



**STATE OF RHODE ISLAND**

**Rhode Island  
Renewable Energy Standard**

**Annual RES Compliance Report  
for Compliance Year 2019**

**February 2021**

**Rhode Island Public Utilities Commission**

89 Jefferson Boulevard

Warwick, Rhode Island 02888

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# Rhode Island Renewable Energy Standard

## Annual Compliance Report for Compliance Year 2019

### Executive Summary

#### **Introduction**

Compliance Year 2019, from January 1, 2019 through December 31, 2019, was the thirteenth Compliance Year of the Rhode Island Renewable Energy Standard (RES).<sup>E1</sup> 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.<sup>E2</sup> In 2019, each Obligated Entity was required to obtain at least 14.5% of electrical energy (including line losses) sold to Rhode Island end-use customers from Eligible Renewable Energy Resources, with no less than 12.5% 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.

#### **2019 RES Obligation and Compliance**

The State’s 2019 RES-obligated retail sales totaled 7,601,633 megawatt-hours (MWh) of electrical energy, which was served by twenty-six Obligated

Entities<sup>E3</sup> including the Narragansett Electric Company. As shown in Table E.1 below, the total minimum obligation to be satisfied by New Renewable Energy Resources was 950,217 MWh (12.5% of each Obligated Entity’s retail sales).<sup>E4</sup> The obligation to be satisfied by either Existing (or Class II) or New Renewable Energy Resources was 152,049 MWh (2.0% of each Obligated Entity’s retail sales). Almost all (97.6%) 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.<sup>E5</sup>

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, 1997.<sup>E6</sup> “Existing” is defined as renewable units in service before December 31, 1997.<sup>E7</sup>

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<sup>E1</sup> 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 2019 runs from July 2019 through June 2020.

<sup>E2</sup> 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.

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<sup>E3</sup> 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.

<sup>E4</sup> An individual Obligated Entity’s New and Existing obligation is rounded up to the nearest whole MWh.

<sup>E5</sup> 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.

<sup>E6</sup> 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

The total number of New RECs held by Obligated Entities in Compliance Year 2019 was 1,093,979, which includes 86,083 RECs banked from Compliance Years 2017 and 2018. This is a 15.1% surplus of New RECs across all Obligated Entities. With this surplus in Compliance Year 2019, sixteen Obligated Entities combined to bank 150,119 RECs for use in Compliance Years 2020 or 2021. This total does not include 16,545 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. One Obligated Entity chose to comply, partially, by making ACPs totaling \$141 in lieu of retiring two RECs.<sup>E8</sup> This continues a recent trend of relatively low total ACP

costs paid by Obligated Entities. One Obligated Entity did not file compliance information and failed to comply with its RES obligation by either retiring 26,817 RECs or making approximately \$1,889,258 in ACP payments.<sup>E9</sup>

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 2019. The market price for New RECs, however, increased in 2019 and continue to remain relatively high compared to prices in 2017 and 2018, 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. As of the report date, National Grid has filed a petition to revise certain compliance filings for Standard Offer Service customers because some of the RECs National Grid retired were invalidly minted. More information is provided below in Section VII.

**Table E.1: Composition of 2019 RES Compliance**

|   | <b>New RES Obligation</b>         | <b>Existing RES Obligation</b> |
|---|-----------------------------------|--------------------------------|
| 2019 Minimum Obligations (MWh) <sup>a</sup>   | 950,217 MWh                       | 152,049 MWh                    |
| GIS Certificates Retired for 2019 RI RES Compliance (MWh, %)  | 927,098 MWh, (97.6%) <sup>b</sup> | 148,349 MWh, (97.6%)           |
| RI RES Compliance by Alternative Compliance Payments (MWh, \$)  | 1 MWh, \$70.45                    | 1 MWh, \$70.45                 |
| Banked for Future Compliance  | 150,119 Certificates              | Not Applicable                 |
| Over-compliance / RECs Not Banked   | 217 certificates <sup>c</sup>     | 0 Certificates                 |
| Outstanding REC / ACP obligation  | 23,118                            | 3,699                          |
| <sup>a</sup> See note E3.   |                                   |                                |
| <sup>b</sup> This value includes the application of 69,538 RECs banked from Compliance Years 2017 and 2018 plus the application of RECs minted and retired in Compliance Year 2019. |                                   |                                |
| <sup>c</sup> Banking is capped at 30% of an individual Obligated Entity's Compliance Year obligation for New RECs.  |                                   |                                |

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.”

<sup>E7</sup> R.I.G.L. § 39-26-2(9).

<sup>E8</sup> In Compliance Year 2019, Alternative Compliance Payments (ACPs) in lieu of both New and Existing RECs were valued at \$70.45 per MWh.

<sup>E9</sup> See Section VII for more information on non-compliance.

Figure E.1: Historical New RECs by Fuel Source

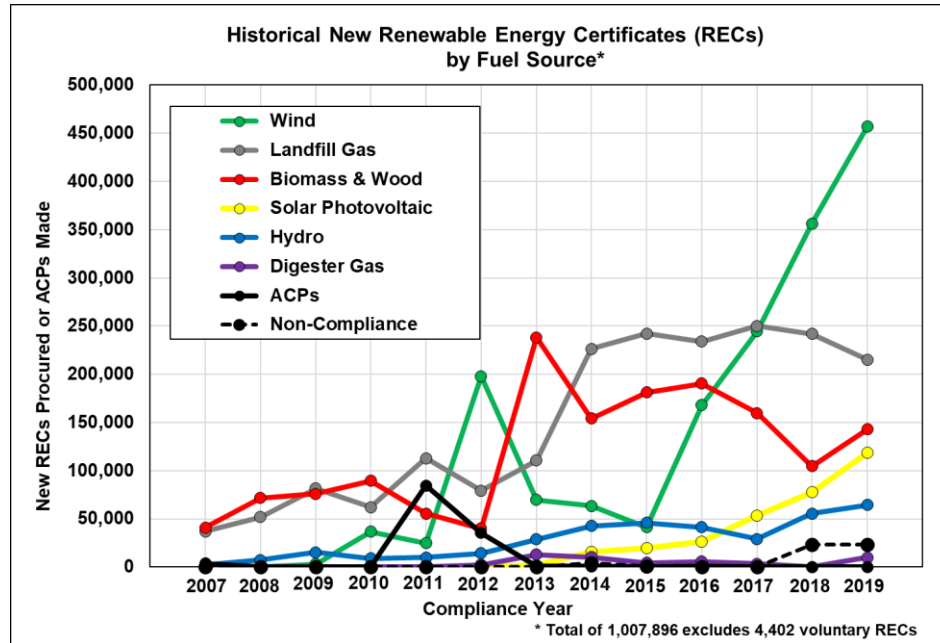
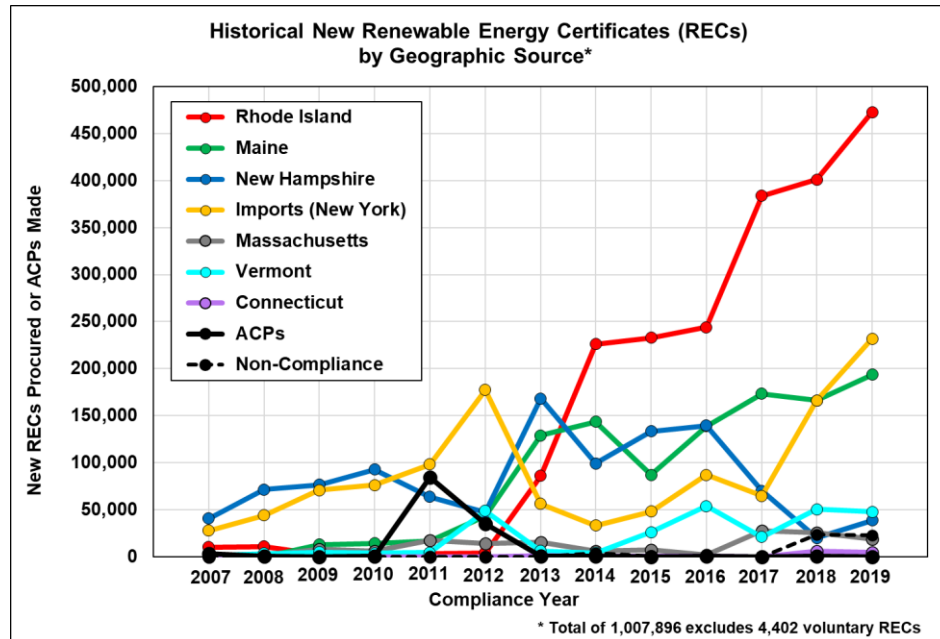


Figure E.2: Historical New RECs by Geographic Source



**2019 RES Resources**

Most New RECs settled in 2019 were generated at wind facilities (45.3%), followed by landfill gas (21.3%), biomass (14.2%), solar photovoltaic (11.8%), hydroelectric (6.4%), and digester gas (1.0%) facilities.<sup>E10</sup> This continues a notable increase in

<sup>E10</sup> Not all the RECs purchased, minted, and settled in Compliance Year 2019 were used to meet Compliance Year 2019 obligations. Some RECs were banked for use in Compliance Years 2020 and 2021. Also, this summary excludes voluntary REC purchases above the RES. Voluntary

reliance on wind resources and solar resources (Figure E.1).<sup>E11</sup>

In terms of location, most New RECs settled in 2019 were sourced from Rhode Island (46.9%), with an

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

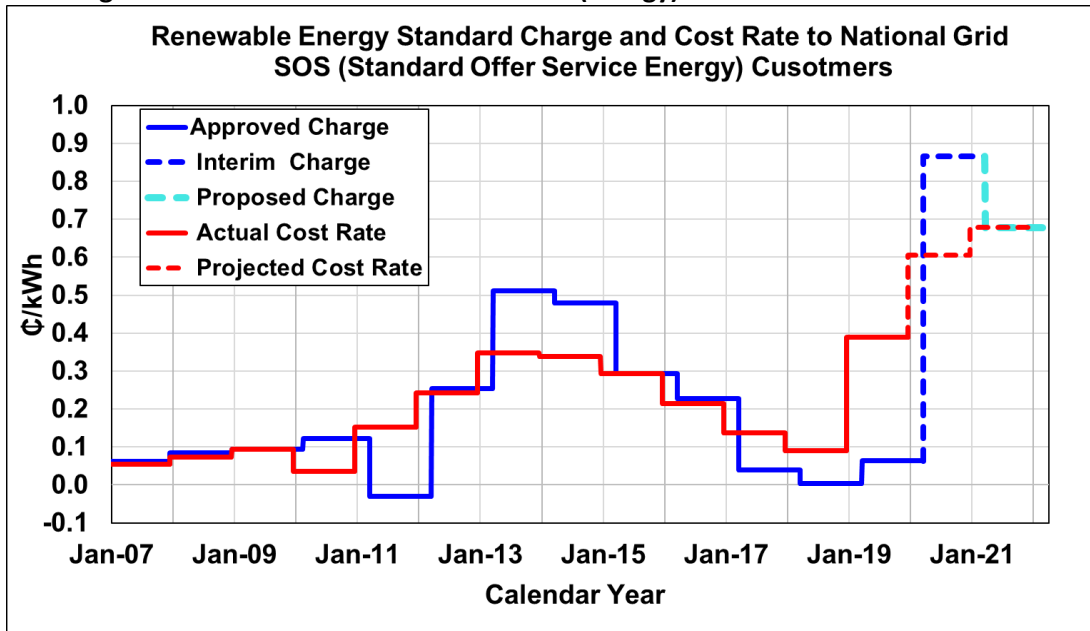
<sup>E11</sup> Additional information on the composition of 2019 RES compliance by fuel type and geographic location is provided in Section III of this Report.

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

| Effective Date             | Initially-Projected REC Procurement Cost (per kWh) <sup>a</sup> | 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 | \$0.00678   | (\$0.00013)  | \$0.00665 <sup>b</sup>          | \$3.33   \$39.90                             |
| April 2020 – March 2021    | \$0.00606   | \$0.00260  | \$0.00866 <sup>c</sup>          | \$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                              |

<sup>a</sup> 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.  
<sup>b</sup> As of the report date this rate is proposed and under review by the PUC.  
<sup>c</sup> As of the report date the PUC had approved the proposed rate on an interim basis.

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



increase in Rhode Island RECs compared to 2018 (Figure E.2). The remaining RECs came from New York (23.0%), Maine (19.2%), Vermont (4.7%), New Hampshire (3.8%), Massachusetts (1.9%), and Connecticut (0.4%). All Existing RECs were generated at hydroelectric facilities in Maine (64.3%), New Hampshire (31.7%), and Massachusetts (4.0%).

Finally, twenty-six projects were approved as Renewable Energy Resources by the PUC since the previous Report. This represents 78.4 MW of incremental New or Existing RES-eligible capacity.<sup>E12</sup>

<sup>E12</sup> Visit <http://www.ripuc.ri.gov/utilityinfo/res.html> for a monthly status report on RES eligibility applications.

**2019 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.<sup>E13</sup> Early in a calendar year, National Grid proposes a RES charge designed to collect the costs of compliance during the upcoming compliance year, outstanding costs for the remainder of the current compliance year, and to true up any outstanding cumulative under- or over-collection made during previous compliance years.<sup>E14</sup>

<sup>E13</sup> See Section V for the history of RES charges to National Grid’s Standard Offer Service customers.

