

STATE OF NEW HAMPSHIRE



DEPARTMENT OF ENVIRONMENTAL SERVICES

29 Hazen Drive  
Concord, N.H. 03301

PUBLIC UTILITIES COMMISSION

21 S. Fruit St., Suite 10  
Concord, N.H. 03301

November 15, 2019

Legislative Oversight Committee to Monitor the Transformation of Delivery of Electric Services and the  
Air Pollution Advisory Committee  
Legislative Office Building, Room 304  
Concord, New Hampshire 03301

Re: RSA 125-O:21 Regional Greenhouse Gas Initiative Annual Report Required of the Department of Environmental Services (Department) and the Public Utilities Commission (Commission)

Dear Members of the Committees:

New Hampshire Revised Statutes Annotated Chapter 125-O, sections 20 – 29, establishes the state’s Carbon Dioxide Emissions Budget Trading Program as part of the Regional Greenhouse Gas Initiative (RGGI). RGGI is a cooperative effort by nine Northeast and Mid-Atlantic States (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont) to reduce greenhouse gas emissions from the electric power generation sector.<sup>1</sup>

The statute requires an annual report on the program:

***125-O:21 Carbon Dioxide Emissions Budget Trading Program. –***

*VI. The department and the commission shall report on an annual basis to the air pollution advisory committee under RSA 125-J:11 and the legislative oversight committee on electric utility restructuring under RSA 374-F:5, on the status of the implementation of RGGI in New Hampshire, with emphasis*

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<sup>1</sup> For more information on RGGI, please refer to the RGGI, Inc. website. See [www.rggi.org](http://www.rggi.org).

*on the prices and availability of RGGI allowances to affected CO<sub>2</sub> sources and the trends in electric rates for New Hampshire businesses and ratepayers. The report shall include but not be limited to:*

- a) The number of allowances sold in the RGGI program and the type of entities purchasing allowances;*
- b) The number of unsold allowances in the RGGI program;*
- c) The available price data of allowances from the regional auction and secondary markets;*
- d) Market monitoring reports;*
- e) The CO<sub>2</sub> emissions by affected source, state, and RGGI region;*
- f) The spending of revenues from auction allowances by each RGGI state;*
- g) [Repealed]; and,*
- h) The status of any proposed or adopted federal CO<sub>2</sub> cap and trade program, the impact on New Hampshire's RGGI program, and recommendations for any proposed legislation necessary to accommodate the federal program.*

## **Overview**

Prior to 2013, auction revenues from RGGI allowances were primarily directed to energy efficiency measures intended to reduce regional electricity demand and CO<sub>2</sub> emissions. House Bill 1490 (Ch. 281, Laws of 2012; effective January 1, 2013) amended RSA 125-O:23 by replacing the greenhouse gas emission reduction fund with the energy efficiency fund, lowering the rebate threshold for auction proceeds to \$1, and allocating the remaining proceeds received by the state from the sale of allowances to energy efficiency programs administered by the state's electric distribution utilities.

Investment of RGGI proceeds toward energy efficiency directly benefits *all* New Hampshire citizens and ratepayers by reducing the overall demand for electricity, which in turn reduces the additional capital investment needed by electricity providers to meet increased demand. In particular, the high cost of energy-related infrastructure, necessary to meet "peak" electricity demands, are reduced or avoided.<sup>2</sup> Thus, investment in energy efficiency ultimately reduces costs for everybody.

Quarterly RGGI auctions have been conducted for eleven years. These auctions have run smoothly and an independent market monitor has concluded that these auctions have been efficient and have resulted in competitive outcomes. The state has received nearly \$153 million to date in allowance auction revenues for energy efficiency investments and ratepayer rebates. Total revenues collected for consumer benefit in the nine RGGI states have totaled over \$3.28 billion to date.

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<sup>2</sup> See SB 125 (2017) Committee to Study Transmission, Distribution, Generation and Other Costs in the State's Electricity System Final Report; <http://www.gencourt.state.nh.us/statstudcomm/reports/1337.pdf>.

## **RGGI Model Rule & Legislation**

The 2012 RGGI Program Review recommended changes to the RGGI Model Rule. Subsequently, amendments to RSA 125-O, effective January 1, 2014, were enacted to implement the amended RGGI Model Rule. Similarly, in the 2019 legislative session, further amendments were enacted to implement most of the recommended 2016 RGGI Program Review Model Rule changes, as discussed in the last section of this report. There were two Model Rule changes, namely the 2021 budget step down and the Emissions Containment Reserve (ECR), which New Hampshire did not implement. Those two changes, and others, could be considered during the 2021 RGGI Program Review.

With respect to additional states joining the program, New Jersey will participate in the program beginning on January 1, 2020. Virginia's participation in the program was delayed. However, results of recent Virginia elections indicate that Virginia could soon be back on track to participate in the program beginning on January 1, 2021. Pennsylvania has announced its intention to participate in the program as early as January 1, 2021, as well.

## **Trends in Electric Rates**

The cost of CO<sub>2</sub> emissions allowances is a very small part of overall electricity bills. With respect to New Hampshire, in 2018, RGGI allowance proceeds amounted to \$13.9 million, of which approximately \$10.7 million<sup>3</sup> was refunded to customers.<sup>4</sup> Therefore, the net compliance cost, excluding the amount refunded to customers, was \$3.2 million.<sup>5</sup>

When divided by New Hampshire's 2018 actual kWh sales usage of approximately 10.9 billion kilowatt-hours (kWh), the rate impact is \$0.000294 per kWh,<sup>6</sup> which, in turn, translates to 19 cents per month for a typical residential customer.<sup>7</sup> The average cost associated with the CO<sub>2</sub> emissions cap accounted for 0.15% of an average residential customer bill.<sup>8</sup> The net compliance costs are offset by strategic reinvestment in energy efficiency measures which reduce demand for electricity and give households and businesses better control over their energy bills.

