New Hampshire Public Utilities Commission

NEW HAMPSHIRE
RENEWABLE ENERGY FUND

ANNUAL REPORT

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Submitted to:

LEGISLATIVE OVERSIGHT COMMITTEE
TO MONITOR THE TRANSFORMATION OF DELIVERY OF ELECTRIC SERVICES

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THE SENATE ENERGY AND NATURAL RESOURCES COMMITTEE

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THE HOUSE SCIENCE, TECHNOLOGY AND ENERGY COMMITTEE

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Executive Summary

Thirteen years ago, New Hampshire established a renewable energy policy, the Electric Renewable Portfolio Standard (RPS). The New Hampshire General Court found it to be in the public interest to stimulate investment in low emission renewable energy generation technologies within the state. The Public Utilities Commission (PUC or Commission) is required to make an annual report to the Legislative Oversight Committee to Monitor the Transformation of Delivery of Electric Services, the Senate Energy and Natural Resources Committee, and the House Science, Technology and Energy Committee, detailing how the Renewable Energy Fund (REF) is used. The report that follows is the New Hampshire Renewable Energy Fund Annual Report which describes program results for fiscal year 2020 (July 1, 2019 through June 30, 2020) and summarizes compliance data for calendar year (CY) 2019.

Renewable Energy Fund Programs

Competitive Grant Program

As required by RSA 362-F:10, XI, the Commission issued an annual request for proposals (RFP) to fund renewable energy projects. The RFP for fiscal year (FY) 2020 (FY20) was issued on December 12, 2019, for certain non-residential renewable energy projects located in New Hampshire that are eligible to generate renewable energy certificates (RECs) and not eligible to receive funds from other REF incentive programs.

The Commission received seven proposals requesting a total of $2.24 million in grant funds. Five projects were selected for funding: renovations of three run-of-river hydroelectric facilities, an automated wood chip boiler for an elementary school, and an advanced cyclone for particulate matter emissions reduction at a wood-pellet manufacturing facility. The five projects selected received $1,250,000 in funding through grant contracts approved by the Governor and Executive Council on June 24, 2020.

Low-Moderate Income Community Solar Grant Program

The "New Hampshire Clean Energy Jobs and Opportunity Act of 2017,"[1] included a funding allocation requirement for a program intended to reduce market barriers to solar energy participation by low and moderate income (LMI) residential customers. The FY20 RFP was issued on December 20, 2019, seeking proposals for community solar photovoltaic (PV) projects providing direct benefits to New Hampshire LMI residential electric customers. The Commission received one proposal.

[1] *See* www.gencourt.state.nh.us/bill_status/billText.aspx?sy=2017&id=957&txtFormat=pdf&v=current.

The most recent order approving the LMI Community Solar Grant program included the following directive (Order No. 26,214 (January 25, 2019)):

> "We therefore direct Staff to consider issuing a second RFP in FY 2019 and FY 2020, if at least $300,000 remains in the REF LMI budget following the initial RFP process for the respective fiscal year."

During deliberations regarding next steps following the light response to the December 20, 2019 LMI RFP, it was decided to issue a second RFP. On July 8, 2020, an RFP was issued seeking additional proposals for community solar PV projects providing direct benefits to New Hampshire LMI residential electric customers. The deadline for proposals was September 14, 2020.

Solar Rebate Programs

Solar PV continues to increase in New Hampshire. An additional 19 megawatts (MW) of solar PV was interconnected in 2019. Net metering, the RPS, and REF programs are incentives and drivers for participants in this market. During FY20, the incentive levels of the residential solar program remained at $0.20 per watt, up to a maximum $1,000. In 2020, the Commission adjusted rebate levels to $0.20 per watt, up to a maximum $10,000, for commercial and industrial (C&I) installations.[2]

Wood Pellet Rebate Programs

The growth and stability of the wood pellet industry in New Hampshire continues to depend, in part, on the wood pellet rebate programs. During FY20, the incentive levels for the wood pellet furnace and boiler programs remained at 40 percent of eligible project costs, up to a maximum $10,000 for residential installations and $65,000 for C&I installations. To encourage larger and more economical wood pellet deliveries, the residential program offers a supplemental rebate adder of $100 per ton for fuel storage systems larger than the three-ton minimum requirement, up to a maximum of $500. The C&I program offers additional incentives for the installation of a thermal storage tank and/or production meter to track thermal generation for REC certification.

Instead of heating oil, these homes and businesses are using wood pellets, a renewable fuel that is often locally sourced. Over 375 incentivized residential systems are operational in more than 100 municipalities, and the bulk storage containers installed with these systems have a total combined capacity of over 1,800 tons. On average, each residential wood pellet heating system replaces an estimated 627 gallons of heating oil each year. In total, incentivized residential systems are reducing the state's heating oil consumption by approximately 250,175 gallons each year, and reducing CO_2 emissions by approximately 2,542 metric tons, or the equivalent of

[2] *See* Commission Order No. 26,336 (March 6, 2020).

the annual emissions created by 549 passenger cars.[3]

There are 60 incentivized C&I systems located in 36 New Hampshire municipalities; and the bulk storage containers installed with these systems have a total combined capacity of over 1,000 tons. These C&I wood pellet heating systems displace 462,000 gallons of fuel oil each year, which represents approximately 4,694 metric tons of CO_2 emissions, or the equivalent of the annual emissions created by over 1,000 passenger cars.[4]

Sustainable Energy Division Non-Program Updates

Low-Moderate Income Community Solar Program – Costs and Benefits Report to the Legislature

In 2019, Senate Bill 165[5] became law. This legislation requires the Commission to report on the costs and benefits of LMI Community Solar no later than June 1, 2020. The report describes proposed projects as well as the annual costs and benefits of the three projects that were operational in 2019.

Approximately 16 percent of the Renewable Energy Fund has been allocated to the Low-Moderate Income Community Solar Grant Program since fiscal year 2018. A competitive solicitation process, which included RFPs, led to the award of grants to projects proposing different models:

- subscription-based community solar;
- manufactured housing resident-owned community (ROC) solar; and
- multifamily rental housing behind-the-meter solar.

Project models varied in upfront costs, ownership, ongoing operational costs, and methods for providing direct benefits to LMI participants. These grant awards helped mitigate market barriers to solar energy participation by LMI households.

Of the six projects awarded grants, three projects became operational in 2018. Annual reports containing data

[3] Calculations based on U.S. Energy Information Agency (EIA) and U.S. Environmental Protection Agency (EPA) data. *See* EIA 2015 Residential End-Use Consumption Survey, Table CE 4.7, available at eia.gov/consumption/residential/data/2015/. Average oil-heated New England home uses 627 gallons/yr. *See* eia.gov/environment/emissions/co2_vol_mass.php for EIA's estimate of 22.4 pounds of CO_2 per gallon of home heating fuel. *See* epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references for EPA assumption of 4.63 metric tons CO_2E/vehicle/year.

[4] Calculations based in EIA and EPA data. *See* EIA Agency's 2012 Commercial Buildings End-Use Consumption Survey, Table E10, available at eia.gov/consumption/commercial/data/2012/index.php?view=consumption#e1-e11 estimates the average commercial building in New England that uses fuel oil for space heating uses 240 gallons/1000 sq. ft. The buildings heated with these incentivized systems have a total combined area of ~1,925,000 sq. ft. as reported on incentive applications. *See* EIA estimate of 22.4 pounds of CO_2 per gallon of home heating fuel, eia.gov/environment/emissions/co2_vol_mass.php. *See* EPA assumption of 4.63 metric tons CO_2E/vehicle/year, epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references.

[5] *See* Senate Bill 165 (2019), http://gencourt.state.nh.us/bill_Status/billText.aspx?sy=2019&id=1054&txtFormat=pdf&v=current.

for 2019 were provided to the Commission for each project's first full year of operation. This data, as well as information received through follow up discussions with grant recipients, are the sources for the annual costs, direct benefits, non-monetary benefits, and observations. Overall, the three operational projects provided net positive direct benefits with no upfront costs to participants.

After thoroughly analyzing the program and the different models, the Commission observed that each model has different characteristics that impact ongoing annual costs and benefits.

The report noted that the LMI Community Solar Grant program has reduced or eliminated market barriers to solar energy that LMI residential customers face. As more data becomes available and the various project models are evaluated, opportunities for improvement may be observed in the areas of administrative efficiency, income verification, and project financing. All project models were designed in a manner lending themselves to replication while allowing for improvements in their design and implementation. In summary, while the models vary the solar projects receiving grant funding from the REF are efficiently providing both direct and indirect benefits to LMI families in New Hampshire.

