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The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Thomas S. Burack, Commissioner



October 21, 2014

Electric Utility Restructuring Legislative Oversight Committee and
Air Pollution Advisory Committee
Legislative Office Building, Room 304
Concord, New Hampshire 03301

Re: RSA 125-O:21 RGGI annual report required of the Department of Environmental Services (DES) and the Public Utilities Commission (PUC)

Dear Chairman Borden and 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. For more information on RGGI please refer to the website (www.rggi.org).

The statute requires an annual report on the program as follows:

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 on the prices and availability of RGGI allowances to affected CO₂ 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 CO₂ 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- g) [Repealed]; and,*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 CO₂ 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

In the past, revenues from RGGI allowance auctions have been primarily directed to energy efficiency measures intended, directly or indirectly, to reduce regional electricity demand and CO₂ 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 Core energy efficiency programs to be administered by the State's electric distribution utilities.

Reducing the funds available for energy efficiency investment reduces the program's ability to lower electric rates (via avoided capital investments needed for new transmission and generation) and the overall benefit to consumers, conservatively estimated at \$3-4 savings for every \$1 invested, as well as the associated economic activity resulting from these investments. 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 both generation and transmission infrastructure necessary to meet "peak" electricity demands are reduced or avoided.¹ Thus, investment in energy efficiency ultimately

¹ See ISO New England *ISO on Background Energy Efficiency Forecast* presentation (slide 22) at <http://www.iso-ne.com/nwsiiss/pr/2012/index.html>

reduces costs for everybody. Recent wintertime peaks caused by constraints to natural gas supply to electric generators have caused significant cost increases in the electricity market. These conditions make energy conservation measures even more cost effective.

Quarterly RGGI auctions have been conducted for six years, smoothly and professionally. The state has received nearly \$73,000,000 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 nearly \$1.73 billion to date.

Potential Changes

EPA's proposed Clean Power Plan to reduce carbon emissions from the electric sector designates energy efficiency programs as one means of meeting the proposed emissions requirements. To comply with this Plan, DES will have to submit a State Plan demonstrating projected compliance, which will likely require greater levels of energy efficiency in New Hampshire. RGGI States are also planning to conduct a regional 2016 Program Review that may involve future program amendments.

Trends in Electric Rates

The cost of CO₂ emissions allowances is a very small part of overall electricity bills. On average, the costs associated with the CO₂ emissions cap accounted for 0.19 to 0.55% of average residential electricity bills across the region.² Based on typical household electricity usage, that translates into 42 cents per month for residential consumers across the region. More specifically to New Hampshire, PSNH's net compliance cost excluding PSNH's portion (\$6.760 million) of the RGGI allowance refund³ is \$1.414 million for 2013, or \$0.000375 per kWh (\$1.414 million divided by 3,772,661 megawatt hours in default service sales times 1000), which translates to 24 cents per month, or 0.22% for a household using 650 kWh. This small rate impact is offset by strategic reinvestment of CO₂ allowance proceeds in energy efficiency measures which reduce demand for electricity and give households and businesses better control over their energy bills.

The monthly average wholesale locational marginal price (LMP) for New Hampshire (excluding capacity and ancillary service charges, as well as distribution and transmission charges) compared to New Hampshire wholesale natural gas prices since 2011 are shown in Figure 1. As shown, the cost of electricity in New Hampshire generally trends similarly to the cost of natural gas.

² 2013 was a unique year in that all RGGI allowances in excess of \$1.00 were refunded to the New Hampshire Utilities. The total amount of this refund was \$12,982,310. PSNH's portion of this refund created a total RGGI cost credit for customers receiving Default Energy Service.

³ These costs reflect the cost of CO₂ allowances required for energy supplied by PSNH generating assets. However, similar to the other utilities in the state that purchase power in the market, the embedded costs of CO₂ allowances of other power purchases required for Default Energy Service, are not uniquely known and thus not quantified or included here.