Figure 1 shows the monthly average regional wholesale price for electricity relative to the monthly average natural gas price.<sup>9</sup> Regional average wholesale electricity prices serve as a reasonable proxy for New Hampshire zonal prices. This figure illustrates that

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<sup>3</sup> Auctions 39, 40, 41 and 42.

<sup>4</sup> See Commission Order [No. 25,664](#), May 9, 2014 (Docket DE 14-048), which provides guidance defining how refunds are distributed to customers.

<sup>5</sup> Note: \$13.9 million - \$10.7 million = \$3.2 million

<sup>6</sup> Note: \$3.2 million divided by 10.9 billion kWh = \$0.000294 per kWh

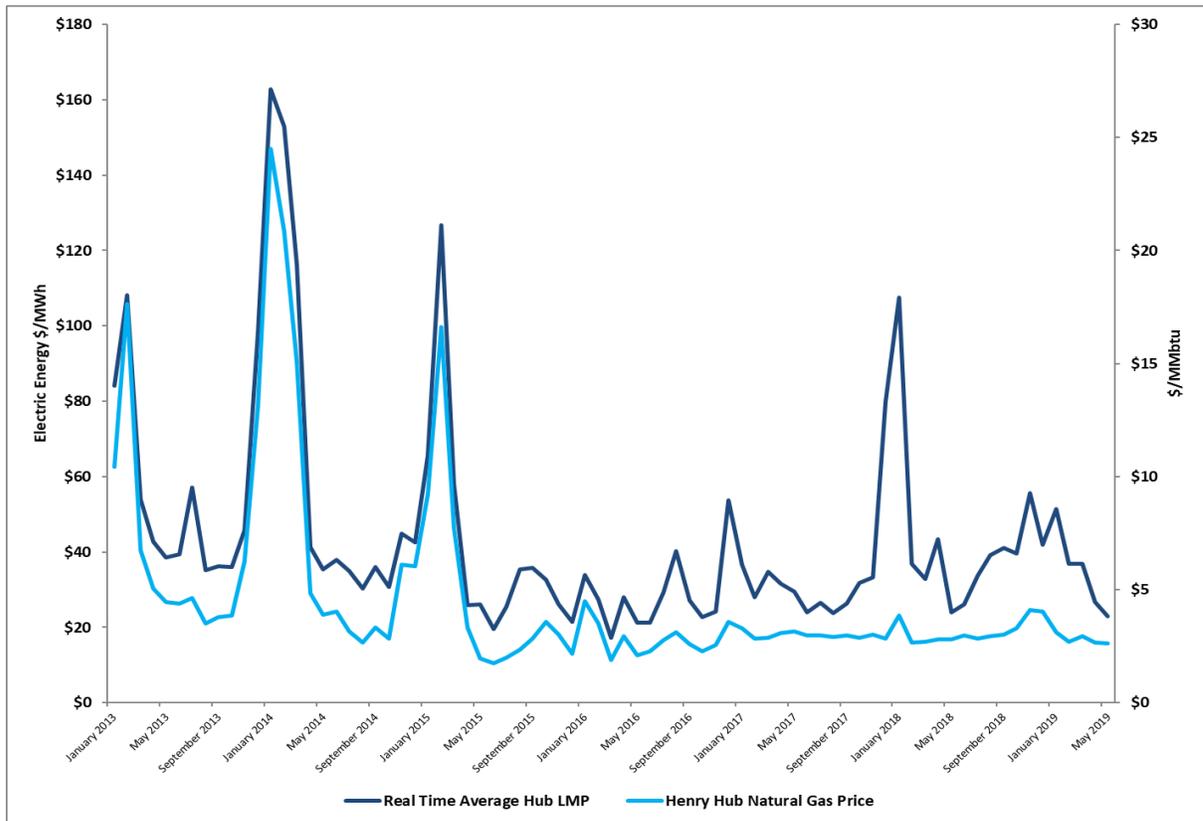
<sup>7</sup> Based on 650 kWh per month (i.e., 650 kWh x \$0.000294 = \$0.19).

<sup>8</sup> Based on \$0.19 per month divided by an average monthly electric bill for an Eversource residential customer of approximately \$130 (see Figure 3) equals 0.15 percent.

<sup>9</sup> Consistent with prior reports, electricity prices reflect the regional monthly average locational marginal price (excluding capacity and ancillary service charges, as well as distribution and transmissions charges).

wholesale electricity prices in New Hampshire and the region are a function of natural gas prices.<sup>10</sup>

