ALLOWANCE AUCTIONS IN THE REGIONAL GREENHOUSE GAS INITIATIVE

4 November 2008

The Regional Greenhouse Gas Initiative (RGGI) is the cooperative endeavor of ten northeastern US states[1] that will reduce greenhouse gas emissions from the electric power sector by 10% by December 31, 2018, relative to a baseline of emissions in the period of 2000 to 2004. One key principle adopted by the RGGI states was that GHG allowances should *not* be distributed to emitters for free, as was previously done in the Acid Rain (SO_2) and NO_X Budget programs. The RGGI states agreed, in a memorandum of understanding (MOU) dated December 20, 2005, that at least 25% of the RGGI allowances would be auctioned.

Subsequent to the signing of the MOU, several states enacted legislation that requires 100% of the RGGI allowances to be auctioned, and for the auction revenues to be invested for the consumers' benefit in primarily energy efficiency and renewable energy. [2] The logic for auctioning allowances, rather than distributing them administratively and without charge, is that electric generating units currently have no direct means to reduce their GHG emissions – that is, there are no smokestack control technologies today that can remove GHGs from the combustion exhaust stream. In contrast, under the Acid Rain and NO_X budget programs, allowances were distributed at no cost to generators, who then either retired them as needed or sold them and used the proceeds to invest in control equipment that directly reduced sulfur oxides and oxides of nitrogen emissions at the smokestack. For CO_2, the most cost-effective means to reduce emissions today is indirectly, through investments in energy efficiency and renewable energy. Proceeds from the RGGI auctions are therefore to be directed to reducing energy consumption, and to constructing renewable generation that will reduce the output of the fossil fueled power plants, and encourage operation of cleaner, less carbon-intensive generation.

A consultant was hired to advise the RGGI states on auction design, market monitoring, and other principles important to conducting transparent and credible auctions. Acting on behalf of RGGI, the New York State Energy Development Authority (NYSERDA) hired representatives from the University of Virginia (UVA) and Resources for the Future (RFF) to develop recommendations to RGGI for how the states should design, develop and implement, a GHG allowances auction.

The UVA/RFF report includes 16 recommendations on ways to establish price discovery, ensure transparency, and to avoid market manipulation. The report recommends that RGGI conduct a

[1]Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.
[2] Connecticut, Maine, Maryland, Massachusetts, New Jersey, Rhode Island, and Vermont have enacted such legislation. The other states have expressed similar intentions to auction all or virtually all of their allowances and to use the revenues for energy efficiency, other clean energy investments, and for consumer benefits generally.

uniform price, sealed bid, single round auction. This type of auction calls for bids to be "stacked" in the descending order of their prices, i.e., from the highest to the lowest. At the same time, the number of allowances to which the bids relate accumulates (see Table 1, below). When the number of bids equals the amount of allowances that is offered for sale, then the market clears and the price of the last (or "marginal") bid becomes the market clearing price. All allowances will be sold at that single clearing price. In this way, everyone who bid the clearing price or greater will receive allowances.

Table 1. Example of a Single-Price Auction

Bidder	Bid Price	Number of Allowances bid	Cumulative Bids
E	$5.00	20,000	20,000
A	$4.50	10,000	30,000
B	$4.10	10,000	40,000
D	$4.05	20,000	60,000
E	$4.00	10,000	70,000
A	$3.95	10,000	80,000
C	$3.85	10,000	90,000
E	$3.80	10,000	100,000
D	$3.75	5,000	125,000
A	$3.75	10,000	125,000
B	$3.75	10,000	125,000
A	$3.25	30,000	155,000
C	$3.00	40,000	195,000

Source: Regional Greenhouse Gas Initiative, Auction Bidder Webinar, July 24, 2008.

In the Table 1 example, there were 100,000 allowances offered. The auction cleared at $3.75, the tiered price at which the number of allowances bid exceeded those offered for sale.

