

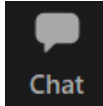

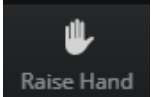


Regional Greenhouse Gas Initiative Program Review:

Public Meeting

September 26, 2023

Meeting Protocols

- This meeting is being recorded and will be shared publicly on the RGGI website.
- Participants will be muted throughout the meeting.
- For technical assistance, use the chat function  or send a message to info@rggi.org
- Use the Q&A function  to send a question to the host. Questions will be addressed during the Q&A portion of the meeting.
- During the Public Comment portion, use the raise hand function  to let the host know that you'd like to make a verbal comment (*phone participants dial *9*).
- The host will let you know when it is your turn to speak.

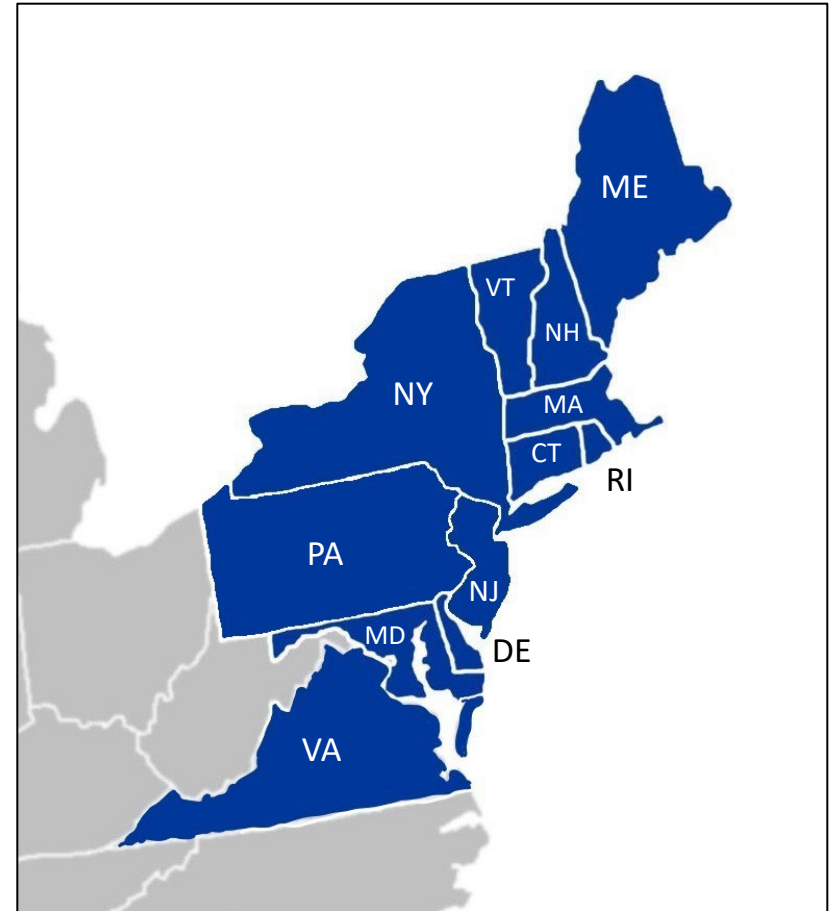
Meeting Agenda

- Welcome & Introductions
- EJ & Equity Considerations
- Program Design Elements
- Electricity Sector Analysis
- Question & Answer
- Public Comment
- Next Steps

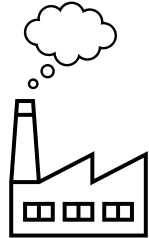
Program Review Introduction

RGGI Overview

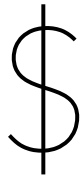
- Cooperative effort to reduce CO₂ emissions from the power sector
- Each state develops its own cap-and-invest program to cap and reduce emissions over time
- Individual programs are similar enough to allow for allowance fungibility, regional auctions, and other cooperative elements



What is Cap and Invest?



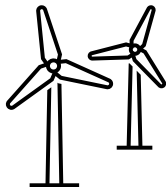
Power plants emit CO₂ and states set a **cap** on emissions.



Power plants must purchase allowances equivalent to their emissions.