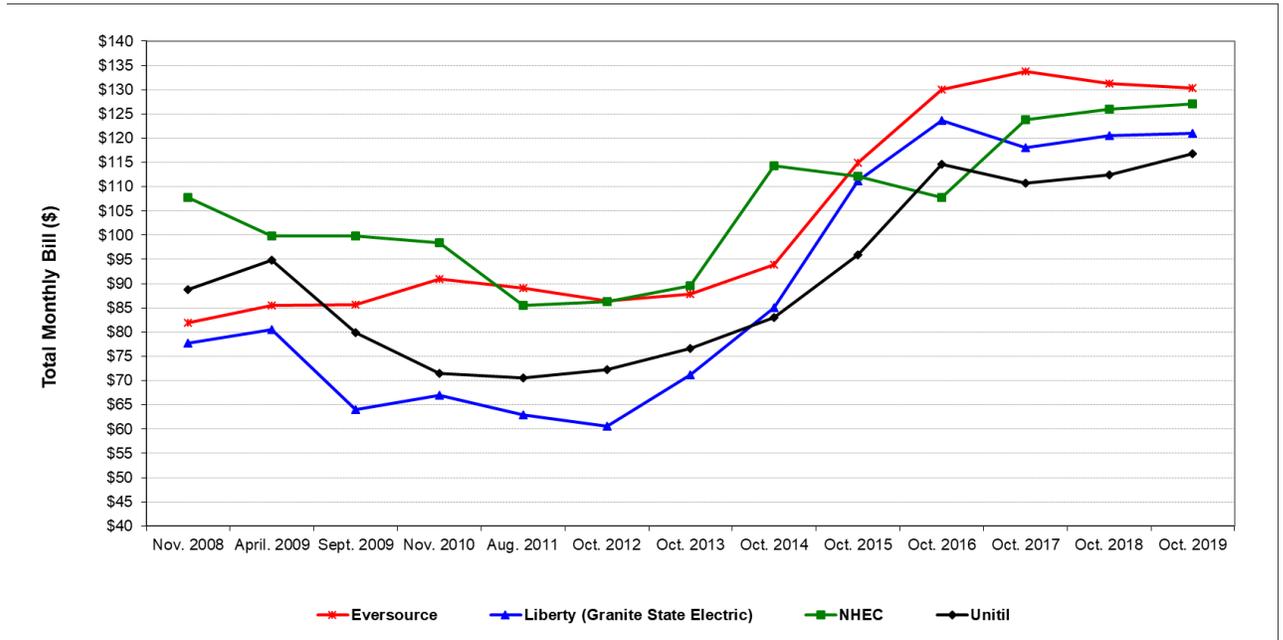
**Figure 1:** Regional Average Wholesale Electricity Prices (Real-time Average Hub LMP) Compared to Regional Natural Gas Prices (Henry Hub Monthly Averages), January 2013 to May 2019



<sup>10</sup> Information to prepare this figure was obtained from U.S. Energy Information Administration and ISO New England. See: <http://www.eia.gov/dnav/ng/hist/n3050nh3M.htm> and <https://www.iso-ne.com/isoexpress/web/reports/pricing/-/tree/zone-info>.

Figure 2 provides monthly residential bill comparisons for New Hampshire’s four electric utilities for the years 2008 through 2019 based on a typical residential bill. The bill comparison is based on a “snapshot” using the rates in effect as of a specific month.<sup>11</sup>

**Figure 2: New Hampshire Residential Monthly Bill Comparison from 2008 to 2019**  
(Assuming 650 kWh per month)



\* Granite State Electric Company, formerly owned by National Grid, was acquired by Liberty Utilities effective July 3, 2012

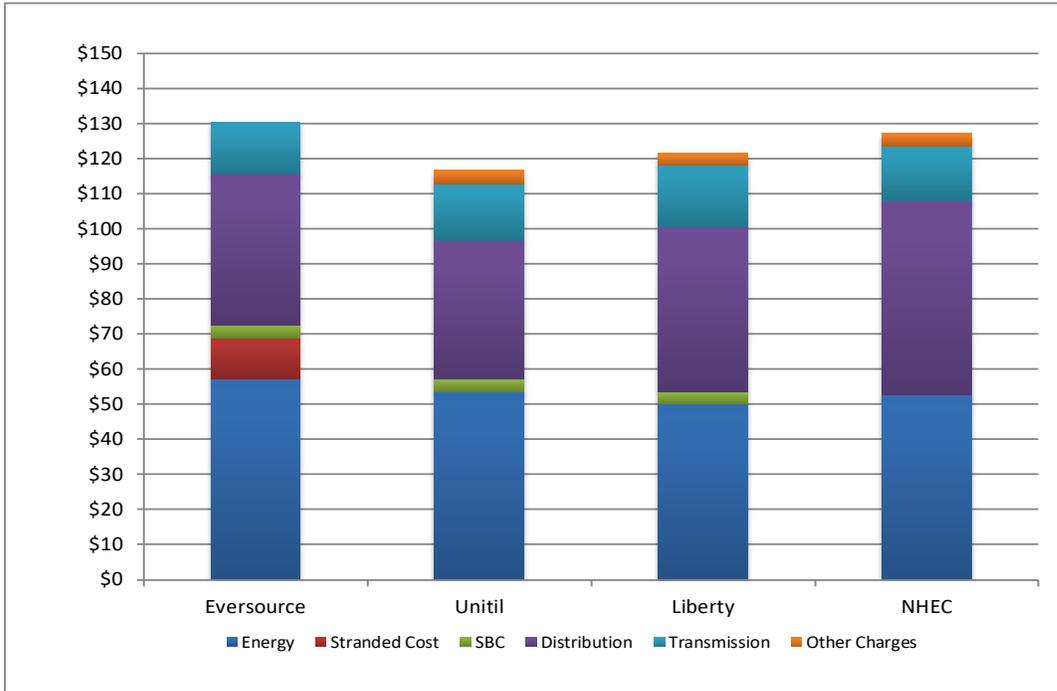
A residential customer bill is comprised of various components, including: a monthly customer charge; volumetric energy, stranded cost, system benefits charge (SBC), distribution, transmission and other charges. As shown in Figure 2, the typical residential customer electricity bill has generally increased over the past 11 years. This trend is primarily due to increased transmission and distribution charges.