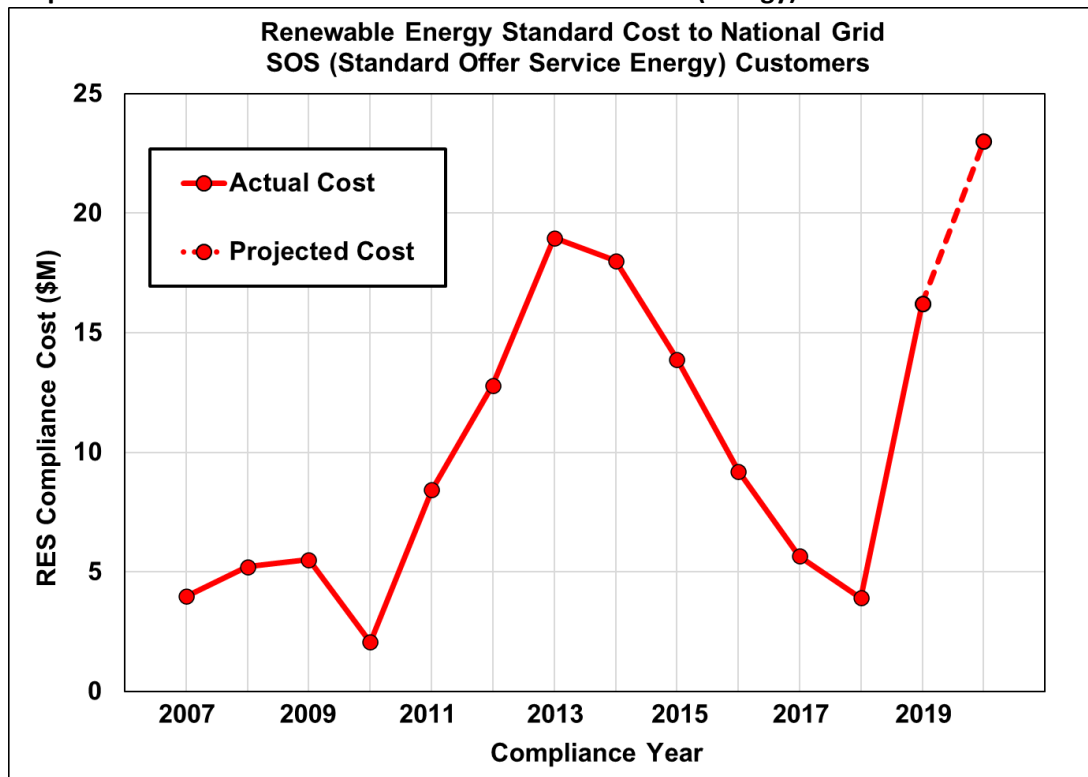
<sup>E14</sup> National Grid typically files for a rate change to the RES Charge with effect on April 1<sup>st</sup>. Thus, changes in the RES charge occur three months into the Compliance Year, and three months before the REC-trading year turns over.

**Table E.3: Summary of National Grid's RES Compliance Costs<sup>a</sup>**

| Compliance Year | Total RES Costs (Millions) | New REC Costs (Millions) | Existing REC Costs (Millions) | ACP Costs (Millions) | Obligated Load (MWh) |
|-----------------|----------------------------|--------------------------|-------------------------------|----------------------|----------------------|
| 2019            | \$16.22                    | \$16.12                  | \$0.10                        | \$0                  | 4,170,969            |
| 2018            | \$3.91                     | \$3.76                   | \$0.15                        | \$0                  | 4,370,298            |
| 2017            | \$5.65                     | \$5.53                   | \$0.12                        | \$0                  | 4,097,802            |
| 2016            | \$9.20                     | \$9.10                   | \$0.10                        | \$0                  | 4,282,268            |
| 2015            | \$13.88                    | \$13.80                  | \$0.08                        | \$0                  | 4,773,192            |

<sup>a</sup> See note E16.

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



**2019 Compliance Costs**

National Grid is also the only Obligated Entity for which the PUC collects cost-of-compliance data.<sup>E15</sup> To meet its 2019 New and Existing RES obligations, National Grid incurred \$16.22 million in compliance costs (Table E.3; Figure E.4).<sup>E16</sup> This is an increase of approximately 315% from the cost incurred to comply

with 2018 RES targets. Approximately \$16.11 million was charged to Standard Offer Service energy supply customers for purchases of RECs generated by projects in National Grid’s Long-term Contracting and Renewable Energy Growth programs in 2019,<sup>E17</sup> although some of those RECs were banked for use in Compliance Years 2020 and 2021 and are not included in the \$16.22 million cost reported here.

<sup>E15</sup> The complete history of RES cost to National Grid’s Standard Offer Service customers is provided below in Section V, Table 5.

<sup>E16</sup> The \$16.22 million sum of New REC and Existing REC costs are based on communications with National Grid and may include the costs of RECs purchased and banked in previous Compliance Years that were used for Compliance Year 2019, among other minor factors.

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

<sup>E17</sup> R.I. Gen. Laws § 39-26.1, § 39-26.2, and § 39-26.6.

was approximately \$0.00389 per kWh in Compliance Year 2019. This is the largest single-year increase in the history of the RES and is driven by increasing costs of New RECs (Figure E.3). Information filed by National Grid with the PUC indicates compliance costs will remain high for Compliance Years 2020 and 2021.

The increase in compliance cost to National Grid likely reflects a tightening supply in Rhode Island-eligible New RECs relative to demand for 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 2019, but rather reveals that more complicated conditions exist in the regional REC market today than in recent years.<sup>E18</sup>

It must be noted that this data only represents expenses incurred by Standard Offer Service customers of National Grid, accounting for approximately 54.9% of all retail energy served statewide in 2019. The remaining 45.1% of statewide electric load is serviced by competitive energy suppliers for whom the PUC does not have access to compliance cost data. Increasing REC costs are likely also increasing compliance costs to other Obligated Entities. It also should be noted that National Grid bears no market risk because the utility passes all savings and expenses resulting from changes in the REC market onto Standard Offer Service customers and distribution customers. In contrast, other Obligated Entities (non-regulated competitive energy suppliers) may assume the REC market risk rather than pass it onto their customers dollar-for-dollar. Finally, in addition to the costs enumerated above, the Commission incurred approximately \$132,000 in expenses related solely to the administration of the RES for Compliance Year 2019.

### **2019 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 tightening.

In 2019, the cost of the RES certainly increased significantly for National Grid Standard Offer Service customers and may have increased for customers of competitive energy suppliers. There is evidence that compliance costs are likely to remain high in the upcoming Compliance Years.

The number of Rhode Island-eligible generating units continues to grow, including facilities located within the State, as does the number of new renewable energy projects throughout the region and adjacent control areas. It appears that the supply of Rhode Island-eligible New RECs will continue to grow, and that Obligated Entities will be able to source RECs in a balanced marketplace over the next few years, with sustained and minor reliance on ACPs. However, it is important to note that economic conditions, various permitting and interconnection issues, uncertainty over the long-term availability of federal incentives, availability of long-term contracting for renewable projects, and other factors that impact investment decisions all have the potential to delay or decrease the number of resources that enter the marketplace. 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, therefore, 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.

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<sup>E18</sup> Future resolution of the issues raised in National Grid's Petition to Amend its 2017 and 2018 Annual Compliance will not change this general conclusion.

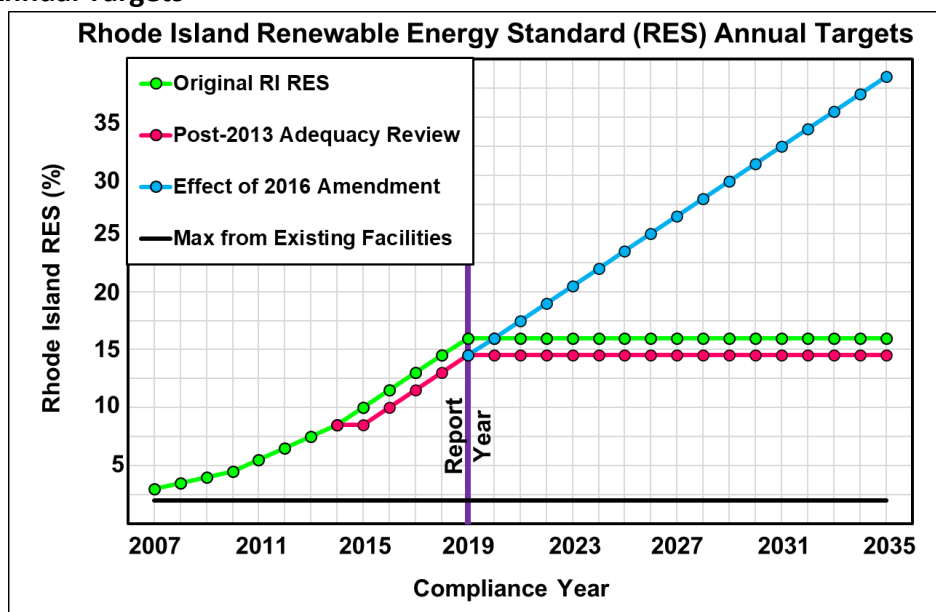


# Rhode Island Renewable Energy Standard Annual Compliance Report for Compliance Year 2019

## 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.<sup>2</sup> Subsequently, in 2013, the PUC conducted a statutory review of the adequacy of renewable energy supplies and, because of that investigation, ordered a delay in the 1.5% increase in Compliance Year 2015. This decision resulted in a revised final target of 14.5% renewable energy in 2019.<sup>3</sup> In 2016, the RES statute was amended to require annual increases of 1.5%, to continue from 2020 through 2035,

<sup>2</sup> 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>.

<sup>3</sup> 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.

resulting in a final target of 38.5% renewable energy.<sup>4</sup> 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.<sup>5</sup>

Compliance Year 2019 was the thirteenth compliance year for Rhode Island's RES.<sup>6</sup> The RES required all Obligated Entities to obtain at least 14.5% of electricity sold in 2019 to Rhode Island end-use customers (inclusive of certain losses) from Eligible Renewable Energy Resources. No more than 2.0% of the total 14.5% could have been sourced from Existing Renewable Energy Resources,<sup>7</sup> thus a minimum of 12.5% must have been obtained from New Renewable Energy Resources<sup>8</sup> (Table A5 in Appendix 5). 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."

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 [www.ripuc.ri.gov/utilityinfo/res.html](http://www.ripuc.ri.gov/utilityinfo/res.html)

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<sup>4</sup> R.I. Gen. Laws §§ 39-26-1 to 10, as amended, do not explicitly maintain an RES proportion in 2036 and thereafter.

<sup>5</sup> 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)

<sup>6</sup> January 1, 2019 through December 31, 2019.

<sup>7</sup> 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).

<sup>8</sup> 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.

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).<sup>9</sup> 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.

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<sup>9</sup> 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 2019 Obligation and Sources of Compliance

Rhode Island’s RES-obligated retail sales in 2019 totaled 7,601,633 MWh of electrical energy. As a result, the total obligation for 2019 was 1,102,266 MWh (i.e., 14.5%). Of the 14.5% obligation, the aggregate minimum amount of RECs that needed to be sourced from “New Renewable Energy Resources” was 950,217 MWh (i.e., 12.5%), 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%).<sup>10</sup> Obligated Entities were required to meet the RES either through the purchase and retirement of NEPOOL GIS RECs<sup>11</sup> 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 2019, the ACP rate was \$70.45 per MWh of obligation.<sup>12</sup> 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 2019 RES Compliance Filings to the PUC**

| <b>Distribution Utilities</b>  |   |
|--|---|
| The Narragansett Electric Company d/b/a National Grid                      |   |
| <b>Competitive Retail Energy Suppliers (Non-regulated power producers)</b> |   |
| 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 Marketing, LLC   | NextEra Energy Services Rhode Island, LLC |
| Clearview Energy   | North American Power and Gas, LLC         |
| Constellation New Energy, Inc.   | Public Power, LLC                         |
| Devonshire Energy, LLC   | SmartEnergy Holdings, LLC                 |
| Direct Energy Business, LLC  | South Jersey Energy Company               |
| Direct Energy Services, LLC  | Town Square Energy, LLC                   |
| Discount Power, Inc.   | Viridian Energy, LLC                      |
| EDF Energy Services, LLC   | XOOM Energy Rhode Island, LLC             |
| ENGIE Resources, LLC   |   |

<sup>10</sup> Note that the total New and Existing RES obligations are slightly different from 12.5% and 2.0% of total obligated retail sales due to rounding protocols for individual Obligated Entities.

<sup>11</sup> RECs are issued about seven months after they are generated. Thus, January 2019 RECs are issued June 15, 2019. Because of this lag, trading for 2019-vintage RECs and the costs incurred by Obligated Entities for Compliance Year 2019 continued through June 15, 2020.