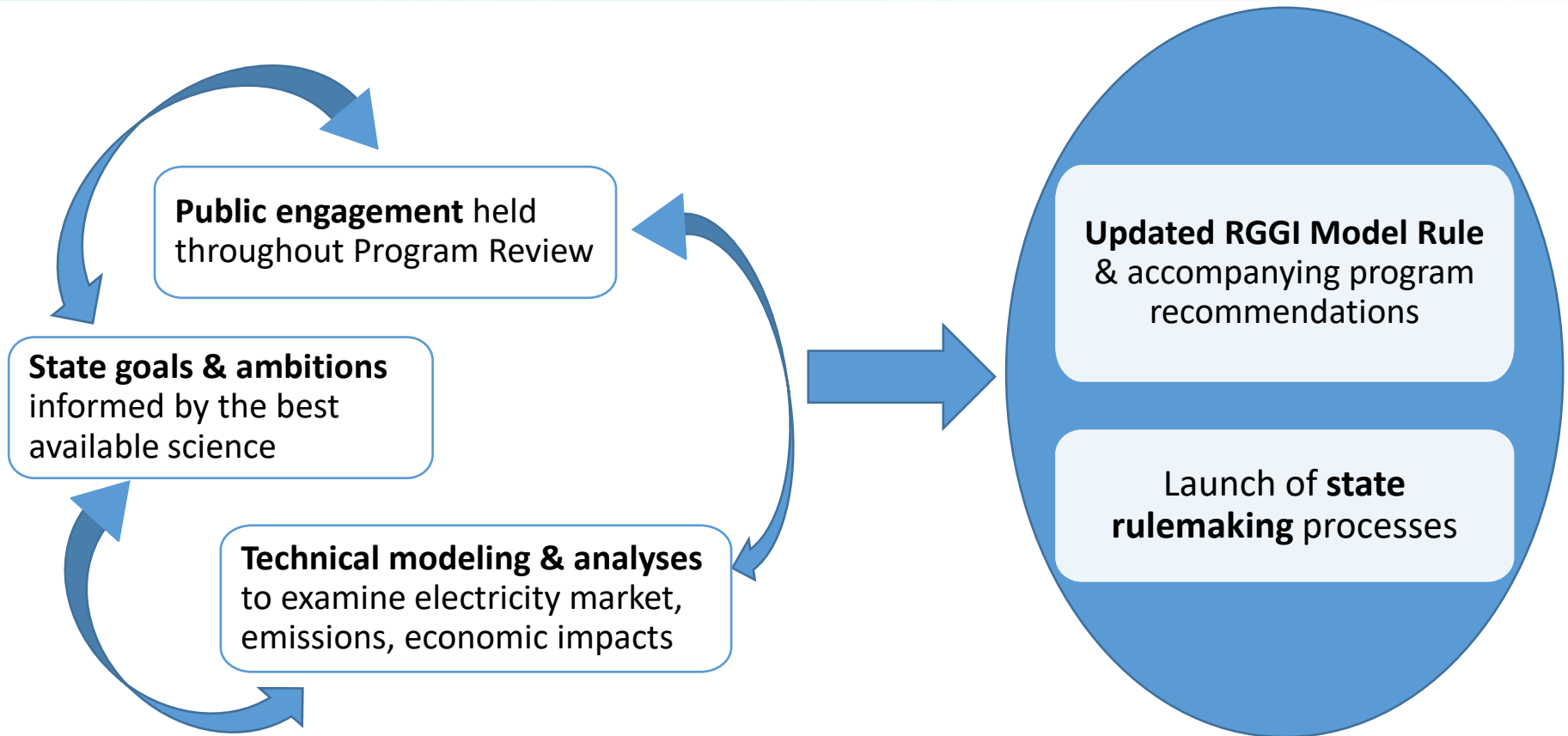


States sell those allowances at quarterly auctions.



States **reinvest** the proceeds in decarbonization and other programs to deliver benefits to their communities.

