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The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Thomas S. Burack, Commissioner

November 7, 2013

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 established the state's Carbon Dioxide Emissions Budget Trading Program in accordance with 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 CO_2 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_2 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g) *[Repealed]; and,*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_2 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 CO_2 emissions. House Bill 1490 (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 funded by system benefits charges.

Although less than a year into this revision of funding, directing the funding to the CORE programs appears to be functioning smoothly. However, 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 reduces costs for everybody. Because greater economic benefits

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

accrue from greater investments in energy efficiency, the legislature may, following additional study, wish to consider potential adjustment of the investment threshold.

Quarterly RGGI auctions have been conducted for five years, smoothly and professionally. The state has received over $57,000,000 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 $1,339,425,950 to date.

On February 7, 2013 after a comprehensive two year program review, supported by an extensive regional stakeholder process, including over 12 stakeholder meetings, webinars and learning sessions that engaged the regulated community, nonprofits, and consumer and industry advocates, the RGGI States released a RGGI *Updated Model Rule* and *Program Review Recommendations Summary*. The *Updated Model Rule* was intended to guide the RGGI states as they follow state-specific statutory and regulatory processes to propose updates to their CO_2 Budget Trading Programs. The changes outlined in the *Updated Model Rule* and *Program Review Recommendations Summary* build upon RGGI's success and strengthen the program moving forward. Improvements include:

- A reduction of the 2014 regional CO_2 budget, (also referred to as the "RGGI cap"), from 165 million to 91 million tons – a reduction of 45 percent. The cap would decline 2.5 percent each year from 2015 to 2020.

- Additional adjustments to the RGGI cap from 2014-2020. This will account for the private bank of allowances held by market participants before the new cap is implemented in 2014. From 2014-2020 compliance with the applicable cap will be achieved by use of "new" auctioned allowances and "old" allowances from the private bank.

- Cost containment reserve (CCR) of allowances that creates a fixed additional supply of allowances that are only available for sale if CO2 allowance prices exceed certain price levels ($4 in 2014, $6 in 2015, $8 in 2016, and $10 in 2017, rising by 2.5 percent, to account for inflation, each year thereafter.)

- Updates to the RGGI offsets program, including a new forestry protocol.

- Requiring regulated entities to acquire and hold allowances equal to at least 50 percent of their emissions in each of the first 2 years of the 3 year compliance period, in addition to demonstrating full compliance at the end of each 3 year compliance period.

House Bill 306 (2013) amended RSA 125-O to implement the RGGI *Updated Model Rule* resulting from the regional 2012 Program Review, including lowering the budget beginning in 2014. States are also planning to conduct a regional 2016 Program Review.

Also, Senate Bill 123 (2013) additionally amended RSA 125-O to re-allocate up to $2 million of RGGI allowance proceeds annually to municipalities via the CORE energy efficiency programs.

Potential Changes

Auction 21 was held on September 4, 2013. The clearing price for allowances was $2.67. Allowance prices have risen from the minimum value (about $2), after release of the *Updated Model Rule*, as some entities are buying allowances now and banking them for future use when allowance prices may be higher. Long-term, investment in energy efficiency is the most cost-effective way to spend RGGI revenues. As discussed above, the committees may want to recommend a study to consider raising the rebate threshold at some point in the future.

Trends in Electric Rates

The cost of CO_2 emissions allowances is a very small part of overall electricity bills. On average, the costs associated with the CO_2 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 43 cents per month for residential consumers across the region. More specifically to New Hampshire, PSNH's net compliance cost is $1.550 million for 2012, or $0.000337 per kWh ($1.550 million divided by 4,600,988 megawatt hours in default service sales), which translates to 22 cents per month, or .20%, for a household using 650 kWh. This small rate impact is offset by strategic reinvestment of CO_2 allowance proceeds in energy efficiency measures which reduce demand for electricity and give households and businesses better control over their energy bills.

Changes in electric rates have been driven primarily by changes in the cost of fossil fuels, especially natural gas, not RGGI compliance costs. Power plants fueled by natural gas generally operate on the margin in New England which in turn affects electric market prices. Because Unitil, Liberty Utilities[3] and the New Hampshire Electric Cooperative do not own generating facilities, they do not have direct RGGI compliance costs. Instead, the cost of CO_2 allowances may be imbedded in their default service rates to the extent that their power purchase price is affected by RGGI compliance costs.

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 2007 are shown in Figure 1. As shown, the cost of electricity in New Hampshire trends similarly to the cost of natural gas.

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[2] Fact Sheet: The Regional Greenhouse Gas Initiative (RGGI), 09-28-12: http://www.rggi.org/docs/Documents/RGGI_Fact_Sheet_2012_09_28.pdf

[3] Granite State Electric Company, formerly owned by National Grid, was acquired by Liberty Utilities on July 3, 2012 and does business as Liberty Utilities.