A typical residential bill for a customer using 650 kWh per month in New Hampshire is in the range of \$115 to \$130 per month, depending on the utility.<sup>12</sup> Figure 3 on the next page provides a chart showing the breakdown, by component, of a typical monthly residential bill as of October 1, 2019 for each of New Hampshire’s four electric utilities.

<sup>11</sup> Figure 2 is derived from individual utility residential tariffs as posted to the Commission website, on the Electric Division webpage. See <https://puc.nh.gov/Electric/electric.htm>

<sup>12</sup> Historically, the average monthly kilowatt hours (kWh) used by New Hampshire households was estimated to be 500 kWh. The household average monthly kWh is estimated to have risen to 650 kWh over the past several years; and, this change is reflected in Figure 2 and Figure 3.

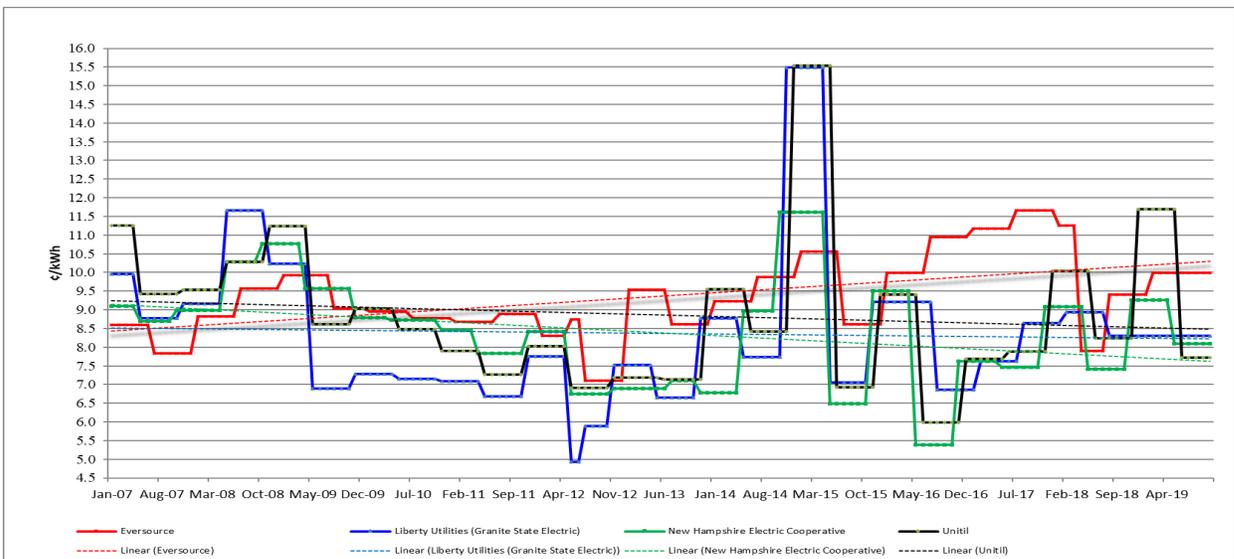
**Figure 3:** Illustrative 650 kWh/Month Residential Bill (in effect October 1, 2019)



The largest portion of electricity costs is the energy component. Customers who choose to receive that service (electricity) from their electric distribution utility, receive what is known as Default Service. Default Service rates are a good indicator of market conditions, especially the rates of Eversource, Unitil, and Liberty Utilities as these utilities procure energy supply every six months through a competitively bid solicitation process.

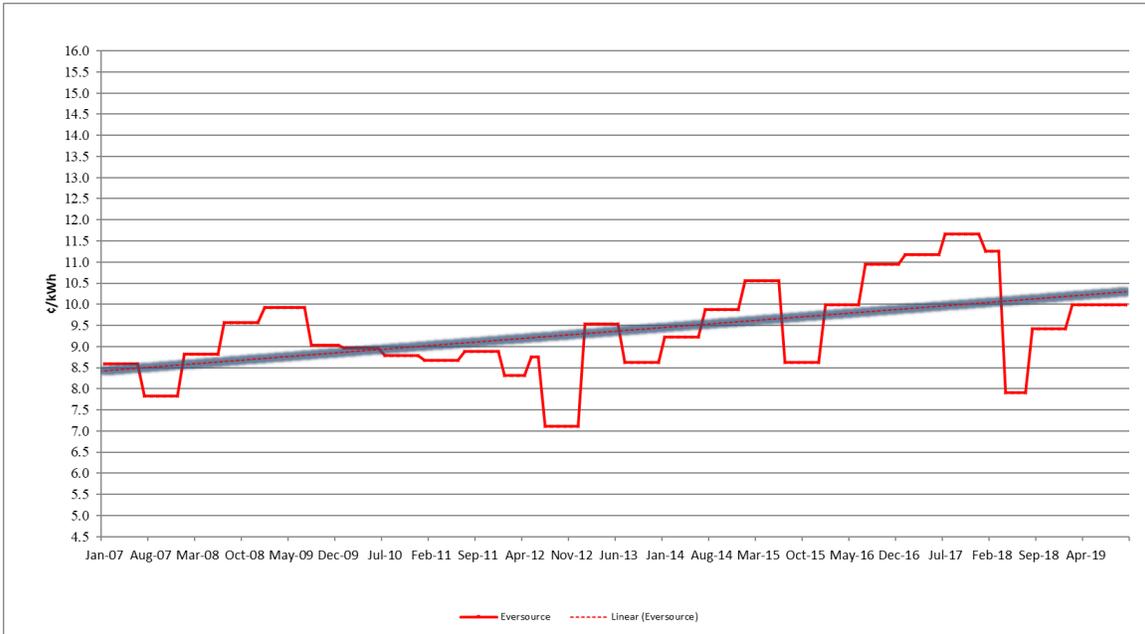
Figure 4 provides a comparison of the Default Service rates for New Hampshire’s four electric utilities for the years 2008 through 2019.

