

**Senate Concurrent Resolution #28
Workgroup
Draft Report**

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Senate Concurrent Resolution #28 Workgroup

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Acknowledgements:

This report represents the work of the SCR 28 workgroup. All of the workgroup’s meeting agendas, minutes, handouts, presentations and supporting materials are available on line at <http://www.awm.delaware.gov/Info/Regs/pages/SCR.aspx> This report was prepared by staff in DNREC with the assistance of Ms. Yusha Hu, graduate student at Swarthmore College, who interned with DNREC during the Winter 08 session. The workgroup hereby acknowledges and appreciates the work of Ms. Hu. The workgroup would also like to thank Ms. Vicki Ward, Administrative Specialist in the DNREC Office of the Secretary for her hard work in preparing workgroup minutes and arranging all logistics for our meetings.

The workgroup has reviewed this report and has agreed to its contents. Where consensus could not be reached on particular issues, those issues are so noted and a range of positions or alternative views are given.

1. The Regional Greenhouse Gas Initiative (RGGI)

The Regional Greenhouse Gas Initiative, or RGGI, is a cooperative agreement between 10 Northeastern states to combat climate change by committing to a reduction of carbon dioxide emissions—a greenhouse gas that contributes to global warming. There is growing scientific consensus that increased anthropogenic emissions of greenhouse gasses are enhancing the natural greenhouse effect and resulting in changes in the Earth’s climate. Climate change is expected to raise sea level, increase the likelihood of both droughts and floods, alter seasonal patterns, and impact other local climate conditions. Changing regional climate could alter forests, crop yields, and water supplies, affecting human health, animals, and many types of ecosystems in Delaware.¹

In order to address this important environmental issue, the RGGI participating states (DE, NJ, MD, NY, CT, RI, MA, NH, VT, & ME) will implement a multi-state cap-and-trade program with a market-based emissions trading system. The RGGI program targets reductions from fossil fired power plants of 25MW or greater nameplate capacity within the 10 state region. The cap-and-trade program limits carbon dioxide emissions by placing a cap on the total amount of carbon pollution from power plants (“generators”) permitted in the RGGI region, requiring generators to have RGGI allowances for each ton of carbon dioxide (CO₂) emissions they generate. As that pollution cap is lowered over time, the program will require generators in participating states to reduce carbon dioxide emissions 10% below the initial annual carbon dioxide budget by 2018, as outlined in the RGGI Memorandum of Understanding (MOU).²

The market-based trading system allows RGGI allowances to be traded between companies so that reductions can be achieved efficiently, at the lowest marginal cost of pollution abatement across the spectrum of affected facilities in the 10 states. Furthermore, a carbon constraint on fossil fuel-fired electricity will create a strong incentive for the creation, development, and deployment of more efficient fuel burning technologies and processes, as well as renewable energy supplies, demand-side management practices and actions to increase energy efficiency, leading to less dependence on the import of, and use of, fossil fuels. The Regional Greenhouse Gas Initiative provides a possible model for the implementation of a federal emissions trading scheme while increasing pressure for federal legislation to address the issue of climate change.

RGGI is a cooperative effort on the part of 10 states, requiring each state to promulgate state rules and regulations in order to participate in the regional effort. Regionally, during 2000-2002, the average annual emissions of CO₂ from power plants in the 10 state region were roughly 180,000,000 tons. Under the MOU, each state receives an allocation equivalent to their state’s contribution to the total. The RGGI MOU requires a minimum of 25% of each state’s emission allowances to be used for public benefit and strategic energy purposes. The disposition of the remaining 75% of allowances held by each state is left to each state.

¹ See the EPA’s “Climate Change and Delaware” available at http://www.awm.delaware.gov/NR/rdonlyres/703E698E-DA83-4217-950E-F03F96C94573/2798/de_impct.pdf and “The Northeast Climate Impacts Assessment” available at http://www.awm.delaware.gov/NR/rdonlyres/703E698E-DA83-4217-950E-F03F96C94573/2799/NECIA_climate_report_final.pdf

² RGGI MOU available at http://www.rggi.org/docs/mou_12_20_05.pdf

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2. Purpose of the SCR 28 Workgroup

On June 30, 2007, the General Assembly passed Senate Concurrent Resolution (SCR) #28 calling on the Secretary of the Department of Natural Resources and Environmental Control (DNREC) to convene a workgroup to consider the sale of CO₂ allowances under RGGI and the use and management of potential revenue stemming from such allowance sales. The Workgroup is tasked to study the RGGI MOU, analyze the actions of other RGGI states, and consider and recommend the best course of action for Delaware.

The workgroup has wrestled with two principle questions:

1. what percent of Delaware's allowances should be auctioned (as opposed to allocated directly to generators) and
2. what should be the fate of any revenue generated through the sale of allowances.

Under the SCR, this revenue may be used to further the goals of the Sustainable Energy Utility or such other goals the Workgroup may consider and that are consistent with the RGGI MOU.³

3. The State of Delaware

3.1 Electricity generation in Delaware

Electricity serving Delawareans comes from both local, in-state generation sources and from imports from the regional electric grid. In 2006, Delaware had a generating capacity of approximately 3000 MW. Delaware facilities subject to RGGI (the "Generators") account for the majority of that capacity and are shown in Table 1.

