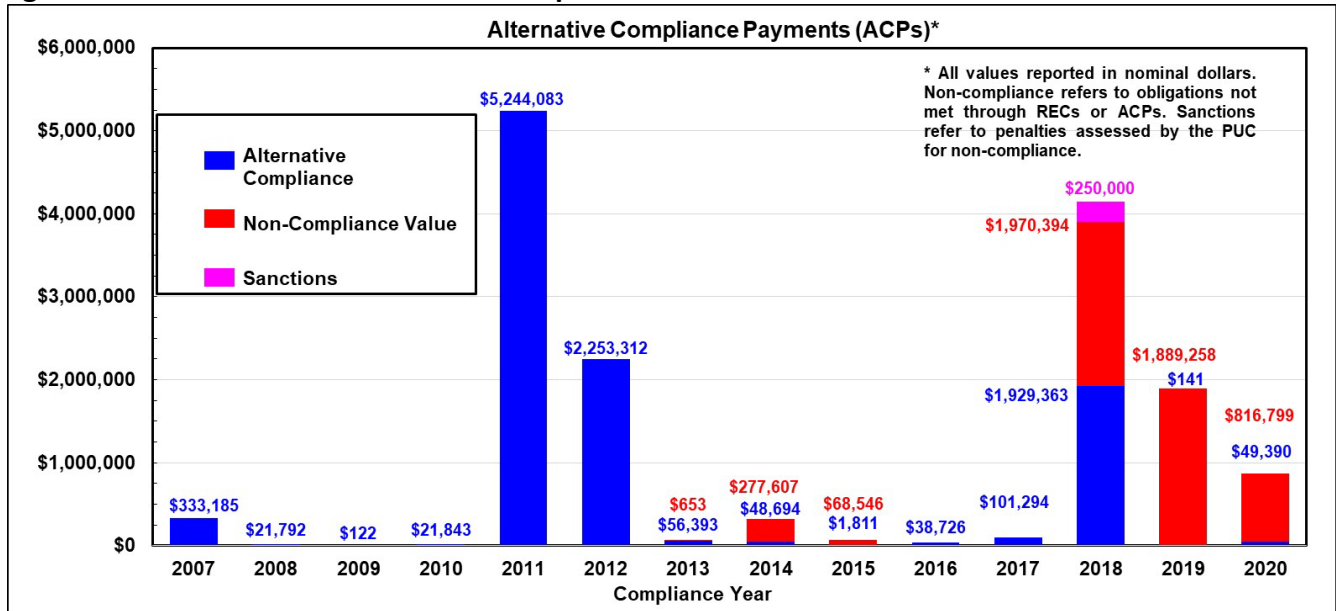
¹⁵ Section VII contains more information on this instance of non-compliance.

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

¹⁷ In Compliance Year 2020, ACPs in lieu of both New and Existing RECs are valued at \$71.58 per MWh.

were also two Obligated Entities that failed to comply with their RES obligations, and left a balance valued at approximately \$816,799 in unpaid ACPs. More information on non-compliance is provided in Section VII.

Figure 3: Total Annual ACPs and Non-Compliance Value



III. Compliance by Fuel Type and Geographic Location

New RECs minted, purchased, and settled in Compliance Year 2020 were generated by eight types of renewable energy generators: wind, solar photovoltaic, hydroelectric, landfill gas, digester gas, biogas, biomass, and wood (Figure 4).¹⁸ For the fourth consecutive year most of the New RECs were generated by wind-powered facilities (49.7%). The remaining New RECs were generated by landfill gas, digester gas, and biogas (20.0%); ¹⁹ solar photovoltaic (13.6%); biomass (11.7%); hydroelectric (4.3%), and wood (0.8%). In terms of resource location, the greatest source of New RECs settled in 2020 was Rhode Island (46.0%) with the rest coming from New York (24.2%), Maine (17.2%), Vermont (6.8%), Massachusetts (4.2%), New Hampshire (1.1%), and Connecticut (0.5%) (Figure 5).

Figure 4: Distribution of Settled 2020 New RECs by Fuel Type

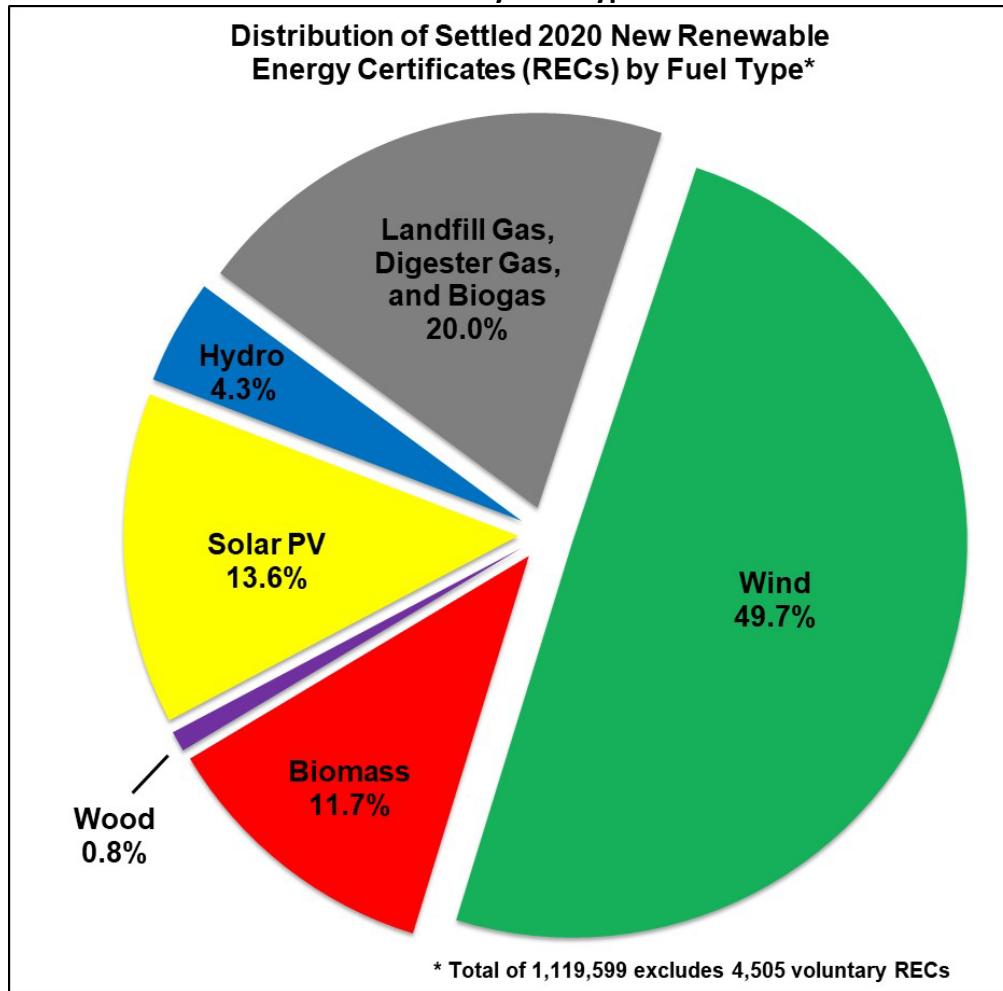
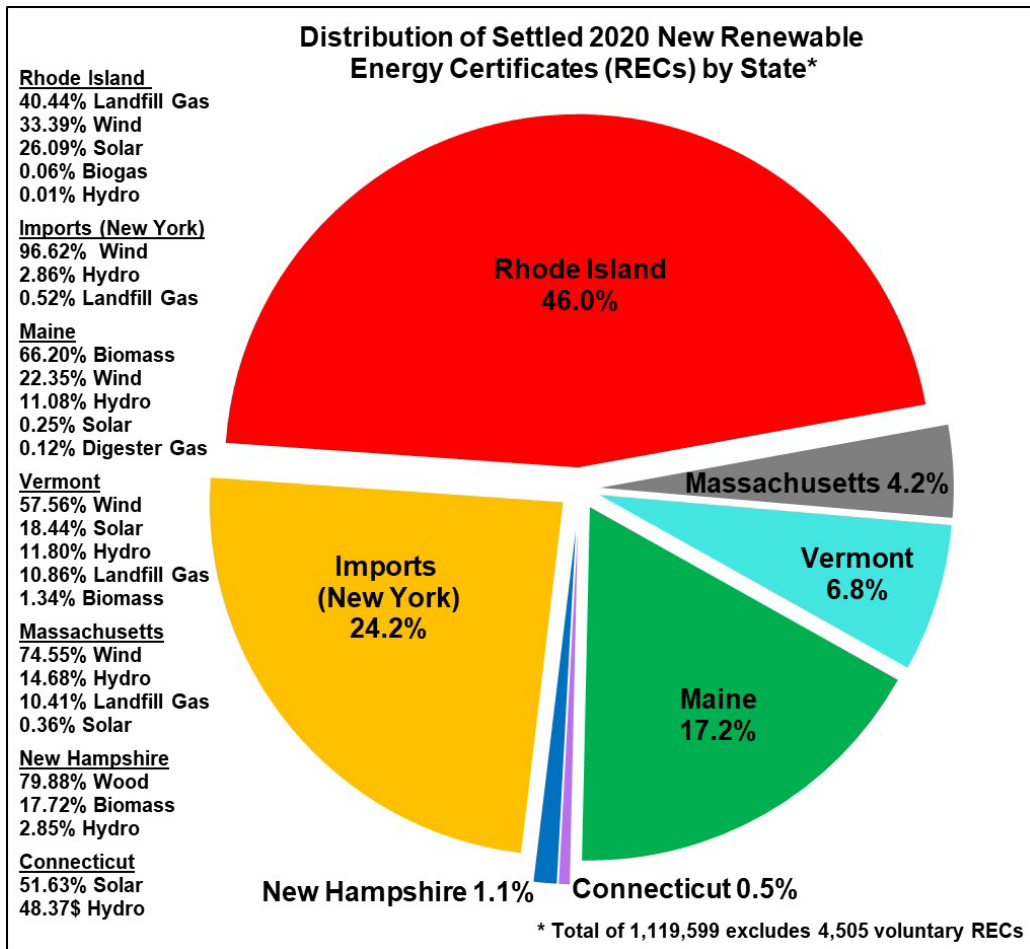


Figure 5: Distribution of Settled 2020 New RECs by State and Fuel Type

¹⁸ Not all of the New RECs purchased and settled in Compliance Year 2020 were used to meet Compliance Year 2020 obligations. Some RECs were banked for use in Compliance Years 2021 and 2022, while others were purchased in excess of the obligation. This summary of New resources includes all RECs retired in 2020, excluding 4,505 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 4 of this Report.