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

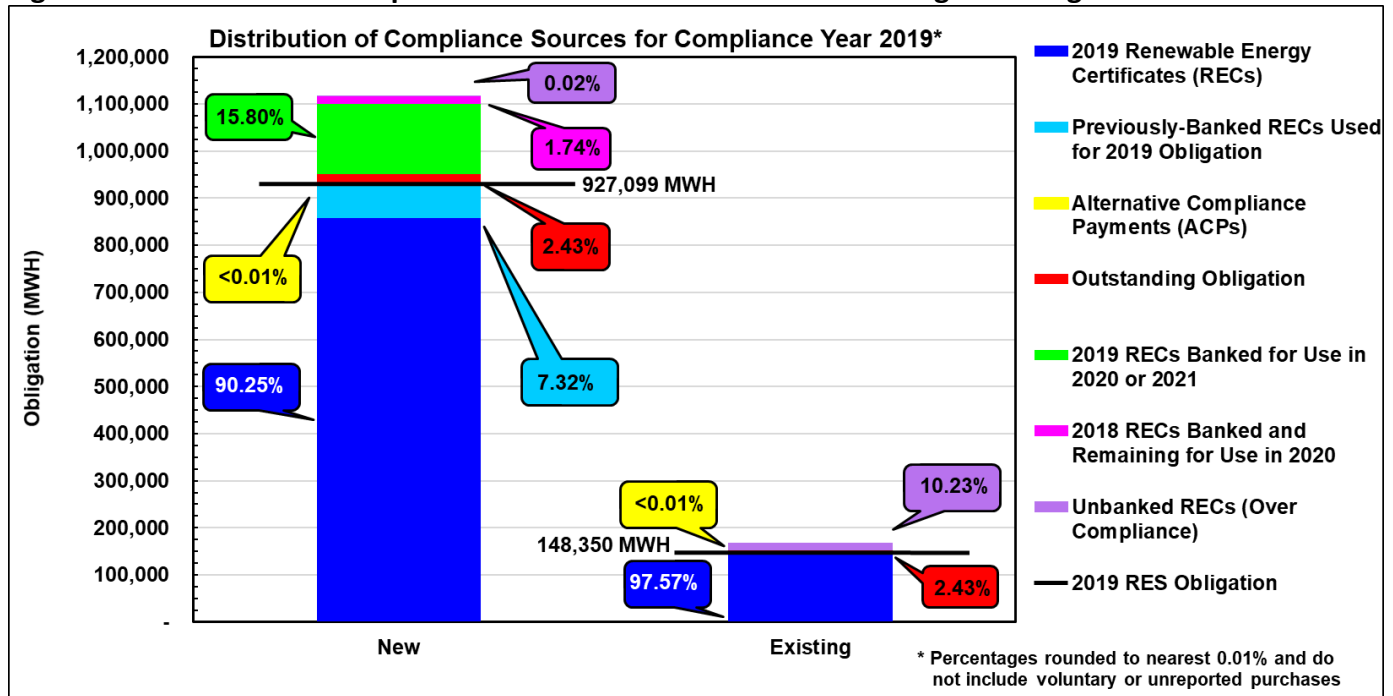
**Table 2: Summary of 2019 RES Compliance**

| <b>Results for Compliance Year 2019</b>   |  | <b>(MWh)<sup>a</sup></b> |
|---|--|--------------------------|
| <b>A</b>  | <b>2019 RES Obligated Retail Sales</b>   | <b>7,601,633</b>         |
| A.1   | National Grid  | 4,170,969                |
| A.2   | Competitive Suppliers (25 total)   | 3,430,664                |
| <b>New RES Obligations and New Renewable Energy Certificates</b>  |  |                          |
| <b>B</b>  | <b>Total New RECs Held for Compliance in Rhode Island<sup>b</sup></b>              | <b>1,093,979</b>         |
| B.1   | 2019 New RECs Purchased  | 1,007,896                |
| B.2   | Banked 2017 and 2018 New RECs Held   | 86,083                   |
| <b>C</b>  | <b>New RES Obligations (12.5% of "A")</b>  | <b>950,217</b>           |
| C.1   | Banked RECs Applied to 2019 New Obligations (subset of B.2)                        | 69,538                   |
| C.2   | 2019 New RECs Applied to 2019 New Obligations (subset of B.1)                      | 857,560                  |
| C.3   | Alternative Compliance Payment Credits Applied to 2018 New RES Obligations         | 1                        |
| C.4   | Outstanding Obligation (RECs or ACPs)  | 23,118                   |
| <b>D</b>  | <b>Banked RECs Available for Compliance Year 2020 or 2021</b>                      |                          |
| D.1   | Remaining 2019 New RECs Available after Meeting New RES Obligations (B1 – C.2)     | 150,336                  |
| D.2   | 2019 New RECs Applied to 2019 Existing RES Obligations                             | 0                        |
| D.3   | 2019 New RECs Purchased above 30% Banking Cap (not eligible for banking)           | 217                      |
| D.4   | 2019 RECs Banked for Future Use in Compliance Years 2020 or 2021 (D.1 – D.2 – D3)  | 150,119                  |
| <b>Existing RES Obligations and Existing Renewable Energy Certificates</b>  |  |                          |
| <b>E</b>  | <b>Existing or New RES Obligations (2.0% of "A")</b>                               | <b>152,049</b>           |
| E.1   | 2019 Existing RECs Applied to 2019 Existing RES Obligations                        | 148,349                  |
| E.2   | 2019 New RECs Applied to 2019 Existing RES Obligations (from D.2)                  | 0                        |
| E.3   | Alternative Compliance Payment Credits Applied to 2018 Existing RES Obligations    | 1                        |
| E.4   | Outstanding Obligation (RECs or ACPs)  | 3,699                    |
| <b>F</b>  | <b>Total 2019 Existing RECs Settled in Rhode Island</b>                            | <b>163,901</b>           |
| F.1   | 2019 Existing and New RECs Applied to 2019 Existing RES Obligations (E.1 plus E.2) | 148,349                  |
| F.2   | 2019 Existing RECs Purchased above 2019 RES Obligations (not eligible for banking) | 15,552                   |
| <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 16,545 previously-banked RECs that were not used for compliance in 2019 and may still be used for compliance in 2020, but after which they will expire.</p> |  |                          |

In total, twenty-six entities were obligated to submit RES compliance filings to the PUC, including National Grid and twenty-five 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.

Twenty-three of these entities met their entire RES obligation by retiring RECs.<sup>13</sup> One competitive supplier met a portion of its 2019 RES obligation by making ACPs to the Rhode Island Commerce Corporation, and one competitive supplier did not submit a RES compliance filing and failed to comply with all of its RES obligation. Sixteen Obligated Entities utilized some of their Banked Compliance to meet their 2019 obligation. Sixteen Obligated Entities banked RECs minted in 2019 for use in 2020 or 2021. The number of Obligated Entities choosing to bank RECs decreased slightly from Compliance Year 2018 when seventeen entities banked New RECs. A breakdown of compliance by the numbers is presented in Table 2.

**Figure 2: Distribution of Compliance Sources for 2019 New and Existing RES Obligations**



For Compliance Year 2019, New RECs were used to meet 97.6% 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 1,093,179, including 86,083 New RECs banked from Compliance Year 2017 or 2018. Of that total, 1,007,896 New RECs that were minted in 2019 were retired for compliance in Rhode Island, 150,119 of which were banked for use toward compliance in either Compliance Year 2019 or 2020. Notably, one Obligated Entity purchased 217 more New RECs than the maximum allowable amount it could bank for future years.<sup>14</sup> The total New RECs retired represents a 6.1% surplus compared to the 2019 New RES obligation for all Obligated Entities, down from the 6.4% and 9.6% surpluses for Compliance Years 2018 and 2017, respectively. The total New RECs available to meet the 2019 RES obligation including banked RECs, however, represents a 15.1% surplus. This continued surplus in New RECs to meet increasing demand reflects a sustained increase in regional renewable energy supply through the construction of additional capacity and the retrofitting of existing resources throughout

<sup>13</sup> These twenty-three includes one entity that submitted a compliance filing, as required, but served no load in 2019 and therefore had no obligation.

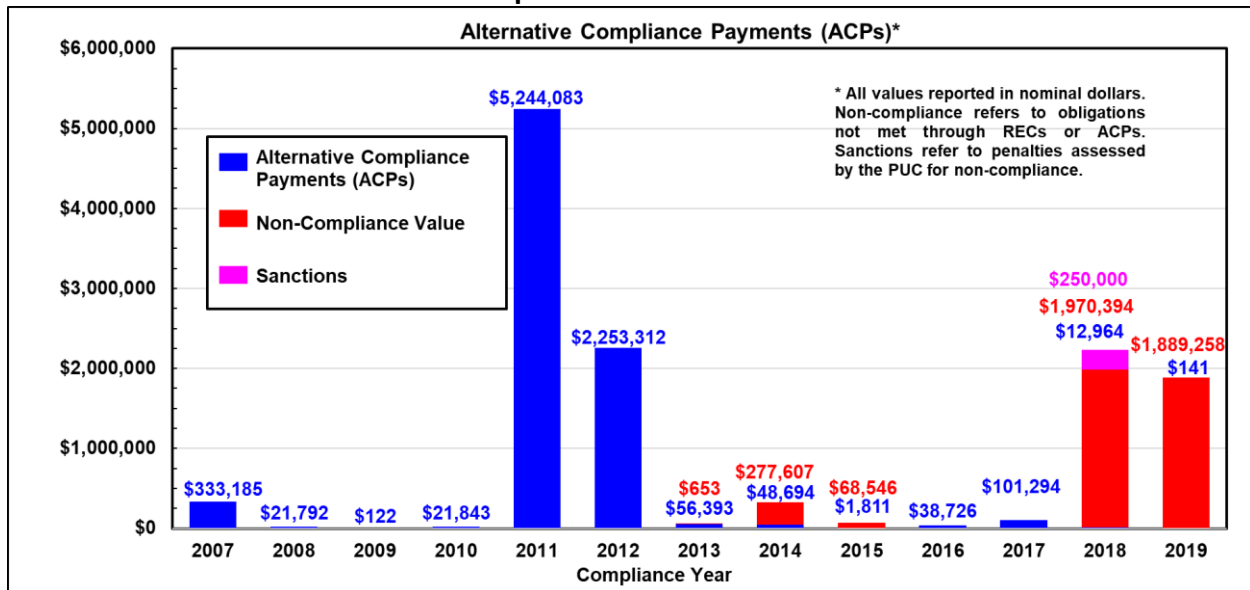
<sup>14</sup> Banking is capped at 30% of an Obligated Entity’s Compliance Year obligation for New RECs.

the NEPOOL region, as well as a significant increase in the quantity of RES-eligible imports during this period.

Approximately 97.57% of the State’s 2019 Existing or New RES obligation was met through retiring RECs (Figure 2), with one Obligated Entity failing to comply with all its Existing or New RES obligation.<sup>15</sup> A total of twelve suppliers retired cumulatively 15,552 more Existing RECs than was necessary to meet their combined obligations.<sup>16</sup> 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 one Obligated Entity chose to comply, partially, by making ACPs totaling approximately \$141 in lieu of retiring 2 RECs.<sup>17</sup> This continues a recent trend of relatively low total ACP costs paid by Obligated Entities (Figure 3). Notably, there was also one Obligated Entity that failed to submit a compliance filing with the PUC, failed to comply with all its RES obligation, and left a balance valued at approximately \$1,889,258 in unpaid ACPs. More information on this event is provided in Section VII.

**Figure 3: Total Annual ACPs and Non-Compliance Value**



<sup>15</sup> Section VII contains more information on this instance of non-compliance.

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

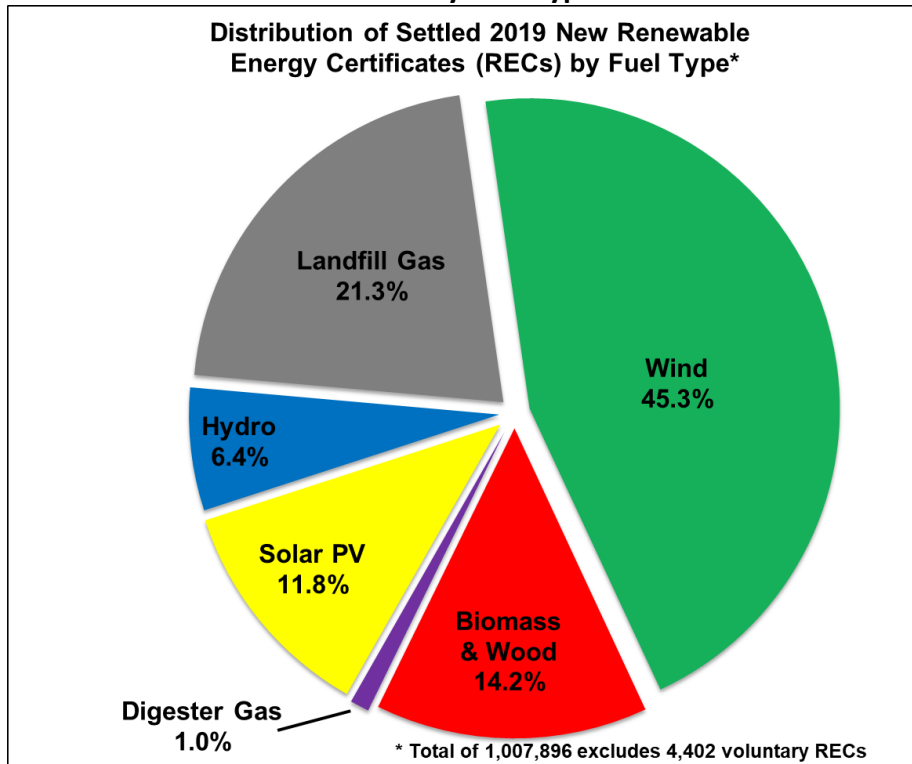
<sup>17</sup> In Compliance Year 2019, ACPs in lieu of both New and Existing RECs are valued at \$70.45 per MWh.



### III. Compliance by Fuel Type and Geographic Location

The information in this section of the Report is based on the compliance filings filed with the PUC. On July 2, 2020, National Grid filed a petition to revise its 2018 and 2017 compliance filing for Standard Offer Service customers.<sup>18</sup> The PUC dismissed National Grid’s petition without prejudice in order to conduct a factfinding investigation to determine the requirements of National Grid as an Obligated Entity. The results of this investigation may alter the information provided in this report pertaining to Compliance Years 2017 through 2019. More information is provided below in Section VII.

**Figure 4: Distribution of Settled 2019 New RECs by Fuel Type**



New RECs minted, purchased, and settled in Compliance Year 2019 were generated by six types of renewable energy generators: wind, landfill gas, biomass and wood, solar photovoltaic, hydroelectric, and digester gas (Figure 4).<sup>19</sup> For the third year in a row most of the New RECs were generated by wind-powered facilities (45.3%). The remaining New RECs were generated by landfill gas (21.3%), biomass and wood (14.2%), solar photovoltaic (11.8%), hydroelectric (6.4%), and digester gas (1.0%). In terms of resource location, most of the New RECs settled in 2019 were sourced from Rhode Island (46.9%) with the rest coming from New York (23.0%), Maine (19.2%), Vermont (4.7%), New Hampshire (3.8%), Massachusetts (1.9%), and Connecticut (0.4%) (Figure 5).