Table 1. Electricity generating facilities in DE greater than 25MW

Facility (units)	Unit types	Generation (MGW)	Year	Fuel type
NRG Indian River (4)	Steam Turbines	82, 82, 177, 442	1957, 1959, 1970, 1980	Coal
Conectiv Edge Moor (3)	Steam Turbines	75, 177, 446	1954, 1966, 1973	Coal (446 Residual Oil)
Conectiv Hay Road (8)	6 CC (2 Waste Heat)	658, (220)	1989, 1990, & 2001	Pipeline Natural Gas/waste heat
Dover - McKee Run (1)	Steam Turbine	113.6	1975	Residual Oil
Dover - Van Sant (1)	CT	45.1	1991	Diesel Oil
DEMEC - Smyrna (1)	CT	45	2002	Natural Gas
NRG Dover (2)	CT	100.00	2001	Natural Gas
Motiva Refinery (6)	Steam Turbines (2CT's)	299	1956, 1961, 2000	Residual Oil (other gas)

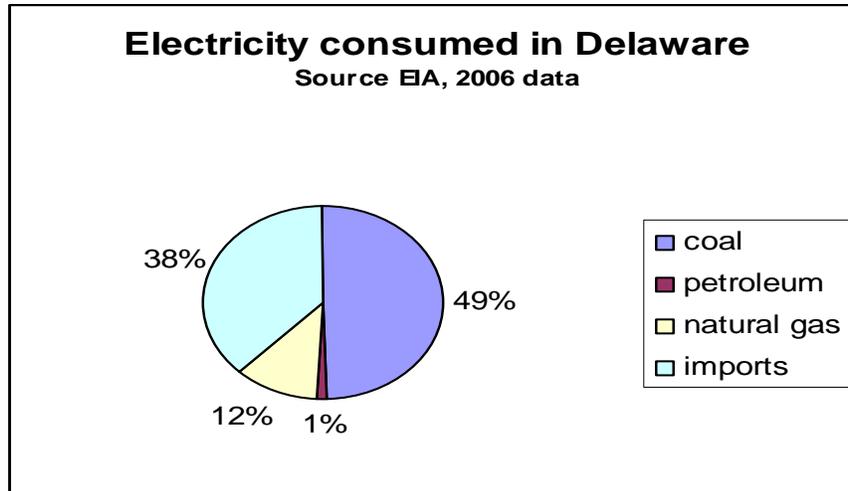
³ From SCR 28 found at:

<http://www.awm.delaware.gov/Info/Regs/Documents/c35fe7643fb94a459964c56db24b3474SCR28.pdf>

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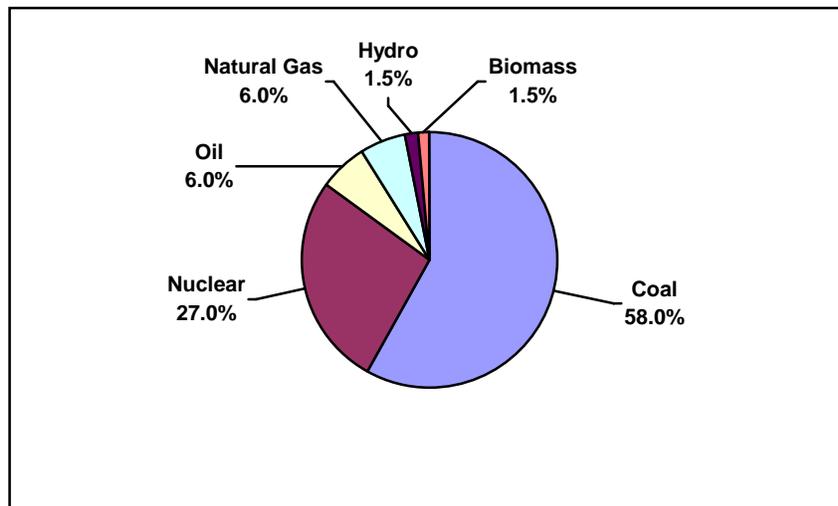
Delaware, however, does not generate all the electricity it needs. In 2006, Delaware imported approximately 38% of the electricity consumed in the state⁴. Imports are realized through the PJM grid as explained below. Figure 1 portrays relative percentages of fuels used to generate electricity in-state with imports brought in through PJM.

Figure 1. Relative percentage of sources of Delaware's electricity



Because of these imports, the fuel diversity for generation of electricity consumed in Delaware looks vastly different than that produced in Delaware. Figure 2 portrays this difference.

Figure 2. Fuels Used to Generate Electricity Consumed in Delaware



⁴ Energy Information Administration, found at http://www.eia.doe.gov/cneaf/electricity/st_profiles/sept01de.xls

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3.2 Carbon Emissions from Delaware's Generators

The RGGI MOU sets an initial emissions allocation of 7,559,787 tons of carbon dioxide for Delaware, which is roughly equivalent to the average annual emissions from 2000-2002 for all affected facilities in Delaware. Affected facilities are defined as any fossil-fueled energy generating unit in excess of 25MW. Appendix A provides a list of all affected facilities and their emissions through 2006.

The Delaware City Refinery (Premcor) accounts for 15.53% of Delaware's allocation. They are shown separately in Appendix A in deference to a possibility that they may be exempted from the RGGI program, in accordance with the RGGI Model Rule, if they sell less than 10% of their generation capacity into the regional electric grid. If Delaware is to follow this optional provision of the RGGI Model Rule, Premcor may apply to be excluded from the RGGI cap, which, if approved, would result in a lowering of the Delaware allocation by 15.53% from the current figure, resulting in a net allocation to Delaware of 6,385,752 tons. The overall RGGI cap would be similarly lowered.