¹⁹ Less than 0.1% of RECs were sourced from biogas and digester gas facilities, so they have been grouped with landfill gas in this figure.



In Compliance Year 2020 the resource type with the largest gain in New RECs was wind, adding an additional 99,001 New RECs over the number retired in Compliance Year 2019 (Figure 6). To put this amount in perspective, this increase represents over 95% of the incremental New RECs needed by Obligated Entities in Compliance Year 2020 compared to Compliance Year 2019. The next largest increase was from solar photovoltaic (solar PV) resources, up 33,370 RECs from Compliance Year 2019. This increase puts solar PV RECs into the third spot for RECs for the first time in RES history. Meanwhile, New RECs obtained from facilities located in Rhode Island increased most sharply from Compliance Year 2019, followed closely by an increase in RECs imported from New York (Figure 7).

The surge of New RECs sourced from wind resources was due to large increases in RECs from New York, New Hampshire, and Vermont, with a modest increase from Rhode Island wind resources. The increase in New solar PV RECs was almost entirely due to the output of resources in Rhode Island. The proliferation of these resources in Rhode Island 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 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.

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

Figure 6: Historical New RECs by Fuel Source

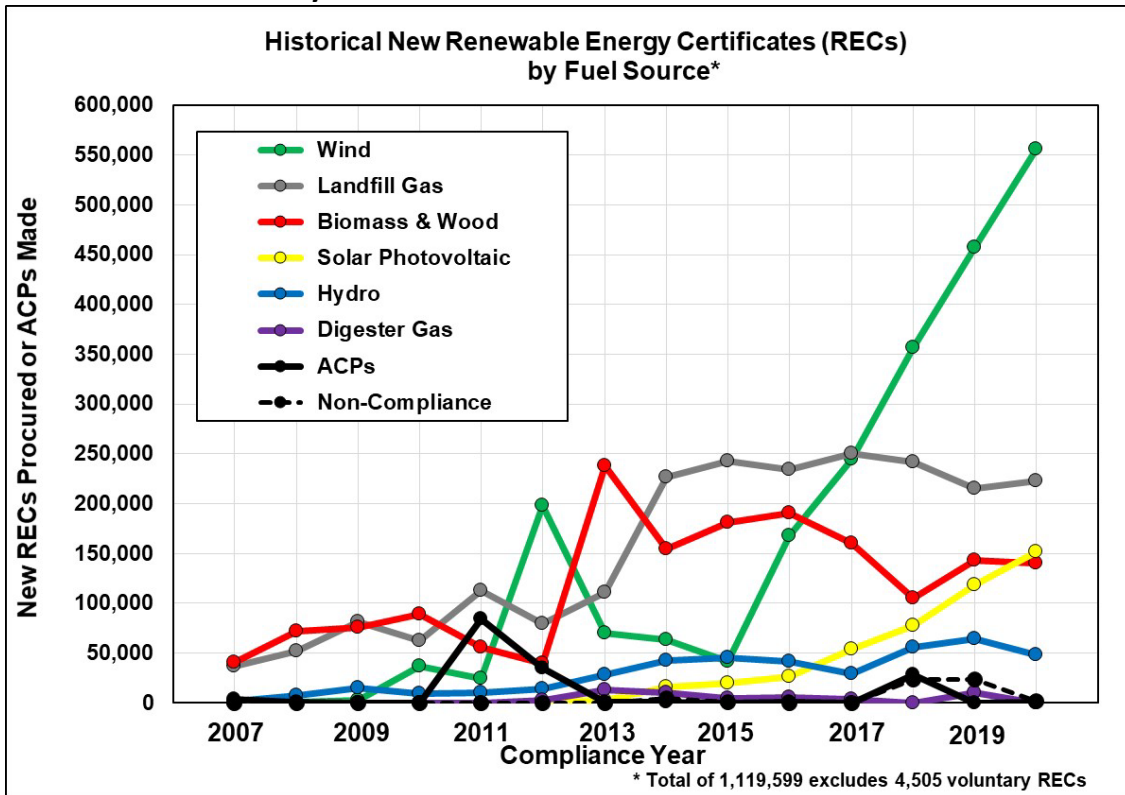
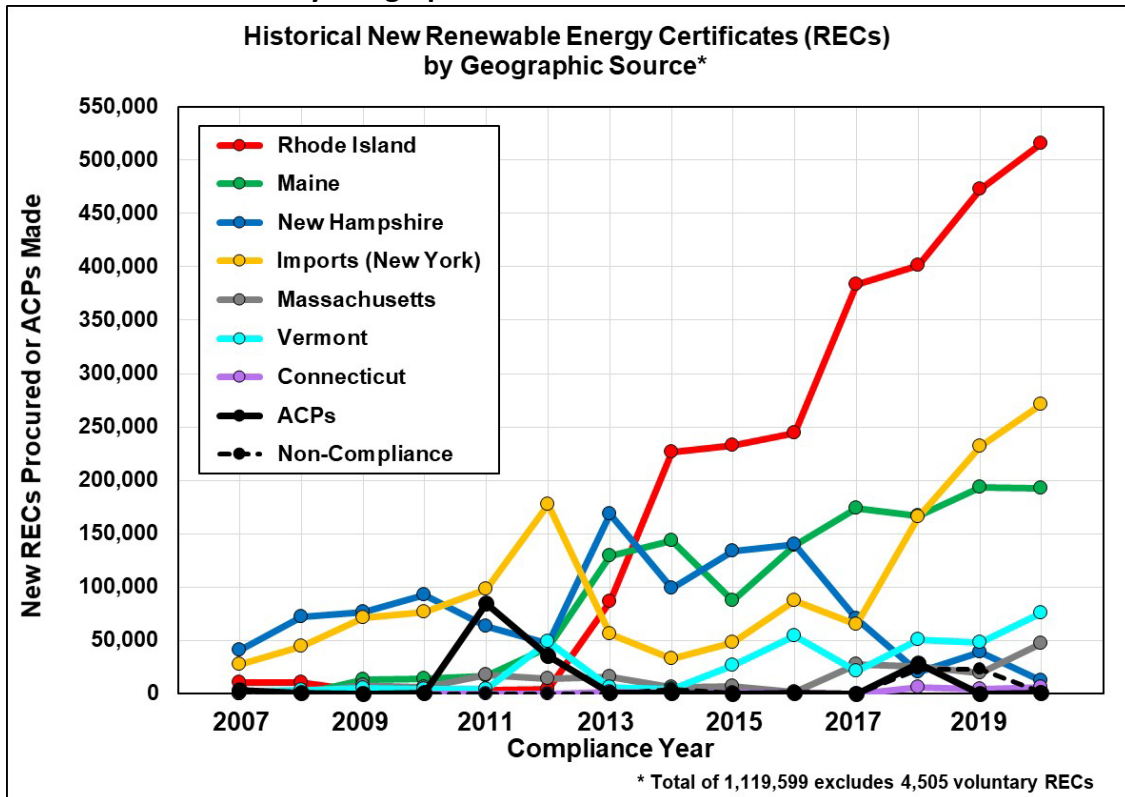


Figure 7: Historical New RECs by Geographic Source



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 2020.

In Compliance Year 2020, all the Existing RECs purchased and settled were generated by hydroelectric facilities. This year, the Existing hydroelectric RECs were sourced from Maine (93.5%), New Hampshire (5.6%), Massachusetts (1.2%), and Rhode Island (0.03%).²¹

²¹ Unlike the reporting for New RECs, the percentages related to Existing REC procurement in this discussion include reported purchases for voluntary programs and over-compliance.