Program Review Introduction



EJ & Equity Considerations

- Ongoing review of public comments
- States share information and best practices
 - [EJ and Equity Advisory Boards of the Participating RGGI States](#)
- Local emissions data:
 - Draft RGGI Emissions Dashboard

RGGI Emissions Dashboard

- Draft Emissions Dashboard available for review and comment on the RGGI website [here](#).
 - User Guide available [here](#).
- Based on: [*New Jersey RGGI Power Plant EGU Emissions Dashboard*](#)

RGGI Emissions Dashboard

DRAFT RGGI Regional Emissions Dashboard

State
All States

Operating Status
Operating & Retired

Unit Type
All

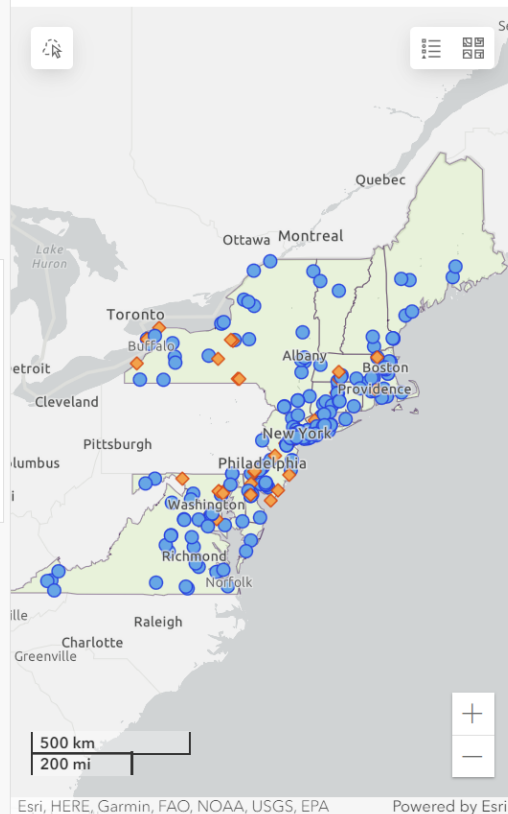