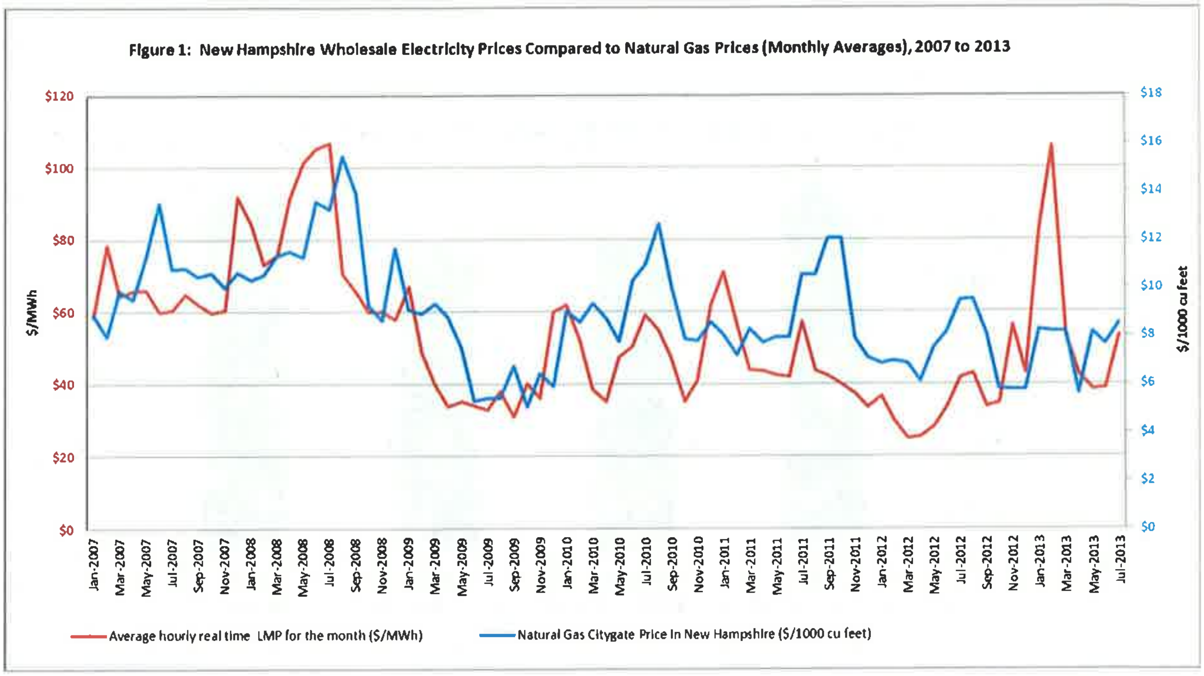
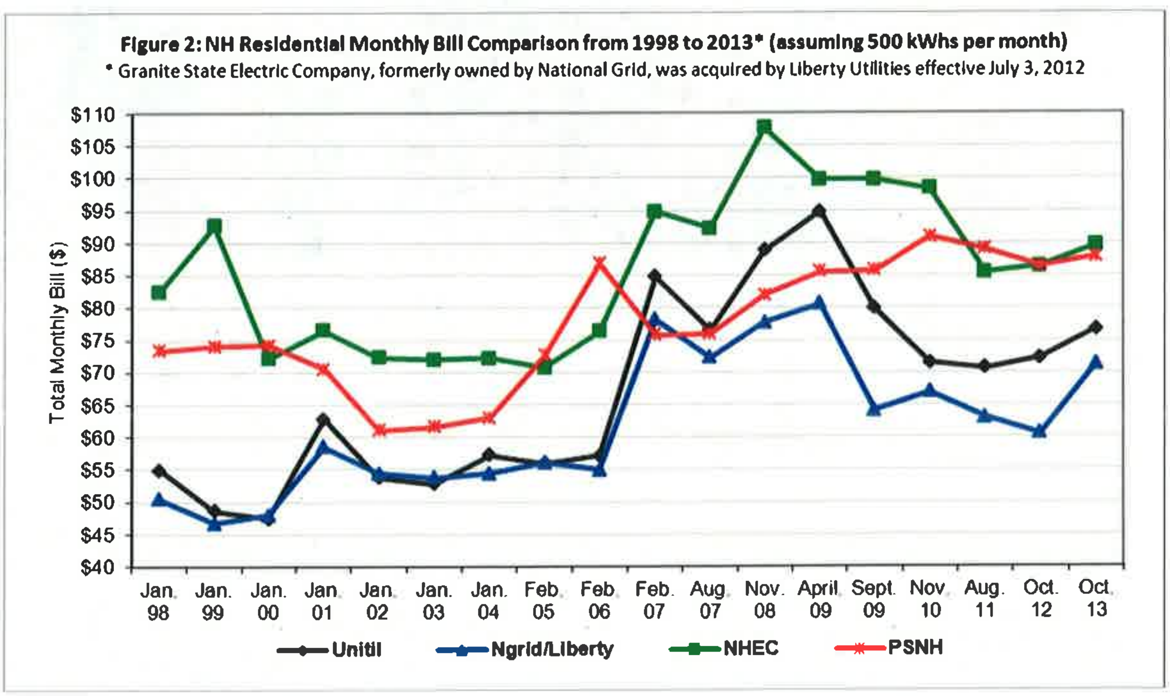


Figure 2 provides a monthly bill comparison of New Hampshire's four electric utilities. Historically, the typical monthly kilowatt hours (kWh) used by New Hampshire households was 500 kWh. The household typical monthly kWh has risen to 650 kWh over the past several years; this change is reflected in 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 shown, the typical monthly residential bill in New Hampshire for the distribution utility customers is $93.36 to $110.34.