IV. Future Renewable Energy Standard 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 2011.²³ 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).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 and found that there was likely to be adequate renewable energy supply to meet the RES increase in Compliance Year 2020 and maintained the scheduled RES increase.²⁵

The targets shown above in Figure 1 (see Section I) and in the projected RES obligations shown 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. For illustrative purposes, the data includes the effect of bills currently before the General Assembly that would increase the RES to 100% by 2030.²⁶ The forecast of Rhode Island’s obligated sales is based on the Forecast Data File of ISO-NE’s 2021 Capacity, Energy, Loads, and Transmission (CELT) Report²⁷ and exempted load, including some wholesale transmission losses, as well as both Pascoag Utility District and Block Island Power Company retail sales.²⁸

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](http://www.ripuc.ri.gov/eventsactions/docket/4903-RESAdequacy-Ord23381(1-4-19).pdf)

²⁶ For Senate bill S 2274, see <http://webserver.rilin.state.ri.us/billtext22/senatetext22/S2274.htm>; for House bill H 7277, see <http://webserver.rilin.state.ri.us/billtext22/housetext22/H7277.htm>.

²⁷ ISO-NE 2021 CELT Forecast Data. See tab 2C, column K NET. ISO-NE 2021 Forecast Data File, available at https://www.iso-ne.com/static-assets/documents/2021/04/forecast_data_2021.xlsx.

²⁸ The analysis includes an assumption that 2.94% 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. This is the difference, in 2020, between the wholesale energy delivered to Rhode Island as reported by ISO-NE and the retail load delivered to Rhode Island as reported by National Grid and used throughout this Report.

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, c}	Proposed S 2274/H 7277 Minimum MWhs from New Renewable Energy Resources^{b, c}	MWhs from either New or Existing Renewable Energy Resources^{b, c} (2.0%)
2007 (Actual)	8,335,706	83,357	83,357	166,715
2008 (Actual)	8,279,006	124,190	124,190	165,584
2009 (Actual)	7,910,112	158,212	158,212	158,212
2010 (Actual)	8,242,937	206,082	206,082	164,866
2011 (Actual)	8,157,796	285,531	285,531	163,165
2012 (Actual)	8,123,025	365,545	365,545	162,469
2013 (Actual)	8,193,979	450,678	450,678	163,891
2014 (Actual)	7,985,473	519,067	519,067	159,720
2015 (Actual) ^d	8,018,905	521,243	521,243	160,392
2016 (Actual)	7,954,467	636,372	636,372	159,103
2017 (Actual)	7,741,800	735,485	735,485	154,850
2018 (Actual)	7,914,524	870,612	870,612	158,306
2019 (Actual)	7,601,633	950,217	950,217	152,049
2020 (Actual) ^e	7,528,108	1,053,949	1,053,949	150,597
2021	8,007,000	1,241,000	1,241,000	160,000
2022	7,768,000	1,321,000	1,515,000	155,000
2023	7,797,000	1,442,000	1,910,000	156,000
2024	7,819,000	1,564,000	2,385,000	156,000
2025	7,819,000	1,681,000	3,245,000	156,000
2026	7,863,000	1,808,000	4,128,000	157,000
2027	7,954,000	1,949,000	5,051,000	159,000
2028 ^f	8,084,000	2,102,000	6,063,000	162,000
2029	8,201,000	2,255,000	7,094,000	164,000
2030	8,348,000	2,421,000	8,181,000	167,000

^a Based on 2020 ISO-NE CELT forecast and assumes 2.94% 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 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 2021 ISO-NE CELT forecast ends in 2030.

V. Authorized Rate Increases and RES Compliance Costs

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 2020 National Grid has two types of distribution customers: customers who get their energy supply from National Grid’s Standard Offer/Last Resort Service³⁰ and customers who get their energy supply from a competitive supplier. Only Standard Offer/Last Resort 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/Last Resort Service customers accounted for approximately 56.4% of the energy used in Rhode Island in 2020. RES compliance costs (and related rates) of competitive suppliers for providing the remaining 43.6% 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/Last Resort 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.³¹ 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/Last Resort 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 found in the third column. The charge of \$0.00866 per kWh, effective April 1, 2020 through March 31, 2021, comprises a \$0.00606 per kWh factor for projected costs for Compliance Year 2020 and a \$0.00260 reconciliation factor for a cumulative over-collection of costs for previous years, including costs for Compliance Year 2019 (*see* the yellow row in Table 4).

²⁹ R.I. Gen. Laws § 39-26-2(16).

³⁰ Standard Offer/Last Resort Service refers to the energy supply commodity provided by National Grid and regulated by the PUC. All National Grid distribution customers have the option of taking supply service from a competitive market supplier or through National Grid’s Standard Offer/Last Resort Service.

³¹ 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 example of this annual filing that first included Compliance Year 2020 compliance costs, *see here*: [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).

Table 4: Estimated Rate Impact of RES Compliance to National Grid SO/LR Service (Energy) Customers

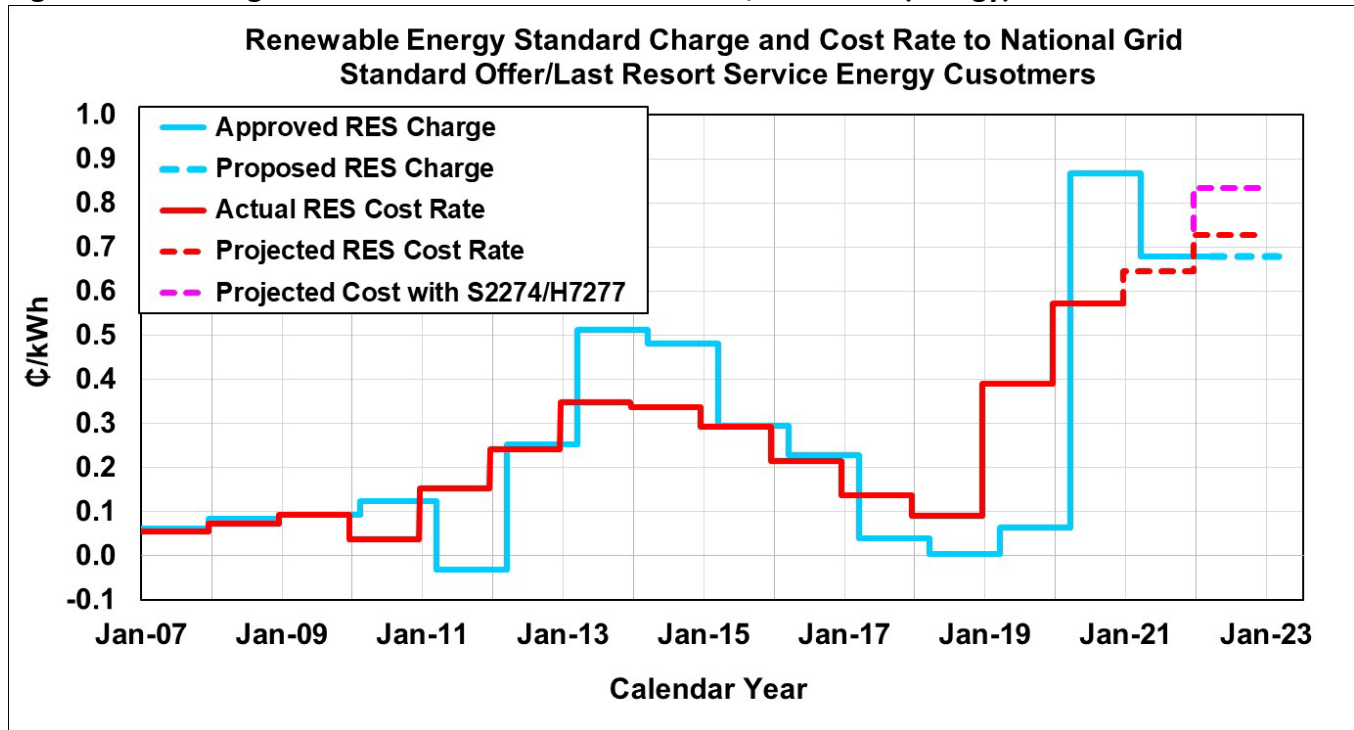
Effective Date	Initially-Projected REC Procurement Cost (per kWh) ^a	Adder for Previous- and Current-Year Costs (per kWh)	Authorized RES Charge (per kWh)	Monthly & Annual Charge to 500-kWh Ratepayer
April 2022 – Future Filing	\$0.00728	(\$0.00007)	\$0.00721	\$3.61 \$43.26
April 2021 – March 2022	\$0.00678	(\$0.00013)	\$0.00665	\$3.33 \$39.90
April 2020 – March 2021	\$0.00606	\$0.00260	\$0.00866 ^c	\$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	^b	\$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 2020 was \$0.00606/kWh and was collected from April 2020 through March 2021.

^b 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/Last Resort Service reconciliation filings.

While this Report focuses on Compliance Year 2020, it should be noted that in February 2021, National Grid filed to decrease the factor to \$0.00665 per kWh with effect on April 1, 2021.³² While the cost of 2021 compliance was expected to increase, the large under-collection factor in the previous rate period lowered the total charge, as seen in Table 4. In February 2022, National Grid filed to increase the factor to \$0.00721 per kWh with effect on April 1, 2022 to keep pace with the expected rise in compliance costs.³³

Figure 8: RES Charges and Cost Rate to National Grid SO/LR Service (Energy) Customers



National Grid executed its proposed REC procurement plan for Compliance Year 2020. Based on the data reported below in Table 5 and in Appendix 2 Table A2, for Compliance Year 2020, National Grid procured Rhode Island-eligible New RECs at an average price of approximately \$40.72 per New REC.³⁴ This is nearly equal to National Grid’s February 2020 projection of \$40.08 per New REC.³⁵ National Grid’s most recent estimate of New REC prices is an average cost of \$38.33 per New REC in Compliance Year 2022.³⁶

For Compliance Year 2020, most of the RECs National Grid purchased to fulfill the RES obligation incurred by their Standard Offer/Last Resort 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

³² National Grid’s “Docket 5096 2021 Renewable Energy Standard (RES) Charge and Reconciliation,” Attachment 1, [http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-RES-Reconciliation-2021-\(PUC-2-25-21\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-RES-Reconciliation-2021-(PUC-2-25-21).pdf).