The UVA/RFF report also recommends several actions for market monitoring and credibility, which have also been adopted by the RGGI states. The number of allowances for each auction is limited, and auctions will be held quarterly. RGGI has a three-year compliance period, with the first period beginning January 1, 2009, and ending December 31, 2011. For each compliance period, there will be twelve auctions – four per year. Note, however, that to help establish the market, and to get experience prior to the program's effective date, six states[3] desired to sell allowances before January 1, 2009. There will two such preliminary auctions, in which only a fraction of the six states' 2009 allowances will be sold. All ten RGGI states agreed to establish a reserve price of $1.86 per allowance. No allowance will be sold for less than the reserve price and, if a sufficient number of bids is not received, any remaining allowances will be bundled and offered for sale in subsequent auctions.

[3] Connecticut, Maine, Maryland, Massachusetts, Rhode Island, and Vermont.

Among the other operating principles that the RGGI states have adopted is that no one person or entity may purchase more than 25% of the allowances during any one auction. Bidders must disclose beneficial ownership to establish that this limit has not been exceeded.[4] They must also post letters of credit and to demonstrate that they hold sufficient funds to cover the amount of their bids. Bidders must also establish an account in the Carbon Dioxide Allowance Tracking System (COATS).

The RGGI states reserve the right to change the auction rules if they observe inappropriate or manipulative behavior. Since all allowances will be tracked through COATS, the RGGI states will be able to determine the nature and extent of any secondary market that develops, and whether additional actions to address speculation should be taken. The RGGI states can change the type of auction conducted if the uniform price, sealed bid, single round format does not meet expectations or if it is necessary to improve the auctions' credibility and transparency.

Allowances will also be sold on a forward basis. Beginning in 2009, bidders will be able to buy some allowances for 2012, 2013, and 2014. Banking, which means that unused allowances can be carried forward to the next three-year compliance period, is permitted. However, the opposite is *not* permitted, that is, allowances designated for 2012 cannot be used in 2009. The RGGI states have also limited forward sales. This means that prior to the start of a vintage year, states will not have made available for purchase any more than 50% of that vintage year's allowances. In other words, by way of example, no more than 50% of 2010's allowances will be auctioned before January 1, 2010.

RGGI states have not adopted a second MOU to cover the auction and its processes. Each state has set its own regulations for governing its participation in the auction. Massachusetts and Connecticut, for instance, have passed legislation and conducted rule-makings; in contrast, Vermont's participation is determined by a previously-approved administrative process. See Table 2 for details.

[4] "Beneficial ownership" means that auction participants must disclose on whose behalf they are purchasing allowances.

50 State Street ♦ Suite 3 ♦ Montpelier ♦ Vermont 05602 ♦ Tel: 802-223-8199 ♦ Fax: 802-223-8172

27 Penny Lane ♦ Cedar Crest ♦ New Mexico 87008 ♦ Tel: 505-286-4486 ♦ E-Fax: 773-347-1512

PO Box 507 (110 B Water Street)♦ Hallowell ♦ Maine 04347 ♦ Tel: 207-623-8393 ♦ Fax: 207-623-8369