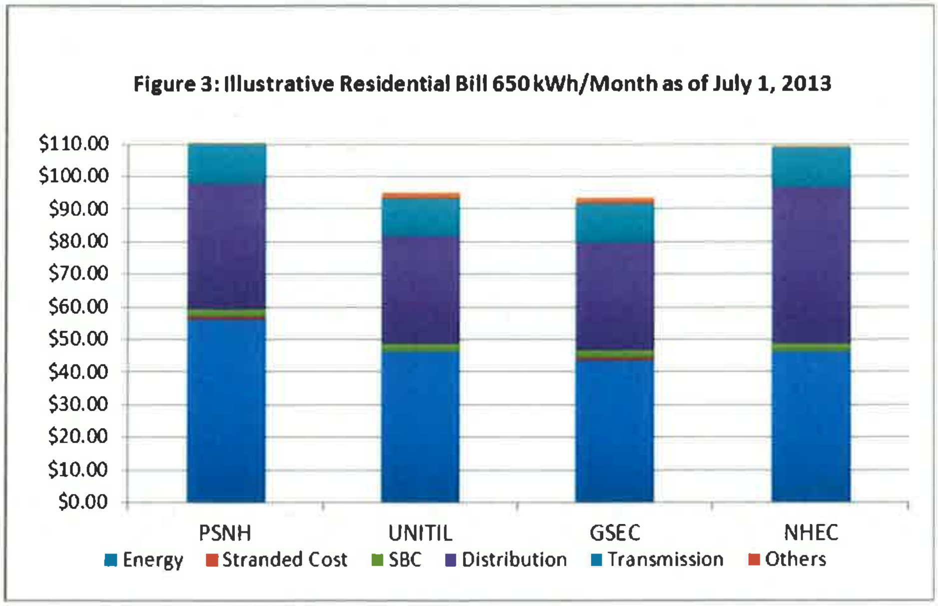
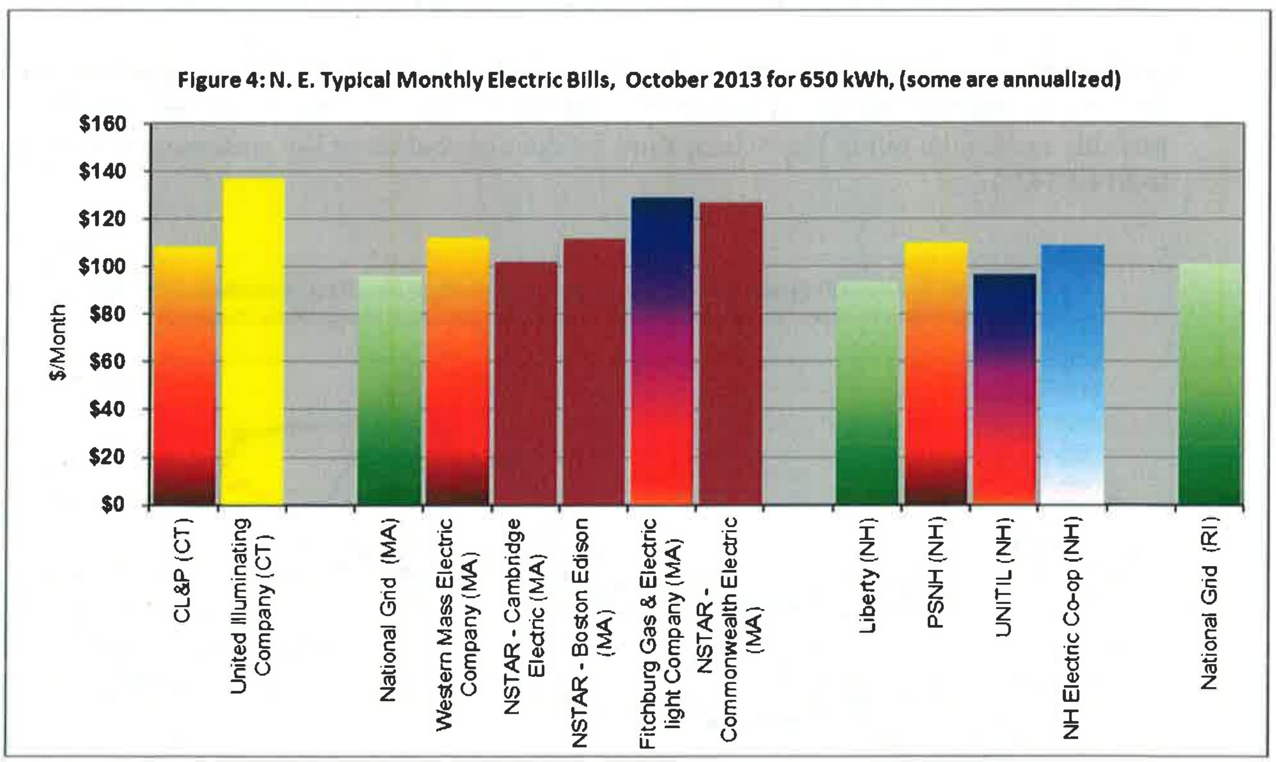


Figure 4 demonstrates the typical monthly bills for New England residents. Across New England the typical monthly residential bill ranges from $93.36 to $129.18, with New Hampshire residences having some of the lowest bills in the region.



Allowance Auctions and Sales Information

New Hampshire's current (2013) CO_2 budget is 8,620,460 tons (or allowances) per year, based on 2003 – 2004 annual emissions from affected sources in New Hampshire. In 2014, New Hampshire's base budget will be lowered to 4,749,011 CO_2 allowances, about equal to the 2012 annual emissions (4,642,898 tons). The base budget will be lowered by 2.5% 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 over the next seven years by the application of adjustments to the base budget. The estimated adjusted 2014 NH budget is 4,343,174 allowances. The year 2014 is the final year that PSNH will be awarded 1,500,000 allowances that effectively reduces the estimated amount available for auction in 2014 to about 2.8 million allowances.