Additionally, an initiative independent of RGGI is leading to the retirement of NRG Indian River Units 1 and 2 in 2010 and 2011, respectively. Because both units are high-emission coal-powered plants, this will cause a significant decrease in state-wide emissions, however, Delaware's allocation of allowances remains unchanged under the MOU.

3.3 Delaware and PJM

Delaware generators are a part of the PJM electric grid, which also includes New Jersey, Maryland, Pennsylvania, Virginia, West Virginia, and portions of Ohio, Indiana, and Illinois. Because Delaware, New Jersey, and Maryland, all RGGI participating states, are a part of a competitive wholesale electricity market that also includes non-RGGI states, they face a different situation than the other 7 RGGI states, all of whom operate within entire power pools (ISO New England and the New York ISO) covered by RGGI.

Generators inside the RGGI region will be required to obtain and hold allowances equal to their emissions, possibly increasing costs for generators inside the region. Generators outside the RGGI region will not have those added costs, and when bidding into the PJM market, may bid lower prices than their RGGI counterparts, leading to a possible shift in generation outside the region and "leakage" of the emission reductions sought within the RGGI region. The implementation of RGGI in PJM states may therefore create financial inequities between RGGI states and non-RGGI states within PJM.

3.4 "Leakage" impacts on Delaware

Leakage is a term applied to the increased importation of electric power from non-RGGI regions as a result of regulations that increase the cost of electricity generation within the RGGI region. Leakage may have negative effects on overall emissions reductions because the

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displacement of RGGI generation by non-RGGI generation means that emissions are not decreasing, just relocating.

However, the extent to which leakage can occur is limited by transmission capacity as well as by differences in local marginal pricing. Local marginal pricing (LMP) is the collective term for differences in the cost of supplying the next MWh of generation at specific locations on the same grid. On the PJM grid, there tends to be a \$4-8/MWh differential between the west side of the grid, which is less expensive, and the east side of the grid, which Delaware is a part of.⁵ This differential exists because of congestion, caused by the limited transmission capability, and because of additional costs applied to transferring electricity from one part of the grid to another. The competitive advantage of non-RGGI generators is therefore diluted as a direct function of how far they are from the specific location electricity is being purchased.

A significant degree of uncertainty exists as to the extent leakage will occur in Delaware; no accurate baseline data exists for current carbon emission due to imported power.⁶ IPM modeling estimates cumulative emissions leakage to be 27% of net CO₂ emissions reductions for the entire RGGI region through 2015, with the majority of it occurring in PJM states including Delaware.⁷ However, IPM modeling projects that the majority of leakage will be caused by a shift in new plant construction from RGGI states to outside of the RGGI region. Such a shift is unlikely, given the importance of location-specific demand, access to transmission for new units, local siting and permits, and power purchase contracts and financing.⁸ Therefore, leakage due to the increased importation of power from existing out-of-state generators and the decreased use of in-state generators is likely to be less than that predicted by the IPM modeling.

Solutions to the leakage problem are not readily apparent, however, IPM modeling drew a strong correlation between the investment in energy efficiency and the reduction of leakage. To the extent states invest in energy efficiency and drive down demand for electricity, leakage is reduced. Studies conducted in both Maryland and New Hampshire indicate that not only does energy efficiency reduce leakage, it can result in positive economic impacts for states participating in RGGI and directly mitigate negative ratepayer impacts resulting from any increase in electricity prices resulting from RGGI.⁹

⁵ Initial Report of the RGGI Emissions Leakage Multi-State Staff Working Group to the RGGI Agency Heads, March 2007.

⁶ Initial Report of the RGGI Emissions Leakage Multi-State Staff Working Group to the RGGI Agency Heads, March 2007.

⁷ IPM modeling, ICF Consulting. IPM runs dated October 11, 2006, available at <http://www.rggi.org/documents.htm>.

⁸ Initial Report of the RGGI Emissions Leakage Multi-State Staff Working Group to the RGGI Agency Heads, March 2007.

⁹ RFF/University of Maryland Study; Additional Model Analysis of Maryland Joining RGGI, found at <http://www.awm.delaware.gov/Info/Regs/Documents/a13a45d7a66d41d1910a3569c5454118MDfollowupmemofromRFF91807.pdf>

4. The Actions of other RGGI States

The two questions posed in Section 2 of this report:

1. What percentage of allowances should be auctioned, and
2. What to do with the revenue

have been answered in different ways among the 9 other RGGI states. The RGGI MOU requires that, at a minimum, 25% of allowances be directed to “public benefit purposes”, that being defined as:

“the use of the allowances to promote energy efficiency, to directly mitigate electricity ratepayer impacts, to promote renewable or non-carbon-emitting energy technologies, to stimulate or reward investment in the development of innovative carbon emissions abatement technologies with significant carbon reduction potential, and/or to fund administration of this Program”

4.1 Allocation or Auction?

All other RGGI signatory states have opted to auction a significantly greater portion of their allowances than is minimally required under the MOU. Small variation in allowance allocations exist in some states to account for high efficiency CHP units, to recognize long term contracts already in place between generators and customers and to recognize early reductions taken in some states with carbon reduction laws already on the books. Still other states have built into their allocation processes relief from high allowance prices and commitments to sell (rather than auction) allowances if certain price triggers are hit.

Another technique used by the states to reward investment in renewable energy production is renewable set-asides. Massachusetts, Maine, Rhode Island and New Hampshire all plan to take a step beyond zero allocation and retire allowances as renewable energy credits are bought voluntarily by private consumers, setting aside up to 1% of allowances for cap reduction beyond RGGI requirements.

These variations among the states are significant, but pale in comparison to the decision by all states to auction far greater than the required 25% minimum. Table 2 provides data on each state’s plans for auction percentages.

