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MEMORANDUM

November 30, 2010

To: RGGI State Commissioners and Staff (electronic submission via: info@rggi.org)

From: Derek K. Murrow, Energy & Climate Policy Director
Peter Shattuck, Carbon Markets Policy Analyst

RE: Comments on Draft RGGI Reference Case Assumptions and Policy Scenarios for the Program Review

The Regional Greenhouse Gas Initiative (RGGI) is presently the only mandatory carbon cap and trade program in the United States, and we thank and congratulate you for your ongoing leadership in developing and implementing a successful program. RGGI has shown that bipartisan efforts by diverse states can deliver a reasonable and transparent market-based environmental policy that guides investment towards cleaner sources of energy. We hope that policy makers in other regions and at the federal level can and will build on RGGI's successes, and we support ongoing efforts to build on RGGI's forward-thinking energy and climate policy in the rest of the nation.

We commend RGGI states for initiating the review process to capitalize on RGGI's success and to strengthen the program going forward. We believe that accurate modeling and scenario development will help inform the 2012 modeling review and promote the development of sound climate policy.

As states approach RGGI's second compliance period, it is important to recognize that the emissions decline in the first few years of RGGI is an excellent outcome, and is consistent with other cap and trade programs where the environmental outcome is delivered more rapidly and at lower cost than anticipated. In order to take advantage of the emissions decline, policy makers must account for structural changes in the regional electric sector, specifically the decrease in the relative price of natural gas in relation to other fuels, the increase in non-emitting generation, and increased investments in energy efficiency across the region.¹ These structural changes show no sign of reversing in the near term, and in order to adopt appropriate policy choices during the upcoming program review it is imperative that the reference case and sensitivities, as well as any policy scenarios, reflect these new circumstances accurately.

¹ We are encouraged that NYSERDA's analysis of emissions from RGGI-regulated plants from 2005-2009 attributes 63.8% of the decline to fuel-switching, increased non-emitting generation and energy efficiency, which conforms to prior analysis of RGGI emissions trends and drivers by ENE (Environment Northeast), available at: <http://env-ne.org/resources/open/p/id/1072/from/331>

General Comments

The reference case should be based on RGGI as it stands now, incorporating new energy market realities, the impact of RGGI itself on regional emissions, and anticipated regulations for the power sector. Relevant information on important topics such as state efficiency plans and projected allowance surpluses should be more broadly disseminated to increase transparency and policy engagement from stakeholders. Additionally, it is important to recognize that large-scale planning models like IPM cannot capture on-the-ground realities with complete accuracy and some scaling may be needed to provide credible projections of RGGI emissions in the future.

In addition to state and federal regulations, relevant legislative requirements should be included in the modeling effort, particularly planned investments of allowance value in energy efficiency and requirements to expand energy efficiency investments using RGGI revenue and other sources of funding.

In terms of process, we believe that the modeling exercise and subsequent results will be strengthened by providing more time for stakeholder input and allowing for responsive comments in all comment cycles. Allowing for responsive comments will maximize stakeholder engagement and utilize the full expertise of all interested parties.

We also suggest that results be translated outside of IPM into estimated bill impacts in terms of average residential customers' total bills, which will allow efficiency program costs and benefits to be fully captured. We also encourage RGGI to undertake economic analysis akin to the REMI modeling conducted during the 2005 policy design process, which estimated macroeconomic impacts associated with the implementation of RGGI. An assessment of related public health benefits could also be helpful in assessing the full impacts of program modifications.

Comments on IPM Modeling Reference Case & Sensitivities


Regional Energy and Peak Demand

Electricity demand is one of the most important drivers of RGGI region emissions, and it is essential that the model incorporate increasing energy efficiency investments that are reducing electricity consumption across the region. While ISO forecasts may provide an adequate starting point for demand assessments, such forecasts do not adequately capture existing and new legal requirements at the state level that are significantly increasing investments in all cost-effective energy efficiency.

We believe that efficiency can be incorporated into the model most accurately by using ISO forecasts that are focused on economic trends, and layering additional efficiency requirements and investments on top of ISO forecasts. The importance of accounting for efficiency investments cannot be understated, as states ramping up to procure all cost-effective energy efficiency will achieve first year annual savings in excess of 2%. (This process is underway in ME, MA, RI and VT, and is mandated and proposed by utilities in CT.) NY has also made significant new commitments to expand efficiency investments. We are encouraged by the incorporation of detailed information on MA's efficiency requirements and

strongly encourage the incorporation of similar detailed inputs for all RGGI states.² Savings goals for CT³ and ME⁴ have been added to the goals of MA⁵ and RI⁶ in Table 1.