New Hampshire has participated in 20 regional auctions to date. New Hampshire specific auction

Table 1: NH Auction Sales and Revenues to Date

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 3-2012	3/18/09	1,189,611 86,850	$3.51 $3.05	**$4,175,535** **$264,892**
4-2009 4-2012	6/17/09	1,189,610 86,850	$3.23 $2.06	**$3,842,440** **$178,911**
5-2009 5-2012	9/9/09	1,189,610 86,850	$2.19 $1.87	**$2,605,246** **$162,409**
6-2009 6-2012	12/2/09	1,362,019 63,922*	$2.05 $1.86	**$2,792,139** **$118,895**
7-2010 7-2013	3/10/10	1,487,013 84,941*	$2.07 $1.86	**$3,078,117** **$157,990**
8-2010 8-2013	6/9/10	1,487,013 86,850	$1.88 $1.86	**$2,795,584** **$161,541**
9-2010 9-2013	9/8/10	1,122,109** 53,296*	$1.86 $1.86	**$2,087,123** **$99,130**
10-2010 10-2013	12/1/10	852,627** 47,609*	$1.86 $1.86	**$1,585,886** **$88,553**
11-2011 11-2014	3/9/11	1,659,423 86,850	$1.89 $1.89	**$3,136,309** **$164,147**
12-2011 12-2014	6/8/11	443,512** 43,915*	$1.89 $1.89	**$838,238** **$82,999**
13-2011 13-2014	9/7/11	263,886** 0*	$1.89 $0	**$498,745** **$0**
14-2011 14-2014	12/7/11	944,201** 0*	$1.89 $0	**$1,784,540** **$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 18-2012 19-2013 20-2013 21-2013	9/5/12 12/5/12 3/13/13 6/5/13 9/4/13	1,069,204*** 868,680*** 1,821,863 1,650,162 1,650,162	$1.93 $1.93 $2.80 $3.21 $2.67	**$2,063,564** **$1,676,552** **$5,101,216** **$5,297,020** **$4,405,933**
Total				**$57,256,798**

*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.

details are presented in Table 1. A regional total of 564,572,169 allowances have been sold in 21 auctions. Another 156,405,811 allowances that were offered for sale went unsold. Greater than 84% of allowances have been purchased by regulated compliance entities.

The current Minimum Reserve Price (price floor) is $1.98 per allowance. The 2013 vintage 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 21 prepared for the RGGI states by Potomac Economics. It states:

> *"We observed the auction as it occurred and have completed our review and analysis of its results. Based on our review of bids in the auction, we find no material evidence of collusion or manipulation by bidders.*
>
> *In summary, the results of our monitoring of RGGI Auction 21 raise no material concerns regarding the auction process, barriers to participation in the auction, or the competitiveness of the auction results."*

CO_2 Emissions Trends

Table 2 provides emission rates from New Hampshire sources from 2008 to 2012 in tons of CO_2.

Table 2: 2008 – 2012 emissions from New Hampshire sources in tons of CO_2

	2008	2009	2010	2011	2012	
PSNH (Merrimack, Schiller, Newington)	3,112,114 + 818,594* + 98,334 = 4,029,042	2,597,795 + 632,878* + 197,436 = 3,428,109**	2,815,040 + 581,464* + 216,603 = 3,613,106**	2,216,310 + 312,980* + 127,608 = 2,656,898**	1,395,642 + 130,449* + 68,600 = 1,594,691**	
Granite Ridge	1,974,812	1,708,459	1,445,639	1,687,224	2,103,629	
Newington Energy	1,091,293	633,312	840,702	1,181,247	944,578	
Total	7,095,147	5,769,880	5,899,447	5,525,369	4,642,898	

*excludes emissions from biomass (net zero)

**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), and 1,500,000 2013 allowances (CPA bonus)

Emissions from the RGGI region for 2012 in tons of CO_2 are provided in Table 3.

Table 3: 2012 emissions from the RGGI region in tons of CO_2

State	CO_2 Emissions	State	CO_2 Emissions
CT	6,819,155	DE	4,839,522
MA	13,217,640	MD	20,596,979
ME	2,940,072	NH	4,642,898
		NY	35,417,901
RI	3,735,785	VT	2,319
		Total	92,212,271
		Budget	165,184,246

Use of Auction Revenue by Each RGGI State

As of 2011, investments of Regional Greenhouse Gas Initiative (RGGI) auction proceeds returned $1.3 billion in lifetime energy bill savings to 2.9 million program participants and 7,400 businesses in the region. These programs are offsetting the need for more than 27 million megawatt hours of electricity generation, and avoiding the release of 12 million short tons of CO_2 pollution into the atmosphere over their lifetime, the equivalent of taking 2 million cars off the road for one year.

The Regional Greenhouse Gas Initiative (RGGI) is making a difference for New England and Mid-Atlantic households, small businesses, farms, and industry. The program has powered a $617 million investment in the region's energy future: reducing energy bills, helping businesses become more competitive, accelerating the development of local clean and renewable energy sources, and limiting the release of harmful pollutants into the air and atmosphere, while spurring the creation of jobs in the region.[1] An independent 2011 study by the Analysis Group[2] reported over 16,000 new job-years created in the first three years of the program. These investments, in concert with the broader energy policies of each RGGI state, are making the region a national leader in energy efficiency, clean and renewable energy, and greenhouse gas emissions abatement. *The Regional Investment report of RGGI CO_2 Allowance Proceeds, 2012* is pending and will be posted at http://www.rggi.org/rggi_benefits.

[1] *Regional Investment of RGGI CO2 Allowance Proceeds, Executive Summary, 2011*, November, 2012. http://www.rggi.org/docs/Documents/2011-Investment-Report__ES.pdf.
[2] *The Economic Impacts of the Regional Greenhouse Gas Initiative, Nov. 2011*, Analysis Group. http://www.analysisgroup.com/uploadedFiles/Publishing/Articles/Economic_Impact_RGGI_Report.pdf

Summary of Greenhouse Gas Emissions Reduction Fund (GHGERF) Programs

In the 2012 Legislative session, HB 1490 amended RSA 125-O:23 to replace the GHGERF with the Energy Efficiency Fund. The legislation allowed for the continued operation of six grants awarded through the GHGERF in 2010 for which funding had already been encumbered. The following is a summary of GHGERF grant program activity in 2012 and 2013.