The complete report is available online at: puc.nh.gov/Home/Commission-Reports/20200601-LMI-Costs-And-Benefits-Legislative-Report.pdf

Net Energy Metering

The Sustainable Energy Division continued work on the various docket-related initiatives ordered through the "Development of New Alternative Net Metering Tariffs and/or Other Regulatory Mechanisms and Tariffs for Customer-Generators" docket (DE 16-576, Order No. 26,029). Work completed during FY20 is summarized below.

Amendments to Puc 900 Administrative Rules Relative to Net Metering

The Commission completed updates to the Net Metering Rules[6] to account for changes to the net metering tariff and legislative amendments that impact net metering and group net metering. Necessary changes include, but are not limited to:

- Eliminating the 100 MW net metering cap;
- Making revisions necessitated by the alternative net metering tariff;
- Eliminating the requirement for group hosts and members to take default service;
- Reducing the administrative requirements related to group net metering; and
- Making changes necessitated by the enactment of Senate Bill 165 (2019) including establishing procedures for on-bill credits, the LMI adder, and new reporting requirements.

[6] *See* N.H. Code of Administrative Rules Puc 900 (Net Metering for Customer-Owned Renewable Energy Generation Resources of 1,000 Kilowatt or Less) at www.puc.nh.gov/Regulatory/rules.htm.

Locational Value of Distributed Generation Study

Recently a locational value of distribution generation (LVDG) study was completed. The study evaluates the distribution-level locational value of load reductions potentially achievable by distributed generation (DG) for New Hampshire's three regulated electric distribution utilities. The study approach closely followed utility planning methods, data, and practices to best represent investment decision-making in the New Hampshire context.

The study covers a 15 year timeframe beginning in year 2020 and includes 5-years of historical data and looks 10-years forward. Distribution system capacity constraints are analyzed under base, low, and high load growth scenarios. The study focuses on significant distribution system capacity deficiencies to be addressed through planned or potential capital investments, such as replacements or upgrades of substations or circuits. No minimum investment threshold level for the cost of upgrades is required for a location to be evaluated; however, small capital investments such as pole top distribution transformers and capacitors will be included in an upcoming separate system-wide Value of Distributed Energy Resources (VDER) study and are not covered in the LVDG study.

When evaluating load reductions to avoid capital investments, the study considers three specific net energy metering eligible DG technologies: solar photovoltaic (PV), solar PV paired with energy storage, and hydroelectric generation, all with capacities rated up to one megawatt.

The study methodology includes three steps:

- **Step 1:** Location Identification – Identify potential locations with expected capacity constraints requiring investments over the study timeframe, including base, low, and high load growth sensitivity analysis.
- **Step 2:** Estimation of Investment Costs for Avoidance – Determine the value of potential avoided capacity investments at the selected locations.
- **Step 3:** Economic Analysis and Mapping of DG Production Profiles with Distribution Capacity Needs – Perform economic analysis to estimate the benefit of capacity avoidance and map representative DG production profiles with distribution system capacity needs.

The results of the study will inform future net energy metering tariff development proceedings before the Commission. The complete study is available on the Commission's website.[7]

[7] *See* Locational Value of Distributed Generation Study, puc.nh.gov/Regulatory/Docketbk/2016/16-576/LETTERS-MEMOS-TARIFFS/16-576_2020-08-21_STAFF_LVDG_STUDY_FINAL_RPT.PDF

Value of Distributed Energy Resources Study

Staff filed a proposed value of distributed energy resources (VDER) study scope, which was followed by a public hearing and written comment period and approved with modifications and clarifications by the Commission through Order No. 26, 316[8] on December 18, 2019. The order directs Commission Staff to issue a request for proposals to engage a consultant to design and perform the study based on the approved scope, with appropriate stakeholder engagement. This study scope formed the basis of the March 27, 2020 request for proposals to solicit a vendor to conduct the study. When complete, the results of the study will be submitted to the Commission and will inform future NEM tariff development proceedings before the Commission.

Low-Moderate Income Solar Pilot

In May 2019, Eversource Energy (Eversource) filed its Clean Innovation Community Solar pilot program for the benefit of LMI customers. "Eversource's proposed Clean Innovation Community Solar pilot program is largely based upon the existing model for group net metering, but is intended to explore a different shared solar model that has the potential to make financial savings from solar programs more accessible to LMI customers by removing or reducing existing financial and administrative barriers to LMI participation in shared solar."[9] On July 11, 2019, representatives of Eversource, the Office of the Consumer Advocate, Clean Energy NH, Conservation Law Foundation, and Staff met to discuss preliminary issues relevant to this proceeding, including the development of a procedural schedule for the docket.

On October 8, 2019, the Commission suspended the requirement for electric distribution utilities to develop low-moderate income solar pilot programs for a period of two years, until July 1, 2021, in order to avoid potential duplication with recently-enacted statutory amendments before the market has had an opportunity to respond to those legislative initiatives. If, by July 1, 2021, at least two low-moderate income community solar projects have not been developed in a utility's service territory, then that utility will be required to file a pilot program by October 1, 2021, that meets the criteria specified in Order No. 26,029.

On May 14, 2020, Staff asked the Commission to suspend this docket until August 15, 2020, in light of uncertainty associated with the impact of the novel coronavirus (COVID-19) on public health and the economy. No parties objected to Staff's recommendation. In May, 2020, Staff proposed an additional suspension until January 2021. Staff believes this will allow all parties to consider the merits of the proposal at a time when the parties anticipate there will be a better opportunity to assess the impact of the novel coronavirus on public health and the economy, and conditions for the pilot proposal.

[8] *See* puc.nh.gov/Regulatory/Docketbk/2016/16-576/ORDERS/16-576_2019-12-18_ORDER_26316.PDF

[9] Eversource's petition and other related documents available at puc.nh.gov/Regulatory/Docketbk/2019/19-104.html.

Outlook for Fiscal Year 2021

Renewable Energy Fund Programs

For compliance year 2019, alternative compliance payments (ACPs) were similar to the prior compliance year; totaling approximately $2.56 million. The Commission is in the process of developing the FY21 program budget. Due to a legislative amendment, the REF is no longer continually appropriated to the Public Utilities Commission.[10] The Commission is working to align the REF programs and current funding with the statutory change. Pursuant to RSA 362-F:10, VIII, any program changes will be considered as part of a public hearing process with stakeholder involvement, and would require notice and hearing.

Net Energy Metering

PUC Staff will continue to work with the net energy metering pilot and study working groups to move the various docket-related initiatives forward. The Sustainable Energy Division in conjunction with a consultant will lead the development of the value of distributed energy resources study. Staff will also continue to conduct technical sessions to inform the design and execution of the Value of Distributed Energy Resources study, and the design and development of utility proposed Eversource Low-Moderate Income pilot.

The Commission is required to authorize at least two new low-moderate income community solar projects per year in each utility's service area starting on January 1, 2020.

[10] In 2017, the legislature removed the statutory language stating that the REF is "continually appropriated to the commission" through an amendment to RSA 362-F:10, I. *See* 2017 Laws Chapter 156, House Bill 517 Section 156:105.

Overview of New Hampshire's Renewable Portfolio Standard Policy

New Hampshire's Renewable Portfolio Standard statute established the renewable energy policy for the State. Common renewable energy sources are solar, wind, hydropower, biomass, and geothermal. These energy sources provide a sustainable and affordable power supply. Renewable energy enables New Hampshire municipalities, schools, businesses, and residents to realize economic and energy security benefits.

Renewable energy generation technologies provide fuel diversity to the state and the region through the use of renewable fuels sourced locally, lowering regional dependence on fossil fuels. Renewable resources also have the potential to lower and stabilize future energy costs by reducing exposure to rising and volatile fossil fuel prices.

The use of local and renewable fuels also allows more energy dollars to be retained in the state instead of being spent on imported fuels. In addition, utilizing renewable technologies can help reduce the amount of greenhouse gases, nitrogen oxides, and particulate matter emissions generated in the state, which helps improve air quality and public health.

The RPS statute established four classes of renewable energy resources (summarized in the box to the right). Class I is split into a separate electricity requirement and thermal energy requirement. Electricity suppliers must obtain RECs for each of the four classes as a set percentage of their retail electric load. One REC represents renewable attributes of one megawatt-hour of electricity or the equivalent amount of thermal energy.

New Hampshire RPS Class Definitions*

Class I - New Renewable Energy. Sources producing electricity or "useful thermal energy" (*i.e.*, Class I Thermal) generated by any of the following resources, provided the generator began operation after January 1, 2006, except as noted below:

- Wind energy;
- Hydrogen derived from biomass fuels or methane gas;
- Ocean thermal, wave, current, or tidal energy;
- Methane gas;
- Eligible biomass;
- Class II solar electric energy not used to satisfy the minimum Class II obligation;
- The incremental new production of electricity in any year from an eligible biomass, eligible methane source, or hydroelectric generating facility of any capacity, over its historical generation baseline;
- The production of electricity from Class III or IV sources that have been restored through significant investment.
- The production of biodiesel in New Hampshire meeting all requirements.