³³ National Grid’s “Docket 5190 2022 Renewable Energy Standard (RES) Charge and Reconciliation,” Attachment 1, [http://www.ripuc.ri.gov/eventsactions/docket/5190-NGrid-RES%20Reconciliation-2022-\(PUC-2-23-22\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5190-NGrid-RES%20Reconciliation-2022-(PUC-2-23-22).pdf).

³⁴ This average cost includes only the costs of RECs retired to meet compliance in Compliance Year 2020. Thus, this includes RECs minted and banked in Compliance Years 2018 and 2019 for use in Compliance Year 2020, but this excludes the costs of RECs minted and banked in Compliance Year 2020 for use in Compliance Years 2021 and 2022.

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).

³⁶ National Grid’s “Docket 5190 2022 Renewable Energy Standard (RES) Charge and Reconciliation,” Attachment 1, [http://www.ripuc.ri.gov/eventsactions/docket/5190-NGrid-RES%20Reconciliation-2022-\(PUC-2-23-22\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5190-NGrid-RES%20Reconciliation-2022-(PUC-2-23-22).pdf).

§ 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.³⁷

Table 5: Summary of National Grid's RES Compliance Costs, 2007 through 2020

Compliance Year	Total RES Costs (Millions) ^a	New REC Costs (Millions) ^a	Existing REC Costs (Millions) ^a	ACP Costs (Millions)	Obligated Load (MWh)
2020	\$24.29	\$24.20	\$0.09	\$0	4,245,056
2019	\$16.22	\$16.12	\$0.10	\$0	4,170,969
2018	\$3.91	\$3.76	\$0.15	\$1.92 ^b	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

^a Total 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.

^b In 2021, National Grid filed a revised Compliance Filing for Compliance Years 2017 and 2018, and it was determined National Grid owed an ACP in 2018. As of the Report date, National Grid has not attempted to include these ACP costs in Standard Offer/Last Resort Service rates. More information on this can be found in Section VII.

Importantly, the costs of these programs' projects are paid for by charges to all National Grid's distribution customers, which includes both Standard Offer/Last Resort Service customers and competitive supply customers. Thus, simply retiring these RECs on behalf of Standard Offer/Last Resort 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/Last Resort Service 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/Last Resort Service customers is used to offset the cost of the PPAs and RE Growth Program to benefit all National Grid's distribution customers.³⁸

³⁷ Some PPAs and all RE Growth Program arrangements include transfer of the project's capacity value from the project to National Grid.

³⁸ 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/Last Resort Service

National Grid's remaining REC needs are purchased through a request-for-proposal procurement process approved annually by the PUC through a docketed proceeding.³⁹ 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 2020 New and Existing RES obligations, National Grid incurred \$24.29 million in compliance costs (Table 5; Figure 9).⁴⁰ This is an increase of approximately 49.8% from the cost incurred to comply with the 2019 RES obligation (\$16.22 million). This large increase in compliance cost to National Grid is mostly caused by the increase in volume of RECs needed to comply with the increase in the RES, as well as the increase in Standard Offer/Last Resort Service usage compared to 2019. Based on National Grid data,⁴¹ the PUC estimates the cost to Standard Offer/Last Resort Service customers for Compliance Year 2021 will increase to approximately \$26 million. Should the RES statute remain unamended, and assuming Standard Offer/Last Resort Service usage is unchanged, the PUC projects the cost to Standard Offer/Last Resort Service will increase to approximately \$30 million in 2022. Assuming the General Assembly passes the proposal to increase the RES to 100% by 2030, the effect would first be felt in Compliance Year 2022, and the PUC projects the Standard Offer/Last Resort Service cost would instead be \$34 million.⁴²

The actual cost rate of the 2020 RES obligation to National Grid's Standard Offer/Last Resort Service energy customers, calculated as 2020 Total RES Costs divided by Obligated Load reported in Table 5,⁴³ was approximately \$0.00572/kWh in Compliance Year 2020, whereas National Grid's original projection was \$0.00606/kWh (Table 4). This increase in actual cost rate was a step increase similar to the increase in 2019 and is again greater than what had been experienced in the previous decade of the RES (see the red line on Figure 8).

Notably, National Grid projects the cost rate will continue to increase in Compliance Year 2021 to \$0.00678/kWh and again to \$0.00728/kWh in Compliance Year 2022 (Figure 8 and Table 4). It should be noted that National Grid's 2022 projection assumes no changes to the RES; the PUC projects that if the RES is amended to increase the RES to 100% under current proposals before the General Assembly, the cost rate would instead rise to \$0.00833/kWh in Compliance Year 2022.

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.⁴⁴ National Grid's most recent and current RES Procurement Plans include the option

customers are the subset of distribution customers that buy their energy supply from National Grid rather than from a competitive supplier.

³⁹ See, e.g., National Grid's "2020 Renewable Energy Standard Procurement Plan Docket No. 4935", [http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-SOS Procurement Plan \(3-1-19\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4935-NGrid-SOS Procurement Plan (3-1-19).pdf).

⁴⁰ 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 2019, among other minor factors. See also note ^a in Table 5.

⁴¹ Based on usage and cost information in National Grid's "Docket 5190 – 2022 Renewable Energy Standard Procurement Plan Renewable Energy Standard (RES) Charge and Reconciliation" Schedule 2, [http://www.ripuc.ri.gov/eventsactions/docket/5190-NGrid-RES Reconciliation 2022 \(PUC 2-23-22\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5190-NGrid-RES Reconciliation 2022 (PUC 2-23-22).pdf)

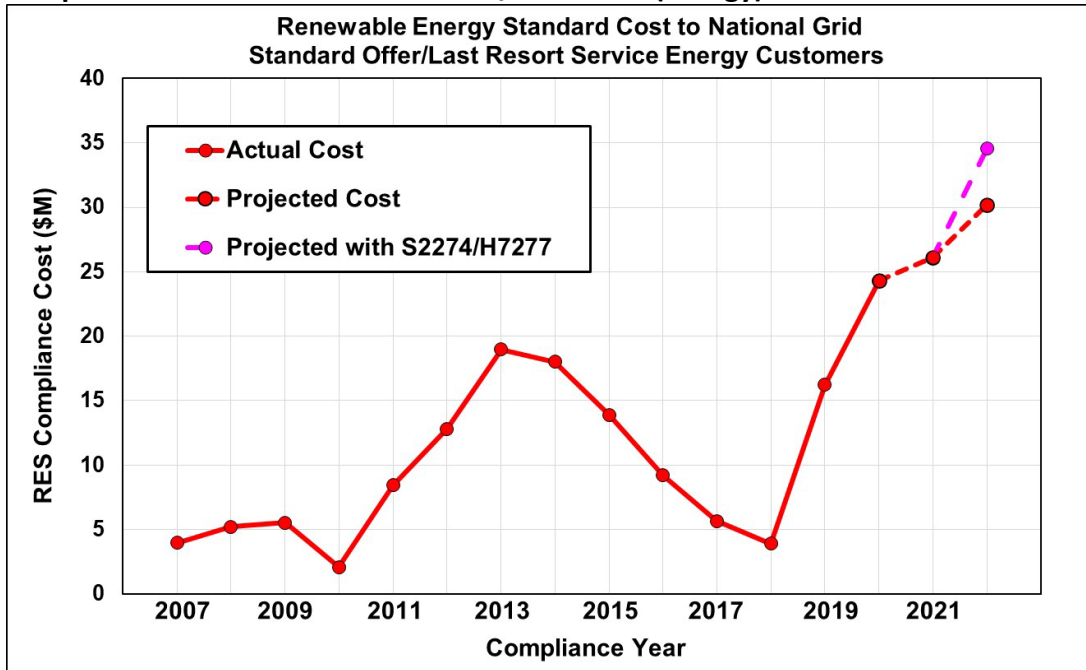
⁴² For Senate bill S 2274, see <http://webserver.rilin.state.ri.us/billtext22/senatetext22/S2274.htm>; for House bill H 7277, see <http://webserver.rilin.state.ri.us/billtext22/housetext22/H7277.htm>.

⁴³ 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/Last Resort Service customers.

⁴⁴ National Grid's "2022 Renewable Energy Standard Procurement Plan Docket No. 5190" Plan at 5, [http://www.ripuc.ri.gov/eventsactions/docket/5190-NGrid-2022 RES Procurement Plan \(R\) \(10-08-2021\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5190-NGrid-2022 RES Procurement Plan (R) (10-08-2021).pdf).

to sell RECs into the regional market should the number of RECs from the contracts and RE Growth Program exceed the company’s obligation and banking allowance.⁴⁵

Figure 9: Compliance Costs to National Grid SO/LR Service (Energy) Customers



It is again noted that the data in this section of the report only represents expenses incurred by Standard Offer/Last Resort Service customers of National Grid, accounting for approximately 56.4% of all obligated retail energy use in 2020. Competitive energy suppliers served the remaining 43.6% of obligated energy use, and the PUC does not have access to compliance costs for these Obligated Entities.⁴⁶ Lacking data from these businesses, it can still be presumed that, among all Obligated Entities, compliance costs have increased. It also is noted that National Grid bears no REC market risk because the utility passes all savings and expenses resulting from changes in the REC market onto Standard Offer/Last Resort 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 approximately \$132,000 in expenses related solely to the administration of the RES for Compliance Year 2020.