- The **New Hampshire Business Finance Authority** (BFA) received $2 million in 2009 to initiate the *NH Business Energy Conservation Revolving Loan Fund* (RLF) for energy efficiency improvements and investments for commercial operations. The program was awarded an additional $2 million through a 2010 grant solicitation. While the program will continue as a dedicated BFA program in perpetuity, when the grant closed on June 30, 2013, the BFA had lent $4.55 million to eight NH manufacturers and one regional tourist facility. Company leverage was $4.4 million and eight of the nine companies had either repaid or were in the process of repaying their loans.

- The Department of Resources & Economic Development administered a grant for the Lakes Region Community College's *Energy Efficiency Training Program* (ETP) in partnership with the Plymouth Area Renewable Energy Initiative (PAREI). Through 2011 and 2012 the ETP offered 94 training opportunities on appropriate building energy efficiency upgrades and retrofits to 1,445 professionals, the general public, and targeted audiences, for a total of 10,539 training hours. From October 1, 2011 through September 30, 2013, PAREI conducted 47 energy efficiency training programs including professional trainings, demonstrations and open houses for the general public, and "housewarmings" where homeowners learned hands-on, do-it-yourself home weatherization skills while completing an air sealing and insulating project at a home or building of a non-profit organization. 535 people participated in these activities.

- The **Retail Merchant Association of New Hampshire's** (RMANH) *Giving Power Back* Energy Efficiency program has enabled nearly 200 small and mid-sized businesses to undertake a wide variety of energy evaluations, audits and deep energy retrofits. As of October 1, 2013, the program has provided approximately $1 million in rebates and estimates $660,000 in annual energy savings to participants. Based on their experience, RMANH has also developed a *Field Guide to Energy Conservation and Efficiency* available at their website, http://www.rmanh.com.

- Currently in its third 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 $12.5 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 80,000 MMBTU of fossil fuels – resulting in greenhouse gas reductions of more than 14,000 tons. An annotated map of project facilities can be viewed at http://nhp4p.com/program-impact/.

- Through the **Community Loan Fund's** *Weatherization Innovation Pilot Program*, weatherization crews organized by the state's community action agencies weatherized 382 homes in 38 manufactured-housing communities over the course of three building seasons. The program combined funds from the GHGERF, the U.S. Department of Energy and the CORE utility programs to provide the most effective weatherization possible for participating homes. In 12 of the targeted communities, crews weatherized more than 20 percent of the homes. The average home weatherized through this program is expected to reduce its annual energy bills by $891, or somewhere between 25 and 50 percent, a sum of great significance to a household at or near the poverty level. Throughout the program, the close proximity of homes in manufactured housing parks allowed for assembly-line style production and resulted in reduced labor requirements and transportation costs, saving the program money and maximizing the number of low-income households that were served.

- When the **New Hampshire Housing Finance Authority's** *Greener Homes Program* (GHP) closes in December 2013, the program will have completed comprehensive energy retrofits for 27 projects and energy audits for 41 projects throughout the state. These projects include elderly housing and low-income units; energy audits have been conducted at 1,277 units resulting in comprehensive energy retrofits for 981 residences. The threshold requirement for participation in the GHP is that the targeted housing must be publicly-financed and rent restricted (i.e. affordable to low-income households). Every GHP project owner must agree to a minimum of 20 years of post-retrofit affordability, enforced through a recorded Greener Homes Land Use Restriction Agreement. To date only one owner has opted not to participate.

As of June 2012, cumulative energy savings from projects that received GHGERF funds ($21.8 million spent) are estimated to be $107.8 million through 2030 based on current energy prices. For every dollar spent as of June 2012, the expected return is

$4.95 in energy savings.[4] Details for each grant award are available at the PUC's website (http://www.puc.nh.gov/Sustainable%20Energy/GHGERF.htm).

Proposed Federal CO_2 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, currently, there are no national limits on the amount of carbon pollution new 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. In order to implement the Clean Air Act requirements and to avoid further litigation, EPA is pursuing federal regulatory, rather than legislative, means of addressing the climate change problem. EPA is continuing the process of adopting a New Source Performance Standard (NSPS) regulation to limit greenhouse gas emissions from **new** power plants.

On September 20, 2013, EPA proposed Clean Air Act standards to cut carbon pollution from new 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.

Under the proposal, new large natural gas-fired turbines would need to meet a limit of 1,000 pounds of CO_2 per megawatt-hour, while new small natural gas-fired turbines would need to meet a limit of 1,100 pounds of CO_2 per megawatt-hour. New coal-fired units would need to meet a limit of 1,100 pounds of CO_2 per megawatt-hour, and would have the option to meet a somewhat tighter limit if they choose to average emissions over multiple years, giving those units additional operational flexibility.

In 2009, EPA determined that greenhouse gas pollution threatens Americans' health and welfare by leading to long lasting changes in our climate that can have a range of negative effects on human health and the environment. Separately, EPA has initiated outreach to a wide variety of stakeholders that will help inform the development of emission guidelines for existing power plants. EPA intends to work closely with the states to ensure strategies for reducing carbon pollution from existing sources are flexible, account for regional diversity, and embrace common sense solutions, allowing

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[4] Carbon Solutions New England, The New Hampshire Greenhouse Gas Emissions Reduction Fund, Year (July 2011 – June 2012) Evaluation. http://www.puc.nh.gov/Sustainable%20Energy/GHGERF/Evaulations/GHGERF_Year%203_annual_report_2011-12_FINAL.pdf.

the United States to continue utilizing every fuel source available. In accordance with the June 25 Presidential Memorandum, EPA will issue proposed guidelines for existing power plants by June 1, 2014.