Class I Thermal - Useful Thermal Energy. Class I Thermal resources must be used to meet a set percentage of the total Class I RPS obligation as outlined in RSA 362-F:3. Eligible Class I Thermal sources include the following technologies that began operation after January 1, 2013 except as noted below:

- Geothermal systems that began producing thermal energy;
- Solar-thermal systems that produce useful thermal energy only;
- Eligible biomass generators that meet emissions criteria;
- The production of useful thermal energy from certain biomass thermal sources which began operation prior to January 1, 2013 and have been upgraded or replaced through significant investment;
- Renewable forms of Methane gas if the output is in the form of useful thermal energy.

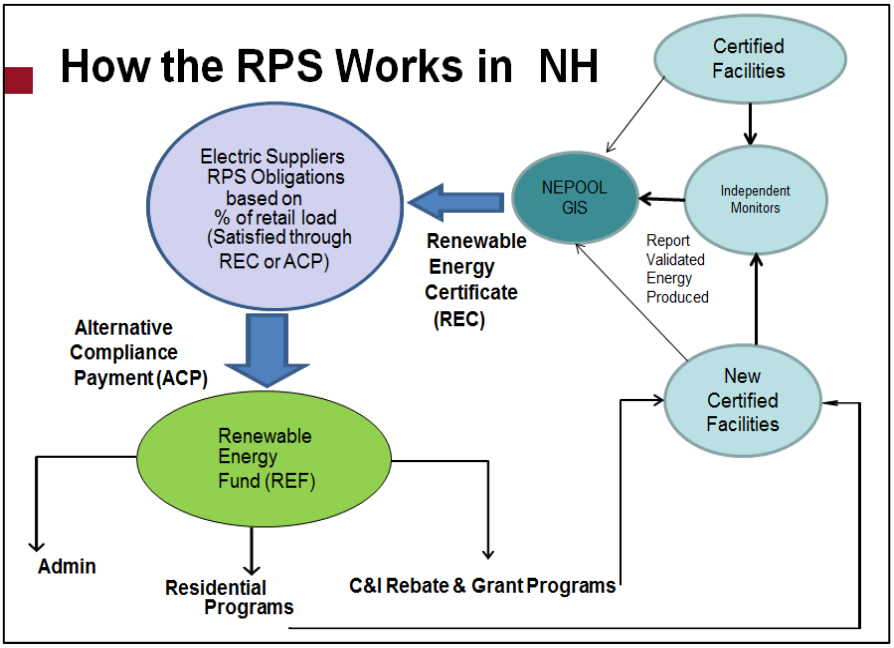
Class II - New Solar. Solar technologies; provided the electric generator began operation after January 1, 2006.

Class III - Existing Biomass/Methane. Eligible biomass systems of 25 MW or less, and methane gas, provided the generator began operation before January 1, 2006. Methane gas sources which began operation prior to 2006 and exceed an aggregated gross nameplate capacity of 10 MW at any single landfill site are not eligible.

Class IV - Existing Small Hydroelectric. Hydro facilities up to 5 MW, provided the generator began operation before January 1, 2006, and complies with certain environmental protection criteria; and hydroelectric facilities up to 1 MW that are interconnected to the distribution grid in New Hampshire.

RECs are generated by certified renewable energy facilities and sold into a regional market. Renewable energy facilities must apply for New Hampshire RPS eligibility. Facilities submit to the Commission a class-specific application for review and approval. The Sustainable Energy Division certifies the systems as eligible under state statutes and rules (Puc 2500 administrative rules) to generate RECs. Facility owners must purchase and install a revenue quality meter to record the gross output and retain the services of an independent monitor to be eligible for certification. All classes of applications that are considered complete must be approved or rejected within 45 days of receipt.

Upon certification, Commission Staff notifies the New England Power Pool Generation Information System (NEPOOL GIS), which issues and tracks RECs for the region. Gross output from certified customer-sited facilities is verified and reported by independent monitors to NEPOOL GIS. On a quarterly basis, NEPOOL GIS issues RECs for reported generation and administers a two-month trading period. RECs generated in one state may be sold in another provided the facility is certified in that state as well.



If electricity suppliers cannot, or choose not to, purchase or obtain sufficient RECs to comply with the RPS law, they must make ACPs to the REF. On an annual basis, the Commission reviews electricity suppliers' compliance with the previous calendar year's RPS requirements. Electricity suppliers include New Hampshire's competitive electric power suppliers and electric distribution utilities (Eversource, Liberty Utilities (Liberty), Unitil Energy Systems, Inc. (Unitil), and the New Hampshire Electric Cooperative (NH Electric Cooperative)).

The REF is a dedicated, non-lapsing fund which is used to support electrical and thermal renewable energy initiatives. ACPs and the interest accrued on the REF are the only sources of funding and fluctuate from year to year, depending on the price and availability of RECs in the regional market.

The Commission's Sustainable Energy Division administers three residential rebate programs, two C&I rebate programs and two competitive grant programs with funding from the REF. Projects installed with incentives from the REF are eligible facilities which may become certified, thereby generating additional RECs to trade in the NEPOOL GIS market. Incentivizing the installation of new renewable facilities enables New Hampshire to continue to meet its increasing RPS goals.

Fiscal Year 2020: Legislative Summary

In 2020, the net metering law was amended and the change in law is summarized below.

Net Metering Legislation

Senate Bill 166 (SB 166)[11] modified the net metering section of the "Limited Electrical Energy Producers Act." With the enactment of SB 166, municipal and county aggregators, in addition to competitive electricity suppliers, may determine the terms under which they will supply, credit, or purchase renewable energy exported to the distribution grid from eligible customer-generators.

[11] *See* gencourt.state.nh.us/bill_Status/billText.aspx?id=1055&txtFormat=html&sy=2020; effective September 15, 2020.

RPS Revenues and Costs

Revenues

Alternative compliance payments and the interest on the REF are the only sources of revenue for the REF. The ACP rate is paid for each megawatt hour of RPS compliance obligation not met by purchasing a REC. The ACP rate serves as a ceiling price in the REC market.

Generally, REC prices trading at or near the ACP rate indicate an under-supply of RECs in the market, whereas RECs trading below the ACP rate indicate an adequate supply of RECs in the market.

ACP rates are defined by RPS Class and are adjusted annually. In accordance with RSA 362-F:10, III (a), the ACP rate for Class IV is adjusted by the Consumer Price Index (CPI) and for Classes I and II by one-half of the CPI. In accordance with RSA 362-F:10, III (b), the Class III ACP is $45 for 2015 and 2016, and $55 for 2017, 2018, and 2019. In accordance with RSA 362-F:10, III (c), the 2020 Class III ACP rate equals the 2013 ACP rate adjusted by each year's CPI for the years 2014 through 2019.

Basic Class Definitions

Class I (Non-Thermal)
- New Renewable
- Production of Biodiesel

Class I Thermal
- New Useful Thermal

Class II
- New Solar PV

Class III
- Existing Biomass
- Existing Methane

Class IV
- Existing Hydro

(See RSA 362-F for detailed definitions)

Table 1: Inflation Adjusted Alternative Compliance Payment Rates ($ per Megawatt Hour)

Inflation Adjusted Alternative Compliance Payment Rate ($ per Megawatt Hour)									
	2012	2013	2014	2015	2016	2017	2018	2019	2020
Class I (Non-thermal)	$ 64.02	$ 55.00	$ 55.37	$ 55.75	$ 55.72	$ 56.02	$ 56.54	$ 57.15	$57.61
Class I Thermal		$ 25.00	$ 25.17	$ 25.34	$ 25.33	$ 25.46	$ 25.69	$ 25.97	$ 26.18
Class II	$ 168.13	$ 55.00	$ 55.37	$ 55.75	$ 55.72	$ 56.02	$ 56.54	$ 57.15	$ 57.61
Class III	$ 31.39	$ 31.50	$ 31.93	$ 45.00	$ 45.00	$ 55.00	$ 55.00	$ 55.00	$ 34.54
Class IV	$ 31.39	$ 26.50	$ 26.86	$ 27.23	$ 27.20	$ 27.49	$ 28.00	$ 28.60	$ 29.06

ACPs from electricity suppliers are made annually by July 1 for the prior calendar year. For example, ACPs for calendar year 2019 (CY19) were to be paid by July 1, 2020. Entities with RPS compliance obligations who might pay ACPs include New Hampshire's electric utilities as well as competitive electric power suppliers. The ACP funding to the REF, as designed, is expected to, and does, fluctuate over time.