Table 1: Energy efficiency savings goals for CT, MA, ME and RI

	2010			2011			2012			2013		2014
	CT	MA	RI	MA	ME	RI	MA	ME	RI	ME	RI	RI
Savings Target (% 2009 Retail Sales)	1.11%	1.40%	1.33%	2.00%	1.13%	1.36%	2.40%	1.45%	1.70%	1.56%	2.10%	2.50%
Annual Energy Savings (MWh)	349,345	624,427	88,546	897,232	129,000	102,566	1,103,423	165,000	128,570	178,000	158,820	189,068
Summer Demand (kW)	58,858	100,277	15,154	145,098	22,000	18,512	179,139	27,000	23,204	29,000	28,664	32,759

Information on Annual Average Growth Rates by State, 2010 to 2030 (slide 17 of the [Assumptions](#)) shows negative load growth of approximately 1.4% for MA from 2010-2030, while all other states are shown with positive load growth, suggesting that the impact of efficiency savings plans was incorporated for MA but not for other states. It is essential that the impacts of mandates comparable to Massachusetts' be incorporated for all states that have them. In order to achieve this, utility commissioners and energy regulators should be consulted in addition to state environmental regulators. Supplemental information and links to these mandated state efficiency plans can also be found at the State Policy page of the American Council for an Energy Efficient Economy.⁷ Furthermore, we believe that all energy savings assumption for all states should assume constant annual demand savings based on the latest available targets, as is assumed for MA. Based on approved plans, constant savings rates of 1.11% for CT, 1.56% for ME, and 2.50% for RI should be incorporated into the reference case.

While the Connecticut efficiency plan currently extends only through 2010, the CT legislature mandated⁸ that utilities procure all cost-effective efficiency, and as such we believe that it is reasonable to project aggressive savings targets for CT over the medium to long term despite present administrative delays.

Thorough efforts should also be made to incorporate other efficiency mandates such as minimum efficiency standards for buildings and appliances and efficiency programs funded by the American Recovery and Reinvestment Act.

In addition to better presenting current plans for efficiency investments in the reference case, a more robust low demand scenario that holds the RGGI region's energy load stable (zero load growth) should be used. This low-end demand sensitivity/scenario would represent aggressive investments in energy efficiency across the region. This same assumption should also be fed into the "low combo" scenario.

² In the first round of stakeholder comments

(http://rggi.org/docs/ENE_RGGI_PR_Modeling_Comments_Supplement.pdf) ENE provided reference to efficiency mandates that should be incorporated into the model for ME, RI and CT, and we believe that comparable information should be included for all RGGI states.

³ CT savings projections based on Energy Conservation Management Board Electric Plan Filings

(<http://www.ctsavesenergy.org/ecmb/documents.php?section=16>), with percentage savings calculated based on ISO-NE forecast data (http://www.iso-ne.com/trans/celt/fsct_detail/2010/isonet_fcst_data_2010.xls)

⁴ ME savings figures based on Triennial Plan of the Efficiency Maine Trust 2011-2013

(http://efficiencymainetrust.org/docs/EMT_Final_Tri_Plan.pdf)

⁵ MA savings figures based on approved statewide electric efficiency plan (<http://www.ma-ecac.org/docs/DPU-filing/1-28-10%20DPU%20Order%20Electric%20PAs.pdf>)

⁶ RI savings figures for 2010-2011 based on approved statewide electric efficiency plan

([http://www.ripuc.org/eventsactions/docket/3931-NGrid-ComplianceProcurePlan\(9-3-08\).pdf](http://www.ripuc.org/eventsactions/docket/3931-NGrid-ComplianceProcurePlan(9-3-08).pdf))

RI savings figures for 2012-2014 based on filing by Energy Efficiency Resource Management Council with the RI PUC in Docket number 4202 on 9/1/10 ([http://www.ripuc.org/eventsactions/docket/4202-EERMC-EST-Filing\(9-1-10\).pdf](http://www.ripuc.org/eventsactions/docket/4202-EERMC-EST-Filing(9-1-10).pdf))