Rather than comply with a mandated 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 as an alternative to the federal 111(d) guidelines, rather than implement a mandated approach. Thus, the geographical area for RGGI could be expanded, consistent with the original intent of RGGI.

If you have any questions or need further information, please contact: Michael Fitzgerald, Air Resources Division Technical Services Bureau Administrator (271-6390, michael.fitzgerald@des.nh.gov), Joe Fontaine, Air Resources Division Trading Programs Manager (271-6794, joseph.fontaine@des.nh.gov), or Jack Ruderman, PUC Sustainable Energy Division Director (271-6012, Jack.Ruderman@puc.nh.gov).

Sincerely,

Craig A. Wright
Director, Air Resources Division, DES

Jack Ruderman
Director, Sustainable Energy Division, PUC

Attachments: Market Monitor Report for Auction 21

cc:	Rep. Charles Townsend	Rep. Laurence Rappaport	Rep. Lester Bradley	Rep. Beatriz Pastor
	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		

RGGI Inc.

MARKET MONITOR REPORT FOR AUCTION 21

Prepared for:

RGGI, Inc., on behalf of the RGGI Participating States

Prepared By:

POTOMAC ECONOMICS

September 6, 2013

The Regional Greenhouse Gas Initiative (RGGI) is the first mandatory market-based regulatory program in the U.S. to reduce greenhouse gas emissions. RGGI is a cooperative effort of Northeast and Mid-Atlantic states to reduce emissions of carbon dioxide (CO_2) from the power sector.

RGGI, Inc. is a non-profit corporation created to provide technical and administrative services to the states participating in the Regional Greenhouse Gas Initiative.

MARKET MONITOR REPORT FOR AUCTION 21

As the Market Monitor for the RGGI CO_2 allowance market, Potomac Economics monitors the conduct of market participants in the auctions and in the secondary market to identify indications of market manipulation or collusion. We also review the administration of the auctions by World Energy Solutions. This report summarizes our findings regarding RGGI Auction 21, which was held on September 4, 2013.

We observed the auction as it occurred and have completed our review and analysis of its results. Based on our review of bids in the auction, we find no material evidence of collusion or manipulation by bidders.

Forty-two bidders participated in the offering of CO_2 allowances for the current control period. Bids were submitted to purchase 2.0 times the available supply of allowances, resulting in a clearing price of $2.67 per ton. Compliance entities or their affiliates purchased 53 percent of the allowances in the offering. There was no indication of barriers to participation in the auction.

Based on our review of the administration of the market, we found that:

- The auction was administered in a fair and transparent manner in accordance with the noticed auction procedures and limitations.
- The auction results were consistent with the market rules and the bids received.
- There were no indications of issues with the auction platform such as hardware or software problems, communications issues, or security breaches.

Sensitive information was treated in a manner consistent with auction rules and procedures, with one exception. In one instance, information provided by one bidder was inadvertently sent to another bidder during the auction qualification process. The bidder was allowed to re-submit the information, and there is no indication that participation in the auction was adversely affected.

In summary, the results of our monitoring of RGGI Auction 21 raise no material concerns regarding the auction process, barriers to participation in the auction, or the competitiveness of the auction results. The appendix provides additional information about the market for RGGI CO_2 allowances and outcomes of the auction.

