

THE REGIONAL GREENHOUSE GAS INITIATIVE (RGGI)

DNREC – Division of Air Quality

Workgroup Meeting - Amendments to Regulation 1147

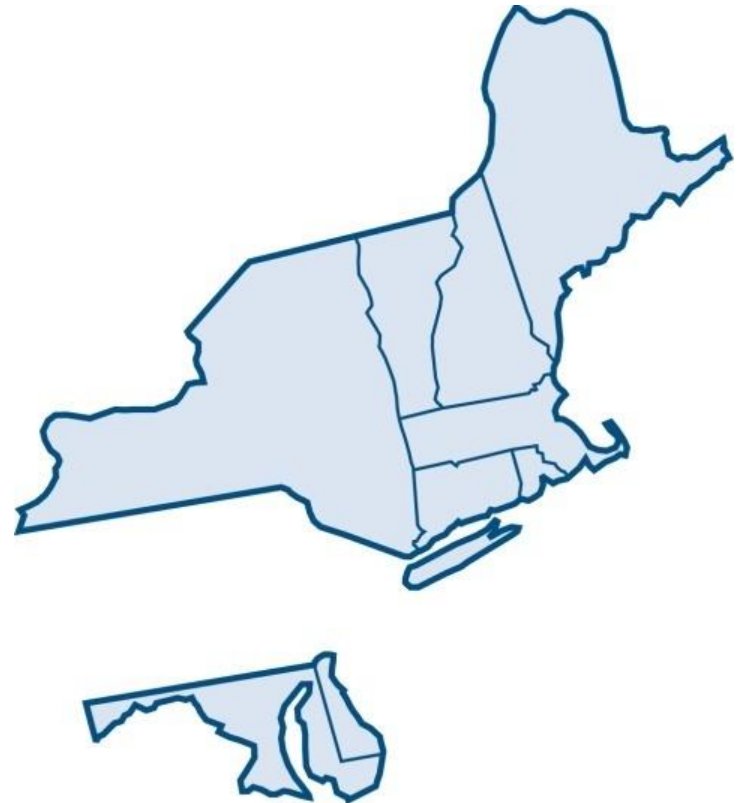
April 17, 2018

Agenda

- Welcome/Introductions
- Overview of the RGGI Program
- 2016 Program Review & Updates to the Model Rule
- Proposed Regulatory Timeline
- Proposed Amendments to Regulation 1147

What is RGGI?

- Regional Greenhouse Gas Initiative
- A cooperative 9-state effort designed to cap and reduce carbon dioxide emissions from the electricity generating sector.



RGGI Program Goals

- Stabilize, then reduce, greenhouse gas emissions.
- Invest in energy efficiency, renewables and climate policies and programs.
- Create a market for carbon.
- Demonstrate that a state-led regional program can work.
- Implement a professional auction model.