⁴⁵ 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.

⁴⁶ 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 before decreasing to 44.4% in 2018 and staying down at 45.1% in 2019.

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 classes⁴⁷ 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 requirements⁴⁸ 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 Renewable Energy Certificates (RECs) 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, renewable thermal, and efficient steam technologies, as well as a Clean Peak Energy Standard (CPS) designed to incentivize clean energy technologies that can supply electricity or reduce demand during defined periods.

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 increase 2% per year through 2029 and 1% per year 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 market equilibrium or shortage, while others make ACPs. Table 6 summarizes aggregate Massachusetts Class I ACPs from 2005 to 2018⁴⁹.

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

⁴⁷ Referred to as “Tiers” in Vermont.

⁴⁸ 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.

⁴⁹ MA has not yet published a 2020 compliance report; the most recent data available are from 2019.

generate Class I RECs thereafter. MA DOER also established an SREC successor program, known as the Solar Massachusetts Renewable Target (SMART). SMART is a declining-block incentive for solar supply. SMART is not a carve-out; eligible facilities generate Class I RECs. In December 2021, the Massachusetts Department of Public Utilities (MA DPU) issued an order doubling the capacity of solar resources eligible for the SMART incentives from 1,600 MW to 3,200 MW.⁵⁰

In August 2020, MA DOER issued regulations to implement a Clean Peak Energy Standard. The regulations require a minimum percentage (starting at 1.5% in 2020) 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. The ACP is set to \$45 per Clean Peak Energy Certificate from 2020 to 2024, declining between \$1.54 to \$4.62 per compliance year thereafter, dependent upon supply and demand dynamics.⁵¹

In July 2021, final proposed amendments to the Class 1 Regulations went into effect.⁵² The amended Regulations lower the Class I ACP to \$60 in 2021, \$50 in 2022, and \$40 in 2023 and thereafter.

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 constructed or converted after July 1, 2003), Connecticut has historically had access to a larger pool of eligible supply and therefore lower RPS compliance costs. As RES targets increase over time, however, new supply is required to fulfill New England’s aggregate obligations, leaving all states (except sometimes Maine) to compete for marginal supply.

Connecticut’s current RPS statute requires the following renewable energy percentages by 2030: 40% Class 1; 4% Class 2; and 4% Class 3. The state’s draft Integrated Resources Plan (IRP), released December 2020, proposes pathways for achieving 100% zero-carbon electricity by 2040. Incremental increases to Class 1 targets are likely required to meet this goal, but no specifics had been identified at the time of this Report. The IRP also proposes accepting only 50% of REC output from certified biomass facilities beginning in 2022 (remaining RECs may be sold for compliance in other states, if eligible). Public Act No. 18-50 reduced the Class 1 ACP to \$40/MWh, effective January 1, 2021.⁵³

Maine

Maine’s first Class I RES⁵⁴ 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 with limited eligibility elsewhere caused a sharp decline in both Maine Class I REC prices and ACP collections, as shown in Table 6. In 2019, Maine expanded its Class 1 RES from 10% to 50% by 2030

⁵⁰ See, <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/14355548>

⁵¹ See, <https://www.mass.gov/doc/225-cmr-21-clean-peak-energy-portfolio-standard-cps/download>

⁵² See, <https://www.mass.gov/regulations/225-CMR-1400-renewable-energy-portfolio-standard-class-i>

⁵³ CT Gen Stat § 16-244c(h) (2013). See, <https://law.justia.com/codes/connecticut/2013/title-16/chapter-283/section-16-244c>.

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

and included a (non-binding) goal of 100% by 2050.⁵⁵ The 2019 RES revisions also set the ACP at the statutory maximum of \$50/MWh for Class 1 and Class 1A resources.

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	\$0.11	\$0.2	\$0.101	\$0	\$2.2	\$0.0 ^b
2018	\$0.0001	\$3.1	\$1.929 ^c	\$0	\$1.7	\$0.0 ^d
2019	\$0.0006	^e	\$0.0001	\$0	\$1.72	^e
2020	^e	^e	\$0.299 ^c	^e	\$2.40	^e

^a Includes Class I and Class I Thermal ACP.

^b 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.

^c Figures include \$250,000 in penalties assessed for non-compliance.

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

^e The applicable data is not yet reported.

New Hampshire

New Hampshire's first Class I compliance year was 2009. New Hampshire is unique in that it has a Class II obligation dedicated to new solar, a Class III obligation dedicated to existing biomass, and a Class IV obligation for existing hydroelectric facilities. In Compliance Year 2020, Class I and II (non-thermal) obligations could also be met through an ACP of \$57.56, which escalated in future years with inflation.⁵⁶ Due to the absence of a vintage requirement in Connecticut, NH Class III overlaps with CT Class 1. The NH Class III ACP was reduced to \$34.54 in 2020 (increasing with inflation thereafter) compared to the CT Class I ACP of \$40.

In 2020, the NH legislature proposed to increase Class I requirements from 15% to 31.5% by 2025 and Class II requirements from 0.7% to 18.7% by 2040, but the bill was vetoed by Governor Sununu.

⁵⁵ Maine's RES expansion was accomplished through the creation of a Class 1A, with similar eligibility criteria to Class 1. [35-A ME Rev Stat § 3210 \(2021\)](https://www.mainelegislature.org/legis/statutes/35-A/title35-Asec3210.html) See, <http://www.mainelegislature.org/legis/statutes/35-A/title35-Asec3210.html>.

⁵⁶ See https://www.puc.nh.gov/sustainable%20energy/Renewable_Portfolio_Standard_Program.htm.

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; that obligation increases by 4% every three years, culminating at 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 by three-fifths of a percent each year 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 based on statute and regulation in effect at the time this report was drafted. Table 8 provides an estimate of the corresponding gigawatt-hours (GWh) of "New" RES demand through 2030. The forecasted RES obligations are based upon ISO-NE's forecast of Annual Energy Net of Behind-the-Meter PV and Energy Efficiency, found in their 2021 CELT Report,⁵⁷ 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 are exempt from Rhode Island's RES.⁵⁸

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

Year	MA Class I	CT Class I	RI New	VT DG	ME Class I^a	NH Class I^b
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%
2029	34.0%	38.0%	27.5%	8.2%	45.0%	12.8%
2030	35.0%	40%	29%	8.8%	50.0%	12.8%

^a Maine RPS obligation for Class 1 and Class 1A resources
^b New Hampshire RES obligation is presented **net** of renewable thermal carve-out

Under current laws and regulations, Massachusetts and Connecticut represent the majority of New England's RES demand through 2030 (Figure 10). In 2020, these two states accounted for 45.2% and 31.9% of demand, respectively. Rhode Island represented 6.8% of the region's 2020 New/Class I RES demand (Figure 11). By 2030,

⁵⁷ The ISO-NE 2021 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 2020 Forecast Data File, available at https://www.iso-ne.com/static-assets/documents/2021/04/2021_celt_report.xlsx

⁵⁸ Unless the jurisdiction requires or publishes specific exemptions, this analysis compares the most recently reported wholesale load served as reported by ISO-NE and compares that to the retail load reported by various entities in each jurisdiction. The fractional difference is then assumed to persist throughout the forecast.

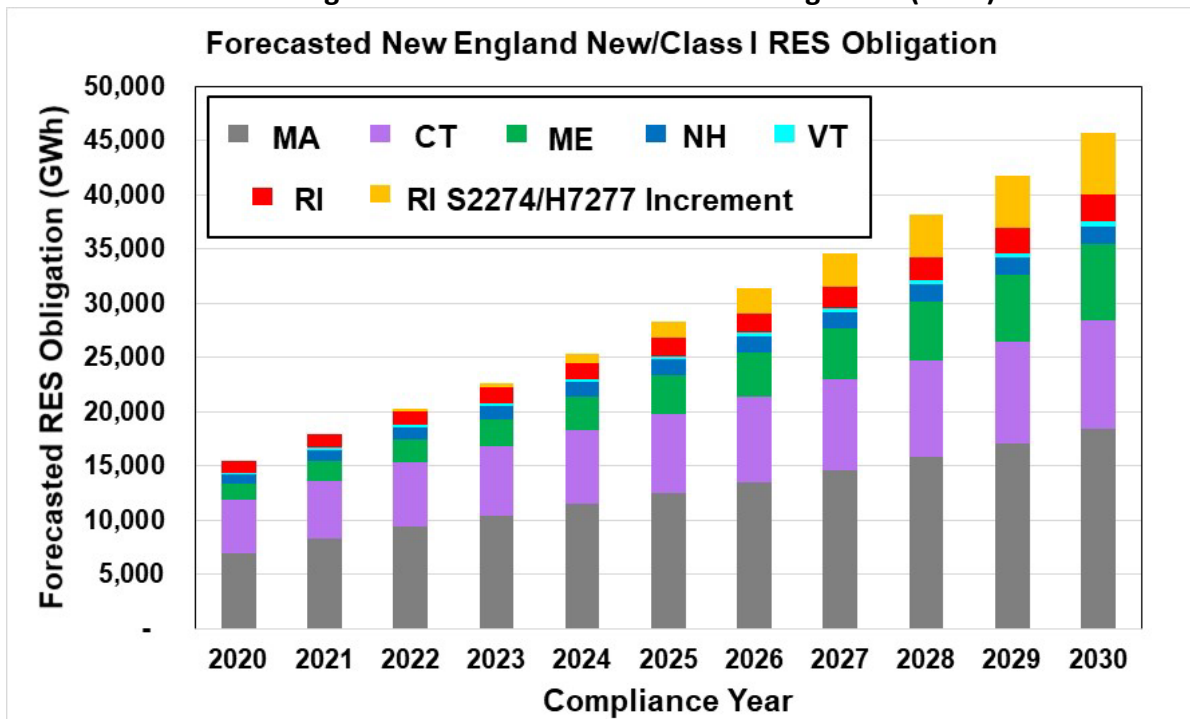
the projected allocation of New/Class I REC demand across the region is: Massachusetts – 46.2%; Connecticut – 24.8%; Maine – 17.8%; Rhode Island – 6.1%; New Hampshire – 3.9%; and Vermont – 1.2% (Figure 12).

