



Policy Office

# Pennsylvania's Proposed CO2 Budget Trading Program

**Air Quality Technical Advisory Committee  
February 13, 2020**

Tom Wolf, Governor

Patrick McDonnell, Secretary

# Implementation Timeline



## 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)

RULE  
WRITING  
PROCESS



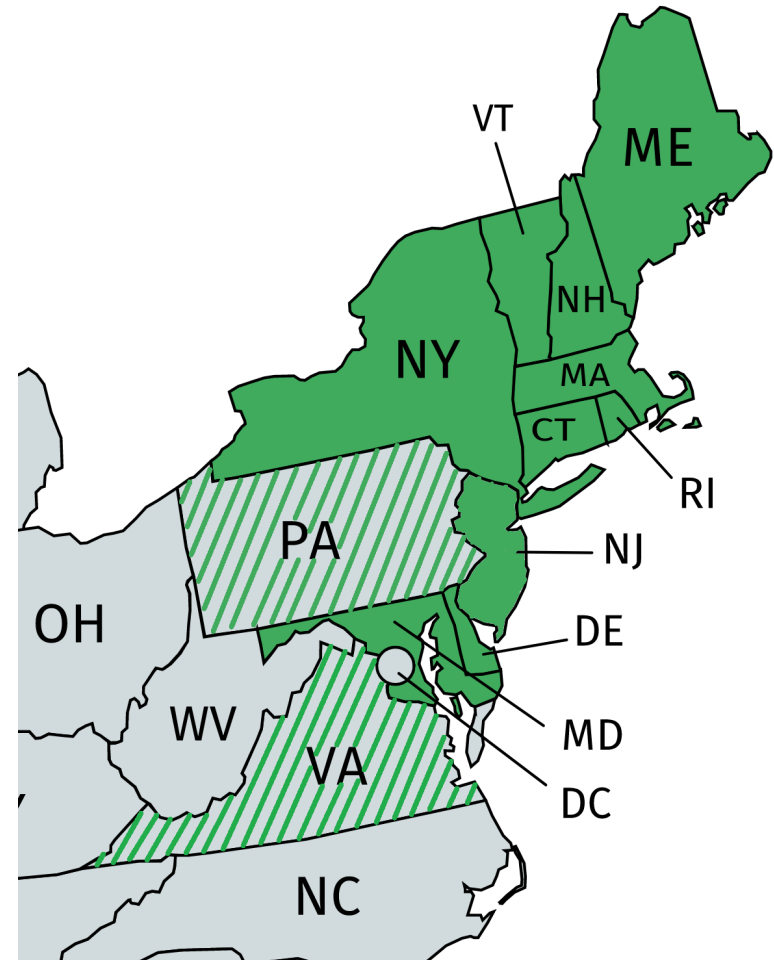
## CO<sub>2</sub> Budget Regulation

- Establishes framework for RGGI participation
- Adapts RGGI Model Rule to fit PA specific energy landscape

RGGI MODEL RULE

# Regional Greenhouse Gas Initiative

- 10 Independent State Programs
  - PA and VA not yet participating
- Cap on CO<sub>2</sub> 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)

Require sources to turn in allowances for CO<sub>2</sub> 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 Trade

Cap and Invest

# Draft Proposed Annex (Preliminary)

## CHAPTER 145. INTERSTATE POLLUTION TRANSPORT REDUCTION

### Subchapter E. CO<sub>2</sub> 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 CO <sub>2</sub> budget units with electrical output to the electric grid restricted by permit conditions. |
| 145.306. | Standard requirements.  |
| 145.307. | Computation of time.  |

*(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 CO<sub>2</sub> Budget Trading Program, which is designed to reduce anthropogenic emissions of CO<sub>2</sub>, a greenhouse gas, from CO<sub>2</sub> 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 CO<sub>2</sub> Budget Trading Program Establish?

Creates a cap-and-invest program for CO<sub>2</sub> emissions from the power sector.