⁷ Available at: (<http://www.aceee.org/sector/state-policy>)

⁸ See House Bill 7432 (<http://www.cga.ct.gov/2007/AMD/H/2007HB-07432-R00HA-AMD.htm>)


State/Federal Environmental Policies

We believe that *all* anticipated state and federal environmental policies should be included in the reference case. Rather than be included as a sensitivity – as proposed in the 11/12 Stakeholder Meeting materials – we believe that pending regulations on Hazardous Air Pollutants, Water Intake, Coal Combustion Residuals, and Ozone National Ambient Air Quality Standards should be included in the reference case, as these regulations will necessarily follow CAA regulation of SO₂, NO_x and Mercury that are already built into the reference case.

RGGI CO₂ Emissions

In order to evaluate options for dealing with banked allowances, we believe that it would be helpful to include projections of surplus allowances in the reference case and with all sensitivities. Based on preliminary analysis (see Table 2 below), we find that very significant quantities of surplus allowances accrue under the reference case, and we encourage RGGI, Inc. and states to provide comparable estimates of surplus allowances for all modeling runs to inform program review.

Table 2: Banked Allowances Under Reference Case RGGI Emissions (all figures are millions)

 Current RGGI Cap	Actual RGGI Unit Emissions	Projected Emissions	Annual Banked Allowances	Cumulative Banked Allowances
2009	188.1		64.4	64.4
2010	188.1	125.5	62.6	127.0
2011	188.1	131.4	56.7	183.7
2012	188.1	136.5	51.6	235.3
2013	188.1	135.5	52.6	287.9
2014	188.1	136.7	51.4	339.3
2015	183.4	135.2	48.2	387.5
2016	178.7	133.6	45.1	432.6
2017	174.0	135.8	38.2	470.8
2018	169.3	138.0	31.3	502.1
2019	169.3	140.2	29.1	531.2
2020	169.3	142.4	26.9	558.1
2021	169.3	143.3	26.0	584.1
2022	169.3	144.2	25.1	609.2
2023	169.3	145.1	24.2	633.4
2024	169.3	146.0	23.3	656.7
2025	169.3	146.9	22.4	679.1
2026	169.3	148.7	20.6	699.7
2027	169.3	150.4	18.9	718.6
2028	169.3	152.2	17.1	735.7
2029	169.3	153.9	15.4	751.0
2030	169.3	155.7	13.6	764.6

Reserve Margins and Local Reserve Requirements

Building on our prior comment on state efficiency plans, we encourage the use of state-specific energy efficiency information in projecting required reserve margins and local reserve requirements.

Fuel Prices

The price of different fossil fuels is one of the most important determinants of RGGI region emissions, and was arguably the greatest determinant of outcomes in the 2004-2006 modeling runs. The future price of fossil fuels is also one of the most difficult variables to predict when modeling power sector behavior. Thus, we believe that the reference case and sensitivities should incorporate information from as many relevant sources as is practicable, including recent trends in fossil fuel prices.

The assumption of increasing natural gas prices and constant coal prices does not conform to recent observed price trends in the RGGI region, wherein coal prices increased and natural gas prices

decreased. Figure 9 in the NYSDERDA draft white paper *Relative Effects of Various Factors on RGGI Electricity Sector CO₂ Emissions* confirms this trend, showing that between 2005 and 2009 coal prices increased 40% and natural gas prices decreased 42%. In light of these observed fuel price trends we question the relevance of a High Gas/Low Oil fuel price sensitivity, as this sensitivity has questionable market fundamental underpinnings.

Biomass Emissions

The majority of RGGI states have yet to define sustainable harvesting standards that would allow co-fired biomass to be exempt from compliance obligations or discounted based on lifecycle greenhouse gas emissions. In light of this unresolved treatment of biomass, we request that modeling results include data on gross emissions from biomass facilities (both co-fired and stand-alone facilities). Otherwise, the modeling would have to make an arbitrary assumption about what percentage of biomass emissions would meet the sustainability standard. While gross emissions do not necessarily capture the full lifecycle emissions of biomass facilities, information on gross emissions will help inform biomass policy decisions related to RGGI. As RGGI moves forward we also encourage states to revisit undefined standards for sustainable harvesting in order to accurately capture the full lifecycle greenhouse impact of biomass power based on the latest science.