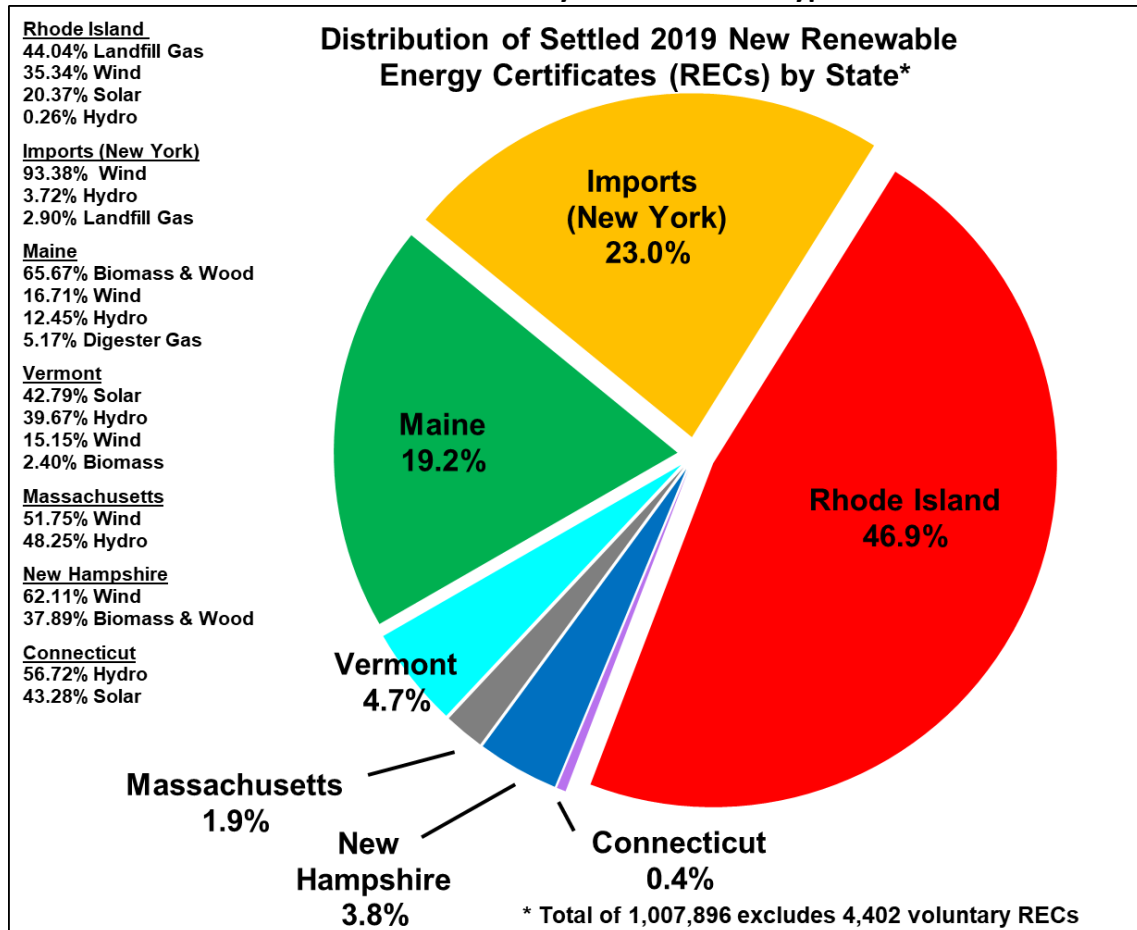
<sup>18</sup> National Grid “Petition to Revise 2017 and 2018 Renewable Energy Standard Compliance Filings,” June 2, 2020 filed in PUC Docket No. 5041. [http://www.ripuc.ri.gov/eventsactions/docket/5041-NGrid-RES-Petition\(7-2-20\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5041-NGrid-RES-Petition(7-2-20).pdf).

<sup>19</sup> Not all of the New RECs purchased and settled in Compliance Year 2019 were used to meet Compliance Year 2019 obligations. Some RECs were banked for use in Compliance Years 2020 and 2021, while others were purchased in excess of the obligation. This summary of New resources excludes RECs retired for the purpose of substantiating renewable energy claims associated with voluntary purchases to serve clean energy choices of end-use customers above and beyond the RES. Voluntary clean energy programs are summarized in Appendix 6 of this Report.



In Compliance Year 2019 the resource type with the largest gain in New RECs was wind, adding an additional 100,720 New RECs over the number retired in Compliance Year 2018 (Figure 6). To put this amount in perspective, it represents 127% of the incremental New RECs needed by Obligated Entities in Compliance Year 2019 compared to Compliance Year 2018. The next largest increase was from solar photovoltaic (solar PV) resources, up 38,173 RECs from Compliance Year 2018. This increase keeps the use of solar PV RECs on par with biomass RECs. Meanwhile, New RECs obtained from facilities located in Rhode Island increased sharply from Compliance Year 2018 (Figure 7).

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



The surge of New RECs sourced from wind resources was largely driven by a massive increase in wind RECs imported from New York and a significant increase in wind RECs from Rhode Island compared to Compliance Year 2018. The increase in New solar PV RECs was primarily driven by the output of resources in Rhode Island and Vermont compared to Compliance Year 2018. The proliferation of these resources in Rhode Island is being driven by National Grid’s statutory long-term contracting and feed-in tariff programs,<sup>20</sup> 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.

<sup>20</sup> R.I. Gen. Laws § 39-26.1, § 39-26.2, and § 39-26.6.

Figure 6: Historical New RECs by Fuel Source

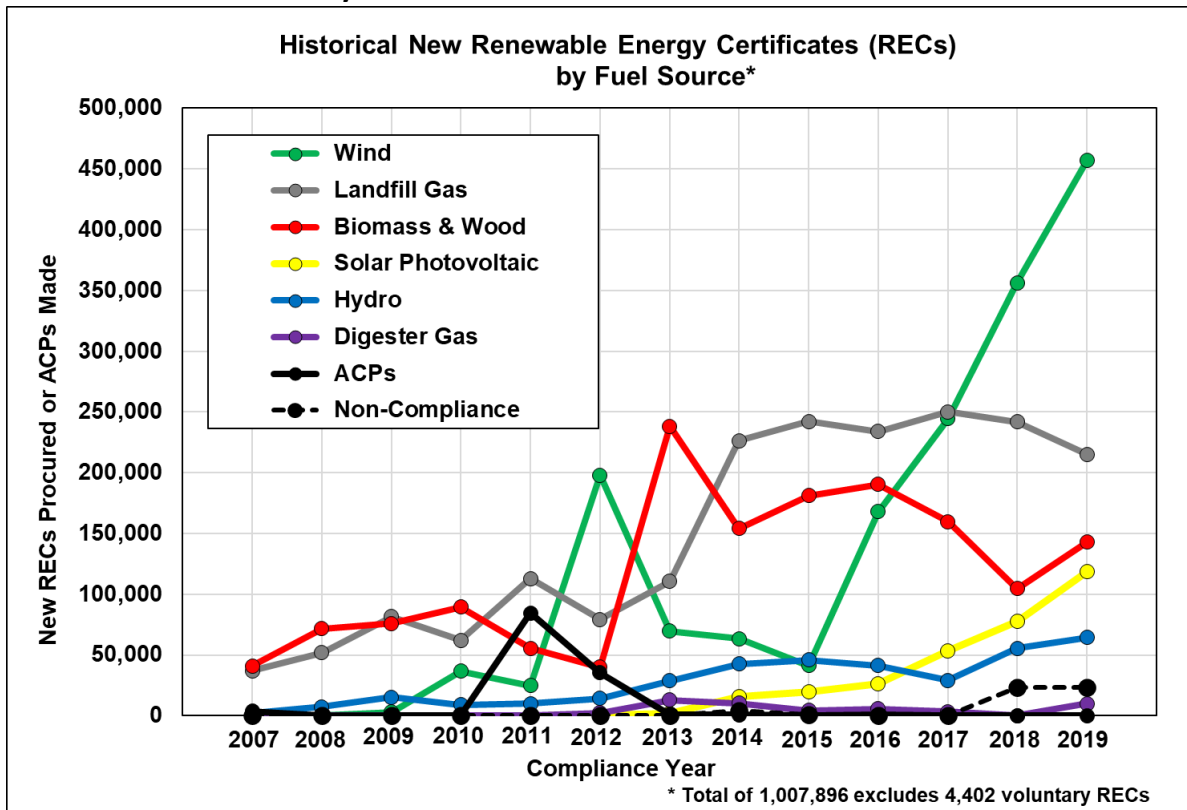
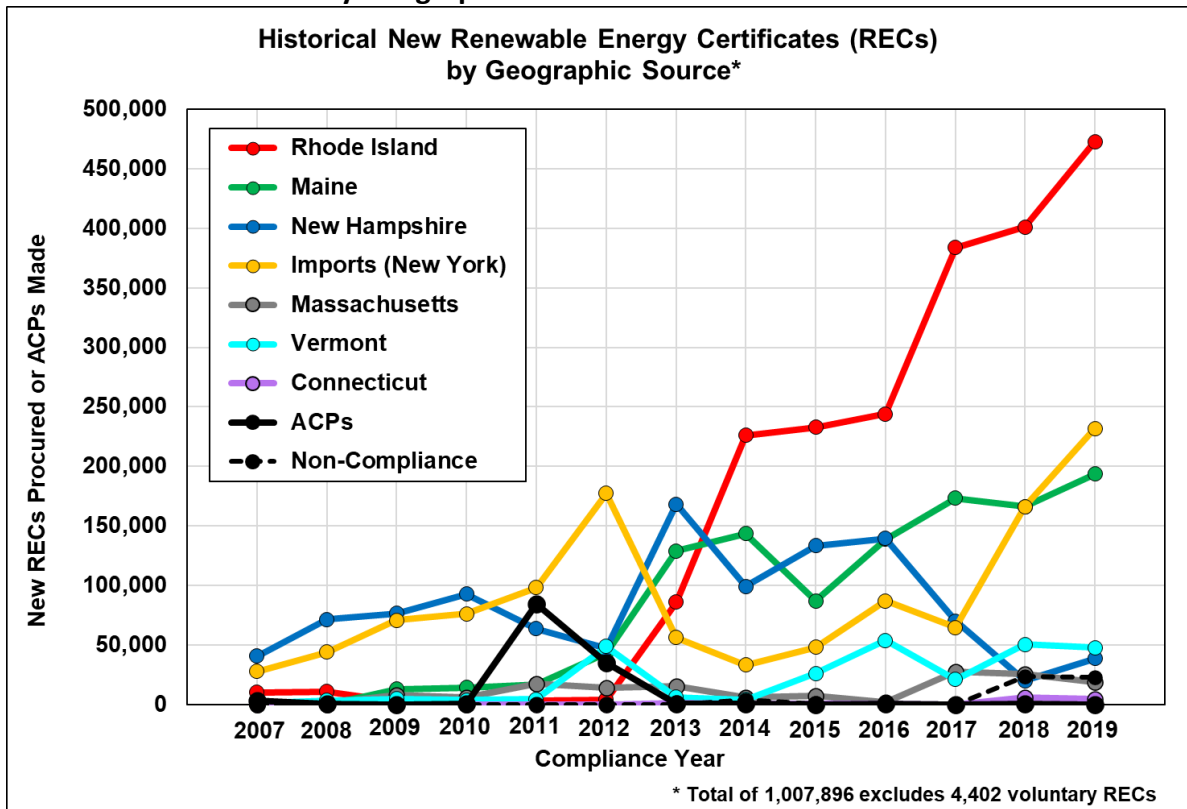


Figure 7: Historical New RECs by Geographic Source



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 2019.

In Compliance Year 2019, all the Existing RECs purchased and settled were generated by hydroelectric facilities. This year, the Existing hydroelectric RECs were sourced from Maine (64.3%), New Hampshire (31.7%), Massachusetts (4.0%).<sup>21</sup>

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<sup>21</sup> These percentages 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.<sup>22</sup>

The way the PUC fulfills the requirement to determine supply adequacy, as well as the timing and implications of the PUC’s decision-making authority, is articulated in the RES Regulations under § 39-26-6(d). In a January 2010 Order for Docket No. 4050, the PUC determined that adequate renewable energy supplies existed to meet the RES target increase scheduled for 2011. Additional information on this proceeding and the PUC’s complete Order can be found at the PUC website.<sup>23</sup> In a February 2014 Order for Docket No. 4404, the PUC determined there was potential inadequacy of renewable energy supply to meet the target increase of 1.5% scheduled for 2015. The result of this determination was to delay the scheduled increase in the RES by a period of one year, thereby capping the escalation of the New RES target at 12.5% rather than 14.0% (with an additional 2.0% to come from Existing or New RECs). Additional information on this proceeding and the PUC’s complete Order can be found at the PUC website.<sup>24</sup> In 2016, the RES statute was amended to require annual increases of 1.5% to continue from 2020 through 2035, resulting in a final target of 38.5% renewable energy. Per the RES statute, the PUC conducted an adequacy review beginning in December of 2018. In that review the PUC found that there is likely to be adequate renewable energy supply to meet the RES increase in Compliance Year 2020 and maintained the scheduled RES increase.<sup>25</sup>

The percentage targets shown above in Figure 1 (see Section I) and in the calculated future RES obligations shown below in Table 3 are adjusted to reflect the PUC’s one-year delay of the 1.5% increase to Compliance Year 2015 and the RES amendments of 2016 that increase the targets through 2035. The quantity (in MWhs) of future years’ RES obligations are estimated by multiplying the forecasted value of total obligated sales in Rhode Island by the RES target for each year. The forecast of Rhode Island’s obligated sales is based on the Forecast Data File of ISO-NE’s 2020 Capacity, Energy,

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

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

<sup>24</sup> 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](http://www.ripuc.ri.gov/eventsactions/docket/4404-RES-Adequacy-Ord21353_2-10-14.pdf).