## What are the Affected Sources §145.304 ?

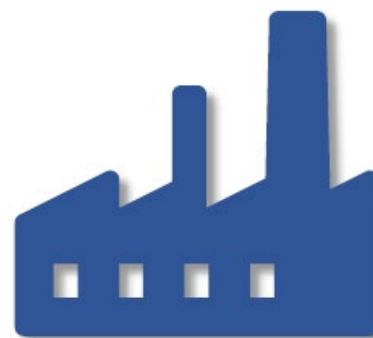
Fossil fuel-fired Electric Generating Units (power plants)

- 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

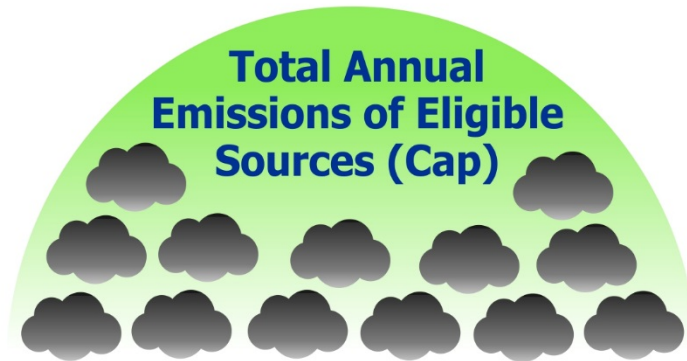


48 Power Plants (125 units)  
9 Waste Coal Plants  
1 Industrial Plant

Pennsylvania

# Establishing Allowances

One allowance is created for each ton of emissions allowed under Pennsylvania's CO<sub>2</sub> emissions cap.



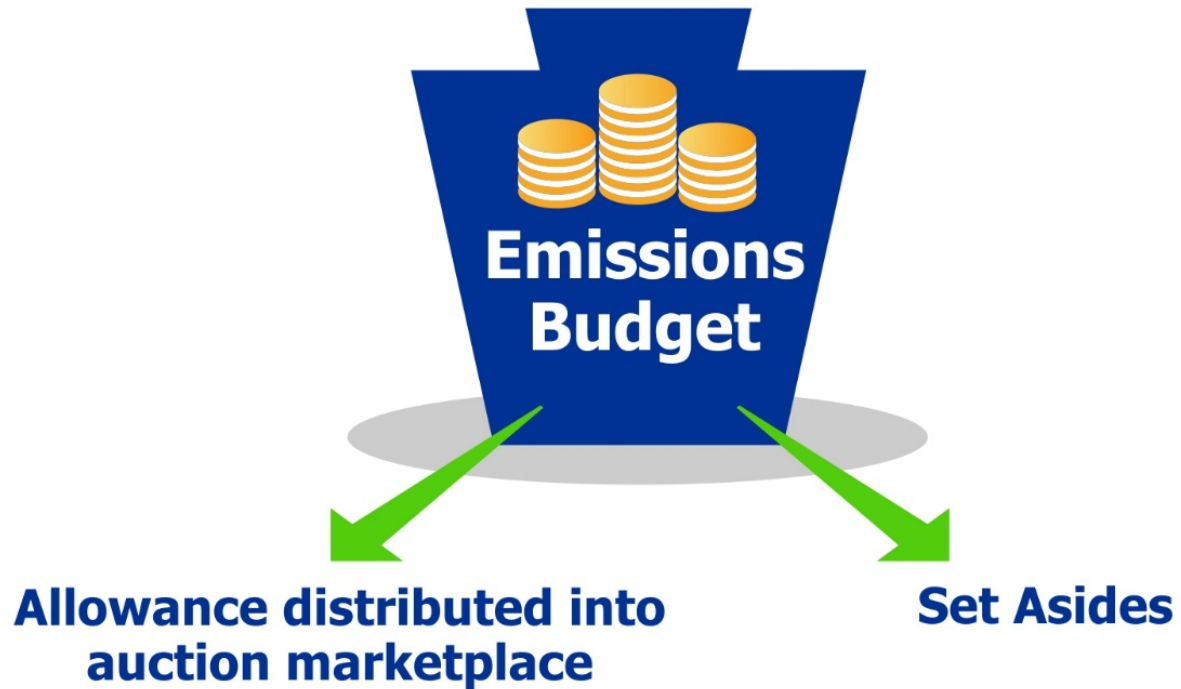
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 = One ton of CO<sub>2</sub> Emissions