**Figure 4:** New Hampshire Default Service Rates (2008 – 2019)

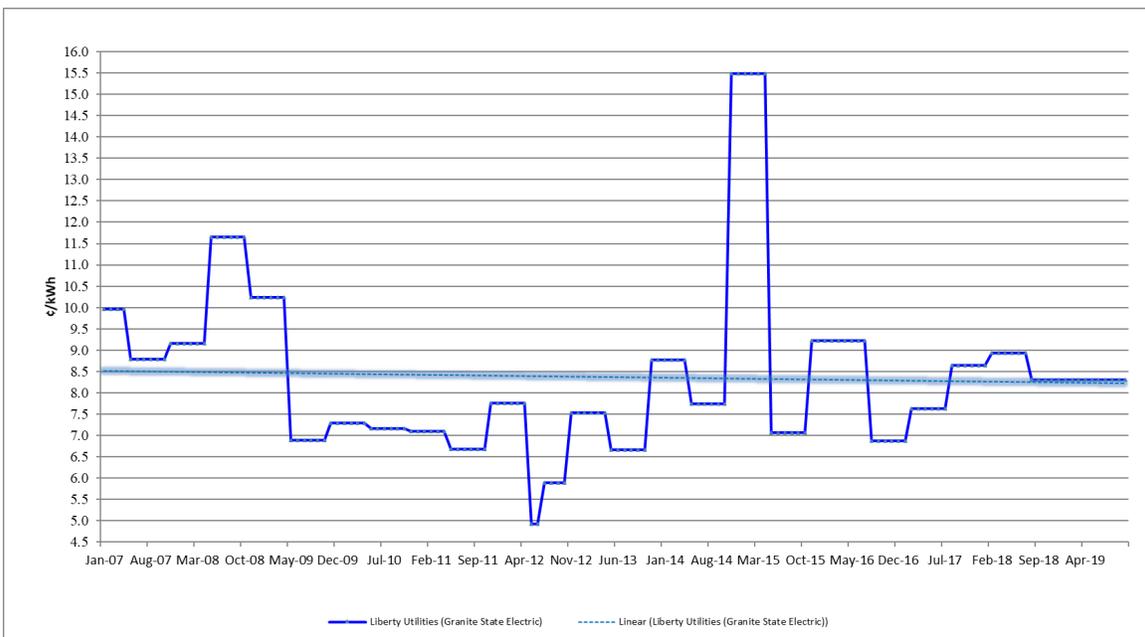


Figures 5 through 8 provide the Default Service rates and trend line individually for each of New Hampshire’s four electric utilities for the years 2008 through 2019.

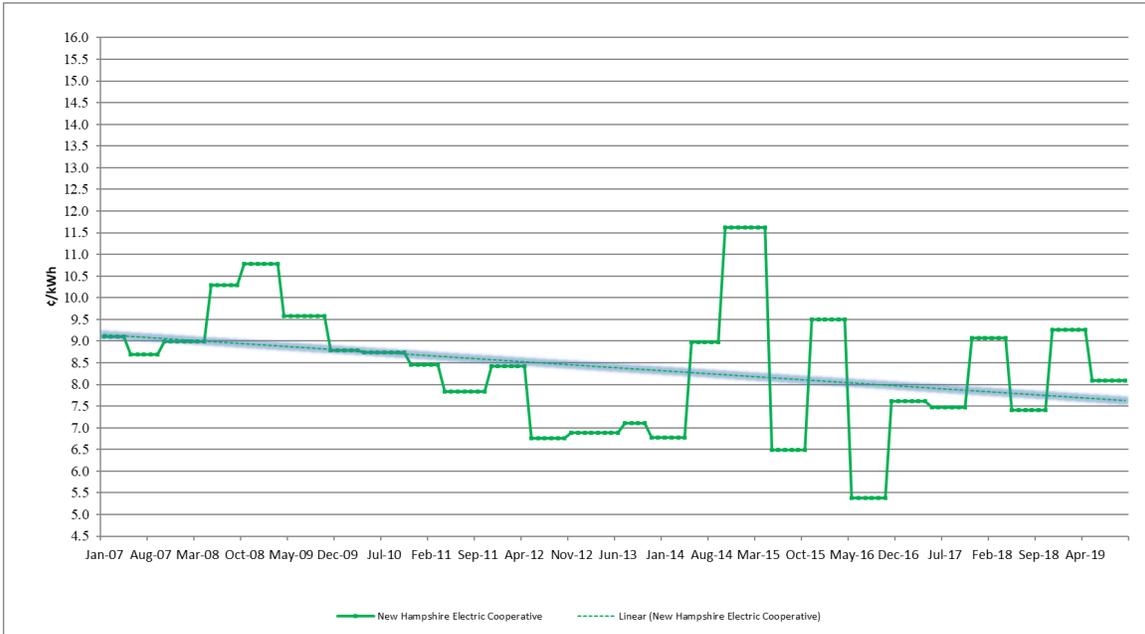
**Figure 5: Eversource Default Service Rates (2008 – 2019)**