<sup>25</sup> 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)

Loads, and Transmission (CELT) Report<sup>26</sup> and exempted load, including some wholesale transmission losses, as well as both Pascoag Utility District and Block Island Power Company retail sales.<sup>27</sup>

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

| <b>Compliance Year</b>     | <b>Actual/Forecasted RES-Obligated Retail Sales<sup>a</sup> (MWhs)</b> | <b>Minimum MWhs from New Renewable Energy Resources<sup>b</sup> (per Figure 1 targets)<sup>c</sup></b> | <b>MWhs from <i>either</i> New or Existing Renewable Energy Resources<sup>b</sup> (2.0%)</b> |
|----------------------------|--|--|--|
| 2007 (Actual)              | 8,335,706  | 83,357   | 166,715  |
| 2008 (Actual)              | 8,279,006  | 124,190  | 165,584  |
| 2009 (Actual)              | 7,910,112  | 158,212  | 158,212  |
| 2010 (Actual)              | 8,242,937  | 206,082  | 164,866  |
| 2011 (Actual)              | 8,157,796  | 285,531  | 163,165  |
| 2012 (Actual)              | 8,123,025  | 365,545  | 162,469  |
| 2013 (Actual)              | 8,193,979  | 450,678  | 163,891  |
| 2014 (Actual)              | 7,985,473  | 519,067  | 159,720  |
| 2015 (Actual) <sup>d</sup> | 8,018,905  | 521,243  | 160,392  |
| 2016 (Actual)              | 7,954,467  | 636,372  | 159,103  |
| 2017 (Actual)              | 7,741,800  | 735,485  | 154,850  |
| 2018 (Actual)              | 7,914,524  | 870,612  | 158,306  |
| 2019 (Actual)              | 7,601,633  | 950,217  | 152,049  |
| 2020 <sup>e</sup>          | 7,708,000  | 1,050,000  | 150,000  |
| 2021                       | 7,890,000  | 1,190,000  | 154,000  |
| 2022                       | 7,868,000  | 1,301,000  | 153,000  |
| 2023                       | 7,830,000  | 1,409,000  | 152,000  |
| 2024                       | 7,816,000  | 1,521,000  | 152,000  |
| 2025                       | 7,793,000  | 1,630,000  | 152,000  |
| 2026                       | 7,809,000  | 1,747,000  | 152,000  |
| 2027                       | 7,857,000  | 1,873,000  | 153,000  |
| 2028 <sup>f</sup>          | 7,951,000  | 2,011,000  | 155,000  |
| 2029                       | 8,028,000  | 2,148,000  | 156,000  |

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

<sup>b</sup> 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.

<sup>c</sup> The annual targets are also listed in Table A5 of Appendix 5.

<sup>d</sup> 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.

<sup>e</sup> The RES was amended in 2016 to continue with a 1.5% increase annually from 2020 to 2035.

<sup>f</sup> The 2020 ISO-NE CELT forecast ends in 2029.

<sup>26</sup> ISO-NE 2020 CELT Forecast Data. See tab 2C, column K NET. ISO-NE 2020 Forecast Data File, available at [https://www.iso-ne.com/static-assets/documents/2020/04/forecast\\_data\\_2020.xlsx](https://www.iso-ne.com/static-assets/documents/2020/04/forecast_data_2020.xlsx).

<sup>27</sup> The analysis includes an assumption that 2.72% 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.

## V. Authorized Rate Increases and RES Compliance Costs

The information in this section of the Report is based on the compliance and filings filed with the PUC. On July 2, 2020, National Grid filed a petition to revise its 2018 and 2017 compliance filing for Standard Offer Service customers.<sup>28</sup> National Grid's petition also included a proposal to address certain deficiencies in National Grid's 2017 and 2018 RES compliance. The PUC dismissed National Grid's petition without prejudice in order to conduct a factfinding investigation to determine the requirements of National Grid as an Obligated Entity. The result of this investigation may alter the information provided in this report pertaining to Compliance Years 2017 through 2019, including authorized rates charged to Standard Offer Service customers. More information is provided below in Section VII.

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

Regarding National Grid's rates, it is important to note that in Compliance Year 2019 the company has two types of distribution customers: customers who get their energy supply from National Grid's Standard Offer Service and customers who get their energy supply from a competitive supplier. Only Standard Offer Service customers pay National Grid's charges related to RES compliance; customers of competitive suppliers pay RES compliance costs through those competitive suppliers' charges. These Standard Offer Service customers accounted for approximately 54.9% of the energy used in Rhode Island in 2019. RES compliance costs (and related rates) of competitive suppliers for providing the remaining 45.1% of energy is unknown.

Early in each calendar year, National Grid proposes a RES charge designed to collect the costs of RES compliance for Standard Offer Service customers during the upcoming compliance year, outstanding costs for the remainder of the current compliance year, and to true up any outstanding cumulative under- or over-collection made during previous compliance years.<sup>30</sup> 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.

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<sup>28</sup> National Grid "Petition to Revise 2017 and 2018 Renewable Energy Standard Compliance Filings," June 2, 2020 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).

<sup>29</sup> R.I. Gen. Laws § 39-26-2(16).

<sup>30</sup> National Grid typically files for rate change to the Renewable Energy Standard Charge in late winter for effect on April 1<sup>st</sup>. 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 2019 compliance costs, see here: [http://www.ripuc.ri.gov/eventsactions/docket/4809-NGrid-RES Reconciliation \(PUC 2-27-19\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4809-NGrid-RES Reconciliation (PUC 2-27-19).pdf).

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

| Effective Date               | Initially-Projected REC Procurement Cost (per kWh) <sup>a</sup> | 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   | \$0.00678   | (\$0.00013)  | \$0.00665 <sup>b</sup>          | \$3.33   \$39.90                             |
| April 2020 – March 2021      | \$0.00606   | \$0.00260  | \$0.00866 <sup>c</sup>          | \$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   | <sup>d</sup>   | \$0.00084                       | \$0.42   \$5.04                              |
| 2007                         | \$0.00062   | N/A  | \$0.00062                       | \$0.31   \$3.72                              |

<sup>a</sup> The projected REC procurement cost is for current year costs; i.e., the projected compliance rate for Compliance Year 2019 was \$0.00183/kWh and was collected from April 2019 through March 2020.

<sup>b</sup> As of the report date this rate is proposed and under review by the PUC.

<sup>c</sup> As of the report date the PUC had approved the proposed rate on an interim basis.

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

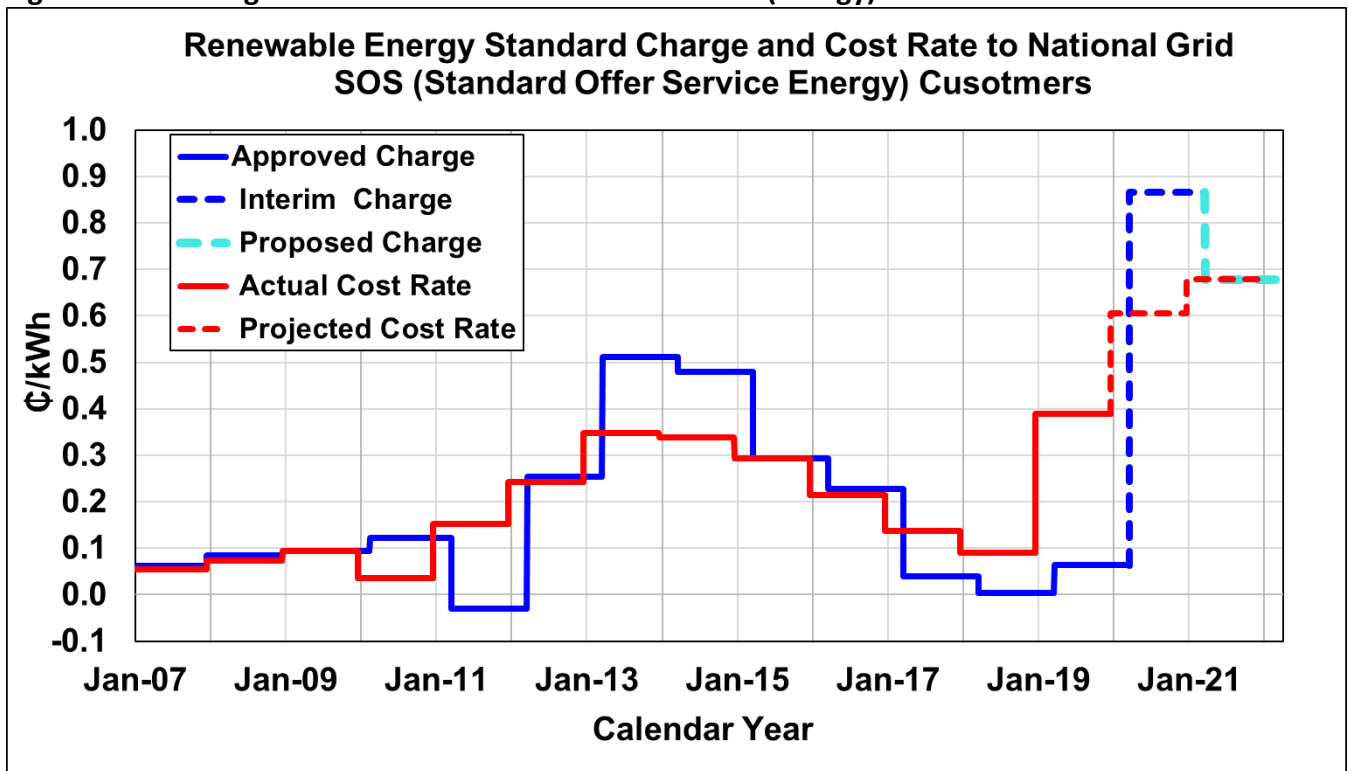
Table 4 provides data on the authorized RES charge (in dollars per kWh) billed to National Grid’s Standard Offer Service customers from 2007 through this Report date, as well as the total charges to a 500-kWh Residential Class ratepayer by month and year (*see also* the blue line on Figure 8). The factors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



rather than the cost to procure Existing RECs) is found in the second column; the reconciliation factor for previous compliance years is found in the third column. The charge of \$0.00063 per kWh, effective April 1, 2019 through March 31, 2020, comprises a \$0.00183 per kWh factor for projected costs for Compliance Year 2018 and a negative \$0.00120 reconciliation factor for a cumulative over-collection of costs for previous years, including costs for Compliance Year 2018 (see the yellow row in Table 4).

While this Report focuses on Compliance Year 2019, it should be noted that in February 2020, National Grid filed to increase the factor to \$0.00866 per kWh with effect on April 1, 2020<sup>31</sup>—by far the largest RES charge in history. This greater-than-ten-fold increase in the RES charge is due in part to a large increase in the reconciliation factor for under collections in previous years. The more significant change, however, was the projected increase in the cost of new compliance (i.e., New and Existing REC procurement to meet the increasing RES obligation), which National Grid projected would cost \$0.00606 per kWh. Due to the state of emergency caused by the COVID-19 pandemic, the PUC did not vote to approve or deny the proposed rate, but rather approved the proposed rate on an interim basis. In February 2021, National Grid again filed a new RES charge of \$0.00665 per kWh with effect on April 1, 2021.<sup>32</sup> While the cost of 2021 compliance is expected to increase, the large under-collection factor in the previous rate has flipped to a slight overcollection factor, thus lowering the overall charges as seen in Table 4.

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



<sup>31</sup> 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).

<sup>32</sup> National Grid’s “Docket 5096 – 2021 Renewable Energy Standard Procurement Plan Renewable Energy Standard (RES) Charge and Reconciliation” Attachment 1, [http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-RES%20Reconciliation%202021%20\(PUC%202-25-21\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-RES%20Reconciliation%202021%20(PUC%202-25-21).pdf).



National Grid executed its proposed REC procurement plan for Compliance Year 2019. Based on the data reported below in Table 5 and in Appendix 2 Table A2, for Compliance Year 2019, National Grid procured Rhode Island-eligible New RECs at an average price of approximately \$30.92 per New REC.<sup>33</sup> This is much greater than National Grid’s February 2019 projection of \$13.35 per New REC<sup>34</sup>. National Grid’s most recent estimate of New REC prices is up to an average cost of \$40.38 per New REC in Compliance Year 2021.<sup>35</sup>

For Compliance Year 2019, most of the RECs National Grid purchased to fulfill the RES obligation incurred by their Standard Offer Service customers were from renewable generation projects that have long-term renewable energy power purchase agreements (PPAs) with National Grid pursuant to R.I. Gen. Laws § 39-26.1 and § 39-26.2. National Grid also uses RECs generated by projects enrolled in the Renewable Energy Growth Program (RE Growth Program) feed-in tariff (R.I. Gen. Laws § 39-26.6). As part of these programs, project owners receive a contract or tariff price payment from National Grid, and National Grid receives the projects’ energy and REC generation.<sup>36</sup>

**Table 5: Summary of National Grid's RES Compliance Costs, 2007 through 2019**

| Compliance Year | Total RES Costs (Millions) <sup>a</sup> | New REC Costs (Millions) <sup>a</sup> | Existing REC Costs (Millions) <sup>a</sup> | ACP Costs (Millions) | Obligated Load (MWh) |
|-----------------|---|---------------------------------------|--|----------------------|----------------------|
| 2019            | \$16.22                                 | \$16.12                               | \$0.10                                     | \$0                  | 4,170,969            |
| 2018            | \$3.91                                  | \$3.76                                | \$0.15                                     | \$0                  | 4,370,298            |
| 2017            | \$5.65                                  | \$5.53                                | \$0.12                                     | \$0                  | 4,097,802            |
| 2016            | \$9.20                                  | \$9.10                                | \$0.10                                     | \$0                  | 4,282,268            |
| 2015            | \$13.88                                 | \$13.80                               | \$0.08                                     | \$0                  | 4,773,192            |
| 2014            | \$18.00                                 | \$17.93                               | \$0.07                                     | \$0                  | 5,317,349            |
| 2013            | \$18.96                                 | \$18.90                               | \$0.06                                     | \$0                  | 5,541,409            |
| 2012            | \$12.80                                 | \$12.75                               | \$0.05                                     | \$0                  | 5,272,388            |
| 2011            | \$8.43                                  | \$3.85                                | \$0.05                                     | \$4.53               | 5,554,272            |
| 2010            | \$2.07                                  | \$2.02                                | \$0.05                                     | \$0                  | 5,695,951            |
| 2009            | \$5.51                                  | \$5.28                                | \$0.22                                     | \$0                  | 5,902,667            |
| 2008            | \$5.21                                  | \$5.02                                | \$0.19                                     | \$0                  | 7,123,559            |
| 2007            | \$3.97                                  | \$3.79                                | \$0.19                                     | \$0                  | 7,177,538            |

<sup>a</sup> 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.