 = Emissions Allowance

# Distribution of Allowances





# State Allowance Set-Asides

| State               | Set-Aside Programs/Accounts  |
|---------------------|--|
| Connecticut         | Voluntary Clean Energy, Customer-side Distributed Resources<br>Combined Heat and Power Useful Thermal Energy |
| Delaware            | n/a  |
| Maine               | Voluntary Renewable Energy<br>Integrated Manufacturing Facility Pre-retirement                               |
| Maryland            | Limited Industrial Exemption, Long-term Contract<br>Clean Generation   |
| Massachusetts       | Greenhouse Gas Credit Exchange, Voluntary Renewable Energy   |
| New Hampshire       | Voluntary Renewable Energy Market, Emergency   |
| New Jersey          | Fixed Price Contract, Co-generation  |
| New York            | Voluntary Renewable Energy/Eligible Biomass, Long-term Contract  |
| <b>Pennsylvania</b> | <b>Waste Coal</b>  |
| Rhode Island        | Voluntary Renewable Energy Market  |
| Vermont             | Voluntary Renewable Energy   |

# 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

# Waste Coal Set-Aside Account

*A general account established by the Department for the allocation of CO<sub>2</sub> 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<sub>2</sub> 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 great 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 CO<sub>2</sub> 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).*

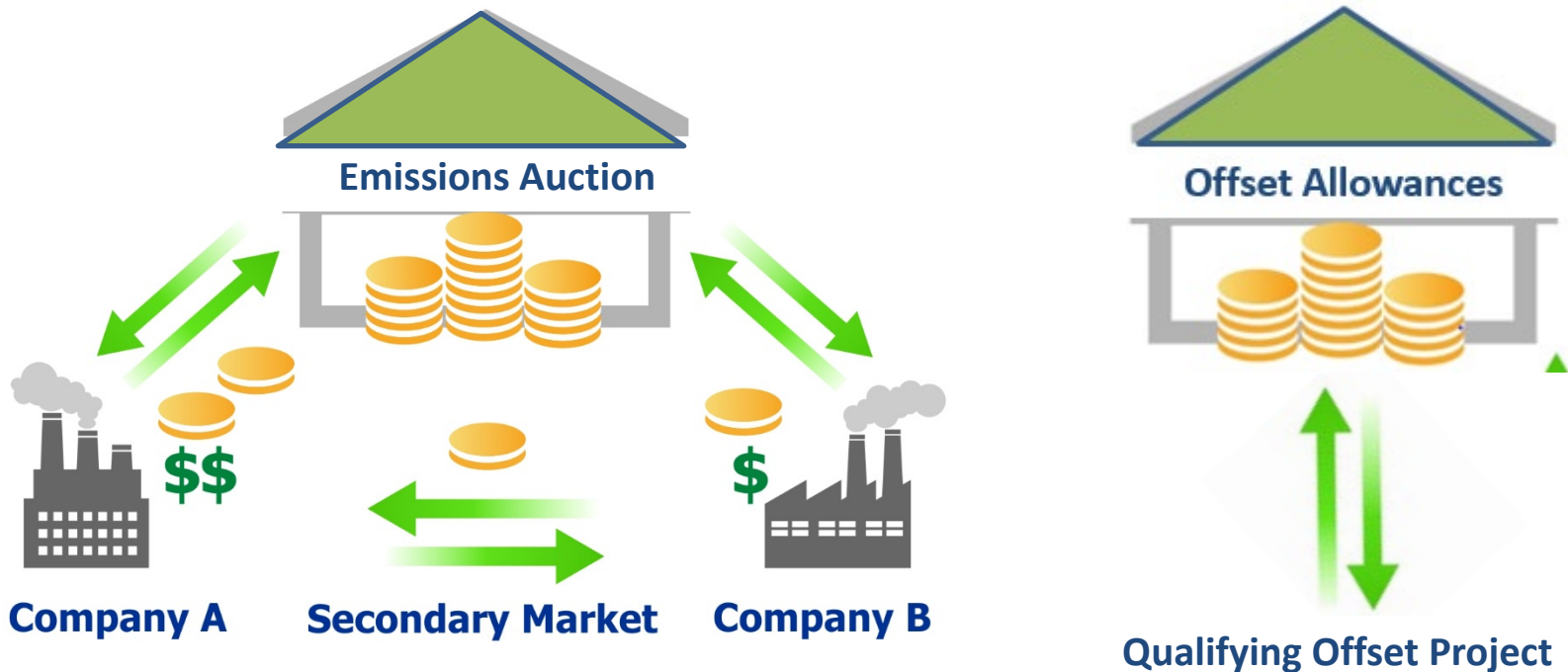
## Defining Legacy Emissions

1. The amount of CO<sub>2</sub> 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 CO<sub>2</sub> emissions. §145.342
3. Includes set-aside adjustment mechanism and sunset provision.