ACP revenues for compliance year 2019 were $2,558,411 as compared to the prior year's revenue of $2,601,432. An additional $500,000 was paid in 2020 towards an outstanding 2018 compliance year obligation. Renewable energy facility development continues to enable suppliers to have an adequate supply level in the

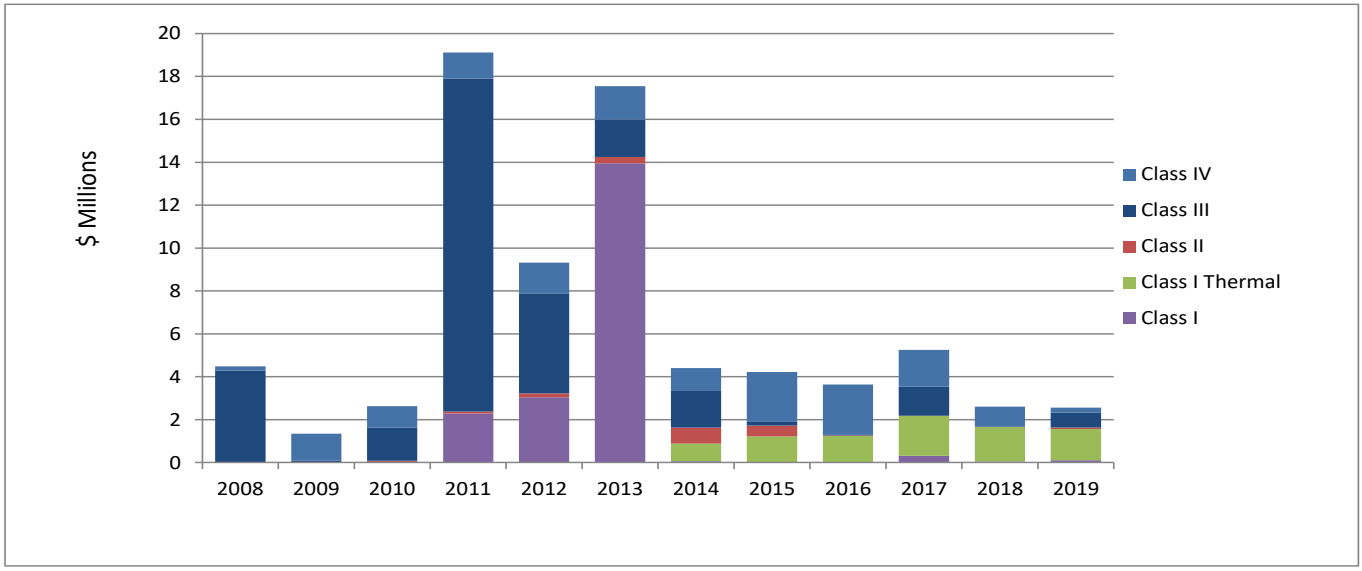
renewable energy certificate market given that the overall compliance obligation increased from 18.7 percent for calendar year 2018 (CY18) to 19.7 percent for CY19. The increased RPS obligation was due to the annual, legislatively defined increases for Class I, Class I Thermal, and Class II. **The fact that renewable requirements increased while ACP revenues decreased indicates that the renewable energy standards are increasing renewable development.**

Table 2: ACP Revenues by Compliance Year

Compliance Year	ACP Revenue	Total RPS Obligation
2008	$ 4,483,917	4.00%
2009	$ 1,348,294	6.00%
2010	$ 2,625,499	7.54%
2011	$ 19,121,853	9.58%
2012	$ 9,323,198	5.55%
2013	$ 17,458,196	5.80%
2014	$ 4,406,804	7.20%
2015	$ 4,224,339	8.30%
2016	$ 3,633,342	8.50%
2017	$ 5,258,420	17.60%
2018	$ 3,101,432	18.70%
2019	**$ 2,558,411**	**19.70%**

ACP Revenues by Class, and Trend by Compliance Year

The chart below illustrates the fluctuating nature of the annual ACP revenue while providing a year-to-year comparison of ACP revenues by RPS Class.



Revenues by RPS Class

This next section provides a discussion of possible market conditions contributing to the 2019 ACP revenues.

Class I & Class I Thermal: New Renewable Energy Production of Electricity or Useful Thermal ACPs

ACPs for Class I increased from $47,662 for CY18 to $110,185 for CY19, with an increased obligation requirement of 8.2 percent for CY19 versus 7.5 percent for CY18.

In addition, pursuant to RSA 362-F:6, II-a and Puc 2503.04(d), each year the Commission computes an estimate of a percentage credit an electricity supplier may take for Class I based on the capacity of customer-sited sources that are net metered but are not certified to create Class I RECs. For CY19, the credit for Class I was 0.0054 percent against a total obligation of 8.2 percent. At the time of its RPS compliance filing, an electricity supplier may claim this Class I REC credit in an amount equal to the percentage credit for Class I times the total electricity (megawatt-hours (MWh)) provided to end-use customers by that electricity supplier.

ACPs for the Class I Thermal were $1,457,047 for CY19 compared to $1,611,766 for CY18. The obligation for Class I Thermal increased to 1.4 percent from 1.2 percent. In CY19, approximately 86,000 RECs were purchased to meet compliance obligations. In CY18, approximately 62,000 RECs were purchased to meet compliance obligations. This increase in available RECs indicates that the REF investments in rebate and grant programs to incentivize thermal projects are increasing the supply of RECs as anticipated.

Class II: New Solar Electric ACPs

ACPs for Class II were $70,866 due to the credit for Class II net metered facilities that are not Class II REC-certified, similar to that described above for Class I. For CY19, the credit for Class II which an electricity supplier may claim at the time of its RPS compliance filing was 0.4794 percent compared to the total obligation of 0.60 percent. The ACPs paid were likely due to decisions by competitive electric power suppliers not to pursue purchase of small quantities of RECs but to expedite their compliance process by paying small ACP amounts.

Class III: Existing Biomass/Methane Electric Technologies (Prior to January 1, 2006) ACPs

The Commission did not reduce the Class III requirement for compliance year 2017, 2018 or 2019. With a Class III obligation equal to 8 percent in CY18 and CY19, ACP revenue was $695,860 for CY19 compared to $0 in CY18. The ACPs paid were likely due to a decrease in available Class III RECs. Two Class III certified biomass facilities were not operational during a portion of 2019 thereby reducing the supply of available RECs.

Class IV: Existing Small Hydroelectric (Prior to January 1, 2006) ACPs

Class IV ACPs decreased to $224,453 in CY19 from $939,120 in CY18. The decrease in ACPs paid were likely due to more favorable weather conditions for small hydro facilities thereby increasing the supply of available RECs.

Table 3 lists the distribution utilities and competitive electric power suppliers (CEPS) that filed E-2500 compliance reports for calendar (compliance) year 2019, documents each company's total ACPs, and further breaks down these payments by renewable energy class. Where no revenue appears for a class, it is because the company obtained RECs to satisfy its obligation for that class. Totals may not sum due to rounding.