<sup>33</sup> This average cost includes only the costs of RECs retired to meet compliance in Compliance Year 2019. Thus, this includes RECs minted and banked in Compliance Years 2017 and 2018 for use in Compliance Year 2019, but this excludes the costs of RECs minted and banked in Compliance Year 2019 for use in Compliance Years 2020 and 2021.

<sup>34</sup> National Grid’s “ Docket 4809 - 2019 Renewable Energy Standard (RES) Charge and Reconciliation,” Attachment 1, [http://www.ripuc.ri.gov/eventsactions/docket/4809-NGrid-RES Reconciliation \(PUC 2-27-19\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4809-NGrid-RES Reconciliation (PUC 2-27-19).pdf).

<sup>35</sup> National Grid’s “ Docket 5096 – 2021 Renewable Energy Standard Procurement Plan Renewable Energy Standard (RES) Charge and Reconciliation” Attachment 1, [http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-RES%20Reconciliation%202021%20\(PUC%202-25-21\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-RES%20Reconciliation%202021%20(PUC%202-25-21).pdf).

<sup>36</sup> Some PPAs and all RE Growth Program arrangements include transfer of the project’s capacity value from the project to National Grid.

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

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

National Grid's remaining REC needs are purchased through a request-for-proposal procurement process approved annually by the PUC through a docketed proceeding.<sup>38</sup> 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 2019 New and Existing RES obligations, National Grid incurred \$16.22 million in compliance costs (Table 5; Figure 9).<sup>39</sup> This is an increase of approximately 315% from the cost incurred to comply with the 2018 RES obligation (\$3.91 million). This large increase in compliance cost to National Grid likely reflects a tightening supply in Rhode Island-eligible New RECs relative to demand for these RECs in Compliance Year 2019, as well as a regional tightening in compliance requirements compared to regional supply of RECs. Based on National Grid data,<sup>40</sup> the PUC estimates the cost to Standard Offer Service customers for Compliance Year 2019 will sharply increase to approximately \$23 million.

The actual cost rate of compliance for National Grid's Standard Offer Service customers was significantly greater than originally projected. The final cost rate of the 2019 RES obligation to National Grid's Standard Offer Service energy customers, calculated as 2019 Total RES Costs divided by Obligated Load reported in Table 5,<sup>41</sup> was approximately \$0.00389/kWh in Compliance Year 2019, whereas National Grid's original projection was \$0.00183/kWh, or less than half the actual cost rate (Table 4). This created a sharp increase in cost, and the first annual increase since costs began decreasing in Compliance Year 2014 (see the red line on Figure 8).

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

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

<sup>39</sup> 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 <sup>a</sup> in Table 5.

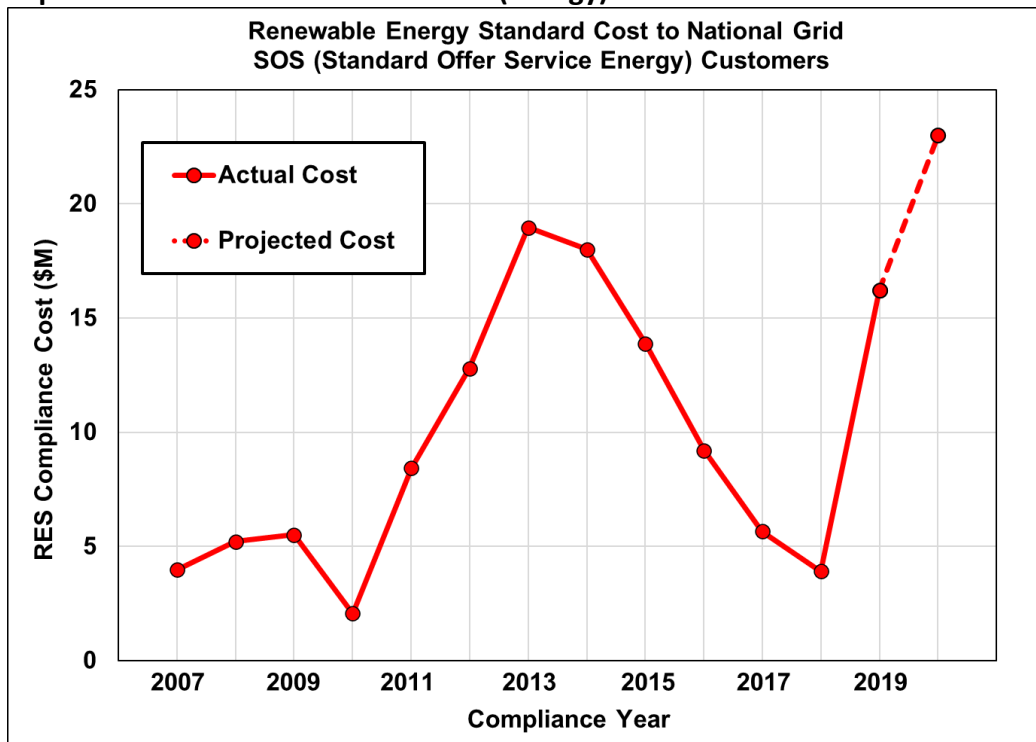
<sup>40</sup> Based on usage and cost information in National Grid's "Docket 5096 – 2021 Renewable Energy Standard Procurement Plan Renewable Energy Standard (RES) Charge and Reconciliation" Attachment 2, [http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-RES%20Reconciliation%202021%20\(PUC%202-25-21\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-RES%20Reconciliation%202021%20(PUC%202-25-21).pdf).

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

Notably, National Grid originally projected 2020 RES costs would be \$0.00606/kWh; newer National Grid cost and usage data<sup>42</sup> signals that the final Compliance Year 2020 cost rate may be slightly lower at \$0.00560/kWh, which is illustrated by the first dashed segment of the cost rate line (drawn in red) in Figure 8.<sup>43</sup> As noted above, National Grid projects the cost rate will continue to increase in Compliance Year 2021 to \$0.00678/kWh (Figure 8 and Table 4).

Notably, National Grid’s most recent public information projects that the company will have more New RECs supplied through long-term renewable energy contracts (PPAs) and the RE Growth Program than their projected annual New REC obligation.<sup>44</sup> National Grid’s most recent and current RES Procurement Plans include the option to sell RECs into the regional market should the amount of RECs from the contracts and RE Growth Program exceed the company’s obligation and banking allowance.<sup>45</sup>

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



It is again noted that the data in this section of the report only represents expenses incurred by Standard Offer Service customers of National Grid, accounting for approximately 54.9% of all obligated retail energy use in 2019. Competitive energy suppliers served the remaining 45.1% of obligated

<sup>42</sup> Based on usage and cost information in National Grid’s “ Docket 5096 – 2021 Renewable Energy Standard Procurement Plan Renewable Energy Standard (RES) Charge and Reconciliation” Attachment 2, [http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-RES%20Reconciliation%202021%20\(PUC%202-25-21\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-RES%20Reconciliation%202021%20(PUC%202-25-21).pdf).

<sup>43</sup> As of the filing and Report date, National Grid may still be incurring costs for compliance in Compliance Year 2018.

<sup>44</sup> National Grid’s “2021 Renewable Energy Standard Procurement Plan Docket No. 5096” Schedule 4 at 5, [http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-2021 RES Plan \(12-11-2020\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/5096-NGrid-2021 RES Plan (12-11-2020).pdf).

<sup>45</sup> 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.

energy use, and the PUC does not have access to compliance costs for these Obligated Entities.<sup>46</sup> 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 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 2019.

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<sup>46</sup> The share of obligated energy served by competitive suppliers increased from 33.4% in 2014, to 40.5% in 2015, to 46.2% in 2016, to 47% in 2017.

## VI. Renewable Energy Standard Implementation in New England

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

All six New England states have active Renewable Energy Standards (RES, as known in Rhode Island and Vermont) or Renewable Portfolio Standards (RPS, as known in Massachusetts, Connecticut, New Hampshire, and Maine). Each of the established RES programs (referring to both RES and RPS programs) has multiple classes<sup>47</sup> 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 requirements<sup>48</sup> 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, 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. Legislation proposed in 2021 (but not yet enacted when this report was drafted) would

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<sup>47</sup> Referred to as “Tiers” in Vermont.

<sup>48</sup> 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.

establish 3% annual increases for 2025-2029. 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 2017<sup>49</sup>.

The Massachusetts Department of Energy Resources (MA DOER) also administers the Class I solar carve-out. Eligible facilities generate SRECs for ten years (which are used to demonstrate compliance with the carve-out) and generate Class I RECs thereafter. MA DOER also established an SREC successor program, known as the Solar Massachusetts Renewable Target (SMART). SMART is a declining-block incentive for an additional 3,200 MW of solar supply. SMART is not a carve-out; eligible facilities generate Class I RECs. In 2020, the Executive Office of Energy and Environmental Affairs released its 2030 Clean Energy and Climate Plan<sup>50</sup>, which recommended an additional 2,000 MW of SMART program authority. This recommendation has since been drafted into the same pending 2021 legislation that proposes the RPS target increase.

In June 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 2020-2024, declining between \$1.54 to \$4.62 per compliance year thereafter, dependent upon supply and demand dynamics.

In late 2020, MA DOER issued proposed amendments to the Class 1 Regulations, including a proposal to lower the Class I ACP to \$60 in 2021, \$50 in 2022, and \$40 in 2023, and allowing biomass resources to achieve certification based on meeting fuel source requirements rather than efficiency standards.

Other legislative efforts in Massachusetts have focused on long-term renewable energy contracting through the regulated distribution utilities. Massachusetts has thus far contracted for 1,600 MW of offshore wind, and 9.45 million MWh of hydroelectric generation through its Section 83C and 83D procurements, respectively. MA DOER has additional procurement authority of up to 1,600 MW of offshore wind. Legislation currently under consideration would enable an additional 2,400 MW of offshore wind procurement authority under Section 83C – which, if enacted, would increase Massachusetts’ total incremental authority to 4,000 MW. The volume of offshore wind ultimately delivered will have a material impact on the long-term REC supply and demand balance for MA Class I, and regional Class 1 RPS markets more generally.

### **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

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<sup>49</sup> MA has not yet published a 2017 or 2018 compliance report; the most recent data available are from 2016.

<sup>50</sup> <https://www.mass.gov/doc/interim-clean-energy-and-climate-plan-for-2030-december-30-2020/download>

England's aggregate obligations, leaving all states (except sometimes Maine) to compete for marginal supply.

Connecticut's current RPS statute requires 40% Class 1 by 2030. 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 proposed at the time this report was drafted. 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). Beginning in 2021, the state's Class 1 ACP will be reduced from \$55/MWh to \$40/MWh where it will remain, indefinitely.

Connecticut has also issued renewable energy procurements in the last several years, and the Connecticut Department of Energy and Environmental Protection (CT DEEP) retains additional procurement authority for up to approximately 16 percent of total load from renewable energy or other sources. The draft IRP included recommendations for future clean energy procurements, including up to 5,700 MW of offshore wind by 2034 and 1,600 MW of energy storage by 2028, but also recommended waiting to conduct such procurements until at least 2023 based on expectations of supply adequacy in the near term. The IRP also recommended the State retain RECs associated with existing and future contracts, instead of selling them into the market. Prior procurements have resulted in contracts with Millstone and Seabrook nuclear power stations, Revolution Offshore Wind, and multiple land-based solar projects.

### **Maine**

Maine's first Class I RES<sup>51</sup> compliance year was 2008. Maine has broader Class I eligibility criteria than the other New England states, resulting in ample supply to fill Class I demand. Beginning in 2011, the certification of refurbished biomass projects (not eligible elsewhere) caused a sharp decline in both Maine Class I REC prices and ACP collections, as shown in Table 6.

In recent years, Maine has supported both new "community-based" renewable energy projects and existing biomass projects through several competitive, long-term contracting programs. In 2019 Maine expanded its Class 1<sup>52</sup> RES from 10% to 50% by 2030 and included a (non-binding) goal of 100% by 2050. The 2019 RES revisions also set the ACP at the statutory maximum of \$50/MWh. In 2020, the ME PUC selected 17 projects, totaling 546 MW through competitive procurement. A second RFP was released in January 2021. In addition, in 2020, the Maine Climate Council released its final Climate Action Plan, recommending that Maine expand its clean energy procurements by 2022 in order to reach RES goals by 2030. The Climate Action Plan also included recommendations for the State to establish deployment targets for offshore wind, distributed generation, and energy storage.

In 2020, the ME PUC implemented a new thermal RES. The thermal RES is incremental to current requirements and equals 0.4% of retail electricity sales in 2021, increasing by an additional 0.4% each year until reaching 4% in 2030 and thereafter. The ACP for thermal RECs (T-RECs) is \$25/MWh.

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<sup>51</sup> 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.

<sup>52</sup> Maine's RES expansion was accomplished through the creation of a Class 1A, with similar eligibility criteria to Class 1.

## **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. Due to the absence of a vintage requirement in Connecticut, NH Class III overlaps with CT Class 1. Dual eligible RECs seek the highest market price, which is affected by both supply/demand balance and ACP. Beginning in 2020 the NH Class III ACP was reduced to \$35 (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.

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

| <b>Year</b> | <b>MA (\$M)</b> | <b>CT (\$M)</b> | <b>RI (\$M)</b>      | <b>ME (\$M)</b> | <b>NH <sup>a</sup> (\$M)</b> | <b>VT (\$M)</b>    |
|-------------|-----------------|-----------------|----------------------|-----------------|------------------------------|--------------------|
| 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 <sup>c</sup> |
| 2018        | - <sup>b</sup>  | \$3.1           | \$0.263 <sup>d</sup> | -               | \$1.7                        | \$0.0 <sup>e</sup> |
| 2019        | -               | -               | \$0.0001             | -               | \$1.72                       | -                  |

<sup>a</sup> Includes Class I and Class I Thermal ACP

<sup>b</sup> MA has not yet published a 2018 or 2019 compliance report; the most recent data available are from 2017.