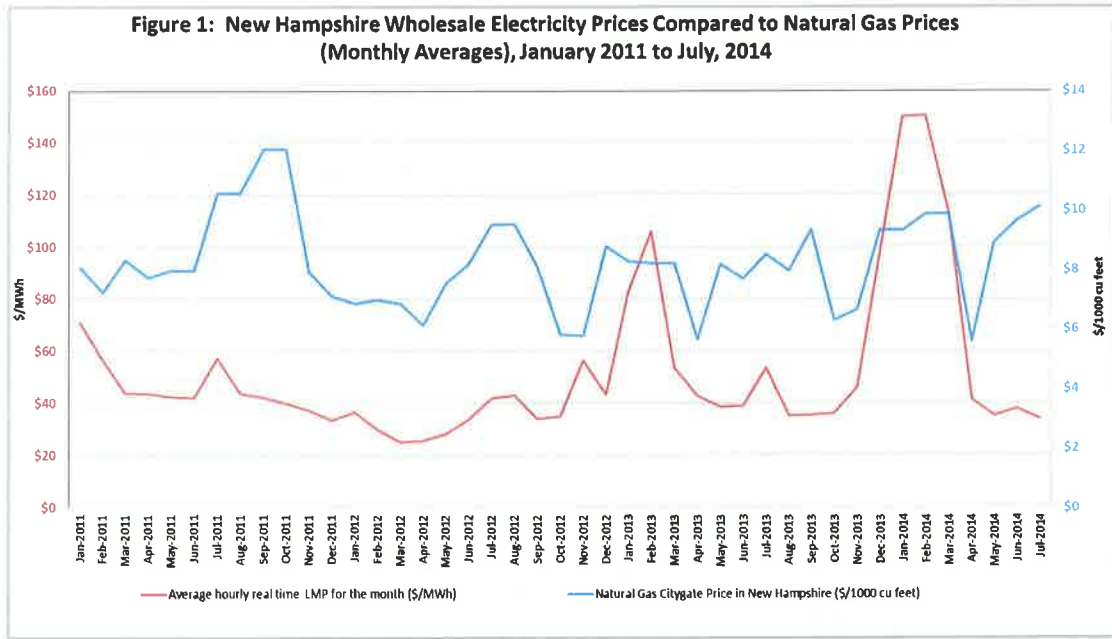
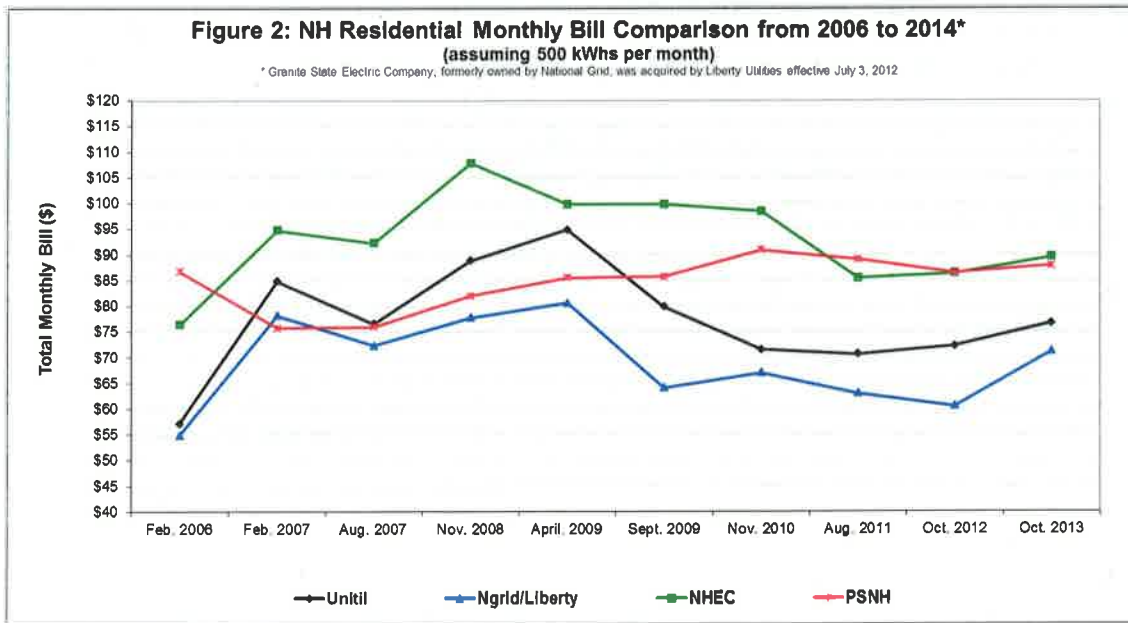


Figure 2 provides a monthly bill comparison of New Hampshire’s four electric utilities. Historically, the average monthly kilowatt hours (kWh) used by New Hampshire households was 500 kWh. The household average monthly kWh has risen to 650 kWh over the past several years; this change is reflected in Figures 3 and 4, respectively.