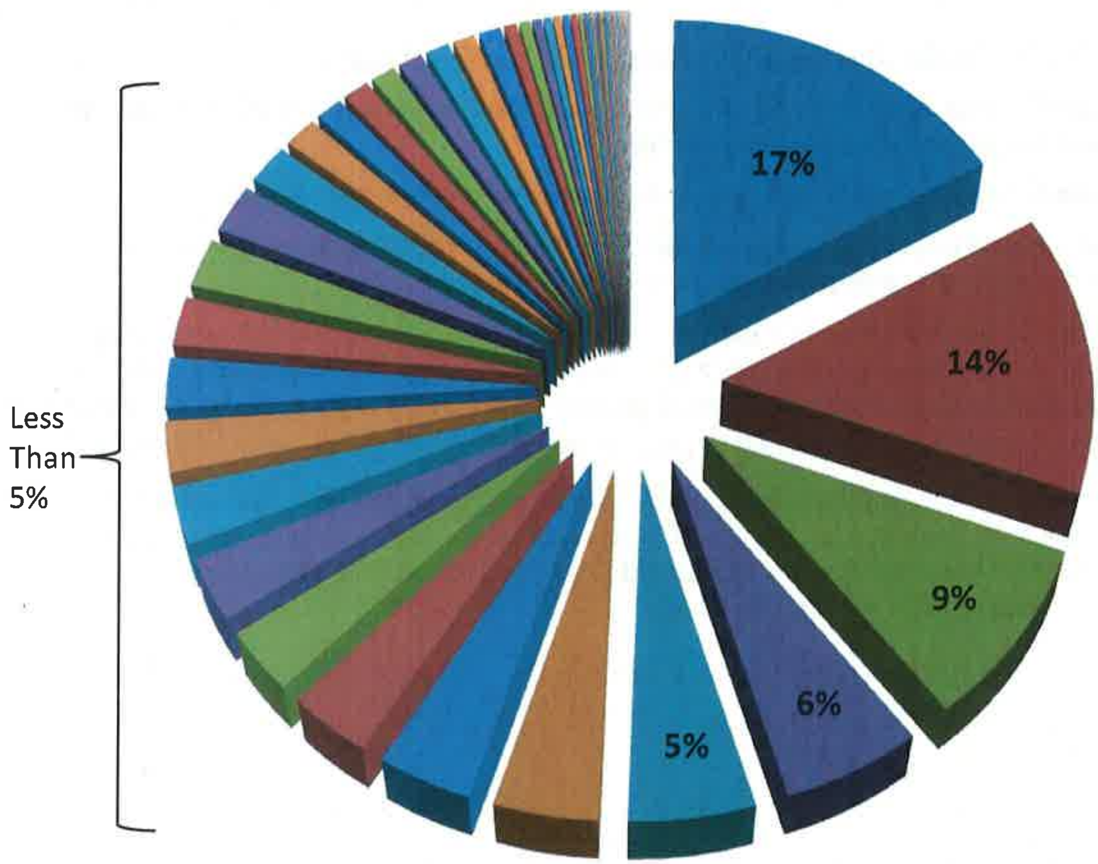
APPENDIX

A. DISPERSION OF PROJECTED DEMAND

The wide dispersion of projected demand for RGGI allowances across compliance entities facilitates the competitive performance of the auction.

The following figure shows the relative shares of projected demand for RGGI allowances by compliance entity in the current control period. The largest compliance entity represents only 17 percent of the total projected demand for allowances. Approximately half of the projected demand is composed of entities that each account for less than 5 percent of the total demand. Participation by a large number of entities facilitates the competitive performance of the auction.

Figure 1: Projected Demand for RGGI Allowances Shares by Compliance Entity



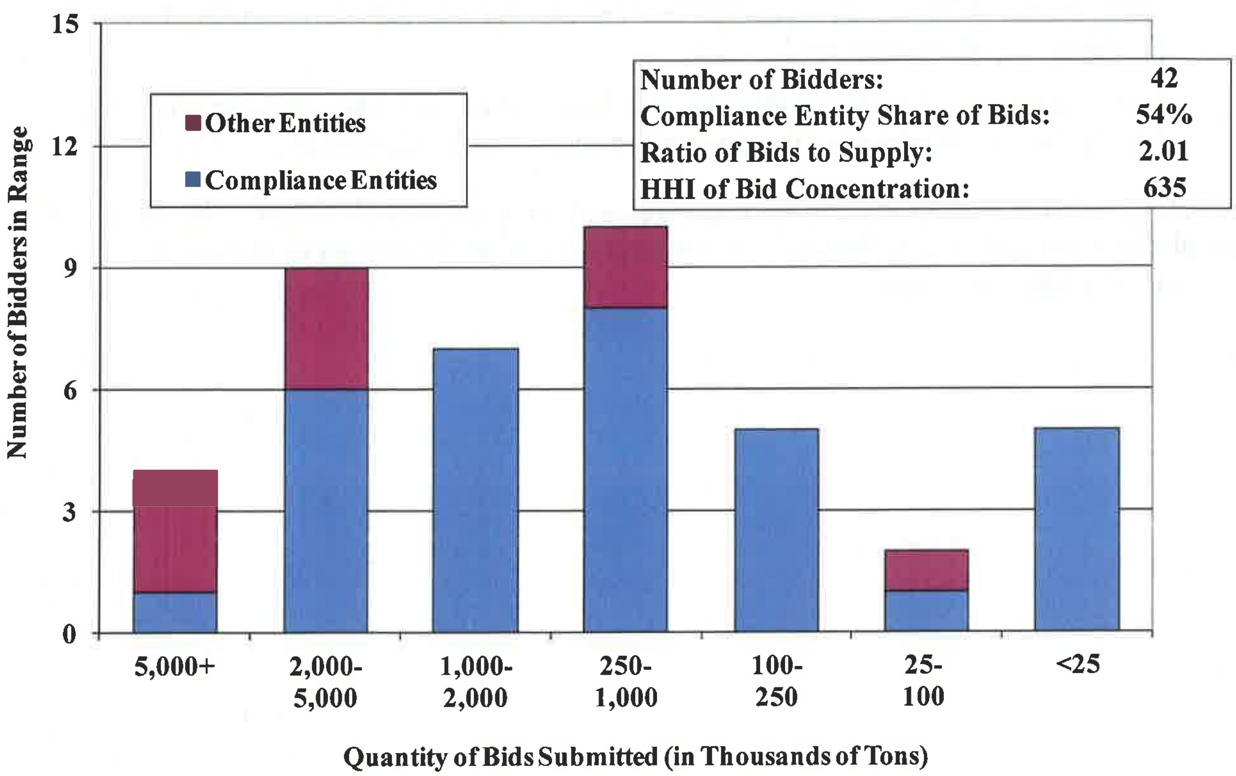
B. DISPERSION OF BIDS IN AUCTION 21

In the offering of allowances for the current control period, bids were submitted by 33 compliance entities and nine other entities. In our review of the bids and the qualification process, we found no material evidence of anti-competitive conduct or inappropriate barriers to participation.

The following figure summarizes the quantity of allowances for which bids were submitted by each bidder. Seven compliance entities and six other entities submitted bids for a large quantity of allowances (i.e., at least 2 million tons). Overall, compliance entities accounted for 54 percent of the quantity of allowances for which bids were submitted. The quantity of allowances for which bids were submitted was 2.0 times the available supply in Auction 21, down slightly from 2.1 times the available supply in Auction 20 and 2.2 times the available supply in Auction 19.

The bid quantities were widely distributed among the 42 bidders. The concentration of bids, using the Herfindahl-Hirschman Index ("HHI"), was relatively low at 635 in Auction 21, up from 565 in Auction 20. The HHI is a standard measure of concentration calculated by squaring each entity's share and then summing the squares across all entities (hence, the index ranges from 0 to 10,000).