Table 3: ACP Obligations by Supplier and RPS Class for Compliance Year 2019

2019	Alternative Compliance Payments (ACPs)					
Company	**Class I**	**Class I Thermal**	**Class II**	**Class III**	**Class IV**	**Total**
Liberty Utilities	$ -	$ -	$ -	$ -	$ -	$ -
New Hampshire Electric Cooperative	$ -	$ 187,192	$ -	$ -	$ -	$ 187,192
Eversource Energy	$ -	$ 519,893	$ -	$ -	$ -	$ 519,893
Unitil Energy Systems, Inc.	$ -	$ -	$ 1,029	$ -	$ -	$ 1,029
Distribution Utilities Subtotal	**$ -**	**$ 707,085**	**$ 1,029**	**$ -**	**$ -**	**$ 708,114**
Agera Energy, LLC *	$ -	$ -	$ -	$ -	$ -	$ -
Ambit Energy, L.P.	$ -	$ -	$ 2,743	$ -	$ -	$ 2,743
Calpine Energy Solutions LLC	$ -	$ 32,385	$ -	$ 88,935	$ 38,210	$ 159,529
Champion Energy Services LLC	$ 59,436	$ 4,623	$ 7,315	$ 56,100	$ 45,503	$ 172,976
Clearview Energy	$ -	$ 5,402	$ -	$ -	$ -	$ 5,402
Constellation New Energy, Inc.	$ -	$ 77,131	$ -	$ -	$ -	$ 77,131
CS Berlin Ops, Inc.	$ 2,000	$ 156	$ 57	$ 1,870	$ 172	$ 4,255
Devonshire (Fidelty)	$ -	$ -	$ -	$ -	$ -	$ -
Direct Energy Business, LLC	$ -	$ 194,749	$ 1,600	$ -	$ -	$ 196,349
Direct Energy Services, LLC (First Point Power)	$ -	$ 65,522	$ 57	$ -	$ -	$ 65,579
EDF Energy Services, LLC	$ 343	$ 31,242	$ -	$ 75,130	$ -	$ 106,715
ENGIE Resources LLC	$ -	$ 149,743	$ 19,888	$ -	$ -	$ 169,631
ENH Power	$ -	$ -	$ -	$ 179,135	$ -	$ 179,135
Energy Rewards	$ -	$ 14,777	$ -	$ -	$ -	$ 14,777
First Point Power, LLC	$ -	$ 96,219	$ 12,744	$ 12,210	$ -	$ 121,173
Mega Energy of New Hampshire	$ 48,406	$ 3,766	$ 457	$ 45,485	$ 4,433	$ 102,547
MP2 Energy NE, LLC	$ -	$ -	$ -	$ -	$ -	$ -
NextEra Energy Services New Hampshire, LLC	$ -	$ -	$ -	$ -	$ -	$ -
North American Power and Gas, LLC	$ -	$ 16,543	$ 16,688	$ 206,470	$ 104,133	$ 343,833
PNE Energy Supply, LLC	$ -	$ -	$ -	$ -	$ -	$ -
Smart Energy Holdings, LLC	$ -	$ 3,013	$ -	$ 30,525	$ -	$ 33,538
South Jersey Energy Company	$ -	$ 13,011	$ 1,200	$ -	$ -	$ 14,211
Summer Energy Northeast	$ -	$ 4,753	$ -	$ -	$ -	$ 4,753
Texas Retail Energy	$ -	$ 31,631	$ 6,001	$ -	$ 32,003	$ 69,636
Think Energy (ENGIE Retail, LLC)	$ -	$ 5,298	$ 972	$ -	$ -	$ 6,269
Town Square Energy, LLC	$ -	$ -	$ -	$ -	$ -	$ -
Xoom Energy New Hampshire, LLC	$ -	$ -	$ 114	$ -	$ -	$ 114
Competitive Energy Suppliers Subtotal	**$ 110,185**	**$ 749,962**	**$ 69,837**	**$ 695,860**	**$ 224,453**	**$ 1,850,297**
TOTAL	**$ 110,185**	**$ 1,457,047**	**$ 70,866**	**$ 695,860**	**$ 224,453**	**$ 2,558,411**

*Agera Energy LLC recorded electric sales in New Hampshire in 2019; however, as of the filing of this annual report, Agera Energy, LLC, has not submitted the E-2500 as required.

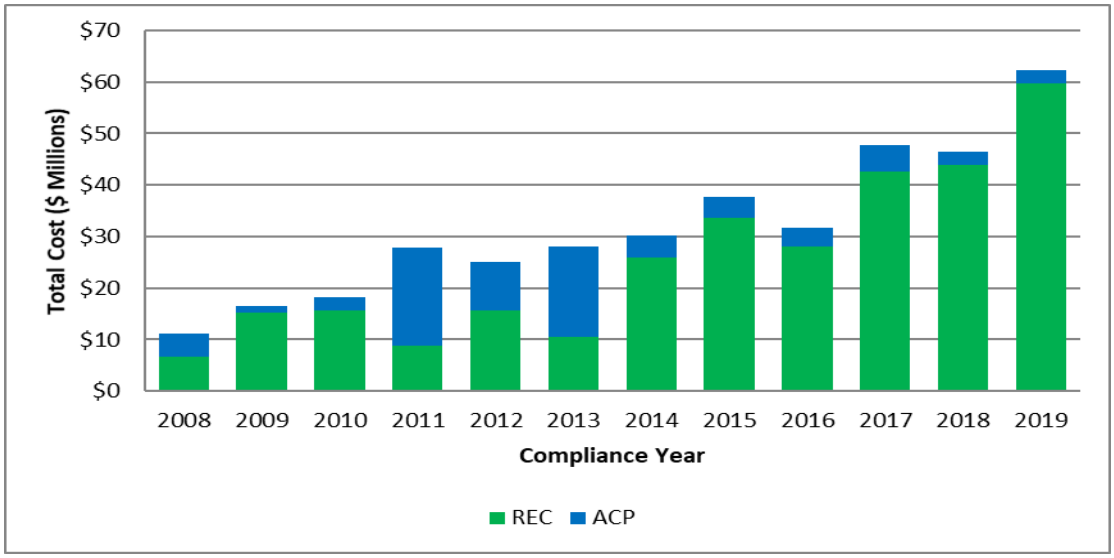
RPS Compliance Costs

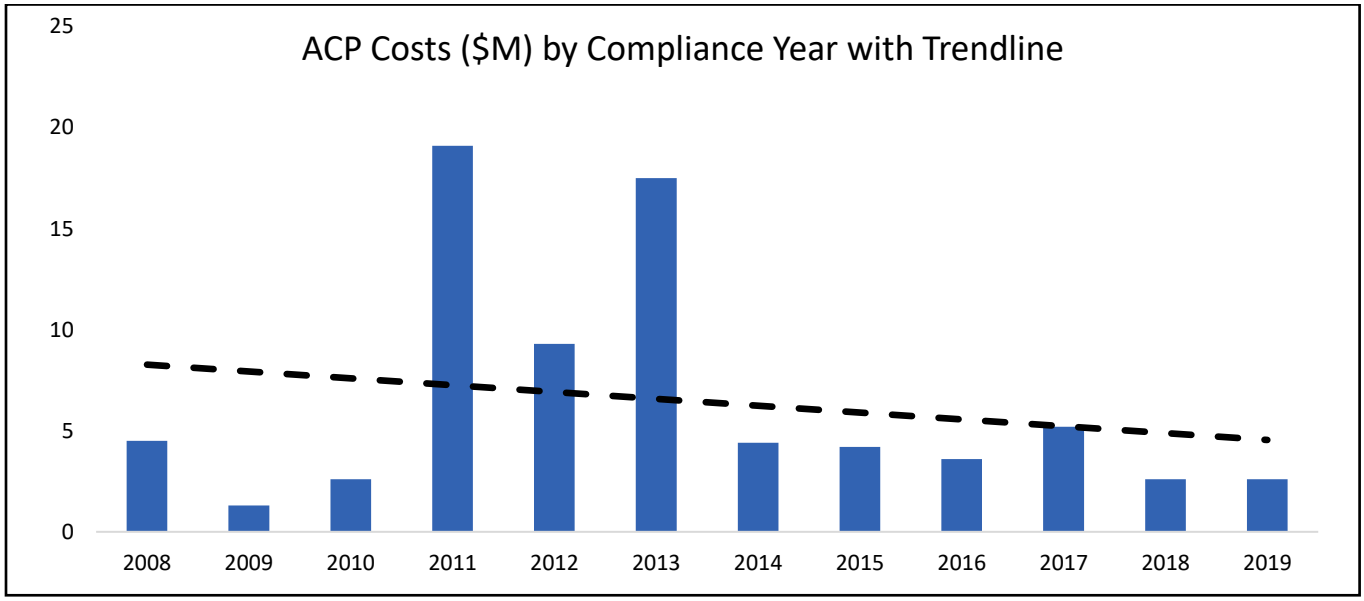
The RPS is a market-based policy where RECs are traded through the NEPOOL GIS. NEPOOL GIS tracks certificates for all megawatt-hours of generation and load produced in the ISO New England control area, as well as imported MWh from adjacent control areas. Electricity suppliers comply with RPS requirements by purchasing RECs or making ACPs. Therefore, the total cost of RPS compliance is equal to the cost of RECs plus the ACPs. The average rate impact for CY 2019 RPS compliance costs is $0.0061 per kWh. As the table and chart illustrate, ACP costs have generally declined while REC purchases have increased in recent years. In addition, between calendar year 2008 and 2019, the annual RPS obligation has increased from 4 percent to 19.7 percent.