A comparison of average residential monthly electric bills for 650 kWh of use per month for New Hampshire residential customers is shown in Figure 3. As demonstrated, the average monthly residential bill in New Hampshire for the distribution utility customers is \$105 to \$140.

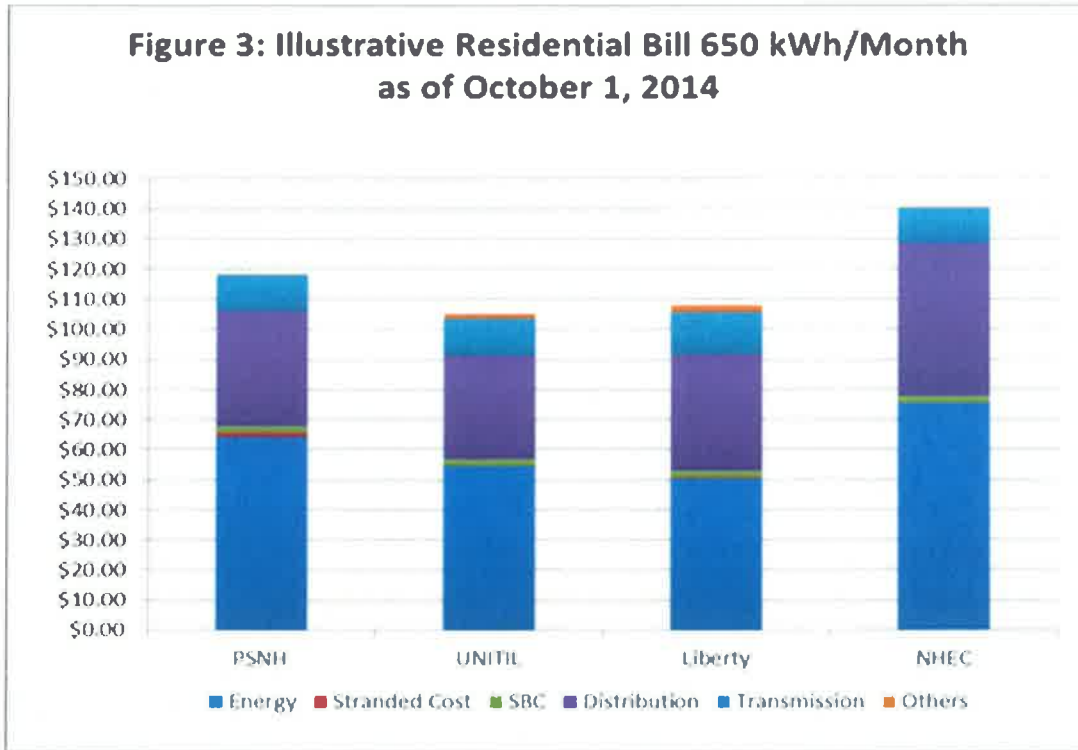
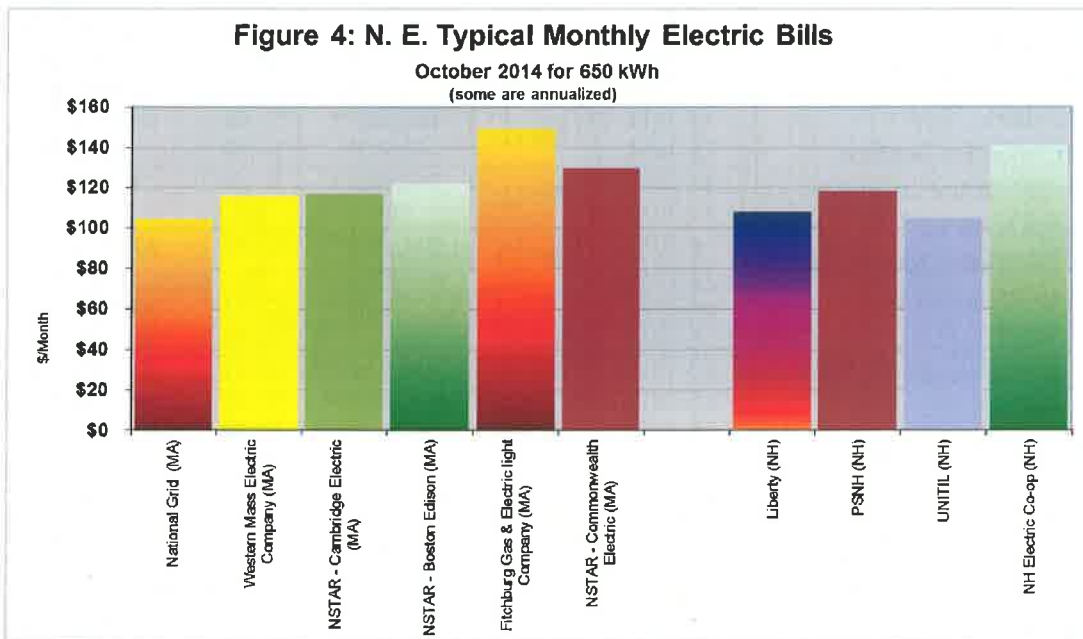


