

Economy-wide Benefits of RGGI: Economic Growth through Energy Efficiency



September 2011

States participating in the Regional Greenhouse Gas Initiative (RGGI) accrue significant economic benefits from efficiency investments funded by the program. Revenue from auctions of allowances (permits to emit one ton of CO₂) is used to finance energy-saving programs that save money while reducing fossil fuel imports and carbon emissions. Efficiency savings flow into the local economy, boosting economic output and increasing employment across the region.

RGGI at a Glance:

- 10 States (ME, MA, NH, VT, RI, CT, NY, NJ, DE & MD)
- Applies to CO₂ emitting power plants over 25 MW
- Went into effect Jan 1, 2009
- Quarterly auctions
- Initial regional cap is 188 million tons CO₂
- Cap is two-phase:
 - Stabilization at initial level for 2009-2014.
 - 2.5% reduction per year 2015-2018 - 10% reduction
- Compliance period is 3 years; first permits due March 1, 2012.

Background

RGGI's original Memorandum of Understanding (MOU) allowed each participating state to determine how to distribute allowances independently, so long as at least 25% of the value of allowance is used for "consumer benefit." After weighing various options for distributing allowances – including free allocation, direct sale to emitters, and auctioning – states elected to auction nearly 90% of allowances and to invest the majority of auction revenue in energy efficiency programs.

Auctioning allowances ensures that emitters address the cost of GHG pollution, and it avoids market distortions inherent in free allocations. Auctions also make best use of a public resource (the atmosphere), by safeguarding against windfall emitter profits and raising revenue for public benefit programs. In competitive wholesale electric markets, generators recognize that allowances are a cost of

doing business and the opportunity cost (the ability to use, sell or trade allowances) will be passed on to consumers whether allowances are provided for free or sold. Auctioning addresses this issue by returning the value of allowances back to consumers.

In a cap and trade system, investing auction revenue in efficiency creates wider benefit than any other use of allowance value, as evidenced in economic modeling commissioned by RGGI states.¹

Efficiency investments benefit consumers in a number of ways. First, reduced energy consumption due to efficiency improvements brings down monthly electric bills. Second, reduced consumption decreases wholesale electricity prices, delivering additional savings to all consumers. Third, reduced demand for electricity brings down emissions from fossil fuel-fired power plants, decreasing the demand for emissions allowances and the overall cost of RGGI.

Efficiency investments provide **additional benefits throughout the economy** by creating local

efficiency-related jobs, reducing expenditures on imported fossil fuels and boosting consumer spending on other goods and services. Direct employment benefits of efficiency programs range from energy

Testimonials

"RGGI auctions and efficiency investments allow NSTAR to better serve our customers by providing smart, practical solutions to help cut down on energy consumption and save money."

Penni Conner, Vice President of Customer Care, **NSTAR**

"RGGI dollars spent on industrial efficiency programs in CT deliver the greatest bang for the buck, making local businesses more competitive and reducing state-wide electricity demand and the price of power."

Jeffrey R. Gaudiosi, Regulatory Counsel, **Manufacturing Alliance of Connecticut**

"Maine's decision to auction RGGI allowances and invest the proceeds in energy efficiency has been instrumental in pushing down energy costs and boosting the local economy."

Michael Stoddard, Executive Director, **Efficiency Maine Trust**


¹ Results available at <http://rggi.org/design/history/modeling>

service contractors who install insulation and efficient equipment to manufacturers of advanced energy saving technologies. Indirect employment benefits accrue across the economy as the money customers save on monthly energy bills is spent locally, benefitting everyone from bus drivers to bus boys.

Benefits

Recent analysis of the impacts of efficiency investments in RGGI states has made it possible to quantify the economy-wide benefits that RGGI has produced thus far. The following table draws on a number of sources to arrive at calculated benefits. Auction revenue data² is provided by RGGI, Inc., the official administrator of the 10-state accord. Figures on energy efficiency (EE) funding are drawn from ENE’s analysis of allowance allocations and spending plans for each RGGI state.³ Consumer savings are based on the Synapse Energy Economics report *Electricity Energy Efficiency Benefits of RGGI Proceeds: An Initial Analysis*,⁴ and Carbon Solutions New England’s annual report on the New Hampshire GHG Emission Reduction Fund.⁵ Job creation and growth in gross state product (GSP) are based on ENE’s report *Energy Efficiency: Engine of Economic Growth*.⁶

Table 1: Macroeconomic Benefits of RGGI Efficiency Funding To-Date

 ENE Environment Northeast	Revenue (\$ millions)	EE Funding (\$ millions)	Savings (\$ millions)	Jobs Multiplier (Job Years/\$1m EE Funding)	Jobs (Job Years)	GSP Multiplier (GSP increase/ \$1 in EE)	GSP Growth (\$ millions)
Connecticut	\$51.7	\$36.0	\$129.4	41.2	1,481	5.7	\$204.9
Delaware	\$22.5	\$9.5	\$25.9	45.5	434	5.9	\$56.3
Maine	\$27.2	\$25.4	\$119.4	58.1	1,476	4.9	\$124.5
Maryland	\$169.6	\$39.5	\$109.4	45.5	1,796	5.9	\$232.9
Massachusetts	\$142.5	\$126.1	\$390.8	43.4	5,472	6.4	\$806.9
New Hampshire	\$32.9	\$29.0	\$99.3	52.7	1,531	5.9	\$171.4
New Jersey	\$118.3	\$39.2	\$98.5	45.5	1,785	5.9	\$231.4
New York	\$326.7	\$146.5	\$145.1	45.5	6,667	5.9	\$864.5
Rhode Island	\$14.3	\$8.2	\$26.1	48.7	399	5.4	\$44.3
Vermont	\$6.6	\$6.5	\$24.0	49.6	321	4.3	\$27.8
Total	\$912.3	\$465.9	\$1,167.9	45.8	21,361	5.9	\$2,764.8

Auctioning allowances and investing proceeds in energy efficiency is arguably the key policy innovation of RGGI, and it establishes an important precedent for maximizing consumer benefit in a cap and trade system – or, as many have started calling it, a “*cap and invest*” system. Auctions send clear market signals and raise vital mitigation funds, while efficiency investments cost-effectively reduce emissions, increase energy independence, and boost employment and growth. RGGI’s auction and invest model creates a virtuous cycle that guides the market toward lower-emitting technologies while using program revenue to benefit the climate, consumers and local economies.

In order to deliver maximum benefit, RGGI should continue to auction allowances and dedicate revenue to energy efficiency investments, and GHG cap and trade programs under development in other jurisdictions should promote comparable design decisions.

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

² Available at http://rggi.org/market/co2_auctions/results

³ ENE’s Auction Tracker available at: <http://env-ne.org/resources/open/p/id/715>

⁴ Consumer saving multipliers from Table 4, Column 5, p.14, at: <http://www.synapse-energy.com/Downloads/SynapseReport.2010-10.RAP.EE-Benefits-of-RGGI-Proceeds.10-027.pdf>

⁵ NH consumer savings multiplier from p. 4, at:

http://www.puc.nh.gov/Sustainable%20Energy/GHGERF/Evaluations/GHGERF_Year1_Report_11Feb2009.pdf

⁶ GSP multipliers from Table 12, Column 2, p.29, Jobs multiplier from Table 14, Column 2, p. 30. Multipliers for non New England states based on New England average, available at: http://env-ne.org/public/resources/pdf/ENE_EnergyEfficiencyEngineofEconomicGrowth_FINAL.pdf