Table 4: Annual RPS Compliance Costs and Rate Impact

Compliance Year	Total RPS Obligation	Total REC Costs	Total ACP Costs	Total RPS Compliance Cost	Average per kWh Rate Impact
2008	4.00%	$ 6.65	$ 4.48	$ 11.14	$ 0.0011
2009	6.00%	$ 15.19	$ 1.35	$ 16.54	$ 0.0016
2010	7.54%	$ 15.57	$ 2.63	$ 18.19	$ 0.0017
2011	9.58%	$ 8.70	$ 19.12	$ 27.82	$ 0.0026
2012	5.55%	$ 15.70	$ 9.32	$ 25.02	$ 0.0023
2013	5.80%	$ 10.59	$ 17.46	$ 28.05	$ 0.0026
2014	7.20%	$ 25.81	$ 4.41	$ 30.21	$ 0.0028
2015	8.30%	$ 33.51	$ 4.22	$ 37.73	$ 0.0035
2016	8.50%	$ 28.12	$ 3.63	$ 31.75	$ 0.0030
2017	17.60%	$ 42.53	$ 5.26	$ 47.79	$ 0.0046
2018	18.70%	$ 43.94	$ 3.10	$ 47.04	$ 0.0043
2019	**19.70%**	**$ 59.65**	**$ 2.56**	**$ 62.21**	**$ 0.0061**
Totals		$ 305.96	$ 77.54	$ 383.50	

All costs presented in millions and rounded.





REC Purchases

In accordance with RSA 362-F:8, IV, the annual REF report includes the number of RECs that were purchased during the prior compliance year by RPS class. Pursuant to RSA 362-F:7, I, purchased RECs not used for compliance may be banked for up to two years. Banked RECs may be used in future compliance years to meet up to 30 percent of a supplier's RPS requirements for a given class obligation. Table 5 below presents the quantity of RECs purchased during calendar year 2019.

Table 5: RECs Purchased During 2019 by Class

Class I Non-thermal	Class I Thermal	Class II	Class III	Class IV	Total
726,116	83,612	21,601	756,345	151,184	1,738,858

Rebate and Grant Program Summaries and Results

Pursuant to RSA 362-F:10, the Commission administers three residential renewable energy rebate programs, a low moderate income grant program, two C&I renewable energy rebate programs, and a competitive grant program for non-residential renewable energy projects. For all rebate programs and grants, projects funded must be located in New Hampshire.

Renewable Energy Fund Rebate Programs

Rebate programs funded by the REF are described in Table 6.

Table 6: Summary of Renewable Energy Fund Rebate Programs

Rebate Program	Eligible Technologies and Capacity Limits	Incentive Levels (Rebate)	Authority, Date of Inception
Residential Electrical Renewable Energy Rebate (PV and Wind)	Solar electric PV and wind turbines systems	$0.20 per watt up to a maximum of $1,000, or 30% of the total cost of the facility, whichever is less (*Effective January 2, 2018*)	RSA 362-F:10, V July 2009 *Program was modified in Order No. 26,075 in Docket DE 15-302. (Nov. 2017)*
Residential Solar Water Heating Rebate	Solar water heating systems with annual production capacity of 5.5 MMBtus/hour or greater	$1,500, $1,700, or $1,900 depending on system capacity	RSA 362-F:10, VIII April 2010
Residential Wood Pellet Boiler/Furnace Rebate	High efficiency, bulk-fed wood pellet central furnaces/boilers	40% of the eligible system cost and installation, up to a maximum rebate of $10,000. The program also provides a supplemental adder of $100 per ton for fuel storage systems larger than the 3 ton minimum requirement, up to a maximum of $500. (*Effective July 9, 2016*)	RSA 362-F:10, VIII April 2010 *Program was modified in Order No. 25,921 in Docket DE 16-61 (July 2016).*

Rebate Program	Eligible Technologies and Capacity Limits	Incentive Levels (Rebate)	Authority, Date of Inception
C&I Solar Technologies Rebate	PV systems less than or equal to 500 kW AC, and solar thermal systems less than or equal to 100 kW AC or thermal equivalent	Incentive levels for PV systems are as follows: • $0.20/watt (lower of AC and DC) for new solar electric facilities • Up to a maximum rebate of $10,000 • Expansions to existing solar systems are not eligible Incentive levels for solar thermal systems are as follows: • $0.12/rated or modeled kBtu/year for new solar thermal facilities fifteen collectors in size or fewer; • $0.07/rated or modeled kBtu/year for new solar thermal facilities greater than fifteen collectors in size; and • Expansions to existing solar systems are not eligible	RSA 362-F:10, VIII October 2010 *Program modified and opened in Order No. 26,336. In Docket DE 10-212 (March 2020).,*
Commercial and Industrial Wood Pellet Furnace/Boiler Rebate	Non-residential bulk-fuel fed wood pellet boilers and furnaces rated 2.5 MMBtus/hour or less	40% of the eligible system cost and installation, up to a maximum rebate of $65,000. The program also provides supplemental adders for storage and metering. (*Effective July 9, 2016*)	RSA 362-F:10, VIII December 2013 *Program was modified in Order No. 25,922 in Docket DE 13-298 (July 2016).*

New Hampshire's solar electric market continues to grow. Net metering, the RPS, and REF programs are incentives and drivers for participants in this market. Specific program results for the REF rebate programs in FY20 are summarized in Table 7.

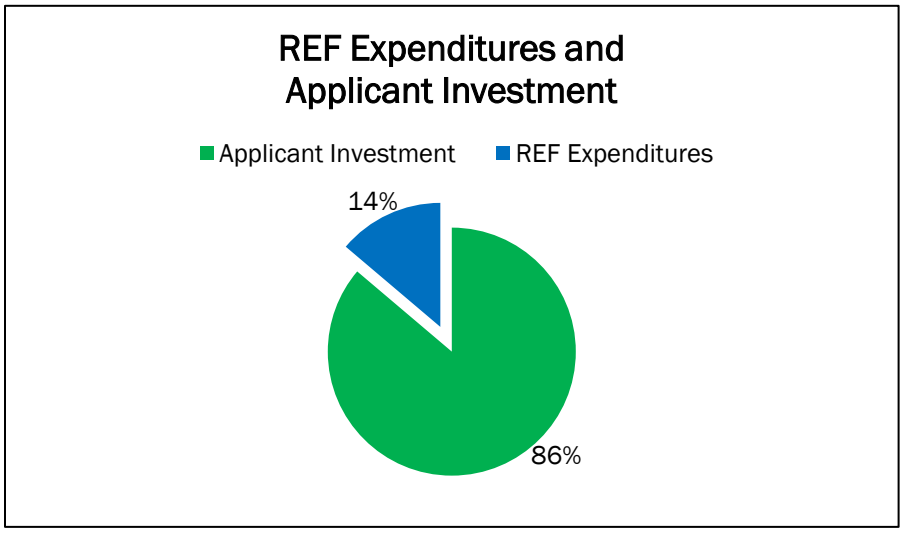
Table 7: REF Rebate Program Results for Fiscal Year 2020

REF Rebate Program	Number of Applications Received	Number Rebates Awarded	Rebate Funds Disbursed	Average Rebate Award
Residential Electrical Renewable Energy (PV and Wind)	882	940	$ 939,884	$ 1,000
Residential Solar Water Heating	n/a	n/a	n/a	n/a
Residential Wood Pellet Furnace/Boiler	25	25	$ 240,154	$ 9,606
C&I Solar Technologies (Electric and Thermal)	61	66	$ 1,165,503	$ 17,659
C&I Wood Pellet Furnace/Boiler	3	4	$ 86,636	$ 23,739
Totals	**971**	**1,035**	**$ 2,432,176**	**n/a**

Cumulative results for the rebate programs, since their inception through June 30, 2020, are shown below in Table 8. The program rebates have leveraged private investment in a ratio greater than six to one.

Table 8: Cumulative Rebate Program Results through June 30, 2020

REF Rebate Program	Number of Applications Received	Number of Rebates Awarded	Rebate Funds Disbursed	Aggregate Applicant Investment	Total Capacity of Incentivized Systems
Residential Electrical Renewable Energy (PV and Wind)	6,788	6,218	$ 15,737,694	$ 143,873,362	36.0 MW DC
Residential Solar Water Heating	510	494	$ 1,008,100	$ 3,292,000	0.92 MMBtu/hr
Residential Wood Pellet Boiler/Furnace	437	399	$ 2,657,349	$ 6,496,740	37.4 MMBtu/hr
C & I Solar Technologies (Electric and Thermal)	911	607	$ 14,094,265	$ 62,897,389	28 MW DC
C&I Wood Pellet Boiler/Furnace	85	60	$ 1,903,478	$ 6,026,903	27.7 MMBtu/hr
Totals	**8,731**	**7,778**	**$ 35,400,886**	**$ 222,586,394**	**n/a**



Non-Residential Competitive Grant Program

RSA 362-F:10, XI, requires the Commission to issue an annual RFP for non-residential renewable energy projects that are not eligible to participate in incentive and rebate programs developed under RSA 362-F:10, V and RSA 362-F:10, VIII.