Figure 2: Quantity of Bids Submitted by Entity
By Type of Entity and Quantity Bid



C. Summary of Purchases of Allowances in Auction 21

In the offering of allowances for the current control period, awards were distributed across 38 bidders with seven bidders purchasing two million tons or more and 23 bidders purchasing 300,000 tons or more. Compliance entities or their affiliates purchased 53 percent of the allowances in the auction.

The share of allowances purchased and several other quantities are reported for two types of entities:

- *Compliance Entities*: This includes all compliance entities and their affiliates. In this report, affiliated firms are firms that: (i) have a parent-subsidiary relationship with a compliance entity, (ii) are subsidiaries of a parent company that has a large interest in a compliance entity, (iii) have substantial control over the operation of a budget source and/or responsibility for acquiring RGGI allowances to satisfy its compliance obligations.
- *Other Entities*: This includes all other entities without compliance obligations.

The following statistics summarize the purchases and holdings of allowances by compliance entities and their affiliates under the RGGI program:

- In Auction 21, compliance entities and their affiliates purchased 53 percent of the allowances sold.
- In the first 21 RGGI auctions, compliance entities and their affiliates purchased 84 percent of the allowances sold.
- Compliance entities and their affiliates will hold 82 percent of the allowances in circulation following the settlement of allowances sold in Auction 21.

The following table shows the quantity of allowances purchased by each bidder. The identity of each bidder is masked, and the bidders are ranked according to the amount of allowances awarded, from largest to smallest.

Table 1: Quantity of Allowances Awarded by Bidder

Bidder	Number of Allowances Awarded
Bidder 1	9,445,043
Bidder 2	3,000,000
Bidder 3	2,600,000
Bidder 4	2,300,000
Bidder 5	2,235,000
Bidder 6	2,109,000
Bidder 7	2,000,000
Bidder 8	1,492,000
Bidder 9	1,350,000
Bidder 10	1,225,000
Bidder 11	1,100,000
Bidder 12	1,060,000
Bidder 13	1,045,000
Bidder 14	1,007,000
Bidder 15	1,000,000
Bidder 16	1,000,000
Bidder 17	725,000
Bidder 18	550,000
Bidder 19	500,000
Bidder 20	450,000
Bidder 21	350,000
Bidder 22	317,000
Bidder 23	315,000
Bidder 24	250,000
Bidder 25	200,000
Bidder 26	168,000
Bidder 27	164,000
Bidder 28	105,000
Bidder 29	100,000
Bidder 30	50,000
Bidder 31	50,000
Bidder 32	50,000
Bidder 33	46,000
Bidder 34	20,000
Bidder 35	10,000
Bidder 36	9,000
Bidder 37	6,000
Bidder 38	6,000

D. Summary of Bid Prices in Auction 21

Bids were submitted across a wide range of prices in the auction and the clearing price of $2.67 was relatively consistent with average bid prices submitted.

The following table reports several statistics regarding the bid prices for bids submitted in Auction 21. The median and mean bid prices are weighted by the quantity of each bid.

Bid Prices:	
Minimum	**$1.98**
Maximum	**$12.85**
Average (Median)	**$2.66**
Average (Mean)	**$2.79**
Clearing Price:	**$2.67**

E. Names of Potential Bidders in Auction 21

In accordance with Sections 2.8 and 3 of the Auction Notice for CO_2 Allowance Auction 21 on September 4, 2013, the Participating States are releasing the names of Potential Bidders in Auction 21. The states defined potential bidders as: "Each Applicant that has been qualified and submitted a complete *Intent to Bid*." The list of 52 Potential Bidders is as follows:

Astoria Energy, LLC
Astoria Generating Company, LP
Berkshire Power Company, LLC
Brooklyn Navy Yard Cogen Partners, LP
Caithness Long Island, LLC
Calpine Energy Services, LP
Castleton Power, LLC
CE2 Carbon Capital, LLC
ClimeCo Corporation
Consolidated Edison Comp. of NY, Inc.
CP Energy Marketing (US) Inc.
Delaware City Refining Company, LLC
DTE Energy Trading, Inc.
Dynegy Marketing and Trade, LLC
EDF Trading North America, LLC
Empire Generating Co., LLC
Entergy Rhode Island State Energy, LP
EquiPower Resources
Exelon Generation Company, LLC
Footprint Power Salem Harbor Operations, LLC
GenOn Energy Management, LLC
Granite Ridge Energy, LLC
H.Q. Energy Services (U.S.) Inc.
Hess Corporation (G)
Indeck Energy Serv. of Silver Springs
Indeck-Corinth Limited Partnership
Indeck-Oswego Limited Partnership
Jamestown Board of Public Utilities
J-Power USA Development Co., Ltd.
Kleen Energy Systems, LLC
Koch Supply & Trading, LP
Lakeside Energy, LLC
Luminus Energy Partners QP, LP
Mercuria Energy America, Inc.
Millennium Power Partners, LP
Morgan Stanley Capital Group, Inc.
National Grid Gen. dba National Grid
New Athens Generating Company, LLC
NextEra Energy Power Marketing, LLC
NRG Power Marketing, LLC
Power Authority of the State of New York
PSEG Energy Resources & Trade, LLC
Public Service Company of New Hampshire
RBC
Selkirk Cogen Partners, LP
Shell Energy North America (US), LP
Twin Eagle Resource Management, LLC
Upstate New York Power Producers, LLC
Verso Paper Corp.
Village of Freeport
Vitol Inc.
Wallingford Energy, LLC