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Table 2. State Auction percentages and authorizing statutes and regulations

State	Tons yr.	Auction Percentage	Authority
Connecticut:	10,695,036	94%*	State Statute: http://www.cga.ct.gov/2007/ACT/PA/2007PA-00242-R00HB-07432-PA.htm
Maine:	5,948,902	100%	State Statute: http://janus.state.me.us/legis/ros/lom/LOM123rd/PUBLIC317.asp
Maryland:	37,503,983	90%**	Proposed Rule: http://www.mde.state.md.us/assets/document/Air/RGGI_Chapters01-03_10-07.pdf
Massachusetts:	26,660,204	100%***	Proposed Rules: MA DEP http://www.mass.gov/dep/service/regulations/proposed/co2regs.pdf DOER regulations http://www.mass.gov/doer/rggi/rggi-prop_doer_co2_regs.pdf
New Hampshire:	8,620,460	100%****	Proposed Statute
New Jersey:	22,892,730	100%	State Statute: http://www.njleg.state.nj.us/bills/BillView.asp
New York:	64,310,805	100%	Proposed DEC Regulation: http://www.de.ny.gov/regulations/36588.html
Rhode Island:	2,659,239	100%	State Statute: http://www.rilin.state.ri.us/PublicLaws/law07/law07206.htm
Vermont:	1,225,830	100%	State Statute: http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=30&Chapter=005&Section=00255

*1% set-a-side for renewables, 5% set-a-side for Combined Heat and Power (CHP)

**10 percent of each budget shall be allocated to a set-a-side pool to be used for new sources, offset projects, early reductions and other purposes established by the Department.

*** minus small (<1%) set-a-sides for renewable energy purchases and MA Reg 729 compliance

**** considering 1% set-a-side for renewables and grants to PSNH under existing Clean Power Act

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4.2 The Disposition of Revenues

Generally, all states target energy efficiency as the recipient of RGGI revenues, with some variability. Each state varies with respect to how they administer their funds and exactly where they are to be spent. Many states have yet to decide the precise details of expenditures but are provided guidance or direction from enabling states as notated in Table 2 above.

A complete description of each state's requirements for distribution of RGGI revenues is provided in Appendix B. In each state, a portion of RGGI revenues are also allotted for administration of RGGI and other climate change programs within each state.

5. Possible Impacts of RGGI on Delaware

5.1 RGGI impact on electricity rates for consumers

Modeling analyses conducted by ICF International for RGGI states indicate the potential for a 1% increase in wholesale electric rates at the start of the program in 2009 increasing to 1.75% by 2018.¹⁰ The exact price impacts will not be known until the program is underway and we see the impact the competitive market has on bidding prices.

A 1% increase in prices as a result of RGGI is very modest, and should be placed in context with recent increases in electricity prices in the last few years. By example, Delmarva Power customers experienced a 59% increase in electricity rates for 2006, independent of RGGI initiatives. Such a steep increase, even when averaged over what was a largely flat rate since 2000, represents an 8% annual raise in rates during those years. Additional price impacts from PJM's new Reliability Pricing Model and the added costs of new capacity in Delaware and elsewhere are similarly impacting prices.

The impact of RGGI on the price of electricity for the consumer may be independent of the percent of allocations that will be auctioned to generators. It is often assumed that the less capital generators have to spend on the allowances they acquire, the smaller the increase ratepayers will see in the price of electricity. However, history and general practice prove this to be a false assumption.¹¹ Whether generators acquire allowances at no cost or whether they are purchased on auction, the generator will, when possible, pass on the value of the allowance and add it to the variable cost of electricity generation for the customer. Even if the allowance was acquired at no cost, the generator is losing the opportunity of selling the allowance on the market when they must use it to cover the carbon emissions generated by the electricity purchased, so

¹⁰ IPM RGGI Electricity Sector Modeling Results as presented to the SCR 28 workgroup and found at: <http://www.awm.delaware.gov/Info/Regs/Documents/0c8105de9e594764b0f417a53239be85ICFDelawareRGGIpresentation111907.pdf>

¹¹ See the European Union's cap and trade scheme's allocation for more information, details available at <http://www.openeurope.org.uk/research/etsp2.pdf>, and the comments of then NY Attorney General Spitzer for further support, available at <http://www.fiscalpolicy.org/NYAttorneyGeneralPreliminaryRGGIComments.htm>

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instead make up that lost revenue by increasing the price of electricity for the consumer. However, generators operating in Delaware are uniquely situated in the PJM market, where some states are part of RGGI and others aren't – suggesting that the experience in other RGGI states or the EU may not be as relevant to the competitive market place within PJM.

5.2 RGGI impact on electricity price volatility

As with any emergent market, volatility may be a significant factor. Price volatility in the emissions market will hinder effective planning of investment in carbon abatement for electricity generators. Market volatility will represent a significant factor for electricity generators, who can be expected to collectively invest \$15.4 million in only the first year of auctions assuming 0% allocation and IPM estimates of \$2/ton for emissions allowances. Because the first few years of the market are likely to be characterized by considerable price volatility, generator investment may be forced beyond projected values. Partial allocation may minimize the negative effects of price volatility and reduce early program risk and uncertainty for electricity generators.