Transmission Capability

We believe that limited additional transmission, beyond what's approved today, will be needed for reliability if reasonable assumptions are made in regards to new efficiency investments. But we support the use of ISO studies for any other reliability need identified by the model.

Reserve Margins and Local Reserve Requirements

We support the use of ISO requirements and projections for reserve margins and local reserve requirements, so long as downward adjustments are made to peak demand to reflect investments in efficiency and demand response.

Offsets

For modeling offsets availability, we support the use of EPA price and availability estimates scaled to RGGI, but we recommend that international offsets be excluded due to the complexity of negotiating international agreements with other countries and the ability of RGGI states to police offset quality outside of U.S. borders, on top of the price based limitation that already exists in RGGI. We also recommend that input be requested from the MJBBradley team related to their experience in acquiring offsets, specifically input on how prices for proposed RGGI offsets related to projected offset prices.

Emissions Combination Sensitivity Cases – High Emissions Combo

In relation to the high emissions combo, we believe that it is inappropriate to assume a 50% reduction in the deployment of renewable energy, as the state-level RPS targets are legislative requirements. Achievement of only 50% of RPS requirements appears to affect emissions significantly in the model, and seems an arbitrary policy to discount, as there are many state policies that affect energy use that could be discounted.

Comments on Retrospective Analysis of CO₂ Emissions, 2005 to 2009

We find this analysis very helpful and consistent with our findings⁹ that relative fuel prices, changes in the available capacity mix, and energy efficiency have had the most significant impact on emissions from RGGI-regulated facilities since the RGGI cap was set in 2005. We think it is important to recognize that

⁹ Available at <http://env-ne.org/resources/open/p/id/1072/from/331>

these structural changes could have long-lasting effects on RGGI region emissions, and we are further encouraged that Karl Michael of NYSERDA stated at the November 12th stakeholder meeting that the retrospective analysis found that economic impacts and weather had far less significant impacts on regional electric sector emissions than fuel-switching, non-emitting generation, and increased efficiency investments. This assertion highlights the importance of accurately capturing required and anticipated state level investments in energy efficiency.

We are encouraged that NYSERDA took a state-by-state approach to evaluating the impact of energy efficiency programs on electric demand and emissions, but we are concerned that the lack of input from RI and DE underestimates the impact of consumer-benefitting efficiency programs. As stated above and in prior comments, we believe that the most recent efficiency mandates and plans should be incorporated for each state in order to support accurate analysis and modeling.

Comments on Potential IPM Policy Scenarios

The significant decline in RGGI region emissions and the new IPM reference case and sensitivity modeling results suggest that the RGGI states need to examine significantly lowering the emissions cap from the current level, and that any adjustment of the RGGI cap should account for surplus allowances from the first compliance period that are likely to be banked for future use.

The modeling shows that emissions from RGGI regulated units will remain well below the cap under the reference case and the majority of sensitivities, and even under the extreme “High Combo” sensitivity annual emissions do not surpass the cap until after 2020.

In order to preserve the original intent of the RGGI program to reduce emissions from 2009 levels, it is clear that states need to model the impact of significantly reducing the cap. We believe that forthcoming modeling runs of cap level adjustment should utilize the following 3 step process:

- 1) Begin with setting the cap based on *actual* 2009 emissions levels of 123.7 million tons;
- 2) Establish a new percent reduction target from this starting point (a range of reduction scenarios should be modeled); and
- 3) Further adjust the cap down to account for banked allowances (given the original intent of the RGGI program and the results of the reference case model, we believe that it is reasonable to model a cap reduction that accounts for current and expected allowance surpluses).