Primary Fuel Type
All

Facility Name
All

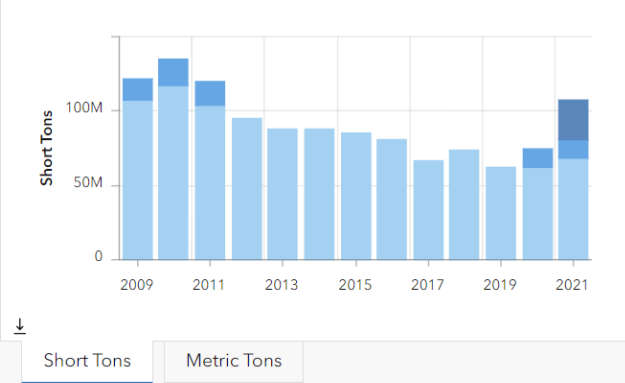
Year
2009 to 2021



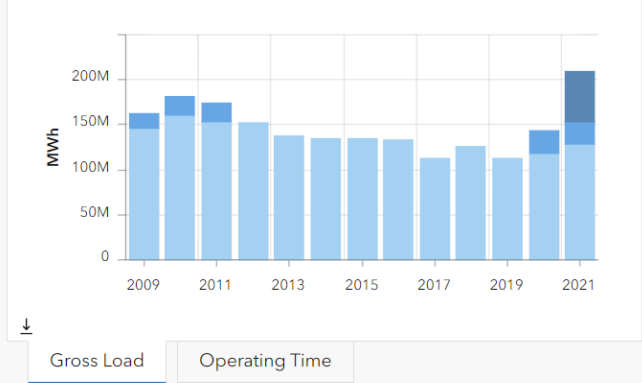
RGGI Facilities - 2021 Data



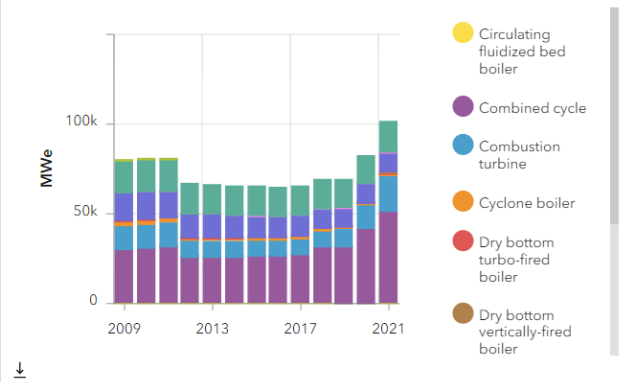
CO₂ Emissions



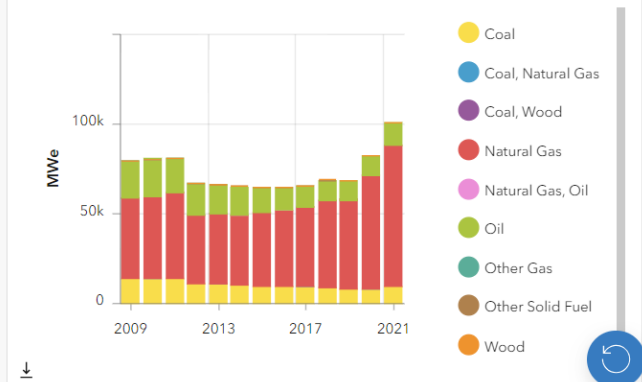
Gross Load



Unit Type and Nameplate Capacity



Fuel Type and Nameplate Capacity



RGGI Emissions Dashboard

DRAFT RGGI Regional Emissions Dashboard

State

NY

Operating Status

Operating & Retired

Unit Type

All

Primary Fuel Type

All

Facility Name

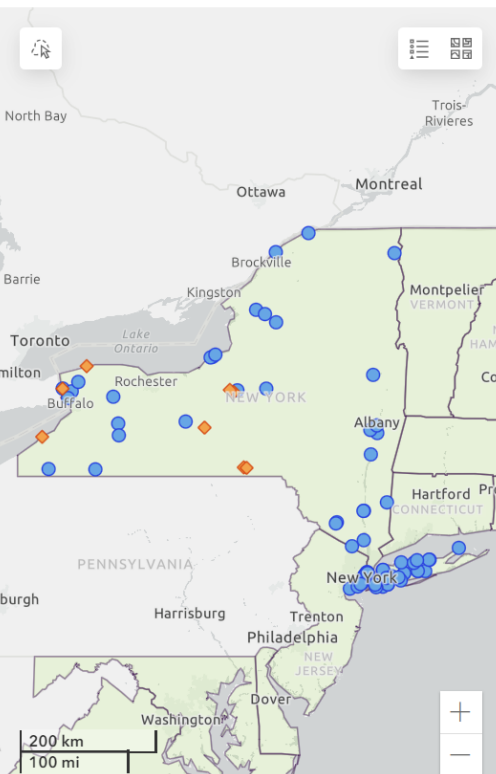
All

Year

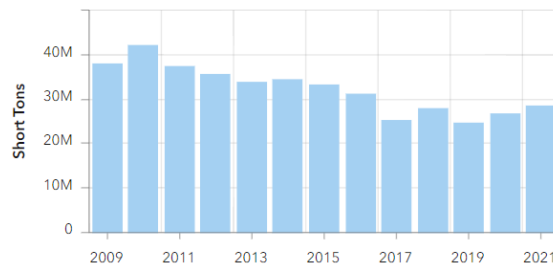
2009 to 2021