\*Fourth quarter 2019 CO<sub>2</sub> emissions extrapolated based on previous three quarters.

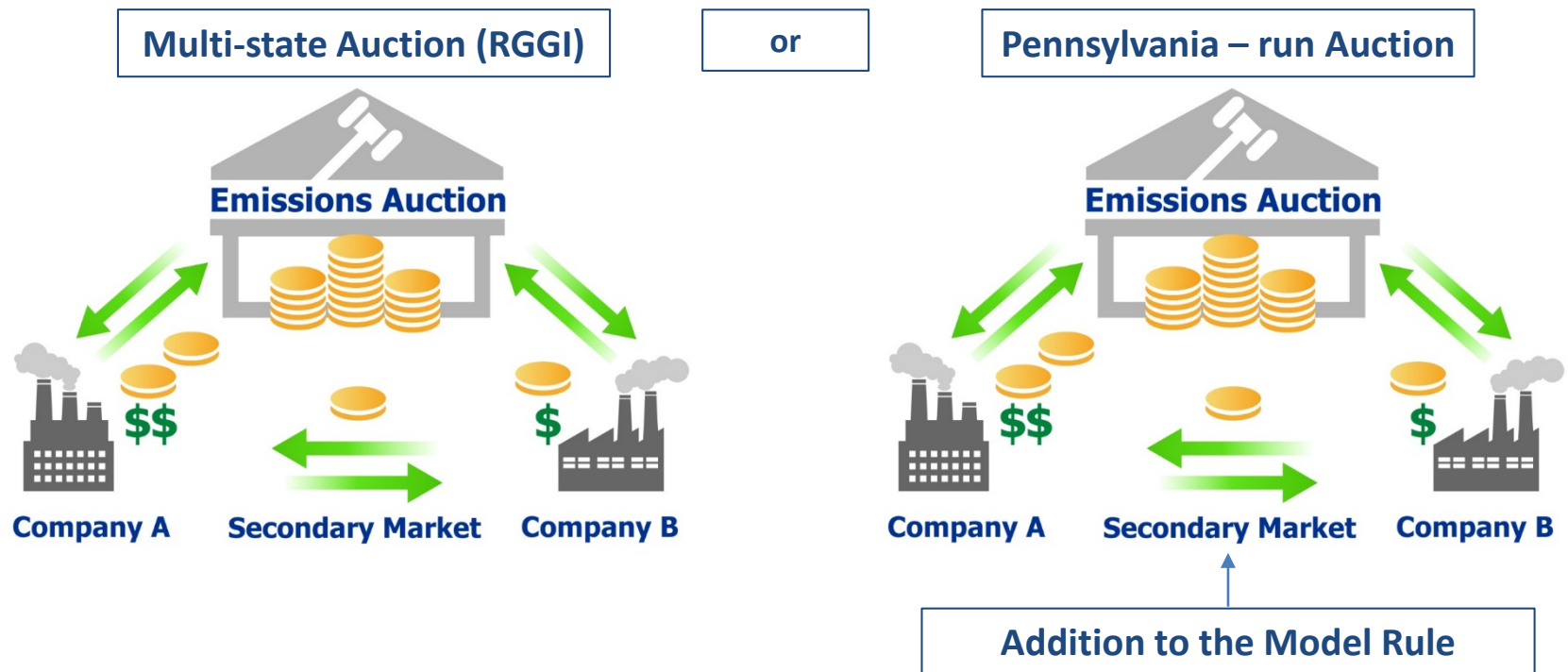
# Options for Compliance

Affected Sources must attain the number of allowances  
– equal to the amount of CO<sub>2</sub> they emit –



# Auction Platform Flexibility

*The Department will determine whether to participate in multistate CO<sub>2</sub> allowance auctions in coordination with other participating states or to conduct Pennsylvania-run auctions to sell CO<sub>2</sub> allowances allocated to the air pollution reduction account.*



# RGGI CO<sub>2</sub> Offset Allowances

*A RGGI CO<sub>2</sub> 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 Cap.
- 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





**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Policy Office

## **Hayley L. Book**

Senior Advisor on Energy and Climate  
Phone: 717-787-6107 | [hbook@pa.gov](mailto:hbook@pa.gov)

[www.dep.pa.gov](http://www.dep.pa.gov)



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION