Pennsylvania’s Proposed CO$_2$ Budget Trading Program

Citizens Advisory Council
February 18, 2020

Tom Wolf, Governor
Patrick McDonnell, Secretary
Executive Order No. 2019-1
- 26% reduction in net GHG emissions by 2025 (from 2005 levels)
- 80% reduction in net GHG emissions by 2050 (from 2005 levels)

Executive Order No. 2019-7
- Directs DEP to develop a draft regulation for delivery to EQB
- Requires Interaction w/ the Regional Transmission Organization (PJM)

CO₂ Budget Regulation
- Establishes framework for RGGI participation
- Adapts RGGI Model Rule to fit PA specific energy landscape
Regional Greenhouse Gas Initiative

- 10 Independent State Programs
  - PA and VA not yet participating
- Cap on CO\textsubscript{2} emissions from power sector
- Most allowances sold at auction
- Auction proceeds fund air pollution reduction programs
- Markets are Linked through:
  - Consistent Regulations
  - Reciprocal Acceptance of Allowances
- No central RGGI Authority
  - States oversee program jointly
    - DEP & PUC on Executive Board
    - RGGI Inc. does most administrative and technical functions
Cap and Trade vs. Cap and Invest (RGGI)

**Cap and Trade**

- Require sources to turn in allowances for CO₂ emissions.
- Only issue a specific number of allowances.
- Allow sources to trade allowances.
- Invest proceeds from allowance auctions into air pollution reduction programs.

**Cap and Invest**
CHAPTER 145. INTERSTATE POLLUTION TRANSPORT REDUCTION

Subchapter E. CO₂ BUDGET TRADING PROGRAM

GENERAL PROVISIONS

Sec.  
145.301. Purpose.  
145.302. Definitions.  
145.303. Measurements, abbreviations and acronyms.  
145.304. Applicability.  
145.305. Limited exemption for CO₂ budget units with electrical output to the electric grid restricted by permit conditions.  
145.306. Standard requirements.  

(Editor's Note: Sections 145.301—145.414 are new and printed in regular type to enhance readability.)

§ 145.301. Purpose.

This subchapter establishes the Pennsylvania component of the CO₂ Budget Trading Program, which is designed to reduce anthropogenic emissions of CO₂, a greenhouse gas, from CO₂ budget sources in a manner that is protective of public health, welfare and the environment and is economically efficient.
Applicability & Covered Sources

**What does the CO2 Budget Trading Program Establish?**
Creates a cap-and-invest program for CO$_2$ emissions from the power sector.

**What are the Affected Sources §145.304 ?**
Fossil fuel-fired Electric Generating Units (power plants)
- 25 MW or more nameplate capacity AND
- Sends >10% of gross generation to the grid.

**Limited Exemptions for CHP §145.305**
- An otherwise qualifying EGU (25 MW+) that supplies ≤ 10% of its gross generation to any entity.
- An otherwise qualifying co-generation EGU (25 MW+) that supplies ≤ 15% of its annual total useful energy to any entity- not including energy sent to an interconnected manufacturing facility.

Addition to the Model Rule

Pennsylvania

48 Power Plants (125 units)
9 Waste Coal Plants
1 Industrial Plant
One allowance is created for each ton of emissions allowed under Pennsylvania’s CO₂ emissions budget.
Distribution of Allowances

Emissions Budget

Allowance distributed into auction marketplace
Set Asides
## State Allowance Set-Asides

<table>
<thead>
<tr>
<th>State</th>
<th>Set-Aside Programs/Accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>n/a</td>
</tr>
<tr>
<td>Maine</td>
<td>Voluntary Renewable Energy, Integrated Manufacturing Facility Pre-retirement</td>
</tr>
<tr>
<td>Maryland</td>
<td>Limited Industrial Exemption, Long-term Contract, Clean Generation</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Greenhouse Gas Credit Exchange, Voluntary Renewable Energy</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Voluntary Renewable Energy Market, Emergency</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Fixed Price Contract, Co-generation</td>
</tr>
<tr>
<td><strong>Pennsylvania</strong></td>
<td><strong>Waste Coal</strong></td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Voluntary Renewable Energy Market</td>
</tr>
<tr>
<td>Vermont</td>
<td>Voluntary Renewable Energy</td>
</tr>
</tbody>
</table>
Benefits of Waste Coal Generation

**Environmental, Health and Economic Benefits**

- Removes significant health, environmental and safety hazards
- Improved Water Quality (ground and surface waters)
- Improved Air Quality (elimination of airborne silt, burning piles)
- Creates lands capable of supporting natural habitats
- Creates “new” parcels suitable for redevelopment

**Accomplishments Since 1988**

- 160.7 million tons of waste coal used for co-generation
- 200 million tons of coal ash beneficially used to reclaim mine sites
- 3,700 acres reclaimed - now available for reuse and redevelopment
- 71 million cubic feet of waste coal removed
A general account established by the Department for the allocation of CO\textsubscript{2} allowances for retirement in an amount sufficient to provide allowances equal to the legacy emissions from all waste coal-fired units pursuant to § 145.342(i).

Set-Aside Eligibility Criteria for Qualifying Facilities

1. Units must be located in PA and be subject to the CO\textsubscript{2} Budget Trading Program.

2. Must meet definition of Waste Coal-Fired Unit per §145.302.
   a) Combustion of waste coal, or if in combination with any other fuel, waste coal comprises 75% or greater of the annual heat input on a Btu basis.*
   b) Facilities must be using at a minimum:
      1. A Circulating Fluidized Bed (CFB) boiler,
      2. Limestone injection system, and
      3. Fabric filter particulate removal system.

3. Waste coal is defined as coal disposed or abandoned prior to July 31, 1982 or disposed of thereafter in a permitted coal refuse disposal site.

*Consistent with eligibility criteria for the PA Coal Refuse Energy and Reclamation Tax Credit Program (Act 84 of 2016).
Calculating the Waste Coal Set Aside

A general account established by the Department for the allocation of CO₂ allowances for retirement in an amount sufficient to provide allowances equal to the legacy emissions from all waste coal-fired units pursuant to § 145.342(i).

Defining Legacy Emissions

1. The amount of CO₂ emissions in tons equal to the highest calendar year of emissions from the 3-year period beginning January 1, 2017 through December 31, 2019 as determined by the Department. §145.302
   a) 2017- 7.2 million tons
   b) 2018- 7.9 million tons
   c) 2019- 6.1 million tons*

2. The Department has determined that legacy emissions are equal to 7,900,000 tons of CO₂ emissions. §145.342

3. Includes set-aside adjustment mechanism and termination provision.

*Fourth quarter 2019 CO₂ emissions extrapolated based on previous three quarters.
Affected Sources must attain the number of allowances – equal to the amount of \( \text{CO}_2 \) they emit –
The Department will determine whether to participate in multistate CO₂ allowance auctions in coordination with other participating states or to conduct Pennsylvania-run auctions to sell CO₂ allowances allocated to the air pollution reduction account.

Multi-state Auction (RGGI)  

Pennsylvania – run Auction

Addition to the Model Rule
A RGGI CO$_2$ offset allowance represents a project-based greenhouse gas emission reduction outside of the capped electric power generation sector.

- Project-based.
- Greenhouse gas emission reduction outside of power generation sector.
- Comparable offsets across region.
- In addition to, not in place of a regulatory requirement.

Project Categories

1. Landfill Methane
2. Reforestation, Improved Forest Management, and Avoided Conversion
3. Agricultural Methane

Pennsylvania is proposing a fourth offset category of Abandoned Well Plugging.
Next Steps

- Continued engagement with the General Assembly, key stakeholders, residents and businesses of Pennsylvania.
- Complete Power Sector Modeling (IPM) & Identify Allowance Budget.
- April 16, 2020- present proposed draft Annex to the Air Quality Technical Advisory Committee.
- July 21, 2020- present proposed draft Annex to the Environmental Quality Board.
- Fall 2020- public comment period and hearings.
Regulatory Timeline

- Governor Wolf signs EO: Oct 2019
- Draft Regulation Presented to EQB: Spring 2020
- Draft Regulation Presented to Advisory Committees: July 2020
- Opens for Public Comment: Fall 2020
- Final Rule Presented to Advisory Committees: Spring 2021
- Final Regulation Presented to EQB: Fall 2021
- Regulation Effective: Fall 2021