For illustrative purposes, a forecast that reflects the requirements of pending legislation to expand Rhode Island’s RES to 100% by 2030 (currently under consideration by the Rhode Island General Assembly) has been provided in Figure 10 and 13⁵⁹, using the forecast data provided above in Table 3. In the forecast for this scenario, Rhode Island would have the third highest share of demand for Class I RECs at 17.9% of the New England total demand.

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
2020	6,259	4,761	952	120	1,188	862	14,140
2021	6,945	4,945	1,050	139	1,366	934	15,378
2022	8,348	5,589	1,190	187	1,787	1,068	18,169
2023	9,302	5,948	1,301	219	2,177	1,162	20,110
2024	10,237	6,426	1,409	251	2,573	1,253	22,151
2025	11,226	6,931	1,521	284	3,109	1,373	24,445
2026	12,174	7,399	1,630	315	3,653	1,486	26,657
2027	13,179	7,892	1,747	348	4,235	1,500	28,900
2028	14,226	8,396	1,873	380	4,852	1,517	31,244
2029	15,359	8,942	2,011	415	5,516	1,540	33,782
2030	16,437	9,442	2,148	448	6,180	1,554	36,208

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



⁵⁹ For Senate bill S 2274, see <http://webserver.rilin.state.ri.us/billtext22/senatetext22/S2274.htm>; for House bill H 7277, see <http://webserver.rilin.state.ri.us/billtext22/housetext22/H7277.htm>.

Figure 11: 2020 Aggregate New England New or Class I RES Demand

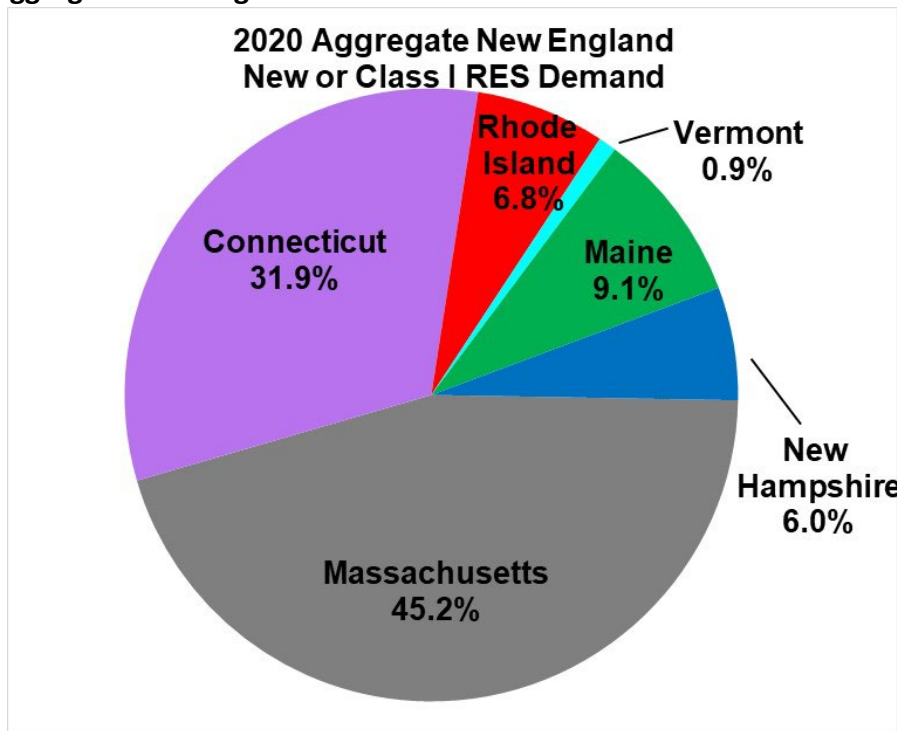


Figure 12: 2030 Aggregate New England New or Class I RES Demand Forecast

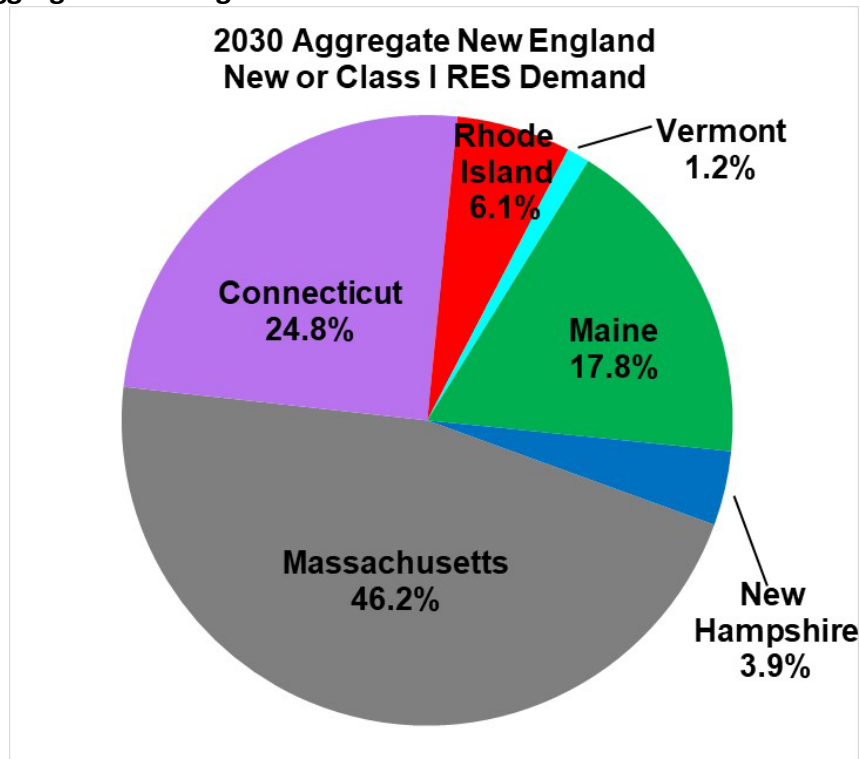
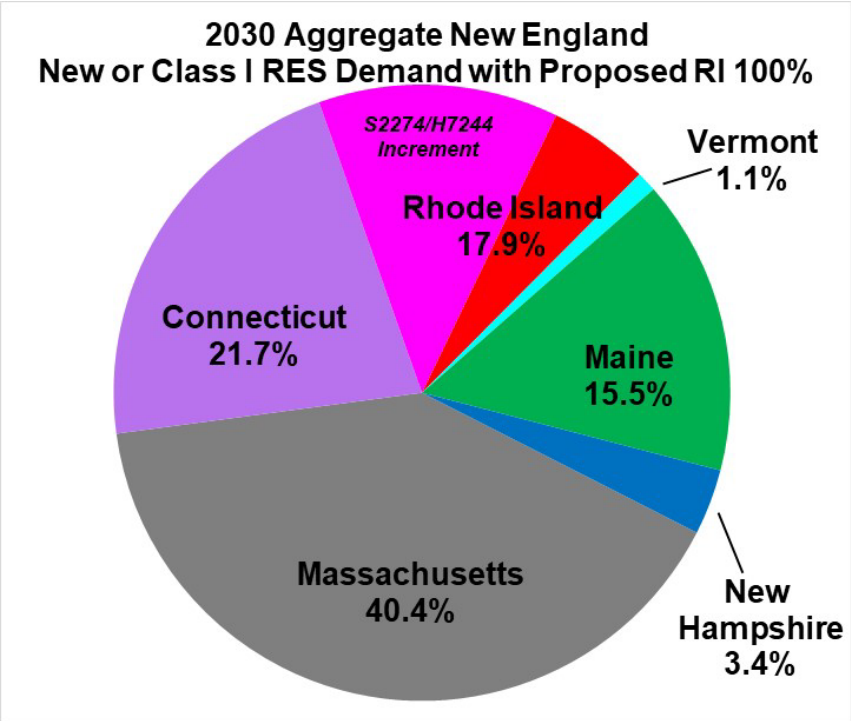


Figure 13: 2030 Aggregate New England New or Class I RES Demand Forecast with RI 100% RES



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 relevant to the time since the last Report was published but may span multiple Compliance Years.