5.3 RGGI impact on producer costs and profit margin

As discussed in Section 3, the implementation of RGGI in PJM states may create financial inequities between RGGI states and non-RGGI states. The increase in variable costs due to the auctioning of carbon emissions allowances may raise the bids of Delaware electricity generators, and possibly impact the total amount of electricity generators will be able to sell on a competitive wholesale market. An alternative outcome may be to raise the price of electricity throughout the PJM market, if Delaware generators are at the margin. The costs of compliance with RGGI will be borne either by the generator, resulting in a potential loss of profitability or asset value¹², or to the consumer, resulting in higher costs overall – or some combination of those two outcomes to be determined by the market.

Regional circumstances may prevent generators from accurately reflecting increased variable costs in the price at which electricity is sold. Although Delaware is an unregulated electricity market, a number of social variables may lead to generators being unable or unwilling to raise electricity rates enough to fully offset increased costs. In such a case, the amount of electricity sold by a generator will not see a significant change, but the profit margin per kWh of electricity sold will decrease as a result of RGGI regulations.

¹² ICF analysis as presented to the SCR 28 workgroup and found at: <http://www.awm.delaware.gov/Info/Regs/Documents/0c8105de9e594764b0f417a53239be85ICFDelawareRGGIpresentation111907.pdf>

6. Workgroup Conclusions

6.1 Allowance allocation

When the RGGI states agreed to the cap and trade program in December 2005, they agreed to dedicate a minimum of 25% of allowance value to public benefit purposes as defined in the MOU. The remaining 75% of the allowances were left to states to decide how to distribute. As was done in the NOx and SO2 programs, it was initially anticipated that the remaining allowances would be “grandfathered”, or given, to generators. There were, however, over the course of the next two years, several studies done which concluded that regardless of how the allowances were distributed, generators would seek to obtain their value in bidding power into regional markets¹³ and consumers would still bear the full cost of the program. In addition, states began to identify the benefits of funneling all RGGI allowance revenue into energy efficiency and consumer benefit programs, to help in reducing energy demand, easing customer impacts and reducing emissions associated with generation. For these two reasons, all RGGI states have opted to auction nearly all of the allowances provided under the program.

In Delaware, the workgroup is divided on the allocation issue. All members believe that a 100% auction is the correct approach however the generators have proposed a ramp up to 100%, beginning at 55% auction and increasing to 100% over a five year period. This “easing into” 100% was a suggested course due to uncertainties in the market place, the expected volatility early in the trading program and to minimize impacts on consumers.¹⁴ Other members feel strongly that a 100% auction from the beginning is the best course for the reasons cited previously. DNREC, by memorandum from Secretary Hughes has suggested that a starting point of 60%, rising over 4 years may be acceptable, as Delaware’s situation is somewhat unique compared to other states.¹⁵

6.2 Revenue Disposition

A separate, yet seemingly linked question to that of auctioning is the fate of any revenues generated through the sale of allowances. It is difficult to estimate how much revenue might be expected, because prices in this new marketplace are unknown and because the allocation formula is undetermined. Using the ICF Integrated Planning Model (IPM), the RGGI states have estimated allowance values at \$2.00/ton for the beginning of the program (2009) rising to \$4.50 by 2021.¹⁶

¹³ Evaluation of CO2 Emission Allocations as Part of the Regional Greenhouse Gas Initiative, Rutgers University, 12/05 and found at:
<http://www.awm.delaware.gov/Info/Regs/Documents/68872657103c437e8df1aabace8cbac6RutgersreportonCO2auctioning2005.pdf>

¹⁴ Generators 3/10/08 proposal and found at:
[http://www.awm.delaware.gov/Info/Regs/Documents/SCR%2028%20Generators%20Proposal%20Final%20030508.ppt#268,5,Distribution of Proceeds as Allowances DE Generators Proposal for a Transition to a 100% Auction](http://www.awm.delaware.gov/Info/Regs/Documents/SCR%2028%20Generators%20Proposal%20Final%20030508.ppt#268,5,Distribution%20of%20Proceeds%20as%20Allowances%20DE%20Generators%20Proposal%20for%20a%20Transition%20to%20a%20100%20Auction)

¹⁵ Memorandum from John A Hughes to the SCR 28 workgroup dated March 6,2008 and available at
<http://www.awm.delaware.gov/Info/Regs/Documents/Memo%20to%20SCR%2028%20group%20from%20JAH%2003-6-08.pdf>

¹⁶ ICF modeling data presented to SCR 28 workgroup on 11/19/07 and found at:
<http://www.awm.delaware.gov/Info/Regs/Documents/0c8105de9e594764b0f417a53239be85ICFDelawareRGGIpresentation111907.pdf>

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Table 3 presents revenue estimates at varying auction percentages and allowance prices using the total 7.559 million allowances. Without the Valero allocation, estimates need to be reduced by 15.53%.

Table 3. Annual RGGI revenue estimates (\$millions)

CO2 Allowance Price	25% Auction	50% Auction	100% Auction
\$2	\$3.8	\$7.6	\$15.1
\$5	\$9.4	\$18.9	\$37.8

During workgroup meetings, suggestions for use of RGGI revenue have included end-use energy efficiency measures, incenting renewables, direct mitigation for low to mid-income ratepayers, transportation fuel efficiency measures, research and development, and public education to strengthen the connection between energy efficiency, carbon dioxide, and climate change. Forestland preservation to reduce the rate of deforestation in Delaware and offset carbon emissions has also been proposed by stakeholders as a use of RGGI revenue.¹⁷ The generators have also suggested that 5% of the allowances be used to fund carbon abatement programs (shown below in Section 7 as a “Carbon Fund”).¹⁸

All workgroup members agree to several basic principles:

- All RGGI revenues should be directed to public benefit programs regardless of auction percentage.
- Some portion of revenues should be used to help make Delaware more energy efficient and to promote renewable energy sources
- Some portion of revenues should be directed to low and moderate income ratepayers to help them become more energy efficient through weatherization efforts and to help meet high energy costs (LIHEAP)
- An appropriate portion of revenues should be directed to DNREC to run RGGI and other climate change programs.