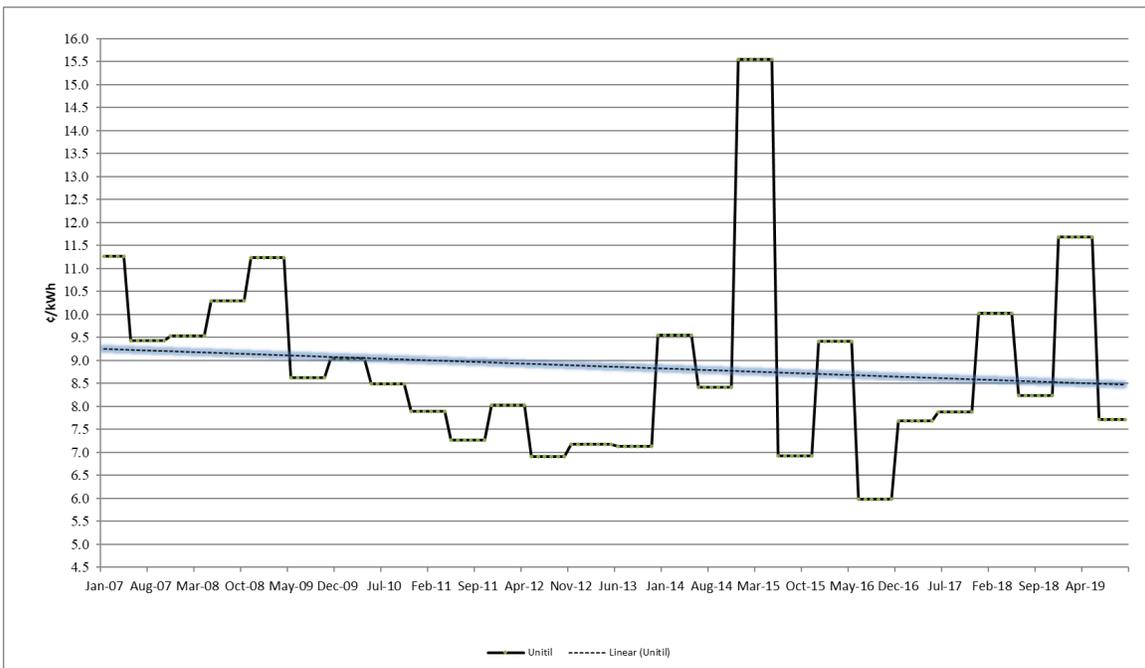
**Figure 6: Liberty Utilities Default Service Rates (2008 – 2019)**



**Figure 7: New Hampshire Electric Cooperative Default Service Rates (2008 – 2019)**



**Figure 8: Unitil Default Service Rates (2008 – 2019)**



## Allowance Auctions and Sales Information

New Hampshire's 2019 CO<sub>2</sub> base budget is 4,184,333 tons (or allowances) per year. The base budget will be lowered by 2.5 percent in 2020 and by 118,725 tons each year thereafter through 2030.

During the first five years (2009 – 2013) of the program, a large bank of privately held allowances was accumulated raising concerns that this bank could be used to allow emissions to creep back up above current levels if there were no further adjustments. Therefore, per RSA 125:O, this bank will be gradually reduced by the application of adjustments to the base budget. The adjusted 2019 New Hampshire budget is 3,041,970 allowances. A similar budget adjustment will be applied through 2025 because the bank remains large.

New Hampshire has participated in forty-five RGGI auctions to date. State-specific auction results are presented in Table 1. In total, RGGI-states have sold 994,603,981 CO<sub>2</sub> allowances; another 156,405,811 allowances that were offered for sale went unsold. An additional 5 million and 10 million Cost Containment Reserve allowances were sold in March 2014 and September 2015 respectively. To date, seventy-four percent of the allowances have been purchased by compliance entities and their affiliates.

Auction (Vintage)	Date	Allowances	Price	Revenue
1-14 (2009-2011)	9/25/08 - 12/7/11	14,479,101	\$3.51 to \$1.86	\$34,720,252
15-26 (2012-2014)	3/14/12 - 12/3/14	14,530,449	\$1.93 to \$5.21	\$41,615,139
27-38 (2015-2017)	3/11/15 - 12/6/17	10,640,467	\$2.53 to \$7.50	\$50,554,722
39-2018	3/14/18	765,857	\$3.79	\$2,902,598
40-2018	6/13/18	853,761	\$4.02	\$3,432,119
41-2018	9/5/18	765,857	\$4.50	\$3,446,356
<b>42-2018</b>	<b>12/5/18</b>	<b>765,858</b>	<b>\$5.35</b>	<b>\$4,097,340</b>
<b>43-2019</b>	<b>3/13/19</b>	<b>739,571</b>	<b>\$5.27</b>	<b>\$3,897,539</b>
<b>44-2019</b>	<b>6/5/19</b>	<b>825,344</b>	<b>\$5.62</b>	<b>\$4,638,433</b>
<b>45-2019</b>	<b>9/5/19</b>	<b>739,571</b>	<b>\$5.20</b>	<b>\$3,845,769</b>
<b>Total</b>				<b>\$153,150,268</b>

## Market Monitoring Reports

A market monitor evaluates each RGGI auction. To date the Market Monitor has identified no significant issues associated with the auctions. The Market Monitor Report for Auction 45 was prepared for the RGGI states by Potomac Economics. It states:

*In summary, the results of our monitoring of RGGI Auction 45 raise no material concerns regarding the auction process, barriers to participation in the auction, or the competitiveness of the auction results.*

## CO<sub>2</sub> Emissions Trends

Table 2 provides emission rates from New Hampshire sources from 2008 to 2018 in million tons of CO<sub>2</sub>.