Non-Compliance

Compliance Year 2020 is the sixth year of the last eight in which at least one Obligated Entity failed to comply with the RES, and thus cause Rhode Island to miss its full RES target. In 2020, Rhode Island experienced the last year of the expected effects that began in Compliance Year 2018 resulting from Agera Energy, LLC's (Agera) bankruptcy proceedings and associated non-compliance with the RES. Agera's load asset was retired in April 2020, and the company left a balance of 133 MWH of non-compliant energy supplied to retail customers—a small amount that represents approximately 0.01% of the total RES requirement. No Compliance Filing was made by Agera for Compliance Year 2020.

Compliance Year 2020 included non-compliance by Liberty Power Holdings, LLC (Liberty), which was also related to a bankruptcy proceeding. Liberty met a small fraction of its RES obligation through banked RECs from previous Compliance Years but left a balance of 11,278 MWH of non-compliant energy supplied to retail customers.

The combined value of Liberty and Agera's unmet obligation for Compliance Year 2020 was equal to \$816,799.38; in terms of volume, the non-compliance represented just under 1% of the total compliance necessary to meet the RES. In other words, of the 16% of retail load that required compliance through the retirement of RECs or payment of ACPs, only 15.85% was compliant. The PUC expects Liberty's non-compliance to extend into Compliance Year 2021. The PUC expects additional future bankruptcies by Obligated Entities to affect Compliance Years 2021 and 2022.

For its failure to comply in Compliance Year 2019, the PUC penalized Agera \$250,000,⁶⁰ 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.⁶¹ After the financial security was demanded in full, Agera was no longer in compliance with the Division's Rules for selling retail energy in Rhode Island, and the Division subsequently suspended Agera's certification to enter into any new contracts for energy supply with retail customers in Rhode Island.⁶² Upon remittance, the PUC transferred the \$250,000 to the Commerce Corporation for deposit in the Renewable Energy Development Fund. Per PUC rules, the penalty did not remedy Agera's 2018 Obligation.⁶³ The State of Rhode Island remained engaged in Agera's bankruptcy proceeding and the Commerce

⁶⁰ 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>.

⁶¹ Competitive Suppliers must post financial security in the amount of \$250,000 pursuant to the Division's Rules Applicable to Nonregulated Power Producers 815-RICR-30-05. http://www.ripuc.ri.gov/rulesregs/divrules/Rules_Applicat_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.

⁶² Docket No. D-19-26 Agera Energy LLC Renewable Energy Standard Compliance, Notice of Public Hearing and Suspension Order, September 19, 2020. http://www.ripuc.ri.gov/eventsactions/docket/D_19_26_notice.pdf.

⁶³ 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 fulfilling any shortfall in its compliance obligation; provided, however, that no sanction shall be imposed if compliance is achieved through alternative compliance payments.

Corporation collected \$82,755 as a settlement of its claim for the full remaining ACP amount of \$1,970,394.08. The PUC had no further ability to claim or penalize Agera for the additional \$1,898,778 in ACPs left unpaid by Agera for load it served in Compliance Year 2019 and Compliance Year 2020.

For its failure to comply in Compliance Year 2020, the PUC penalized Liberty \$250,000,⁶⁴ equal to the full amount of financial security Liberty had posted to the Division. The PUC, along with the Division and the Commerce Corporation have worked together to ensure the sanction would not be in contradiction to the ongoing bankruptcy proceeding and, as of the date of this Report, the agencies are working to execute collection of the sanction amount. The PUC and Division's authority to go beyond this sanction for the requirements of Compliance Year 2020 and future Compliance Years is limited in the same manner as discussed above in the Agera case.

National Grid's Mistaken Use of Ineligible RECs

On July 2, 2020, National Grid filed a Petition to Revise its 2017 and 2018 RES Compliance Filings related to its obligation arising from Standard Offer/Last Resort Service energy supply; Standard Offer/Last Resort Service accounted for just over 50% of Rhode Island's obligated load over the two-year period (petition).⁶⁵ 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 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 to offset the cost of the RE Growth Program to its distribution customers.⁶⁶ Specifically, National Grid takes title to the RECs generated by participants' facilities and sells them in the market at prevailing market prices.⁶⁷ 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

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 principals 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 principals. Rather, R.I. Gen. Laws § 39-1-27.1(c) provides for a simple registration requirement.

⁶⁴ See the PUC's Order 24311 in Docket 5233 – Liberty Power Holdings, LLC Renewable Energy Standard Compliance. <http://www.ripuc.ri.gov/eventsactions/docket/5233page.html>.

⁶⁵ 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).

⁶⁶ 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.

⁶⁷ National grid also takes title to and sells any energy and capacity products from large facilities to the extent that such products can be sold, and this also reduces the total net program costs.

Grid maintains a single PUC-approved solar aggregation.⁶⁸ Because of their size, however, larger facilities are individually registered in the NEPOOL-GIS. National Grid stated in its petition that while these larger facilities were correctly registered in the NEPOOL-GIS, they were simultaneously (and erroneously) included in the small solar aggregation generation total, resulting in a double-minting of some RECs—two RECs were created from a single MWH of generation. National Grid stated that the error was not detected earlier because generation from the erroneously included 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 2019.⁶⁹

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. On March 2, 2021, PUC staff completed its review of National Grid’s Compliance Filings and data for Compliance Years 2017, 2018, and 2019. Staff communicated to National Grid that the company would have to file revised Compliance Filings for Compliance Years 2017 and 2018 to reflect the effect of excluding the invalid, double-minted RECs. This resulted in a shortfall of 27,790 New (or Class I) RECs for Compliance Year 2018, which staff indicated would have to be met through an Alternative Compliance Payment of \$1,916,398.40. National Grid revised the relevant filings and paid the ACP on behalf of Standard Offer/Last Resort Service customers. Staff made no findings or recommendations regarding whether National Grid could recover the cost of the ACP from ratepayers. As of the date of this Report, National Grid has not attempted to collect the ACP amount in rates, nor has National Grid expressed an intention to do so.⁷⁰

Legislative Proposals for a 100% RES

Throughout this Report, where possible, the PUC has included expected effects of bills currently before the General Assembly that would increase the RES to 100% by, and in, Compliance Year 2030.⁷¹ The first Compliance Year that would be effected with the new RES requirements is Compliance Year 2022 (the Compliance Year currently occurring as of the date of this Report) in which the RES would increase by 4%, rather than the 1.5% increase in the existing statute. The cumulative RES in Compliance Year 2021 is 17.5% and the subsequent increases are as follows:

- a. an additional 4% in 2022;
- b. an additional 5% in 2023;
- c. an additional 6% in 2024;
- d. an additional 11% in 2025, 2026, and 2027; and
- e. an additional 11.5% in 2028, 2029, and 2030.

The bill also explicitly requires that the 100% RES is maintained in each year after 2030. The actual volume of retail load served by Obligated Entities and requiring RES compliance may change from year to year. The volume of load requiring 100% RES compliance in and after 2030 may increase if, for example, electric heating and/or

⁶⁸ 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.

⁶⁹ National Grid has indicated it put in new controls to avoid this situation in the future. (Docket No. 5041, Petition at 17. [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)). In addition, the PUC has worked with its consultant to refine its level of oversight of National Grid’s compliance filings related to the aggregation.

⁷⁰ National Grid’s Responses to the Commission’s First Set of Data Requests at 13. Docket No. 5190 2022 Renewable Energy Standard Procurement Plan. See, <http://www.ripuc.ri.gov/eventsactions/docket/5190page.html>.

⁷¹ For Senate bill S 2274, see <http://webserver.rilin.state.ri.us/billtext22/senatetext22/S2274.htm> for House bill H 7277, see <http://webserver.rilin.state.ri.us/billtext22/housetext22/H7277.htm>.

electric transportation increase. The PUC expects the changes will have a market impact but cannot predict the full nature and extent of these impacts. Should the RES statute be amended, the PUC expects that, absent the effects of bankruptcies like those described above, full compliance will be met with a high percentage of that compliance coming through the retirement of RECs rather than ACPs. This is because, as discussed in Section VI above, for the future Compliance Years that would be affected, the ACP for New/Class I REC requirements in Rhode Island will be significantly higher than in other New England states, which means the value of retiring a New/Class I REC that is eligible to meet obligations in multiples states will be highest in Rhode Island. In other words, Rhode Island retail electricity customers (excluding Block Island Utility District and Pascoag Utility District) will be willing to pay a higher price for New/Class I RECs than retail electricity customers in the other New England states.

VIII. Conclusion

Based upon the PUC's analysis of regulated utility data; competitive supplier data; and general market trends, the PUC concludes that the supply of, and demand for, Rhode Island-eligible New RECs were adequate to meet obligations in Compliance Year 2020. The evidence for adequate supply is mainly Obligated Entities' low reliance on ACPs for RES compliance as in Compliance Years 2017, 2018, and 2019. Another line of evidence is that Obligated Entities banked a significant number of RECs for future years.

There is some evidence that supply is increasing at the same pace or slightly slower than increases in demand in 2019 and 2020 relative to the market in 2018. The evidence is the known increase in compliance costs to National Grid and other market data that shows New/Class I REC prices increased significantly in the region in 2019 and those prices were sustained in 2020. Thus, while Obligated Entities were able to find adequate, and even surplus, supply, they likely paid significantly more to comply in 2019 and 2020 than in recent previous years. That Obligated Entities were willing to pay the increased prices for 2020 New RECs in order to bank them for use in 2021 or 2022 may indicate that market participants expect REC prices will continue to stay high relative to 2018.