<sup>c</sup> 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.

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

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

## **Vermont**

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



distribution system. The Vermont legislature is considering possible approaches to achieving a 100% RES. Specific proposals are expected in the 2021 legislative session but may require more than one session to mature and pass.

**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 2029. 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 2020 CELT Report,<sup>53</sup> and adjusted to exclude an estimate of public or other utilities and load exempted from the states’ RES obligations. For example, both Pascoag Utility District and Block Island Power Company have been removed from Rhode Island’s RES demand forecast.

Massachusetts and Connecticut represent the majority of New England’s RES demand through 2029 (Figure 10). In 2019, these two states accounted for 44.3% and 33.7% of demand, respectively. Rhode Island represented 6.7% of the region’s 2019 New/Class I RES demand (Figure 11). By 2029, the allocation of New Renewable RES demand across the region is projected as follows: Massachusetts – 45.4%; Connecticut – 26.1%; Rhode Island – 5.9%; New Hampshire – 4.3%; Vermont – 1.2%; and Maine – 17.1% (Figure 12).

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

| Year | MA Class I | CT Class I | RI New | VT DG | ME Class I | NH Class I |
|------|------------|------------|--------|-------|------------|------------|
| 2019 | 14.0%      | 19.5%      | 12.5%  | 2.2%  | 10.0%      | 8.2%       |
| 2020 | 16.0%      | 21.0%      | 14.0%  | 2.8%  | 12.5%      | 8.9%       |
| 2021 | 18.0%      | 22.5%      | 15.5%  | 3.4%  | 15.0%      | 9.6%       |
| 2022 | 20.0%      | 24.0%      | 17.0%  | 4.0%  | 18.0%      | 10.3%      |
| 2023 | 22.0%      | 26.0%      | 18.5%  | 4.6%  | 21.0%      | 11.0%      |
| 2024 | 24.0%      | 28.0%      | 20.0%  | 5.2%  | 25.0%      | 11.9%      |
| 2025 | 26.0%      | 30.0%      | 21.5%  | 5.8%  | 29.0%      | 12.8%      |
| 2026 | 28.0%      | 32.0%      | 23.0%  | 6.4%  | 33.0%      | 12.8%      |
| 2027 | 30.0%      | 34.0%      | 24.5%  | 7.0%  | 37.0%      | 12.8%      |
| 2028 | 32.0%      | 36.0%      | 26.0%  | 7.6%  | 41.0%      | 12.8%      |
| 2029 | 34.0%      | 38.0%      | 27.5%  | 8.2%  | 45.0%      | 12.8%      |

<sup>a</sup> New Hampshire RES obligation is presented **net** of renewable thermal carve-out

<sup>53</sup> The ISO-NE 2020 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/2020/04/2020\\_celt\\_report.xlsx](https://www.iso-ne.com/static-assets/documents/2020/04/2020_celt_report.xlsx).

**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  |
|------|------------|------------|--------|-------|------------|------------|--------|
| 2019 | 6,259      | 4,761      | 952    | 120   | 1,188      | 862        | 14,140 |
| 2020 | 6,945      | 4,945      | 1,050  | 139   | 1,366      | 934        | 15,378 |
| 2021 | 8,348      | 5,589      | 1,190  | 187   | 1,787      | 1,068      | 18,169 |
| 2022 | 9,302      | 5,948      | 1,301  | 219   | 2,177      | 1,162      | 20,110 |
| 2023 | 10,237     | 6,426      | 1,409  | 251   | 2,573      | 1,253      | 22,151 |
| 2024 | 11,226     | 6,931      | 1,521  | 284   | 3,109      | 1,373      | 24,445 |
| 2025 | 12,174     | 7,399      | 1,630  | 315   | 3,653      | 1,486      | 26,657 |
| 2026 | 13,179     | 7,892      | 1,747  | 348   | 4,235      | 1,500      | 28,900 |
| 2027 | 14,226     | 8,396      | 1,873  | 380   | 4,852      | 1,517      | 31,244 |
| 2028 | 15,359     | 8,942      | 2,011  | 415   | 5,516      | 1,540      | 33,782 |
| 2029 | 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)**

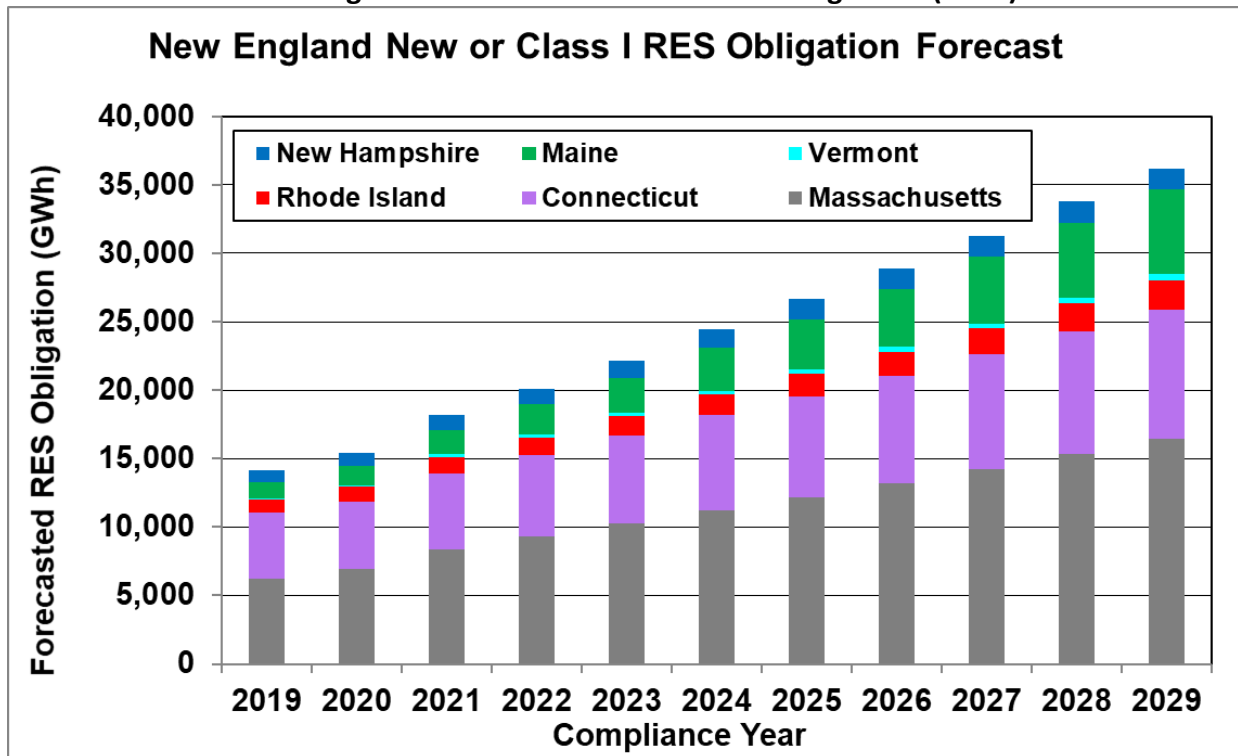


Figure 11: 2019 Aggregate New England New or Class I RES Demand

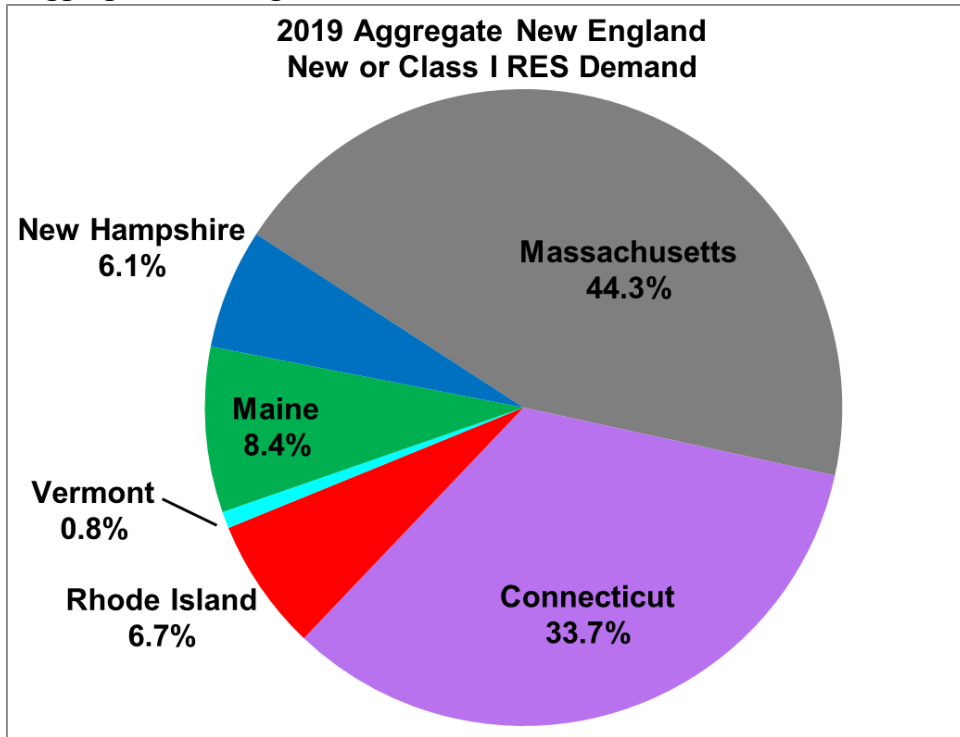
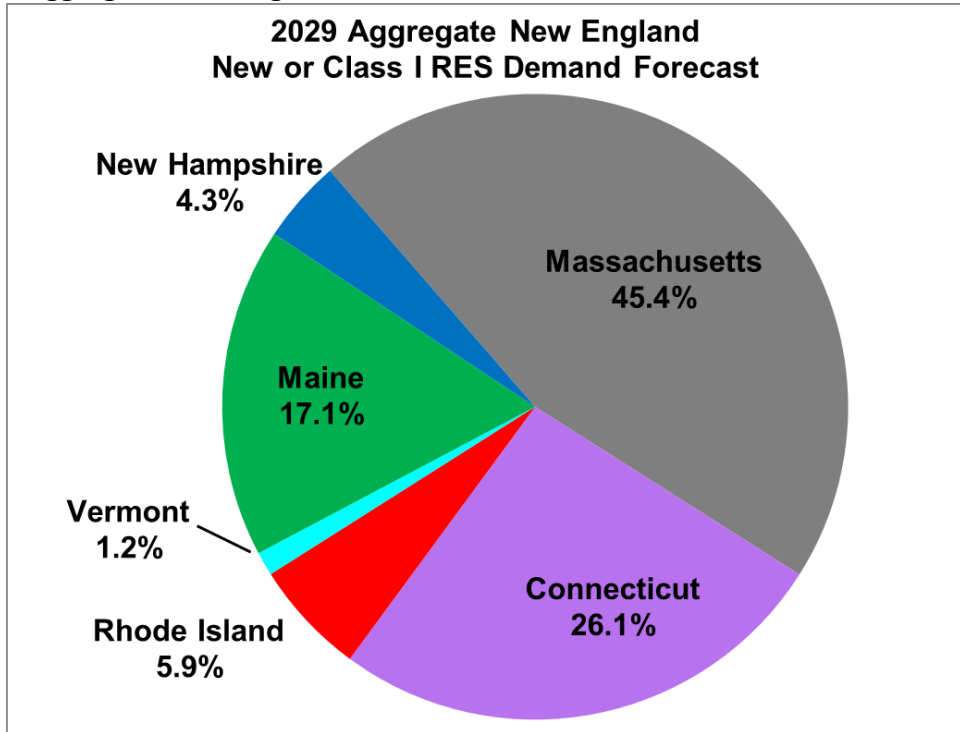


Figure 12: 2029 Aggregate New England New or Class I RES Demand Forecast



## VII. Continuing and Developing Issues Related to the RES

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

### Non-Compliance

In Compliance Year 2019, the Rhode Island RES program experienced the remainder of Agera Energy LLC's (Agera) multi-year failure to comply with its RES Obligation. Compliance Year 2019 is the fifth year in the last seven 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 its 2018 compliance filing, Agera indicated that it was neither retiring RECs nor making ACPs to comply with its RES obligation. Agera was contacted by PUC staff to correct some issues with its filing. In that correspondence, PUC staff applied some banked RECs to Agera's outstanding obligation and noted that, since the trading deadline had passed, Agera had until August 16, 2019 to provide an ACP to the Commerce Corporation and refile its compliance filing with the PUC. Agera refiled the compliance filing to correct some issues with the filing but did not make an ACP transfer to Commerce Corporation. At the time, the PUC granted protective treatment of Agera's filing. It is now public information filed in Agera's bankruptcy proceeding that Agera failed to pay an ACP valued at \$1,970,394.08.<sup>54</sup> From this information, at an ACP rate of \$68.96 per megawatt-hour, it is easily calculated that Agera missed its obligation by 28,573 megawatt-hours.

Because of this failure, none of the energy Agera sold to its customers was supplied by renewable resources (or covered by ACPs) compared to the 15.5% required by law. Furthermore, in 2019, Agera was the fifth largest competitive supplier active in Rhode Island and served a significant amount of load.

For its failure to comply in Compliance Year 2019, the PUC penalized Agera \$250,000,<sup>55</sup> 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.<sup>56</sup> After the financial security was demanded in full, Agera was no longer in compliance with the Division's Rules required for selling retail energy in Rhode Island. Upon remittance, the PUC transferred the \$250,000 to the Commerce Corporation. Per PUC rules, the penalty did not remedy Agera's 2018 Obligation.<sup>57</sup> The State of Rhode

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<sup>54</sup> See, for example, [http://www.ripuc.ri.gov/eventsactions/docket/D\\_19\\_26\\_Bank.pdf](http://www.ripuc.ri.gov/eventsactions/docket/D_19_26_Bank.pdf).