The Commission issued the annual RFP for renewable energy projects on December 12, 2019, stating that the RFP program had $1,250,000 in available grant funds. This RFP sought project proposals which would increase the supply of RECs from thermal renewable energy or non-photovoltaic electric renewable energy projects located in New Hampshire. Specifically, projects which would qualify to generate Class I, Class I Thermal, or Class IV Renewable Energy Certificates were eligible to apply. Seven grant proposals were received by the Commission. These proposals represented approximately $5.31 million of total investment and requested $2.24 million in grant funds. The Commission recommended, and the Governor and Executive Council approved, five grant awards totaling $1,250,000.[12] Once installed and certified, these projects are estimated to create 23,184 Class I Thermal RECs and 2,685 Class IV RECs annually. A complete list of grants awarded is shown in Table 9.

Table 9: Non-residential Competitive Grants Awarded in Fiscal Year 2020

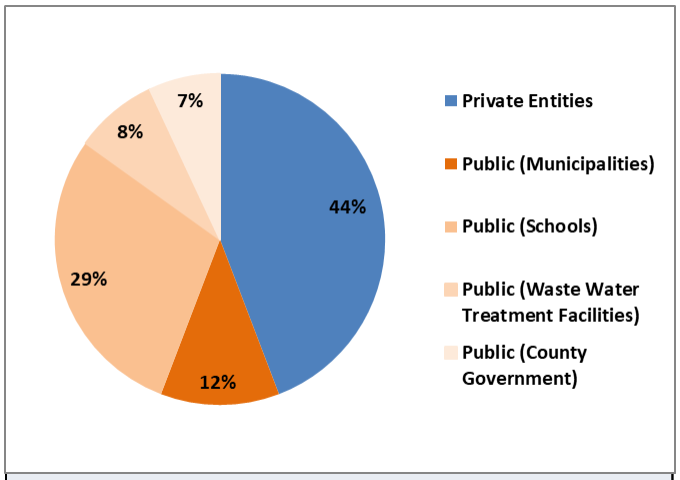
Grantee	Technology	Project Description	Total Project Costs	Grant Amount	Estimated Annual RECs
Durgin and Crowell Lumber Company, Inc.	Biomass Thermal	Install an advanced cyclone for particulate matter emissions reductions	$ 740,696	$ 500,000	22,494 Class I Thermal
Campton School District	Biomass Thermal	Install a wood chip boiler for space heating at Campton Elementary School	$ 1,350,000	$ 200,000	690 Class I Thermal
Sweetwater Hydroelectric, LLC	Hydro-electric	Perform rehabilitations to Unit #3 generator and turbine	$ 338,000	$ 270,000	1,380 Class IV
Woodsville/ Rochester Hydro Associates, LLC	Hydro-electric	Perform rehabilitations to return facility to operation and improve efficiency	$ 301,300	$ 150,000	555 Class IV/Class I
Noone Falls Energy LLC	Hydro-electric	Repair and replace the broken penstock at facility	$ 181,000	$ 130,000	750 Class IV

[12] *See* sos.nh.gov/administration/miscellaneous/governor-executive-council/2020-meetings/june-24-2020/june-24-2020 , Governor and Executive Council agenda items #95, #96, #97, #98, and #99.

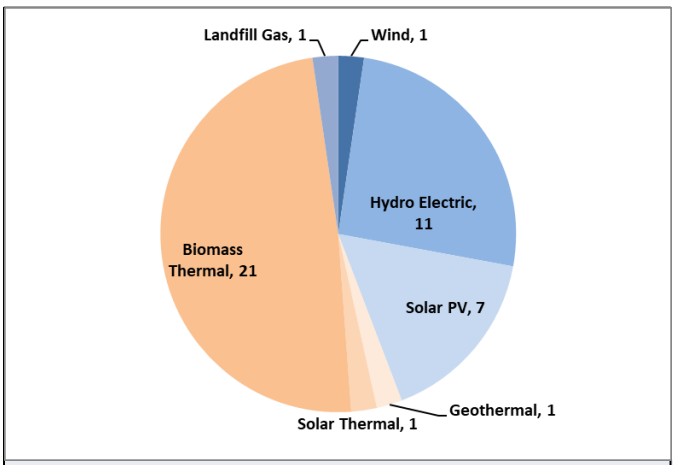
Table 10 and the subsequent charts summarize all grant awards since program inception.

Table 10: Non-residential Competitive Grant Program Summary

Year	Number of Grants Awarded	Total Grant Amount	Total Value of Projects
2011	4	$ 467,890	$ 1,280,923
2012	6	$ 654,750	$ 4,035,424
2013	9	$ 3,637,890	$ 28,888,905
2014	5	$ 2,107,199	$ 7,683,400
2015	3	$ 825,000	$ 2,327,000
2016	6	$ 1,272,425	$ 6,106,790
2017	3	$ 895,000	$ 2,425,000
2018	2	$ 950,000	$ 5,077,300
2019	5	$ 1,250,000	$ 2,910,996
Totals	**43**	**$ 12,110,154**	**$ 60,810,338**



Grant Award Recipients
Private Entities in blue;
Public Entities in oranges



Grants by Technology
Electricity Generation in blues;
Thermal Generation in oranges

Non-residential Competitive Grant Completed in Fiscal Year 2020

The County of Cheshire received a grant from the 2017 program to install a wood chip biomass-fired boiler to serve the Maplewood Nursing Home. The new 8 MMBtu/hour biomass boiler has been installed and became operational in December 2019. The 150-unit nursing home underwent a major renovation throughout 2018 and 2019, including improved insulation, improved air sealing, and other energy efficiency measures. The boiler serves as the primary space heating system for the entire nursing home, expected to provide approximately 95 percent of the building's space heating needs each year. The boiler burns processed dry chips (PDCs) purchased from a New Hampshire supplier. The PDCs are stored in a newly constructed silo (shown below) which is located just outside the boiler room. The project is expected to burn nearly 2,000 tons of PDCs and produce over 4,000 Class I Thermal RECs during its first full winter of operation in 2020/2021. Maplewood Nursing Home formerly burned approximately 100,000 gallons of fuel oil each year for space heating.

Maplewood Nursing Home Wood Chip Boiler

Wood Chip Storage Silo

Low-Moderate Income Program

Under Senate Bill 129, enacted as 2017 N.H. Laws Chapter 226 (SB 129), and pursuant to RSA 362-F:10, X, the Commission is required to develop program(s) for Low-Moderate Income (LMI) residential electric customers. The program(s) must "directly benefit a group of at least 5 residential customers, where at least a majority of the residential customers are at or below 300 percent of the federal poverty guidelines" (*i.e.*, at least three LMI participants). The program(s) may finance or leverage financing for low moderate income community solar projects in manufactured housing communities or in multi-family rental housing.

Based on multiple stakeholder meetings and direct public comment, the Commission issued Order No. 26,214 which approved the use of competitive solicitations to select projects to be funded by the Renewable Energy Fund Low and Moderate Income program in FY19 and FY20, and found that "implementation of the REF LMI program through the issuance of an annual RFP represents a reasonable and appropriate means of meeting the statutory requirements of SB 129." Further, "the RFP approach should permit review and evaluation of data from multiple project models, and potentially facilitate the implementation of an alternative program in future years." [13]

The Commission issued an RFP in December 2019 for Community Solar Photovoltaic Projects Providing Direct Benefits to Low and Moderate Income Residential Electric Customers, stating that the LMI program had $900,000 in available grant funds. One grant proposal was received by the Commission. The Commission issued a second RFP on July 8, 2020.

Table 11: Low-Moderate Income Grants Awarded in Fiscal Year 2020

Grantee	Town	Total Project Costs	Grant Funding	Total Projected Annual Benefits to LMI	LMI Participant Households
No grants were awarded during FY20					

[13] *See* puc.nh.gov/Regulatory/Orders/2019Orders/26214e.pdf, Order No. 26,214, Docket DE 17-172.

Revenues, Expenditures, and Statutory Funding Requirements

Administrative Costs

Administrative costs are estimated and include, for example, personnel, organizational dues, and IT services. REF administrative expenditures cover the cost of managing the various rebate and grant programs, monitoring and validating facility and supplier compliance with the RPS, and working on RPS related dockets such as Puc 2500 rules, Puc 900 rules, net metering, and REF program revisions. Administrative budgeted and actual costs are provided in Table 12.

Table 12: Budgeted and Actual Administrative Costs by Fiscal Year

Fiscal Year	Budget	Actual	Difference
2018	$ 894,835	$ 683,341	$ 211,494
2019	$ 916,102	$ 696,411	$ 219,691
2020	$ 768,750	$ 517,274	$ 251,476
2021	$ $425,864		

Revenues

Table 13 below summarizes the REF revenues recorded in fiscal year 2020.