Website: www.raponline.org

Table 2. RGGI State Policy Status

(A) State	(B) Population (2007, million)[ε]	(C) State Gross Domestic Product (2007, billion)[ε]	(D) Electricity Consumption (2006, TWh)[μ]	(E) Annual Allocation (short tons)	(F) Percentage of Allowances to be Auctioned	(G) Percentage of Auction Proceeds Earmarked for Energy Efficiency	(H) Net RGGI Funding Earmarked for Energy Efficiency[ψ]
Connecticut	3.5	216.3	31.667	10,695,036	77%	69.5%	53.5% up to $5[λ]
Delaware	0.9	60.1	11.555	7,559,787	60% (increasing to 100% by 2014)	Up to 65%[*]	39% in 2009, increasing to 65% in 2014[*]
Maine	1.3	48.1	12.285	5,984,902	100%	Up to 88%[α]	Up to 88% up to $5[λ]
Maryland	5.6	268.7	63.173	37,503,983	85%	46%	39%
Massachusetts	6.4	351.5	55.850	26,660,204	98%	Not less than 80%	Not less than 78.4%
New Hampshire	1.3	57.3	11.094	8,620,460	At least 71% through 2011, at least 83% thereafter	Up to 90%	Up to 63% through 2011, up to 75% thereafter[ω]
New Jersey	8.7	465.5	79.681	22,892,730	Up to 99% (with $2 allowances set aside for CHP and direct allocation to Co-generation)[δ]	Up to 80%	Up to 79%
New York	19.3	1,103.0	142.238	64,310,805	97%	Up to 100%[*]	Up to 97%[*]
Rhode Island	1.1	46.9	7.799	2,659,239	99%	Up to 95%[ρ]	Up to 94%[ρ]
Vermont	0.6	24.5	5.795	1,225,830	99%	100%[θ]	99%[θ]
RGGI Total	48.7	2641.9	421.137	188,112,976			
				RGGI Weighted Average[π]	91%	80%	74%

[ε] Source: EIA http://tonto.eia.doe.gov/state/index.cfm

[μ] Source: EIA Electric Sales, Revenue and Average Price 2006; Table 2: Retail Electricity Sales 2006 http://www.eia.doe.gov/cneaf/electricity/esr/esr_sum.html

[ψ] The product of column (F), the percentage of allowances to be auctioned, and column (G), the percentage of auction proceeds earmarked for energy efficiency.

[λ] Revenue raised from allowance prices exceeding $5 must be returned to ratepayers as rebates.

[*] Means that energy efficiency is one option on a list that includes renewable energy and other clean energy investments and details on distributions of the proceeds are yet to be worked out.

[α] In Maine 10% portion of allowances will go to incentives for combined heat and power (CHP) facilities at integrated manufacturing facilities and 2% portion of allowances will go to VRECs.

[ρ] Rhode Island's RGGI auction proceeds have been put into a restricted receipt account, which is subject to a potential 10% reduction for use in the general fund.

[θ] In Vermont net proceeds, after administrative costs associated with Vermont's participation in RGGI and any awards to state agencies for innovative carbon abatement technologies are deducted, are earmarked for energy efficiency.

[δ] NJSA 26:TC-52 mandates a two-part rulemaking; first, the DEP will promulgate Priority Ranking Guidance , and second, DEP, BPU, and EDA will conduct funding rulemakings.

[ω] Early reduction allowance not to exceed 2.5 million tons in 2009-2011 and 1.5 million tons thereafter may be granted to Public Service of New Hampshire.

[π] The weighted average based on allowances allocated, assuming maximum proceeds in discretionary states, at initial percentages.

First Regional Greenhouse Gas Initiative (RGGI) Auction Results

At 9:00 am, Eastern Daylight Time, September 29, 2008, the results of the first US GHG allowance auction were announced. The auction that was held on September 25, 2008, received bids for more than 51 million allowances (12.5 million were offered), and cleared at a price of $3.07 per allowance.

The second auction will be held December 17, 2008. The exact number of allowances to be offered at that auction has not been determined, but it is expected to be at least the 12.5 million allowances that were offered during the September 25, 2008, auction, since the same six early states will be participating. One or two other states may also join the auction, if regulations have been adopted in those jurisdictions.

50 State Street ♦ Suite 3 ♦ Montpelier ♦ Vermont 05602 ♦ Tel: 802-223-8199 ♦ Fax: 802-223-8172

27 Penny Lane ♦ Cedar Crest ♦ New Mexico 87008 ♦ Tel: 505-286-4486 ♦ E-Fax: 773-347-1512

PO Box 507 (110 B Water Street)♦ Hallowell ♦ Maine 04347 ♦ Tel: 207-623-8393 ♦ Fax: 207-623-8369

Website: www.raponline.org