<sup>55</sup> 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](http://www.ripuc.ri.gov/eventsactions/docket/4964-AgeraEnergy-Ord23659_8-28-2019.pdf).

<sup>56</sup> Competitive Suppliers must post financial security in the amount of \$250 thousand pursuant to the Division's Rules Applicable to Nonregulated Power Producers 815-RICR-30-05. [http://www.ripuc.ri.gov/rulesregs/divrules/Rules\\_Appliccate\\_NPP.pdf](http://www.ripuc.ri.gov/rulesregs/divrules/Rules_Appliccate_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.

<sup>57</sup> 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

Island remained engaged in Agera's bankruptcy proceeding and the Commerce Corporation collected \$82,755 as a settlement of its claim for the full remaining ACP amount of \$1,970,394.08. The PUC had no further ability to claim or penalize Agera for the additional \$1,889,258 in ACPs left unpaid by Agera for load it served in Compliance Year 2019.

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

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

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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.

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.

<sup>58</sup> 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).

<sup>59</sup> 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.

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

<sup>61</sup> 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](http://www.ripuc.ri.gov/eventsactions/docket/4536C-NGrid-Ord22015_7-31-15.pdf).

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

The PUC dismissed the Petition (without prejudice to the utility to refile) because the proposal made by National Grid in the Petition to remedy the error was not yet ripe for review, as it merged compliance issues with ratemaking issues. The PUC is currently completing its investigation to gain a full understanding of the double-counting of RECs, related impacts, and appropriate resolutions. This Annual Report does not provide any conclusions on whether or not National Grid missed its RES obligation in 2017, 2018, or 2019. The PUC will provide updated information in a future RES Annual Report.

## VIII. Conclusion

Based upon the PUC's analysis of regulated utility data; competitive supplier data; and general market trends, the supply of, and demand for, Rhode Island-eligible New RECs were adequate Compliance Year 2019. Data also suggests, however, that there is a tightening in the supply of New RECs locally and in the region that began in 2019 and is possible to continue in the near future.

The evidence for adequate supply is mainly Obligated Entities' low reliance on ACPs for RES compliance as in Compliance Years 2017 and 2018. Another line of evidence is that Obligated Entities banked a significant amount of RECs for future years. The evidence that supply may have tightened in 2019 relative to 2018 is the increase in compliance costs to National Grid and other market data that shows New (or Class I) REC prices increased significantly in the region. Thus, while Obligated Entities were able to find adequate, and even surplus, supply, they likely paid significantly more to comply. Finally, the evidence that the market supply will continue to be tight or tighten in the future is that Obligated Entities were willing to pay these increased prices for 2019 New RECs in order to bank them to use in the future. Indeed, demand for RECs across the region is increasing, as states expand their renewable portfolio targets, and this regional demand could continue to drive up compliance costs in Rhode Island. National Grid projects compliance costs to its Standard Offer Services customers will increase Compliance Years 2020 and 2021.

The increase of New Renewable Energy Resources has likely contributed to stabilizing and lowering compliance costs, and this trend continues today. 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 a significant portion of, and in some cases more than all of, the region's annual increase in demand for New (or Class I) RECs. Since the last RES Report, the PUC has approved or conditionally approved twenty-six 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 78.4 MW of additional certified New nameplate capacity that are eligible to contribute to meeting the RES targets in future Compliance Years.

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.

The PUC regards Compliance Year 2019 a relative success because the resources available in the regional marketplace, particularly increased wind and solar PV resources, were able to meet REC demand for Compliance Year 2019 and allow a significant share of Obligated Entities the opportunity

to bank RECs for future Compliance Years. Although one competitive supplier (Agera) failed to meet its RES obligation, this action is likely related to other energy and energy-related market conditions, and not specifically to the unavailability of Rhode Island-eligible RECs, the value of which represented a relatively small fraction of the liability Agera was unable to manage across the nation. Furthermore, although National Grid's Petition to revise its Compliance 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 current market data indicates a multi-year increase in REC prices across New England that may be related to a tightening of supply relative to demand. In the coming year, the PUC will continue to monitor the regional renewable energy marketplace and the State's continued ability to achieve its established targets in a just and reasonable manner.



## Appendix 1: Alternative Compliance Payments

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

Section 3.2 of the RES Rules states that ACPs must be made at a rate of \$50 per MWh of renewable energy obligation, in 2003 dollars, adjusted annually by the annual change in the United States Bureau of Labor Statistics' Consumer Price Index. Additionally, the RES Rules states that the PUC will publish the ACP rate by January 31 of each Compliance Year. For Compliance Year 2019, the ACP rate was \$70.45 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  |

Connecticut, Maine, Massachusetts, and New Hampshire all have similar ACP mechanisms. The Table below shows the 2019 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 2019**

| 2019 ACP Rates | CT   | NH      | MA      | ME      | VT      |
|----------------|------|---------|---------|---------|---------|
| Class I        | \$55 | \$57.15 | \$71.57 | \$70.44 | \$10.00 |
| Class II       | \$55 | \$57.15 | \$29.37 | N/A     | \$60.00 |
| Class III      | \$31 | \$55.00 | N/A     | N/A     | N/A     |
| Class IV       | N/A  | \$28.60 | N/A     | N/A     | N/A     |

## Appendix 2: Rhode Island RES 2019 Compliance Summary

Table A2: 2019 Compliance Summary by Obligated Entity <sup>62</sup>

| Obligated Entity  | Retail Sales (from filing) | RES Obligations (MWh)  |                            | NEPOOL GIS Certificates |                          |                  |                 | Alternative Compliance Payments |                  | Banked "New" RECs for Future Compliance |
|---|----------------------------|------------------------|----------------------------|-------------------------|--------------------------|------------------|-----------------|---------------------------------|------------------|---|
|   | Load (MWh)                 | "New" Obligation (Raw) | 2.0% "Existing" Obligation | "New" RECs              | Banked from 2016 or 2017 | Total "New" RECs | "Existing" RECs | "New" (MWh)                     | "Existing" (MWh) | RECs Eligible for 2019 or 2020          |
| <b>Distribution Companies</b>   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| The Narragansett Electric Company   | 4,170,969                  | 521,372                | 83,420                     | 624,514                 | 0                        | 624,514          | 83,420          | 0                               | 0                | 107,544                                 |
| <b>Competitive Suppliers</b>  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Agera Energy, LLC   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Ambit Northeast, LLC  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Archer Energy, LLC  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Clearview Electric, Inc.  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Discount Power, Inc.  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| First Point Power, LLC  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Town Square Energy, LLC   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Calpine Energy Solutions, LLC   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Champion Energy Services, LLC   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Devonshire Energy LLC   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Direct Energy Business, LLC   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Constellation NewEnergy, Inc. (Inclusive of Constellation NewEnergy, Inc., ConEd, CNE, and Constellation Energy Services) |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Total of Assets 66110 and 37830   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Viridian Energy, LLC  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Public Power, LLC   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Direct Energy Business, LLC (Inclusive of two load assets)  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Constellation NewEnergy, Inc.   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Total of Assets 49425 and 11412   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Liberty Power Holdings LLC  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| Moore Energy LLC  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| NextEra Energy Service Rhode Island, LLC  |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| North American Power and Gas, LLC   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| SmartEnergy Holdings, LLC   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| South Jersey Energy Company   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| XOOM Energy Rhode Island, LLC   |                            |                        |                            |                         |                          |                  |                 |                                 |                  |   |
| <b>Competitive Supplier Subtotal</b>  | <b>3,430,664</b>           | <b>428,845</b>         | <b>68,629</b>              | <b>378,980</b>          | <b>69,538</b>            | <b>448,518</b>   | <b>80,481</b>   | <b>1</b>                        | <b>1</b>         | <b>42,575</b>                           |
| <b>Totals</b>   | <b>7,601,633</b>           | <b>950,217</b>         | <b>152,049</b>             | <b>1,003,494</b>        | <b>69,538</b>            | <b>1,073,032</b> | <b>163,901</b>  | <b>1</b>                        | <b>1</b>         | <b>150,119</b>                          |

<sup>62</sup> 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.

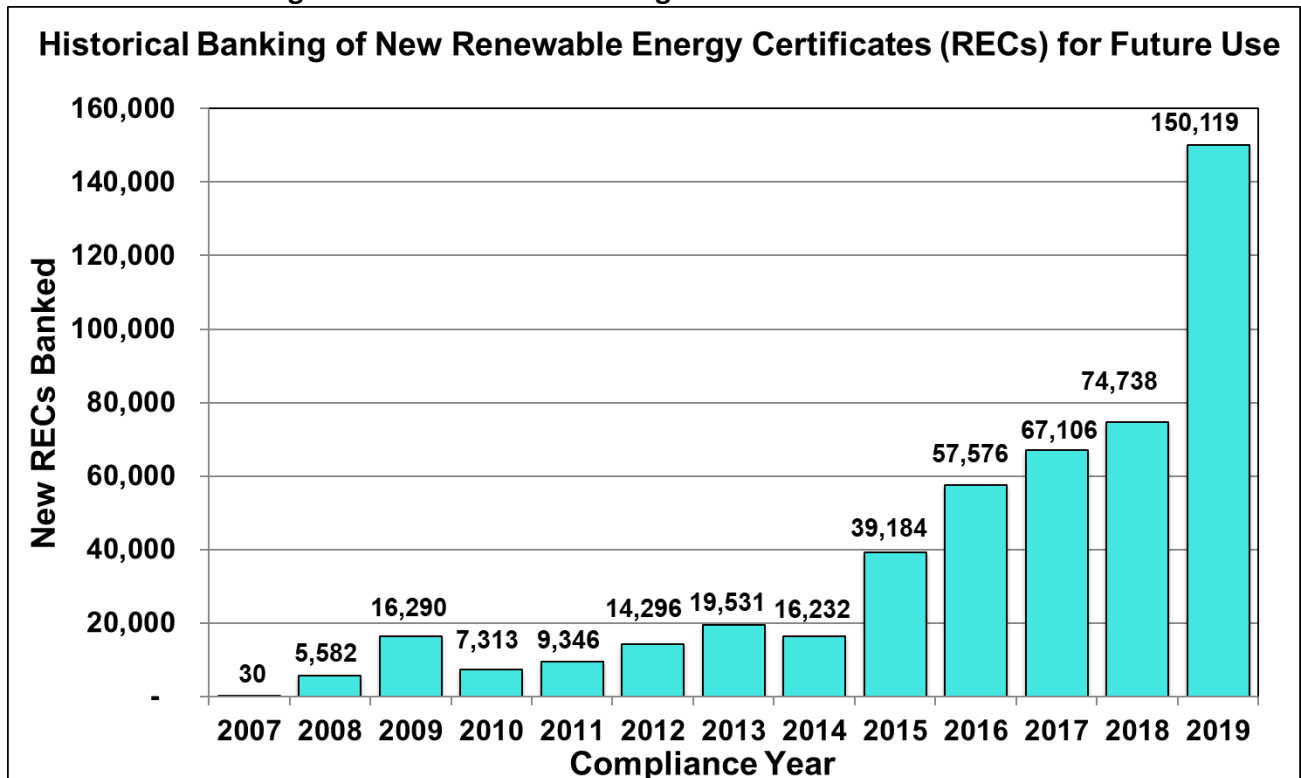
### Appendix 3: Historical Use of ACPs and Banking

The charts below provide additional detail on the breakdown of New and Existing RECs purchased by Rhode Island’s Obligated Entities for the period 2007-2019.

**Table A3.1: Historic Utilization of Alternative Compliance Payments (ACPs)**

|      | New    |           | Existing |         | Total  |           |
|------|--------|-----------|----------|---------|--------|-----------|
|      | MWh    | \$        | MWh      | \$      | MWh    | \$        |
| 2007 | 3,563  | 203,519   | 227      | 12,966  | 3,790  | 216,485   |
| 2008 | 295    | 17,281    | 77       | 4,511   | 372    | 21,792    |
| 2009 | 1      | 61        | 1        | 61      | 2      | 122       |
| 2010 | 192    | 11,699    | 166      | 10,114  | 358    | 21,813    |
| 2011 | 84,402 | 5,243,896 | 3        | 186     | 84,405 | 5,244,083 |
| 2012 | 35,195 | 2,253,184 | 2        | 128     | 35,197 | 2,253,312 |
| 2013 | 803    | 52,412    | 61       | 3,981   | 864    | 56,393    |
| 2014 | 732    | 48,429    | 4        | 265     | 736    | 48,694    |
| 2015 | 18     | 1,207     | 9        | 604     | 27     | 1,811     |
| 2016 | 576    | 38,592    | 2        | 134     | 578    | 38,726    |
| 2017 | 0      | 0         | 1496     | 101,294 | 1496   | 101,294   |
| 2018 | 188    | 12,964    | 0        | 0       | 188    | 12,964    |
| 2019 | 1      | \$70      | 1        | \$70    | 2      | \$141     |

**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.<sup>63</sup> National Grid’s “GreenUp” program is just one example.

For Compliance Year 2019, National Grid reported the purchase of Rhode Island eligible RECs on behalf of end-use customers as part of voluntary clean energy programs. The table below provides a summary of the quantities of voluntary REC purchases made on behalf of National Grid and competitive supplier customers.

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

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

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.

<sup>63</sup> 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 <sup>a</sup> | 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%   |
| <b>2019</b>       | <b>14.5%</b>            | <b>12.5%</b>   | <b>2.0%</b>  |
| 2020 <sup>b</sup> | 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 <sup>c</sup> | 38.5%                   | 36.5%  | 2.0%   |

<sup>a</sup> 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.

<sup>b</sup> R.I. Gen. Laws § 39-26-4 was amended to extend an annual 1.5% increase from 2020 through 2035.

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