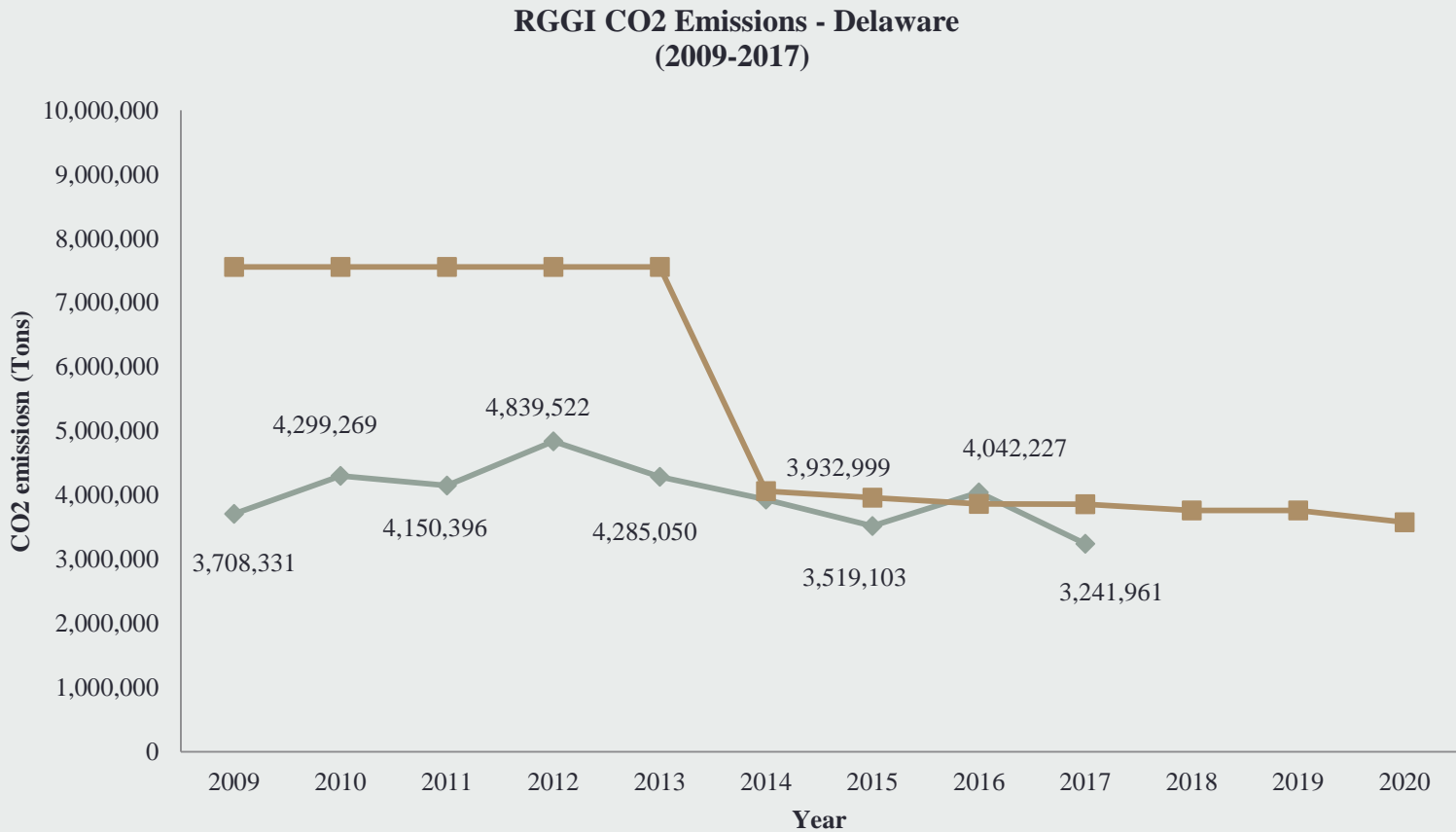
RGGI works

- RGGI states experienced a 45% reduction in carbon dioxide pollution since 2005, even as the regional economy grew by 8%
- RGGI has raised over \$2.58 billion for reinvestment regionally.
- RGGI investments are projected to return \$4.67 billion in lifetime energy bill savings to customers
- **RGGI cost to customers has been and is projected to continue to be negligible. Supply cost for electricity in Delaware has not increased.**

2017 RGGI Emissions

<u>Year</u>	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>	<u>Annual Subtotal</u>	<u>Cap Levels</u>
2009-2011 Avg:	27,912,090	24,354,802	32,504,645	23,051,435	107,822,971	165,184,246
2012-2014 Avg:	22,857,102	19,785,348	26,632,260	19,352,565	88,627,274	(2012-2013) 165,184,246 (2014) 91,000,000
2014:	27,481,780	19,146,768	22,923,899	16,976,931	86,529,378	91,000,000
2015:	24,115,204	18,484,260	25,075,694	15,553,385	83,228,543	88,725,000
2016:	17,118,675	18,136,537	28,445,078	15,527,866	79,228,156	86,506,875
2017:	14,511,005	14,579,253	20,520,516	15,305,518	64,908,718	84,344,203
% Change in 2017 from 2016:	- 15%	- 20%	- 28%	- 1.4%	- 18.1%	

Delaware Historical Emissions



Delaware's "Compliance Entities"

(produce more than 25 megawatts of power)

Compliance Facility	Number of Units	Nameplate Capacity (MW)
Calpine Christiana Substation	2	29, 29
Calpine Edge Moor	3	75, 177, 446
Calpine Garrison Energy Center	1	309
Calpine Hay Road	8	115, 115, 115, 115, 122, 122, 195, 200
City of Dover- McKee Run	1	114
City of Dover- Van Sant	1	45
DEMEC- Warren F. Sam Beasley	1	45
Delaware City Refinery	6	28, 28, 63, 63, 90, 90
NRG- Dover Energy Center	2	50, 50
NRG- Indian River	1	442

Program Reviews

- As called for in the RGGI Memorandum of Understanding and subsequent documents, the Participating States **conduct routine program reviews** of the CO₂ Budget Trading Programs.
- The RGGI program reviews are rigorous and comprehensive evaluations, supported by an **extensive regional stakeholder process** that engaged the regulated community, environmental nonprofits, consumer and industry advocates, and other interested stakeholders.
- **Amendments to the Model Rule** are developed by the RGGI state staff as part of the Program Review. This effort is supported by an **extensive regional stakeholder process** that engaged the regulated community, environmental nonprofits, and other organizations with technical expertise.

2012 Program Review

[Announced results February 7, 2013](#)

- *“RGGI States Propose Lowering Regional CO2 Emissions Cap 45%, Implementing a More Flexible Cost-Control Mechanism”*
- Improvements include:
 - A reduction of the 2014 regional CO2 budget, “RGGI cap”, from **165 million to 91 million tons** – a reduction of 45 percent. The cap would decline 2.5 percent each year from 2015 to 2020.
 - Additional adjustments to the RGGI cap from 2014-2020. This will account for the private bank of allowances held by market participants before the new cap is implemented in 2014. From 2014-2020 compliance with the applicable cap will be achieved by use of “new” auctioned allowances and “old” allowances from the private bank.
 - **Cost containment reserve** (CCR) of allowances that creates a fixed additional supply of allowances that are only available for sale if CO2 allowance prices exceed certain price levels (\$4 in 2014, \$6 in 2015, \$8 in 2016, and \$10 in 2017, rising by 2.5 percent, to account for inflation, each year thereafter.)
 - Updates to the RGGI offsets program, including a **new forestry protocol**.
 - Not reoffering unsold 2012 and 2013 CO2 allowances.
 - Requiring regulated entities **to acquire and hold allowances equal to at least 50 percent of their emissions** in each of the first 2 years of the 3 year compliance period, in addition to demonstrating full compliance at the end of each 3 year compliance period.
 - Commitment to identifying and evaluating potential tracking tools for emissions associated **with electricity imported into the RGGI region**, leading to a workable, practicable, and legal mechanism to address such emissions.

2016 Program Review

[Announced results](#) and updated [model rule](#) – Dec 19, 2017

Revised Regional Cap: The Participating States will specify a regional cap through 2030 which continues the downward trajectory of the existing cap. The lower regional CO2 emissions cap will align the cap more closely with current emissions trends.

- A regional cap of 75,147,784 tons of CO2 in 2021, which will decline by 2.275 million tons of CO2 per year thereafter, resulting in a total **30% reduction in the regional cap from 2020 to 2030.**
- The Participating States will **address the bank of allowances** held by market participants with a third adjustment for banked allowances. The third adjustment will be made over a 5-year period (2021-2025) based upon the size of the bank at the end of 2020.

CCR: The Participating States will modify the size and the price triggers for the CCR. The CCR is a reserved quantity of allowances, in addition to the cap, that would only be available if defined allowance price triggers are exceeded.

- Beginning in 2021, allowances provided within the **CCR will be equal to 10% of the regional cap.**
- The CCR **trigger price will be \$13.00 in 2021, and rise at 7% per year**, ensuring that the CCR will only trigger if emission reduction costs are higher than projected.

ECR: The Participating States will establish an emissions containment reserve (ECR), which is a quantity of allowances that will be withheld from circulation to secure additional emission reductions if prices fall below established trigger prices.

- The states implementing the **ECR will withhold up to 10% of the allowances in their base budgets per year.** At this time, Maine and New Hampshire do not intend to implement an ECR. Allowances withheld in this way will not be reoffered for sale.
- The ECR trigger price will be \$6.00 in 2021, and rise at 7% per year, ensuring that the ECR will only trigger if emission reduction costs are lower than projected.

Offsets: The Participating States will **eliminate two offset categories**, reduction in emissions of sulfur hexafluoride (SF6) in the electric power sector and end-use energy efficiency in the building sector, and update and retain three categories that some States may continue to implement. Any awarded offset allowances will remain fully fungible across the states.

Minimum Reserve Price: The Model Rule retains language to increase the minimum reserve price by 2.5 percent each year.

2016 Program Review - Annual CO2 Allowance Base Budgets													
State	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CT	5,324,434	5,191,324	5,061,540	4,860,813	4,713,516	4,566,218	4,418,921	4,271,624	4,124,326	3,977,029	3,829,731	3,682,434	3,535,137
DE	3,763,576	3,613,361	3,523,027	3,383,313	3,280,789	3,178,264	3,075,739	2,973,215	2,870,690	2,768,165	2,665,641	2,563,116	2,460,591
ME	2,961,611	2,887,571	2,815,382	2,733,450	2,651,519	2,569,587	2,487,656	2,405,725	2,323,794	2,241,862	2,159,931	2,078,000	1,996,069
MD	18,671,044	17,931,922	17,483,623	16,790,271	16,281,475	15,772,679	15,263,882	14,755,086	14,246,290	13,737,494	13,228,698	12,719,902	12,211,106
MA	13,083,598	12,756,508	12,437,596	11,944,355	11,582,404	11,220,454	10,858,504	10,496,554	10,134,604	9,772,654	9,410,704	9,048,753	8,686,803
NH	4,291,624	4,184,333	4,079,725	3,960,999	3,842,274	3,723,549	3,604,823	3,486,098	3,367,373	3,248,648	3,129,922	3,011,197	2,892,472
NY	31,827,636	31,031,945	30,256,146	29,056,270	28,175,777	27,295,284	26,414,791	25,534,298	24,653,805	23,773,312	22,892,819	22,012,326	21,131,833
RI	1,701,806	2,005,354	1,955,221	1,877,683	1,820,783	1,763,884	1,706,986	1,650,085	1,593,186	1,536,286	1,479,387	1,422,488	1,365,588
VT	610,269	577,390	562,955	540,630	524,247	507,865	491,482	475,099	458,716	442,334	425,951	409,568	393,185
Regional CAP	82,235,598	80,179,708	78,175,215	75,147,784	72,872,784	70,597,784	68,322,784	66,047,784	63,772,784	61,497,784	59,222,784	56,947,784	54,672,784

Table 3. Annual CCR Budgets													
State	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CT	647,461	647,461	647,461	486,081	471,351	456,621	441,892	427,162	412,432	397,702	382,973	368,243	353,513
DE	457,658	457,658	457,658	338,331	328,078	317,826	307,573	297,321	287,069	276,816	266,564	256,311	246,059
ME	360,137	360,137	360,137	273,345	265,151	256,958	248,765	240,572	232,379	224,186	215,993	207,800	199,606
MD	2,270,433	2,270,433	2,270,433	1,679,027	1,628,147	1,577,267	1,526,388	1,475,508	1,424,629	1,373,749	1,322,869	1,271,990	1,221,110
MA	1,613,968	1,613,968	1,613,968	1,194,435	1,158,240	1,122,045	1,085,850	1,049,655	1,013,460	977,265	941,070	904,875	868,680
NH	521,869	521,869	521,869	396,099	384,227	372,354	360,482	348,609	336,737	324,864	312,992	301,119	289,247
NY	3,893,277	3,893,277	3,893,277	2,905,627	2,817,577	2,729,528	2,641,479	2,553,429	2,465,380	2,377,331	2,289,281	2,201,232	2,113,183
RI	160,987	160,987	160,987	187,770	182,083	176,393	170,701	165,013	159,321	153,632	147,941	142,252	136,562
VT	74,210	74,210	74,210	54,063	52,424	50,786	49,148	47,509	45,871	44,233	42,595	40,956	39,318
Totals	10,000,000	10,000,000	10,000,000	7,514,778	7,287,278	7,059,778	6,832,278	6,604,778	6,377,278	6,149,778	5,922,278	5,694,778	5,467,278
Table 4. Annual ECR Budgets													
State				2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CT				486,081	471,352	456,622	441,892	427,162	412,433	397,703	382,973	368,243	353,514
DE				338,331	328,079	317,826	307,574	297,322	287,069	276,817	266,564	256,312	246,059
ME													
MD				1,679,027	1,628,148	1,577,268	1,526,388	1,475,509	1,424,629	1,373,749	1,322,870	1,271,990	1,221,111
MA				1,194,436	1,158,240	1,122,045	1,085,850	1,049,655	1,013,460	977,265	941,070	904,875	868,680
NH													
NY				2,905,627	2,817,578	2,729,528	2,641,479	2,553,430	2,465,381	2,377,331	2,289,282	2,201,233	2,113,183
RI				187,768	182,078	176,388	170,699	165,009	159,319	153,629	147,939	142,249	136,559
VT				54,063	52,425	50,787	49,148	47,510	45,872	44,233	42,595	40,957	39,319
Totals				6,845,333	6,637,900	6,430,464	6,223,030	6,015,597	5,808,163	5,600,727	5,393,293	5,185,859	4,978,425

DNREC's Regulatory Timeline

- Start Action Notice approved Feb. 15, 2018
- Workgroup meetings – March 21st (canceled due to snow) and April 17th
 - Draft Regulation reviewed and edited
 - Website updated
<http://www.dnrec.delaware.gov/Air/Pages/RegionalGreenhouseGasInitiative.aspx>
- Public Workshop – TBD May xx, 2018
- Public Hearing – tentatively scheduled August 29, 2018