**Table 2:** 2008 – 2018 emissions from New Hampshire sources in million tons of CO<sub>2</sub>

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Merrimack, Schiller Units 4 & 6, Newington	4.03	3.43*	3.61*	2.66*	1.59*	1.83*	1.58*	1.22	0.40 + 0.10 + 0.05 0.55	0.28 + 0.09 + 0.04 0.41	0.72 + 0.15 + 0.12 0.99
Granite Ridge	1.97	1.71	1.45	1.69	2.10	1.51	1.53	1.99	1.44	1.18	0.93
Essential Power Newington	1.09	0.63	0.84	1.18	0.94	0.32	0.45	0.61	0.57	0.39	0.37
<b>Total</b>	<b>7.10</b>	<b>5.77</b>	<b>5.90</b>	<b>5.53</b>	<b>4.64</b>	<b>3.65</b>	<b>3.57</b>	<b>3.82</b>	<b>2.55</b>	<b>1.98</b>	<b>2.3</b>
* PSNH received 3,564,718 2009 allowances (early reduction & Clean Power Act (CPA) bonus), 2,500,000 2010 allowances (CPA bonus), 2,500,000 2011 allowances (CPA bonus), 1,500,000 2012 allowances (CPA bonus), 1,500,000 2013 allowances (CPA bonus), and 1,500,000 2014 allowances (CPA bonus)											

Emissions from the RGGI region for 2018 in tons of CO<sub>2</sub> are provided in Table 3.

**Table 3:** 2018 emissions from the RGGI region in tons of CO<sub>2</sub>

State	CO <sub>2</sub> Emissions	State	CO <sub>2</sub> Emissions	State	CO <sub>2</sub> Emissions
CT	8,743,239	DE	2,716,368	MA	8,107,721
MD	17,167,737	ME	1,183,215	NH	2,297,766
NY	27,215,742	RI	3,539,026	VT	2,072
				<b>Total</b>	<b>70,972,886</b>
				<b>Budget</b>	<b>82,235,598</b>

## Use of Auction Revenue by Each RGGI State

*The Regional Investment Report of RGGI CO<sub>2</sub> Allowance Proceeds, 2017*,<sup>13</sup> provides an overview of each participating state's activities. The report highlights that RGGI auction proceeds in 2017 are estimated to return \$1.4 billion in lifetime energy bill savings to 294,787 households and 3,331 businesses which participated in programs funded by

<sup>13</sup> See [http://www.rggi.org/rggi\\_benefits](http://www.rggi.org/rggi_benefits).

RGGI investments, and to more than 100,000 households which received direct bill assistance.

The report also notes that these RGGI related investments are projected to offset the need for approximately 14 million megawatt hours (MWh) of electricity generation, save more than 22.6 million British Thermal Units (MMBtu) of fossil fuels, and avoid the release of approximately 8.3 million short tons of carbon dioxide pollution into the atmosphere over their lifetime. These benefits are limited to the direct benefits arising from specific 2017 projects, and do not include larger macroeconomic effects that may occur as a result of the RGGI cap and market signal.

### **Use of RGGI Proceeds in New Hampshire**

House Bill 1434 (Ch. 182, Laws of 2008; effective June 11, 2008) created the state's Greenhouse Gas Emissions Reduction Fund (GHGERF), which was funded with the proceeds from quarterly auctions of the State's CO<sub>2</sub> budget allowances and administered by the Commission. The GHGERF supported a competitive grant program in 2009 and 2010, awarding \$31 million for 36 energy efficiency projects/programs.<sup>14</sup>

Two of these competitive grant programs established revolving loan funds (RLF) for businesses and municipalities undertaking energy efficiency projects which continue to operate:

1. New Hampshire Business Finance Authority \$2 million RLF directed towards businesses; and
2. New Hampshire Community Development Finance Authority \$1.5 million RLF directed towards municipalities.

In 2012, HB 1490 enacted a provision which replaced the GHGERF with the Energy Efficiency Fund (EEF). The bill also placed a cap of \$1 for each RGGI CO<sub>2</sub> allowance sale, and directed that any proceeds above the cap be rebated to electric ratepayers in the form of bill assistance. The amendment further directed the Commission to allocate remaining RGGI revenues to the energy efficiency programs administered by the State's electric distribution utilities, beginning in 2013.

In 2013, SB 123 required the Commission to allocate 15 percent of these funds to the low-income weatherization program, and directed the electric utilities to set aside up to \$2 million of the remaining RGGI funds for municipal and local government energy efficiency projects.

SB 268, enacted in June 2014, directed that any RGGI proceeds remaining after the bill-assistance rebates to ratepayers, the set-asides for the low-income core efficiency program, and the set-aside for municipal and local government energy efficiency projects

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<sup>14</sup> For details for each grant award please see:  
<http://www.puc.nh.gov/Sustainable%20Energy/GHGERF.htm>.

be allocated “to all-fuels, comprehensive energy efficiency programs administered by qualified parties which may include electric distribution companies as selected through a competitive bid process.” The legislation directed the Commission’s Electric Division to conduct a competitive bid process and the Electric Division issued Request for Proposal (RFP) for this purpose.

The Commission completed the selection process and awarded a three-year contract to Eversource on behalf of the four New Hampshire electric utilities including Eversource, Liberty Utilities, the New Hampshire Electric Cooperative and Unitil Energy Systems, to administer the all-fuels comprehensive energy efficiency programs through December 31, 2018.

On July 20, 2018, the Commission’s Electric Division issued an RFP seeking a qualified firm to provide a comprehensive energy efficiency program for residential non-low-income customers for a 3-year period starting in 2019. The Commission completed the selection process and awarded a three-year contract to Eversource on behalf of the four New Hampshire electric utilities to administer the all-fuels comprehensive energy efficiency programs through December 31, 2021.