All members endorse use of at least a portion of the revenues for promoting energy efficiency. Studies have shown that investment in energy efficiency may actually result in lower costs for electricity to consumers. New Hampshire, for example, estimates that PSNH customers will see an annual decrease of 1.4% in their electricity bill by 2018 if 100% of allowances were auctioned and revenue was invested in energy efficiency measures.¹⁹ Maryland estimates that

¹⁷ Roger Jones, The Nature Conservancy available at <http://www.awm.delaware.gov/NR/rdonlyres/703E698E-DA83-4217-950E-F03F96C94573/3110/EmailSCR28WorkgroupRJones120607.pdf>

¹⁸ Revised Generator proposal presented March 10, 2008 found at: [http://www.awm.delaware.gov/Info/Regs/Documents/SCR%2028%20Generators%20Proposal%20Final%20030508.ppt#256,1,DE Generators Proposal for Transition to 100% RGGI Allowance Auction Amended Generators Proposal](http://www.awm.delaware.gov/Info/Regs/Documents/SCR%2028%20Generators%20Proposal%20Final%20030508.ppt#256,1,DE%20Generators%20Proposal%20for%20Transition%20to%20100%20RGGI%20Allowance%20Auction%20Amended%20Generators%20Proposal)

¹⁹ As estimated by New Hampshire Department of Environmental Services and the University of New Hampshire, available at <http://www.des.state.nh.us/ard/climatechange/pdf/economicFAQs.pdf>

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the allocation of each additional 25% of MD RGGI allowance value towards energy efficiency initiatives can be expected to yield a decline in electricity prices of about 0.25% after 2010.²⁰

Efficiency investments also mitigate the potential for leakage, reduce transmission system congestion, forestall the need to build new transmission capacity and result in lower emissions of other priority pollutants.

The Sustainable Energy Utility (SEU), created in 2007 by the Delaware General Assembly has as its primary mission the establishment of energy efficiency and renewable energy programs in Delaware.²¹ The workgroup has debated at length the suitability of the SEU to carry out efficiency programs funded with RGGI revenues and whether or not the SEU is in need of the revenue generated by RGGI. Some Workgroup members have made clear that the SEU is precisely the vehicle to use in this endeavor, while others have suggested the SEU was to have been self-sustaining and would not need the additional revenue. Members of the SEU Oversight Board have made clear that more resources available to the SEU simply translates into an enhanced ability to accomplish more energy savings and customer sited renewables, and that the SEU should be the recipient of the bulk of RGGI revenues. Still other participants in the Workgroup discussions have suggested that the RGGI revenue is still somewhat of an unknown, and that the best course might be to simply set the revenue aside for a year or more and wait to see what revenue is realized and where it might be best utilized.²²

7. Options for consideration by the Workgroup

The workgroup has consistently focused on the two questions before them separately, and yet the two have been inextricably linked throughout the negotiation process. To proceed with RGGI, both in participation in the upcoming planned regional auction and in proceeding with DNREC's cap and trade rulemaking process, Delaware need only solve the issue of how many allowances to auction.

At its last meeting, while not achieving unanimity among all members, there was a growing agreement that a ramp up to 100% might be acceptable, providing the concerns addressed with the SEU might somehow be accommodated. Reducing the percentage of funds dedicated to the SEU may be one way of addressing this concern, as might be use of a "holding account" where the SEU might be able to avail itself of it after a showing that the money is needed and that additional benefits would accrue through the use of added revenue from RGGI.

Below are three possible solutions, two focusing on answering the two questions now and one taking a more general approach on the revenue side while settling the auction question. There are, admittedly, an endless number of possible solutions.

²⁰ As estimated by Resources for the Future, available at <http://www.awm.delaware.gov/NR/rdonlyres/703E698E-DA83-4217-950E-F03F96C94573/2853/MDfollowupmemofromRFF91807.pdf>

²¹ See <http://www.seu-de.org/index.html>

²² Statement by Rep. John Kowalko the workgroup and found at: <http://www.awm.delaware.gov/Info/Regs/Documents/Rep%20%20Kowalko%20statement%203-9-08.pdf>

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7.1 Option 1

60% auction ramping to 100% in 5 years

- Majority of funding to the SEU for efficiency and renewables
- Some allowances used to fund a “Carbon Fund” (controlled by the DNREC Sec’y with environmental advisory group)
- Some allowances used to fund low income programs (Weatherization and LIHEAP)
- Administration expenses off the top (10% cap)

7.2 Option 2

100% auction

- A minority percentage directed to the SEU
- The majority of funds directed to a carbon fund administered by the Secy of DNREC, with advice from a group of stakeholders. Funds to be directed to public benefit programs as defined.
- Carve out for low income programs (weatherization and LIHEAP)
- Administration expenses off the top (10% cap)

7.3 Option 3

100% auction

- Funds directed to holding account (minus administration)
- Direction of revenue decided by 6/30/09
 - Make clear that \$ must be spent on public benefit purposes as defined
 - Advisory group to recommend to General Assembly (three options)
 - SCR 28 workgroup reconvened
 - DNREC Secy, Controller General (CG) and OMB Director
 - DNREC Secy, CG, OMB, SEU Chair, Public Advocate
- Administration expenses off the top (10% cap)