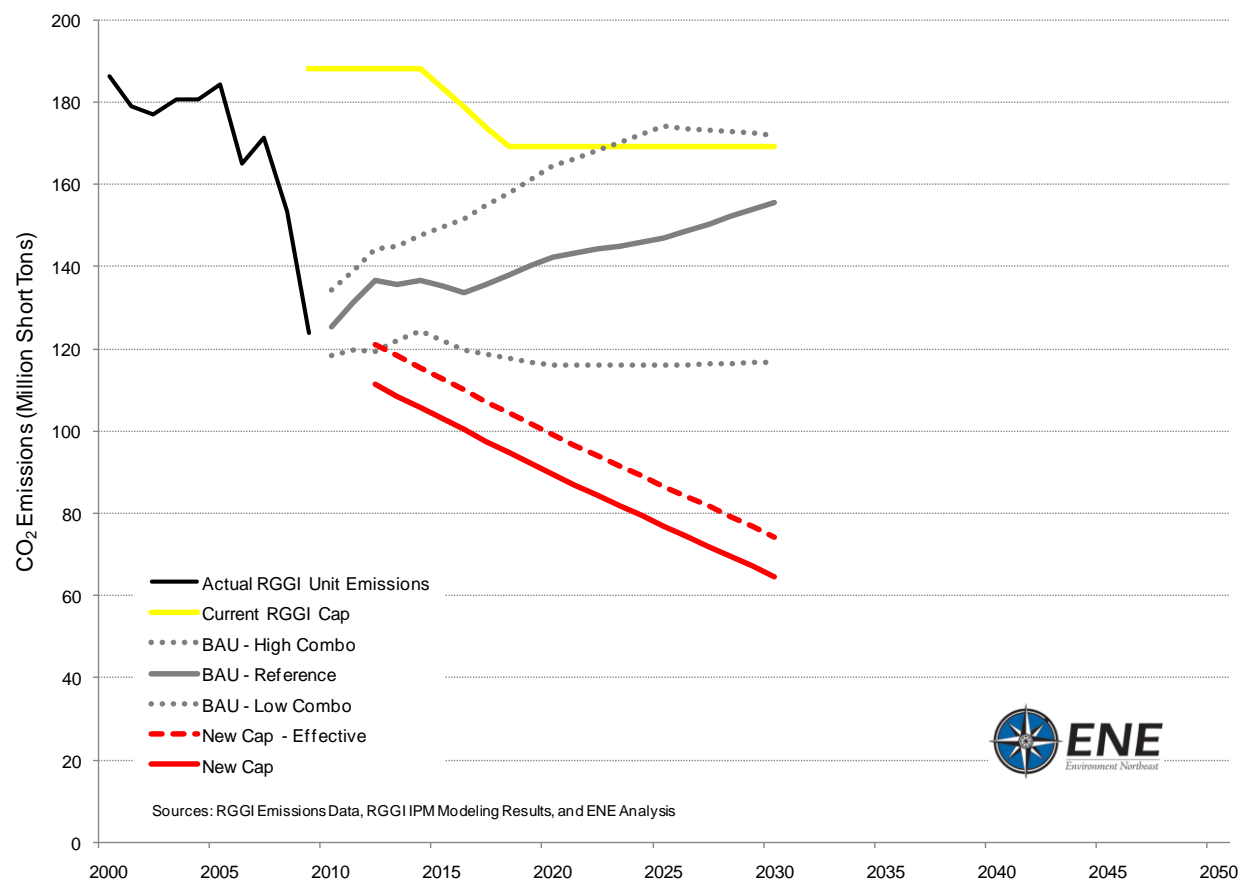
The scientific consensus (IPCC, National Academies, and others) and increasing need to reduce greenhouse gas emissions to address climate change; combined with the federal government’s inability to act and the commitment by RGGI region states to address the issue, mean that RGGI should be strengthened beyond the levels originally envisioned and also provide more certainty over time. A revised RGGI program and cap level will also deliver the economic benefits and clean energy investment certainty associated with RGGI, which will allow the region to continue to be a hub for clean energy technology development and deployment.

ENE believes the next round of IPM modeling should include a series of cap level adjustment scenarios that present a range of potential environmental benefits and costs. One of the scenarios should be a model run that puts the region on track to the emissions levels science suggests should be achieved by 2050:

- Start at 2009 actual emissions;
- Decline 20% by 2020 and 40% by 2030; and
- Adjust the cap to address banked allowances

The following figure depicts the science-based scenario described above, with the banked allowance adjustment distributed evenly across the years 2012 to 2030.