### **Proposed Federal Program Impacts and Other Program Changes**

Power plants account for 28% of all domestic greenhouse gas emissions.<sup>15</sup>

New Hampshire and the RGGI States continue to work together to demonstrate that RGGI, a market-based program with greater flexibility for sources, is a working model for national legislation. On June 2, 2014, EPA proposed Clean Air Act standards to cut carbon pollution from existing power plants in order to combat climate change and improve public health. On August 3, 2015, EPA finalized those standards. On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan pending judicial review. On August 21, 2018, EPA proposed the Affordable Clean Energy Plan. On June 19, 2019, EPA finalized the ACE rule and repealed the Clean Power Plan. It is unlikely that EPA will accept RGGI as a compliance mechanism for the ACE rule. Litigation of the ACE rule is pending.

Other non-RGGI states (New Jersey, Virginia, and Pennsylvania) are seeking to implement RGGI, or RGGI-like programs. Thus, the geographical area for RGGI could be expanded, consistent with the original intent of RGGI.

Proposed revisions to the state’s RGGI program were considered in the context of the statutorily required 2016 comprehensive review of New Hampshire’s RGGI program (pursuant to RSA 125-O:27). On August 23, 2017, the participating RGGI states proposed revisions to the RGGI Model Rule. After a dozen or more stakeholder meetings, the 2016 RGGI program review concluded that the regional cap needed to be

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<sup>15</sup> See [https://www.epa.gov/sites/production/files/2019-04/documents/2019\\_fast\\_facts\\_508\\_0.pdf](https://www.epa.gov/sites/production/files/2019-04/documents/2019_fast_facts_508_0.pdf)

reduced to a level more reflective of current emissions in order to “lock in” the environmental gains of the past few years and to continue to send the appropriate market price signals to encourage further reductions necessary to achieve long-term climate goals. These proposed revisions would lower the regional cap in 2021 to 75,147,784 tons, which will decline by 2.275 million tons per year through 2030.

The states proposed implementing the annual cap decline collectively, but the 2021 cap includes an additional 752,431 tons of reductions that only seven states will implement (Maine and New Hampshire are excluded). There will also be additional adjustments to account for the full bank of excess allowances at the end of 2020. Also, seven states (Maine and New Hampshire are excluded) will implement an Emissions Containment Reserve (ECR). Ten percent of the allowances in states’ budgets will be withheld from auctions to secure additional emissions reductions, if prices fall below \$6.00 in 2021 (rising by 7 percent annually thereafter). All nine states will continue to implement the Cost Containment Reserve (CCR), but the size will be lowered from 10 million to 10 percent of the cap, and the CCR trigger will be \$13.00 in 2021 and rise by 7 percent annually. Retention of offset provisions will now be optional for each state.

Since 2008, the RGGI program has demonstrated that a market-based approach to limiting CO<sub>2</sub> emissions in the electricity generation sector can make significant environmental progress while enhancing economic growth.

Implementing RGGI for New Hampshire makes sense both economically and environmentally. Because New Hampshire is part of a regional electric market, we are directly affected by the decisions made by other states. If New Hampshire alone were to discontinue its participation in RGGI, it would still incur costs associated with the program without receiving any benefit. The RGGI program helps to continue our work toward energy independence and a cleaner environment.

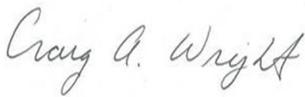
Although RGGI is intended to reduce CO<sub>2</sub> emissions, it is important to understand that it was only after significant study and debate that New Hampshire opted into RGGI as a “no regrets” policy that directly benefits the state both economically and from an energy independence perspective. These conclusions remain fundamentally sound today.

While both the DES and the PUC participated in the development of RGGI, we did not endorse enactment of a New Hampshire statute until we were certain that the program would meet our state’s needs and would not impose economic hardship on New Hampshire’s citizens and ratepayers.

Initially, New Hampshire was one of the last states to become a participant in RGGI, and we did so only after a University of New Hampshire economic study confirmed that New Hampshire would be better off participating in RGGI than not, and that RGGI would have a net *positive* impact on New Hampshire’s economy as well as help to stabilize and, over the longer term, reduce the state’s electricity costs. Even then, New Hampshire’s enabling legislation includes several safeguards to additionally protect the state from potential unintended consequences of any significant market volatility.

If you have any questions or need further information, please contact: Michael Fitzgerald, Assistant Director, DES, Air Resources Division (271-6390, [michael.fitzgerald@des.nh.gov](mailto:michael.fitzgerald@des.nh.gov)), Joe Fontaine, Air Resources Division Trading Programs Manager (271-6794, [joseph.fontaine@des.nh.gov](mailto:joseph.fontaine@des.nh.gov)), or Karen Cramton, Director, PUC, Sustainable Energy Division (271-2431, [karen.cramton@puc.nh.gov](mailto:karen.cramton@puc.nh.gov)).

Sincerely,



Craig A. Wright  
Director, Air Resources Division, DES



Karen Cramton  
Director, Sustainable Energy Division, PUC

cc:      Rep. Douglas Thomas      Rep. Howard Moffett      Rep. Fred Platt  
          Rep. John Mann            Rep. Richard Barry      Rep. Peter Somssich  
          Rep. Robert Backus        Sen. Jeb Bradley         Sen. Bob Giuda  
          Sen. Martha Fuller Clark  
          Sen. Dan Feltes  
          Michael Fitzgerald, Designee of the Commissioner of Environmental Services  
          Commissioner Robert Quinn, Department of Safety  
          Governor's designee