Figure 4 provides a comparison of the typical monthly bills for Massachusetts and New Hampshire residents.



Allowance Auctions and Sales Information

New Hampshire's current (2014) CO₂ base budget is 4,749,011 tons (or allowances) per year, about equal to the 2012 annual emissions (4,642,898 tons). The base budget will be lowered by 2.5% in 2015 and each year thereafter.

Because regional emissions during the first 5 years (2009 – 2013) of the program were well below the original regional cap (165 million tons), a large bank of privately held allowances was accumulated and would still remain in the market, and could be used to allow emissions to creep back up above current levels if there were no further adjustments. Therefore, this bank will be gradually reduced by the application of adjustments to the base budget. The adjusted 2014 NH budget is 4,320,709 allowances. The adjusted 2015 NH budget is 3,487,923 allowances.

New Hampshire has participated in 24 regional auctions to date. New Hampshire specific auction details are presented in Table 1. A regional total of 710,937,738 allowances have been sold in 25 auctions. Another 156,405,811 allowances that were offered for sale went unsold. An additional 5 million Cost Containment Reserve allowances were sold in March 2014. 78% of the allowances have been purchased by regulated compliance entities.

The current Minimum Reserve Price (price floor) is \$2.00 per allowance. The 2014 vintage

Auction (Vintage)	Date	Allowances	Price	Revenue
1-2009	9/25/08	0	\$3.07	\$0
2-2009	12/17/08	1,189,610	\$3.38	\$4,020,882
3-2009	3/18/09	1,189,611	\$3.51	\$4,175,535
3-2012		86,850	\$3.05	\$264,892
4-2009	6/17/09	1,189,610	\$3.23	\$3,842,440
4-2012		86,850	\$2.06	\$178,911
5-2009	9/9/09	1,189,610	\$2.19	\$2,605,246
5-2012		86,850	\$1.87	\$162,409
6-2009	12/2/09	1,362,019	\$2.05	\$2,792,139
6-2012		63,922*	\$1.86	\$118,895
7-2010	3/10/10	1,487,013	\$2.07	\$3,078,117
7-2013		84,941*	\$1.86	\$157,990
8-2010	6/9/10	1,487,013	\$1.88	\$2,795,584
8-2013		86,850	\$1.86	\$161,541
9-2010	9/8/10	1,122,109**	\$1.86	\$2,087,123
9-2013		53,296*	\$1.86	\$99,130
10-2010	12/1/10	852,627**	\$1.86	\$1,585,886
10-2013		47,609*	\$1.86	\$88,553
11-2011	3/9/11	1,659,423	\$1.89	\$3,136,309
11-2014		86,850	\$1.89	\$164,147
12-2011	6/8/11	443,512**	\$1.89	\$838,238
12-2014		43,915*	\$1.89	\$82,999
13-2011	9/7/11	263,886**	\$1.89	\$498,745
13-2014		0*	\$0	\$0
14-2011	12/7/11	944,201**	\$1.89	\$1,784,540
14-2014		0*	\$0	\$0
15-2012	3/14/12	1,021,008***	\$1.93	\$1,970,545
16-2012	6/6/12	1,047,521***	\$1.93	\$2,021,716
17-2012	9/5/12	1,069,204***	\$1.93	\$2,063,564
18-2012	12/5/12	868,680***	\$1.93	\$1,676,552
19-2013	3/13/13	1,821,863	\$2.80	\$5,101,216
20-2013	6/5/13	1,650,162	\$3.21	\$5,297,020
21-2013	9/4/13	1,650,162	\$2.67	\$4,405,933
22-2013	12/4/13	1,650,164	\$3.00	\$4,950,492
23-2014	3/5/14	1,081,406	\$4.00	\$4,325,624
24-2014	6/4/14	648,741	\$5.02	\$3,256,680
25-2014	9/3/14	648,741	\$4.88	\$3,165,856
Total				\$72,955,500

*86,850 allowances were offered; some went unsold.