Figure 1: RGGI Historical Emissions, Business as Usual (BAU) Emissions Forecasts, and Suggested New Policy Scenario



Comments on Other Options for Program Review

Linkage and Harmonization

In order to build on RGGI's successes and broaden its scope, we encourage RGGI states to pursue linkage conversations with other states and provinces. A number of states and provinces – including Quebec, Ontario, British Columbia, California and New Mexico – are developing cap and trade regulations, and a number of other states – Washington, Oregon, Minnesota, Michigan, and Illinois (among others) – have in the past signaled intent to established state-based cap and trade systems. Linking with these states and provinces would expand the scope of low-cost emissions reductions and begin to establish a broader continental carbon reduction system that could make greater reductions in carbon pollution than any state could affect individually. Furthermore, by establishing the foundation for a broader state- and provincial-based cap and trade system, participating states could have very significant impacts on the design of a program that would likely underpin national climate programs in Canada and the U.S. An essential element of linking and harmonizing programs will be the RGGI states committing to a stronger cap, in line with what the WCI and MGGA policy proposals envision.

Expansion to Other Stationary Sources

As a way to expand RGGI and to harmonize RGGI with other cap and trade programs under development, we also encourage expansion to other stationary sources and to currently excluded smaller electric sources. When the original RGGI commitments and work plan were developed, RGGI states envisioned covering other sources of emissions in a second phase. Additionally, the majority of RGGI states have economy-wide emissions limits or targets, and including emissions from sectors and sources not yet covered by RGGI would support these targets and deliver additional emissions reductions across the region. Note that the analysis of expansion to other sectors will require the use of other modeling tools, beyond IPM.

Reserve Price Adjustment

When revising the reserve price, we encourage RGGI states to utilize a straightforward and transparent approach to adjusting the reserve price upward on a regular basis. The RGGI states established an initial reserve price at \$1.86 per ton in order to prevent collusion in the allowance market and to create sufficient incentives for carbon reductions. The reserve price should be revised upward in the future to assure that programmatic goals continue to be achieved. Additionally, market participants and entities relying on RGGI revenue for funding would be able to plan more effectively and make best use of resources if RGGI states were to establish a clear and predictable mechanism for adjusting the reserve price higher over time.

Additional Offset Categories

In order to demonstrate how the Five Part Test could be applied to additional high priority offset projects, RGGI should conduct a thorough review of the recommendation for a forest management offset project type and other relevant project types. RGGI's Five Part Test for offset projects is a critically important standard that is designed to ensure offset credibility and integrity. The joint white paper *Ensuring Offset Quality*¹⁰ rightly holds up RGGI's standardized approach as an example of sound offset policy. In the next phase of RGGI, states should build on this strong foundation in two critical and related respects. First, RGGI should refine how the Five Part Test can be applied to new offset types so that the rigor, enforceability and credibility necessary for meaningful offsets are articulated. Second, RGGI should qualify other offset project types that are relevant to RGGI region, particularly forest offset types that are more likely to occur in the marketplace than afforestation. Forests play an important role in the carbon cycle within the RGGI region and beyond, and comprehensive climate policy should harness the power of standing forests to sequester carbon. Furthermore, applying RGGI's Five Part Test to forest management would provide precedent for applying rigorous offset standards to these offset project types for states and provinces outside the RGGI region. As interest increases in forest management and agricultural offset projects (which confront technical issues similar to forest-based projects), adopting a rigorous forest management protocol would shape regional and national policy and create a framework for achieving critical GHG reductions in the land-use sector. We reference the detailed proposal submitted to RGGI in July 2009 by the Maine Forest Service, ENE and Manomet Center for Conservation Services.¹¹

¹⁰ http://www.rggi.org/docs/Three_Regions_Offsets_Whitepaper_05_17_10.pdf

¹¹ On July 15, 2009 the Maine Forest Service, ENE (Environment Northeast), and Manomet Center for Conservation Services submitted to the RGGI Staff Working Group *A Policy Framework for Including Avoided Deforestation and Forest Management Practices as Forest Offset Types in the Regional Greenhouse Gas Initiative*, available at: <http://cnv-ne.org/resources/open/p/id/884/from/345>

We thank you for the opportunity to comment on the IPM modeling exercise and the upcoming program review, and we look forward to continuing engagement with states as we build on program successes to create a stronger program with extended reach.

ENE Contacts:

Derek Murrow, Energy & Climate Policy Director, (203) 285-1946, dmurrow@env-ne.org
Peter Shattuck, Carbon Markets Policy Analyst, (617) 742-0054 x103, pshattuck@env-ne.org



8 Summer Street POB 583, Rockport, ME 04856 (207) 236-6470
Boston, MA / Providence, RI / Hartford, CT / Charlottetown, PEI, Canada
Daniel L. Sosland, Executive Director / www.env-ne.org / admin@env-ne.org

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