Regulation 1147 – CO2 Budget Trading Program

- Section 1 – General Provisions
- Section 2 – CO2 Authorized Account Representatives
- Section 3 – Permits
- Section 4 – Compliance Certification
- Section 5 – CO2 Allowance Allocations
- Section 6 – CO2 Allowance Tracking System
- Section 7 – CO2 Allowance Transfers
- Section 8 – Monitoring & Reporting
- Section 9 – Auction of CO2 CCR and ECR Allowances
- Section 10 – Offsets
- Section 11 – CO2 Emission Auction

Proposed Amendments to...7 sections

- Section 1 – General Provisions
- Section 2 – CO2 Authorized Account Representatives
- Section 5 – CO2 Allowance Allocations
- Section 6 – CO2 Allowance Tracking System
- Section 8 – Monitoring & Reporting
- Section 9 – Auction of CO2 CCR and ECR Allowances
- Section 10 – Offsets

Section 1 – General Provisions

- Section 1.3 Definitions
 - Administrative edits –
 - Delete references to CAIR and replace with CSAPR
 - Delete definitions associated with Offset Categories – SF6 and Building Energy Efficiency
 - New Definitions
 - CO2 Cost containment reserve trigger price
 - CO2 emissions containment reserve allowance
 - CO2 emissions containment reserve trigger price
 - CSAPR definitions
 - Net electric output
 - Third adjustment for banked allowances
 - Amended Definitions
 - Receive or receipt of

Section 2 – CO2 Authorized Account Representative

- Section 2.1 Authorization and responsibilities of the CO2 authorized account representative
 - Changed sequence of “Alternate CO2 authorized account representative” to “CO2 authorized alternate account representative”
 - Added language to 2.1.2
 - The CO₂ authorized account representative of the CO₂ budget source shall be selected by an agreement binding on the owners and operators of the source and all CO₂ budget units at the source- and must act in accordance with the certificate of representation under 2.4 of this regulation.
- Section 2.6.6 – 2.6.9
 - Added language for delegation

Section 5 – CO2 Allowance Allocations

- Section 5.1 – Delaware Base Budget
 - Deleted 2014-2017
 - Amended 2018 -2020
 - Added 2021- 2031
- Section 5.3
 - Amended CCR language through 2020
 - Added CCR allowance allocation 2021-2030
 - Added ECR withholding language
 - Amended language
 - First Control period adjustment
 - Second Control period adjustment
 - Added language
 - Third Control period adjustment

Section 6 – CO2 Allowance Tracking System

- Changed sequence of “Alternate CO2 authorized account representative” to “CO2 authorized alternate account representative”
- Minor edits and corrections
 - Section 6.4
 - Section 6.8 – Closing general accounts

Section 8 – Monitoring & Reporting

- Changed references to CSAPR trading programs
- Minor edit in 8.8.1 – Additional requirements to provide output data

Section 9 – Auction of CO₂ CCR and ECR allowances

- Section 9.2 – General Requirements
 - Added language to be included in the auction notice
 - Added language for the withholding of ECR allowances from an auction

9.2.4 The Department or its agent shall follow these rules for the withholding of CO₂ ECR allowances from an auction:

9.2.4.1 CO₂ ECR allowances shall only be withheld from an auction if the demand for allowances would result in an auction clearing price that is less than the ECR trigger price prior to the withholding from the auction of any ECR allowances.

9.2.4.2 If the condition in 9.2.4.1 of this regulation is met at an auction, then the maximum number of CO₂ ECR allowances that may be withheld from that auction will be equal to the quantity shown in 5.3.5.1 of this regulation minus the total quantity of CO₂ ECR allowances that have been withheld from any prior auction in that calendar year. Any CO₂ ECR allowances withheld from an auction will be transferred into the State of Delaware ECR Account.

Section 10 – Offsets

- Minor editorial edits and corrections
- Section 10.5 CO2 emission offset project standards
 - Deleted Section 10.5.2 - Reduction in emissions of sulfur hexafluoride (SF6) and
 - Deleted Section 10.5.4 – Reduction in emissions....due to end use energy efficiency

Section 11 – CO₂ Allowance Auctions

- Minor suggested edit 11.13 Publication of Results

Within 10 days of the Transfer of CO₂ Allowances provided for under 11.10 of this regulation, the Department or its agent shall publish on its website the auction clearing price and the total amount of Allowances sold in such Auction.

DISCUSSION & QUESTIONS?

Next Meeting scheduled

To be determined