**1,487,013 allowances were offered; some went unsold

***1,650,162 allowances were offered; some went unsold.

allowances are being sold in four equal lots over 4 auctions. Each auction occurs in the last month of each quarter.

Market Monitoring Reports

Please see the attached Market Monitor Report for Auction 25 prepared for the RGGI states by Potomac Economics. It states:

In summary, the results of our monitoring of RGGI Auction 25 raise no material concerns regarding the auction process, barriers to participation in the auction, or the competitiveness of the auction results.

CO₂ Emissions Trends

Table 2 provides emission rates from New Hampshire sources from 2008 to 2013 in tons of CO₂.

	2008	2009	2010	2011	2012	2013
PSNH (Merrimack, Schiller, Newington)	4,029,042	3,428,109*	3,613,106*	2,656,898*	1,594,691*	1,828,561*
Granite Ridge	1,974,812	1,708,459	1,445,639	1,687,224	2,103,629	1,507,274
Newington Energy	1,091,293	633,312	840,702	1,181,247	944,578	317,361
Total	7,095,147	5,769,880	5,899,447	5,525,369	4,642,898	3,653,196

* 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 2012 in tons of CO₂ are provided in Table 3.

Table 3: 2013 emissions from the RGGI region in tons of CO₂

State	CO ₂ Emissions	State	CO ₂ Emissions	State	CO ₂ Emissions
CT	7,224,361	DE	4,285,050	MA	13,676,426
MD	18,683,424	ME	2,612,423	NH	3,653,196
RI	2,771,105	VT	2,761	NY	33,607,796
				Total	86,516,542
				Budget	165,184,246

Use of Auction Revenue by Each RGGI State

The Regional Investment report of RGGI CO₂ Allowance Proceeds, 2012 posted at http://www.rggi.org/rggi_benefits, provides an overview of each participating state's activities. The report estimates that investments of RGGI auction proceeds to date are projected to return more than \$2 billion in lifetime energy bill savings to more than 3 million participating households and more than 12,000 businesses in the region. These investments are projected to offset the need for approximately 8.5 million megawatt hours (MWh) of electricity generation, save more than 37 million British Thermal Units (mmBTU) of fossil fuels, and avoid the release of approximately 8 million short tons of carbon dioxide (CO₂) pollution into the atmosphere over their lifetime.

Use of RGGI Proceeds in NH

House Bill 1434 (Ch. 182, Laws of 2008; effective June 11, 2008) created the State's Greenhouse Gas Emissions Reduction Fund (GHGERF), to be funded with the proceeds from quarterly auctions of the State's CO₂ budget allowances and administered by the PUC. The GHGERF offered a competitive grant program in 2009 and 2010, awarding \$31 million for 36 energy efficiency projects/programs.⁴

Four competitive grant program energy efficiency programs are still operating, including two revolving loan funds (RLF). The Business Finance Authority continues to manage a \$4 million RLF and the Community Development Finance Authority is managing a \$1.5 million RLF directed towards municipalities. Currently nearly all funding allocated to the RLFs is committed. Two additional programs, including a \$5 million energy efficiency program (managed by TRC Energy Services) targeting large energy users, and an energy efficiency program for retail businesses managed by the Retail Merchants Association are still in operation today though funds are dwindling at both TRC and RMA. A summary of the two active grants follows:

- **The New Hampshire Retail Association's** (formerly known as RMANH) *Giving Power Back* energy efficiency program has enabled over 200 small and mid-sized businesses to undertake a wide variety of energy evaluations, audits and deep energy retrofits. As of October 1, 2014, the program has provided approximately \$1.1 million in rebates and estimates \$738,000 in annual energy savings to participants. Based on their experience, NH Retail developed a Field Guide to Energy Conservation and Efficiency available at their website, <http://www.rmanh.com>, and is currently undertaking a large Measurement & Verification project to ascertain the effectiveness of prescribed energy efficiency measures and standards.

⁴ Details for each grant award are available at the PUC's website <http://www.puc.nh.gov/Sustainable%20Energy/GHGERF.htm>.