Table 13: Renewable Energy Fund Revenues

Revenues Recorded in FY20	
Calendar Year 2018 ACP	$ 1,356,481
Calendar Year 2019 ACP *	$ 2,577,461
Reimbursement from Site Evaluation Committee	$ 100,434
Interest	$ 189,064

* Reconciliation of E-2500 obligations with recorded revenue is in process.

Available funding is being determined and program budget allocations are being developed as of the date of this report.

Allocation of Funding Between Residential and Non-residential Sectors

In 2010, the New Hampshire Legislature required the Commission to balance REF expenditures between the residential and non-residential sectors over each two-year period beginning July 1, 2010, in proportion to each sector's share of total retail electricity sales. In 2012, the requirement was modified such that the Commission must reasonably balance the amounts expended, allocated, or obligated during each two-year period.[14]

In FY19, the first year of the two-year period, new revenues deposited into the REF consisted of ACP revenues less a transfer of funds to the Site Evaluation Committee. In 2017, retail electricity sales for the residential sector represented 41 percent of the total retail sales, while sales for the non-residential sector accounted for 59 percent of total retail sales. Accordingly, based on these percentages, the new revenues (less ACP adjustments and administrative cost) were allocated as follows: Residential Programs, $1,673,705, or 41 percent of allocated funds; Non-Residential Programs, $2,408,503, or 59 percent of allocated funds.

In FY20, the second year of the two-year period, new revenues deposited into the REF consisted of ACP revenues, reimbursement from Tri-County Community Action Agency, reimbursement from the Site Evaluation Committee, and interest earned (July 2017 through June 2019). In 2018, retail electricity sales for the residential sector represented 42 percent of the total retail sales, while sales or the non-residential sector accounted for 58 percent of total retail sales. Accordingly, based on these percentages, the new revenues (less ACP adjustments, existing program reservations and administrative cost) were allocated as follows: Residential Programs, $1,639,118, or 44 percent of allocated funds; Non-Residential Programs, $2,084,973, or 56 percent of allocated funds.

The allocation of funds, over two-years, was budgeted as follows: Residential Programs, $3,312,823, or 42 percent of allocated funds; Non-Residential Programs, $4,493,476, or 58 percent of allocated funds.

[14] See RSA 362-F:10, X.

Funding Cap for Residential Renewable Electricity Rebate Program

RSA 362-F:10, VI places a cap on spending for the residential rebate program for solar electric and wind turbines. No more than 40 percent of the REF can be allocated to this program, measured over two-year periods commencing July 1, 2010.

Use of Class II Revenues for Solar Technology Incentives

RSA 362-F:10, I requires that "Class II moneys shall primarily be used to support solar energy technologies in New Hampshire." For CY19, Class II ACPs equaled $70,866.

Use of Renewable Energy Fund Revenues for Low Moderate Income Program

RSA 362-F:10, X requires allocating "no less than 15 percent of the REF annually to program(s) that benefit low-moderate income residential customers, including, but not limited to, the financing or leveraging of financing for low-moderate income community solar projects in manufactured housing communities or in multi-family rental housing." In FY20, $900,000 of the funds allocated to the LMI program remained unspent, and unencumbered.

Net Metered Capacity, Net Metered Facilities and Group Net Metering

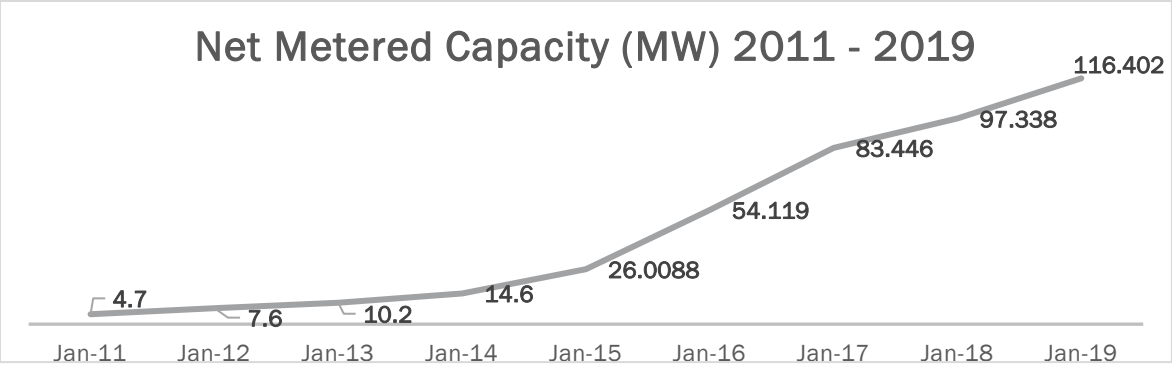
Net Metered Facilities

Each utility's total installed capacity of net metered facilities is listed in Table 14. The facility data includes PV, small wind, and small hydroelectric net metered installations.

Table 14: Total Net Metered Facilities as of December 31, 2019

Electric Distribution Utility	Total Installs in CY2019	Total Installs (End of CY2019)[15]	Capacity Added (MW) in CY2019	Total Capacity (End of CY2019)[16]
Liberty	105	603	1.948	7.648
NH Electric Cooperative	67	1,098	1.142	9.411
Eversource	908	6,972	14.464	89.653
Unitil	122	961	1.510	9.690
Total Net Metered Facilities	**1,202**	**9,634**	**19.064**	**116.402**

The chart below illustrates the historic trend of installed net metered capacity in New Hampshire starting in January 2011 through December 2019. Overall, at the end of 2019, the total installed net metered capacity was 116.402 MW with 19.064 MW being added or installed in 2019.



[15] Based on the utility reports to DOE (EIA Form 861M (formerly Form 826) without adjustment) and includes system expansions. Cumulative total.
[16] Based on the utility reports to DOE (EIA Form 861M (formerly Form 826) adjustment) and includes system expansions. Cumulative total.

Group Net Metering

In July 2009, the Legislature enacted Senate Bill 98, amending RSA 362-A:9 to allow for group net metering and rules were developed to govern group net metering in section 909 of Puc 900 administrative rules. The law permits net-metered renewable energy facilities, known as hosts, to share the proceeds from sales of surplus electricity generation with other electric utility account holders, known as group members. In some cases, the group host and the group members may be the same party. For instance, a town might net meter a solar array and use the proceeds to offset utility expenses associated with other town electric meters. The host and the group members must all be customers of the same distribution utility. Group net metering applications are reviewed and approved by the Commission.

Table 15 provides information about group net metering applications registered by the Commission in CY19.

Table 15: Group Net Metering Applications Registered as of December 31, 2019

Electric Distribution Utility	Total Cumulative Number of Applications Approved		Total Cumulative Capacity of Approved Host Installations (Kilowatts AC)		2019 Net Generation By Host (kWh)*	2019 Total Member Load (excluding Host) (kWh)
	Solar	Hydro	Solar	Hydro		
Eversource	191	34	6,829	13,948	51,458,214	74,096,953
Liberty	18	--	640	--	660,188	1,077,633
NH Electric Cooperative	11	--	297	--	202,259	893,661
Unitil	21	--	535	--	366,206	679,620
Total	**241**	**34**	**8,301**	**13,948**	**52,686,867**	**76,747,867**

Conclusion

Since its inception in July 2009, the Renewable Energy Fund has been used to establish seven grant and rebate programs that have experienced substantial demand. The Renewable Energy Fund has been utilized to fund over 7,700 rebates for renewable energy systems to New Hampshire homeowners, businesses, schools, towns, non-profit organizations, and other eligible entities. In addition, the competitive grant program has provided over $12 million in funding for 43 renewable energy projects for schools, businesses, and municipalities, featuring technologies from biomass heating systems to hydroelectric project upgrades to photovoltaic arrays and solar hot air, among others.

As this report illustrates, demand for rebates and grant awards continues to be strong. Rebate and grant funds have leveraged over $283 million in private investment, providing a boost to the state's economy and creating jobs for electricians, plumbers, and alternative energy businesses. In addition, there has been substantial growth in distributed generation renewable energy systems that serve to diversify our energy supply, reduce our reliance on fossil fuels, reduce greenhouse gas emissions, and increase our energy independence.

The Commission continues to monitor industry and renewable energy certificate market trends, and technological developments such as energy storage. Staff will work with stakeholders to develop new methods and programs to support the renewable energy industry and incentivize renewable energy system installations.

Staff will also work with the net metering working group to design and develop the Commission ordered Value of DER Study and net metering pilot programs. Data from the pilot programs and studies will be used to inform future net metering tariffs.

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