Appendix A

Carbon Emissions from RGGI Affected Units 2000-2006²³

RGGI Data Extracted from Spreadsheet File DE-2000-2004-rev081905 (2005 and 2006 from file DE-2000-2006-rev100907)

Plant Name	Boiler ID	Gen. ID	Nameplate Capacity (MW)	CO2 Annual Emissions (tons)							Analysis with Premcor RGGI Units			
				2000	2001	2002	2003	2004	2005	2006	2000 - 2002 3-yr. ave.	% of cap per unit	% of cap per facility	Facility Name
Conectiv Edge Moor	3	3	75	669,518	483,482	676,268	542,070	517,907	517,711	454,546	609,756	7.84%		
Conectiv Edge Moor	4	4	176.8	1,105,496	899,033	994,209	1,109,128	1,096,953	948,575	1,109,203	999,580	12.85%		
Conectiv Edge Moor	5	5	446	402,017	1,103,614	547,909	900,277	426,538	543,792	93,217	684,513	8.80%	29.50%	Conectiv EM
NRG Indian River	1	1	81.6	549,707	429,902	364,346	469,594	469,946	465,367	433,208	447,985	5.76%		
NRG Indian River	2	2	81.6	556,788	537,725	366,459	460,831	430,836	427,878	514,194	486,991	6.26%		
NRG Indian River	3	3	176.8	714,936	421,729	442,587	763,239	942,837	958,858	883,299	526,418	6.77%		
NRG Indian River	4	4	442.4	1,679,439	1,603,171	1,522,983	1,310,828	1,751,566	2,018,423	1,741,767	1,601,864	20.60%	39.39%	Indian River
City of Dover McKee Run	3	3	113.6	129,576	181,762	152,796	112,284	100,484	88,831	17,409	154,711	1.99%	1.99%	McKee Run
Conectiv Hay Road	1	1	115	148,105	219,522	168,066	150,140	163,792	183,883	97,845	178,564	2.30%		
Conectiv Hay Road	2	2	115	157,366	212,363	190,476	146,448	169,193	151,871	103,366	186,742	2.40%		
Conectiv Hay Road	3	3	115	137,300	222,711	219,733	171,663	174,525	185,838	119,957	193,248	2.49%		
Conectiv Hay Road	4	4	115	0	0	0	0	0	0	0	0	0.00%		
Conectiv Hay Road	5	5	122	not operating	33,503	266,079	93,833	98,333	107,030	51,605	149,791	1.93%		
Conectiv Hay Road	6	6	122	not operating	43,511	261,451	91,502	102,951	117,023	88,379	152,481	1.96%		
Conectiv Hay Road	7	7	122	not operating	46,302	267,539	90,479	95,756	103,057	52,973	156,921	2.02%		
Conectiv Hay Road	8	8	122	not operating	0	0	0	0	0	0	0	0.00%	13.09%	Conectiv HR
City of Dover Van Sant	11	1	45.1	4,276	6,423	5,170	2,751	2,365	4,699	2,231	5,290	0.07%	0.07%	Van Sant
Warren F. Beasley Station	1	1	45	not operating	not operating	13,946	15,874	13,518	13,600	10,212	13,946	0.18%	0.18%	Beasley
NRG Energy Center Dover	2	2	50	not operating	15,570	5,365	3,299	5,064	8,333	2,922	10,468	0.13%		
NRG Energy Center Dover	3	3	50	not operating	14,089	4,427	7,265	4,756	6,657	2,470	9,258	0.12%	0.25%	NRG Dover
Motiva Refinery	BLR1	G1	28	312,687	292,655	288,557	196,359	168,057	159,712	151,168	297,966	3.83%		
Motiva Refinery	BLR2	G2	28	306,097	213,792	176,166	181,839	188,469	208,093	185,286	232,018	2.98%		
Motiva Refinery	BLR3	G3	63	239,436	223,901	276,086	212,835	162,603	202,792	176,017	246,474	3.17%		
Motiva Refinery	DCPP4	G4	63	291,154	347,280	327,715	179,928	192,054	172,638	224,357	322,050	4.14%		
Motiva Refinery	MECCU1	CT1	90	not operating	55,502	84,408	76,559	151,817	318,532	412,932	69,955	0.90%		
Motiva Refinery	MECCU2	CT2	90	not operating	37,740	40,420	126,510	103,832	385,460	581,557	39,080	0.50%	15.53%	Premcor
TOTAL				7,403,897	7,645,302	7,663,163	7,415,535	7,534,152	8,298,653	7,510,121	7,776,069			

Note: for a unit that did not begin operating until 2001 or 2002, the unit's average emissions are based on only those years the unit operated.

²³ An Analysis of the RGGI Emissions Cap, available at <http://www.awm.delaware.gov/NR/rdonlyres/703E698E-DA83-4217-950E-F03F96C94573/3123/RGGIEmissionsCapAnalysis22.pdf>

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APPENDIX B

RGGI State Laws/Regulations Pertaining To Allowance Revenues

Connecticut

The Department of Environmental Protection, in consultation with the Department of Public Utility Control, shall auction all emissions allowances and invest the proceeds on behalf of electric ratepayers in **energy conservation, load management and Class I renewable energy programs**. In making such investments, the Commissioner of Environmental Protection shall consider strategies that maximize cost effective reductions in greenhouse gas emission”
Public Act No. 07-242

Rhode Island

The proceeds from the auction or sale of the allowances shall be used for the benefit of energy consumers through investment in the most cost-effective available projects that can reduce long-term consumer energy demands and costs. Such proceeds may be used only for the following purposes, in a proportion to be determined annually by the Office (of Energy Resources) in consultation with the (Energy Efficiency and Resources Management) Council and the Department (of Environmental Management):

- promotion cost-effective **energy efficiency and conservation**;
- promotion of cost-effective **renewable non-carbon emitting energy** technologies as defined in Rhode Island general law section 39-26-5.
- cost-effective **direct rate relief** for consumers;
- direct rate relief for **low-income consumers**;
- (5)Administration

RI Law 23-82

Vermont

In order to provide the maximum long-term benefit to Vermont electric consumers, particularly benefits that will result from accelerated and sustained investments in **energy efficiency and other low-cost, low-carbon power system investments**, the public service board, by rule or order, shall establish a process to allocate 100 percent of the Vermont statewide budget of tradable power sector carbon credits and the proceeds from the sale of those credits...”