The PUC expects that, even if demand for New/Class I RECs exceeds any increase to the regional supply, it is likely to remain that compliance with Rhode Island's RES will be through a high percentage of RECs rather than through ACPs. This is because beginning in Compliance Year 2021, Rhode Island is projected to have the highest ACP rate for general New/Class I RECs (excluding carveouts) in the region. Therefore, Rhode Island's RES represents the highest value for New/Class I RECs beginning in 2021, and through the foreseeable future.

The increase of New Renewable Energy Resources tends to stabilize compliance costs. This trend likely continues today, but it is difficult to judge the effect of increased supply on the market because New/Class I RECs appear to be trending close to Connecticut's ACP rate, which could potentially stabilize REC prices over a wide range of equilibrium quantities. Price volatility, however, may be created by news of the expected timing of commercial operation of particularly large projects, such as offshore wind farms. This is because these projects represent enough new supply to serve a significant portion of, and in some cases more than all of, the region's annual increase in demand for New/Class I RECs.

Since the last RES Report, the PUC has approved or conditionally approved sixty-three renewable energy facilities for RES certification with the RES eligibility designation of "New," which will increase the quantity of RECs in the market certified to contribute to Rhode Island RES compliance. These generators combined for approximately 410.4 MW AC of additional certified New nameplate capacity that are eligible to contribute to meeting the RES targets in future Compliance Years.⁷²

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 ability to finance renewable energy projects is 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. Additionally, the ability to site and operate already planned large facilities, such as offshore wind farms, in New England and New York will have positive impact on the supply of RECs for meeting renewable portfolio standards in the region.

⁷² The PUC publishes a monthly public report indicating the status of RES applications. The report can be accessed here: <https://rhodeislandres.com/wp-content/uploads/2022/02/RES-Application-Status-Tracking-2.1.2022.pdf>.

The PUC regards Compliance Year 2020 a relative success because the supply of available resources in the regional marketplace, particularly increased wind and solar PV resources, was able to meet REC demand for Compliance Year 2020 and allow a significant share of Obligated Entities the opportunity to bank RECs for future Compliance Years. Although two competitive suppliers (Agera and Liberty) failed to meet their RES obligations, these actions are likely related to other energy and energy-related market conditions, and not specifically to the unavailability of Rhode Island-eligible RECs. Furthermore, although National Grid's Petition to revise its Compliance Years 2017 and 2018 compliance filings 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 a decision to move Rhode Island to a 100% RES will have a significant impact on both Rhode Island and the region's demand for New/Class I RECs. The PUC cannot project the full scope and nature of that impact, although it is highly likely to increase compliance costs locally. 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 2020, the ACP rate was \$71.58 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
2019	\$70.45
2020	\$71.58

Connecticut, Maine, Massachusetts, and New Hampshire all have similar ACP mechanisms. The Table below shows the 2020 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 2020

2020 ACP Rates	CT	NH	MA	ME	VT
Class I	\$50	\$57.61	\$71.57	\$50	\$10.00
Class II	\$25	\$57.61	\$29.37	N/A	\$60.00
Class III	\$55	\$34.54	N/A	N/A	N/A
Class IV	N/A	\$29.06	N/A	N/A	N/A

Appendix 2: Rhode Island RES 2019 Compliance Summary

Table A2: 2019 Compliance Summary by Obligated Entity ⁷³

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 2018 or 2019	Total "New" RECs	"Existing" RECs	"New" (MWh)	"Existing" (MWh)	RECs Eligible for 2021 or 2022
Distribution Companies										
The Narragansett Electric Company	4,245,056	594,308	84,902	664,261	107,544	771,805	84,955	0	0	177,497
Competitive Suppliers										
Agera Energy, LLC										
Ambit Northeast, LLC										
Archer Energy, LLC										
Calpine Energy Solutions, LLC										
Champion Energy Services, LLC										
Clearview Electric, Inc.										
Constellation NewEnergy, Inc.										
Devonshire Energy, LLC										
Direct Energy Business, LLC										
Direct Energy Services, LLC										
Discount Power, Inc.										
EDF Energy Services, LLC										
ENGIE Resources, LLC										
ENGIE Reatil, LLC d/b/a Think Energy										
First Point Power, LLC										
Liberty Power, Holdings, LLC										
Moore Energy, LLC										
MP2 Energy NE LLC										
NextEra Energy Services Rhode Island, LLC										
North American Power and Gas, LLC										
Public Power, LLC										
SmartEnergy Holdings, LLC										
Sunwave USA Holdings Inc										
Town Square Energy, LLC										
Viridian Energy, LLC										
XOOM Energy Rhode Island, LLC										
Competitive Supplier Subtotal	3,283,052	459,641	65,677	455,338	59,114	514,452	79,450	627	63	64,318
Totals	7,528,108	1,053,949	150,579	1,119,599	166,658	1,286,257	164,405	627	63	241,815

⁷³ 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.

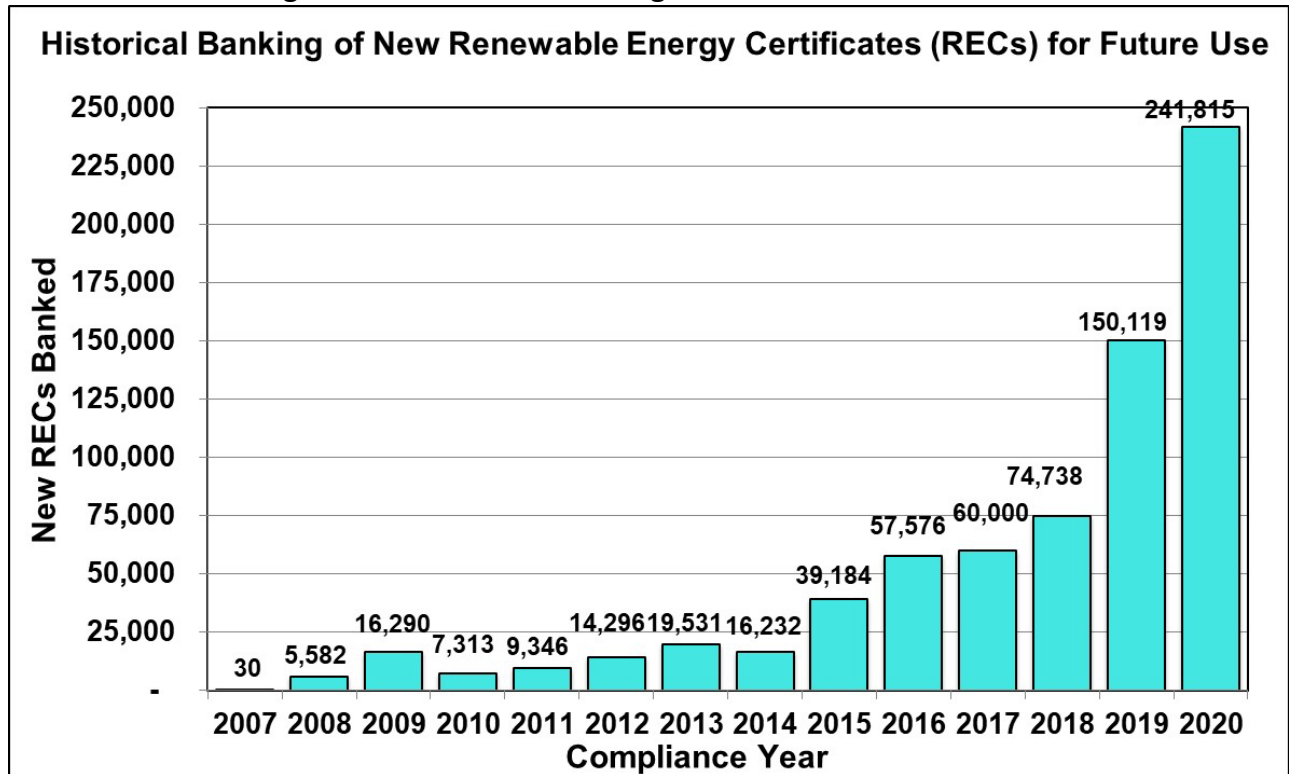
Appendix 3: Historical Use of ACPs and Banking

The charts below provide additional detail on the breakdown of New and Existing RECs purchased by Rhode Island’s Obligated Entities for the period 2007-2020.

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	1,929,363
2019	1	\$70	1	\$70	2	141
2020	627	\$44,881	63	\$4,510	690	49,390

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.⁷⁴ National Grid’s “GreenUp” program is just one example.

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	2019	2020
Total	5,350	7,480	6,642	3,750	689	111	513	502	964	1,692	4,643	4,402	4,505
<i>National Grid</i>	5,161	6,833	4,366	1,474	689	111	513	502	964	1,692	4,643	4,402	4,505
<i>All Competitive Suppliers</i>	189	647	2,276	2,276	0	0	0	0	0	0	0	0	0
Voluntary Existing RECs	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	7,624	2,603	0	0	538	2,181	119	718	759	1,007	4	0	0
<i>National Grid</i>	7,624	2,603	0	0	338	1,181	119	718	759	1,007	0	0	53
<i>All Competitive Suppliers</i>	0	0	0	0	200	1,000	0	0	0	0	4	0	13,579

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 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.

⁷⁴ By comparison, the RES is referred to as the “mandatory” or “compliance” renewable energy market.

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.