- Currently in its fourth year, TRC Energy Services' (TRC) New Hampshire Pay for Performance program (NH P4P) has exceeded the energy savings goals that were established when the program launched. With funding from the GHGERF, TRC designed and manages the NH P4P Program, which has delivered comprehensive energy efficiency solutions to 49 commercial, industrial, and municipal facilities across the state, totaling more than \$13 million in construction. Through a network of more than 30 approved Partner firms, energy reduction plans are developed for each project to meet at least a 15% reduction in total facility source energy consumption. With a whole-building approach to energy savings, NH P4P has saved more than 13 million kWh of electricity and 84,000 MMBTU of fossil fuels – resulting in greenhouse gas reductions of nearly 15,000 tons. An annotated map of project facilities can be viewed at <http://nhp4p.com/program-impact/>.

In 2012, the legislature enacted HB 1490, a provision of which terminated the GHGERF as of the end of 2012, and replaced it with the Energy Efficiency Fund (EEF). The bill also placed a cap of \$1 for each RGGI CO₂ allowance sale, and directed that any proceeds above the cap be rebated to electric ratepayers. The legislation directed the PUC to allocate remaining RGGI revenues to the Core energy efficiency programs administered by the State's electric distribution utilities, beginning in 2013.

In 2013, the New Hampshire legislature enacted SB 123, requiring the PUC to allocate 15% of these funds to the CORE low-income weatherization program, and directing the electric utilities to set aside up to \$2 million of the remaining RGGI funds for CORE municipal and local government energy efficiency projects.

SB 268, enacted in June, 2014, directs that any RGGI proceeds remaining after the rebate to ratepayers and the set-asides for the low-income core efficiency program and municipal and local government energy efficiency projects 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 directs the PUC's Electric Division to conduct a competitive bid process and Electric Division is currently drafting an RFP for this purpose.

Proposed Federal CO₂ Cap and Trade Program Impacts

Power plants are the largest concentrated source of emissions in the United States, together accounting for roughly one-third of all domestic greenhouse gas emissions. While the United States has limits in place for arsenic, mercury and lead pollution that power plants can emit, there are no national limits on the amount of carbon pollution power plants can emit.

New Hampshire and the RGGI States continue to work with EPA to ensure that RGGI, a market-based program with greater flexibility for sources, is an option under State plans that will be required by EPA to meet future requirements. The states set out to establish a

program that could serve as a working model for national legislation and RGGI has done that. Near-term national legislation now appears unlikely. EPA is continuing the process of adopting a New Source Performance Standard (NSPS) guideline to limit greenhouse gas emissions from **existing** power plants.


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. The proposal achieves the first milestone outlined in President Obama's June 25 Memorandum to EPA on "*Power Sector Carbon Pollution Standards*," a major part of the President's Climate Action Plan.

For more details on the proposal, please see EPA's Fact Sheet at <http://www2.epa.gov/carbon-pollution-standards/fact-sheet-clean-power-plan-framework>.

Rather than comply with EPA's rate-based requirement, **existing** power plants may prefer a more flexible alternative compliance program like RGGI. Power plants are familiar with similar programs for other pollutants. Other non-RGGI states may seek to implement RGGI, or RGGI-like programs, as an alternative to the federal guidelines, rather than implement a rate-based approach. Thus, the geographical area for RGGI could be expanded, consistent with the original intent of RGGI. Some states may consider a carbon tax as an alternative compliance mechanism to the federal guidelines. In order to effectively reduce emissions, a carbon tax would need to be greater than \$20/ton. RGGI allowance prices are currently below \$5/ton.

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), Joe Fontaine, Air Resources Division Trading Programs Manager (271-6794, joseph.fontaine@des.nh.gov), or Debra Howland, PUC Executive Director (271-6003, debra.howland@puc.nh.gov).

Sincerely,



Craig A. Wright
Director, Air Resources Division, DES

F. Anne Ross
General Counsel, PUC

Attachments: Market Monitor Report for Auction 25

cc: Rep. Charles Townsend Rep. Laurence Rappaport Rep. Lester Bradley
Rep. James Devine Rep. Robert Introne Rep. Jacqueline Cali-Pitts
Rep. Robert Backus Sen. Jeb Bradley Sen. Sam Cataldo
Sen. Martha Fuller Clark Sen. Andrew Hosmer Rep. Beatriz Pastor
Thomas Burack, Environmental Services John Barthelmes, Dept of Safety