30 VSA Section 254

New Jersey

- There is established in the Department of the Treasury a special, non-lapsing fund to be known as the “**Global Warming Solutions Fund**.” The fund shall be administered by the State Treasurer and shall be credited with moneys received as a result of any sale,

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exchange or other conveyance of allowances through a greenhouse gas emissions allowance trading program;

- Sixty percent shall be allocated to the New Jersey Economic Development Authority to provide grants and other forms of financial assistance to commercial, institutional, and industrial entities to support **end-use energy efficiency projects** and new, efficient electric generation facilities that are state of the art, as determined by the department, including but not limited to **energy efficiency and renewable energy applications, to develop combined heat and power production and other high efficiency electric generation facilities, and to stimulate or reward investment in the development of innovative carbon emissions abatement technologies** with significant carbon emissions reduction or avoidance potential.
- The authority, in consultation with the board and the department, shall determine: (a) the appropriate level of grants or other forms of financial assistance to be awarded to individual commercial, institutional, and industrial sectors and to individual projects within each of these sectors;
- Twenty percent shall be allocated to the board to support programs that are designed to reduce electricity demand or costs to electricity customers in the **low-income and moderate-income residential sector**
- Ten percent shall be allocated to the department to support programs designed to promote **local government efforts to plan, develop and implement measures to reduce greenhouse gas emissions**
- Ten percent shall be allocated to the department to support programs that enhance the **stewardship and restoration of the State's forests and tidal marshes**
- The department may use up to four percent of the total amount in the fund each year to pay for **administrative costs**

P.L.2007, c.112 (C.26:2C-37 et seq.).

Maine

- The **Maine Energy Conservation Board**, as established in Title 5, section 12004-I, subsection 20-B and referred to in this section as "the board," is created to assist the commission and the trustees of the Energy and Carbon Savings Trust in the development, coordination and integration of planning for the State's energy conservation efforts
- The Energy and Carbon Savings Trust and the Energy and Carbon Savings Trust Fund are established effective July 1, 2008 to support the goals and implementation of the carbon dioxide cap-and-trade program.
- There is established a ceiling on energy efficiency spending from the trust equal to \$5 per carbon dioxide allowance
- During the years 2009, 2010 and 2011, not less than 85% of the trust fund must be allocated for **measures, investments and arrangements that reduce electricity consumption**, and not more than 15% must be allocated for **fossil fuel conservation measures, investments and arrangements**

MRSA §12004-G, sub-§13-F

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Massachusetts

- Proceeds of such auctions shall be deposited into the Division's Credit Trust Account and shall thereafter be available for expenditure by the Division subject to the approval of the Secretary of the Executive Office of Energy and Environmental Affairs (Secretary).
- The Division shall annually convene an advisory group of stakeholders representing a broad array of energy and environmental interests to advise it on how best to utilize said funds. After such consultation, the Division shall annually report recommendations for such expenditures to the Secretary for approval.
- Recommendations shall seek to achieve the goals of **cost minimization to electricity customers and the promotion of energy efficiency, reliability, demand response, peak shaving (the reduction of peak energy usage), and other strategic energy goals** of the Commonwealth.

MA 225 CMR 13.00 (Proposed)

Maryland:

“**Consumer energy efficiency account**” means a general account established by the Department from which allowances will be sold or distributed in order to provide funds to encourage and foster the following:

- Promotion of **energy efficiency** measures;
- **Direct mitigation of electricity ratepayer impacts** attributable to the implementation of this subtitle;
- **Promotion of renewable or non-carbon-emitting energy technologies;**
- Stimulation or **reward of investment in the development of innovative carbon emissions abatement technologies** with significant carbon reduction potential; and
- **Funding to implement** this subtitle.

MD COMAR 26.09 (Proposed)

New York

The Department will allocate the CO₂ Budget Trading Program base budget to best achieve the emissions reduction goals of the CO₂ Budget Trading Program by promoting or rewarding investments in **energy efficiency, renewable or non-carbon-emitting technologies, and/or innovative carbon emissions abatement technologies** with significant carbon reduction potential.

Part 242 CO₂ Budget Trading Program (Proposed)

New Hampshire

There is hereby established a greenhouse gas emissions reduction fund appropriated to the public utilities commission to be expended in accordance with this section. Fund monies shall be used to support **energy efficiency, conservation, and demand response programs to reduce greenhouse gas emissions** generated within the state, which may include programs proposed and administered by private entities, as well as by the department, the commission, and other state and local governmental agencies. All programs supported by these funds shall be subject to

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audit by the public utilities commission as deemed necessary. A portion of the fund monies shall be used to pay for commission and department **costs to administer** this subdivision, including contributions for the state's share of the costs of the RGGI regional organization.”

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Appendix C

SCR 28 Workgroup members

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