RGGI Facilities - 2021 Data



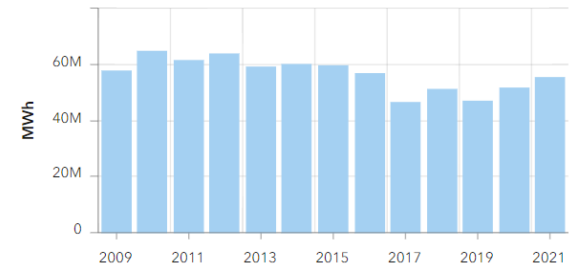
CO₂ Emissions



Short Tons

Metric Tons

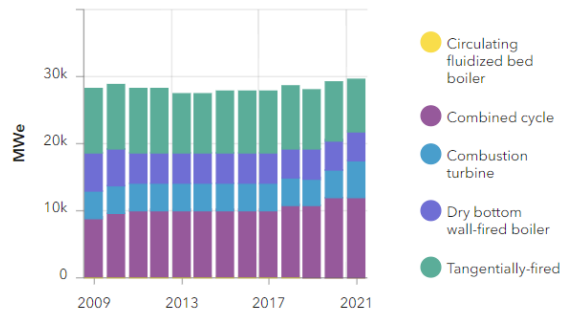
Gross Load



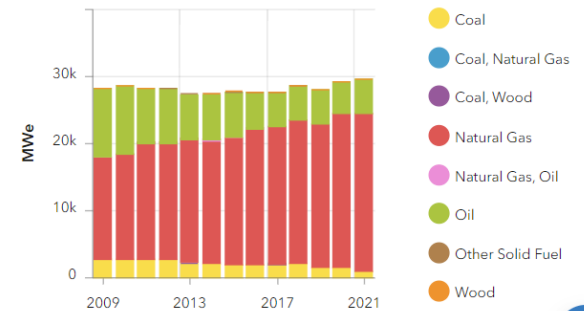
Gross Load

Operating Time

Unit Type and Nameplate Capacity



Fuel Type and Nameplate Capacity



RGGI Emissions Dashboard

DRAFT RGGI Regional Emissions Dashboard

State
All States

Operating Status
Retired

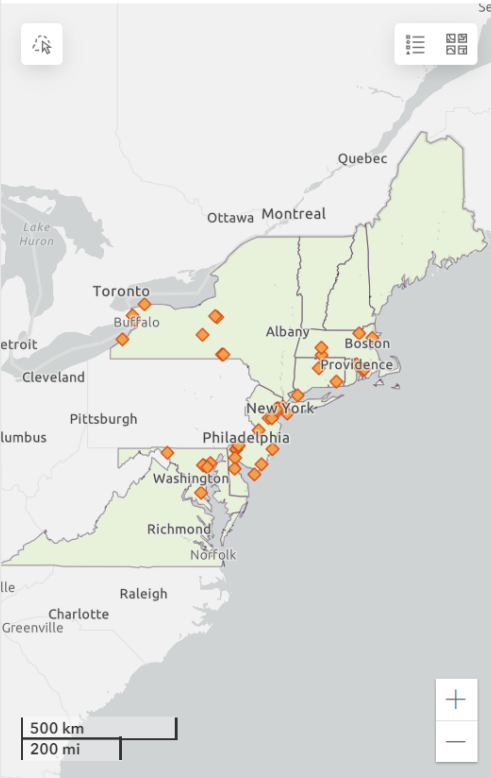
Unit Type
All

Primary Fuel Type
All

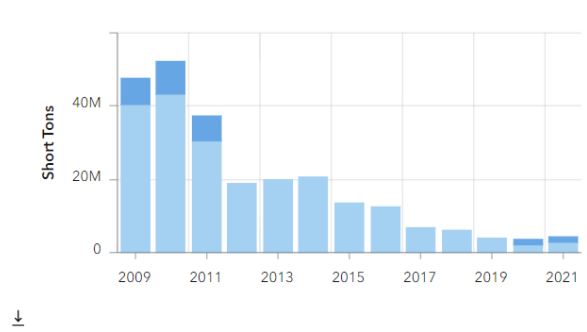
Facility Name
All

Year
2009 to 2021

RGGI Facilities - 2021 Data

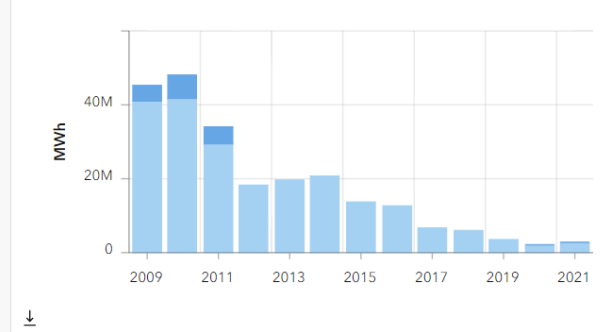


CO₂ Emissions



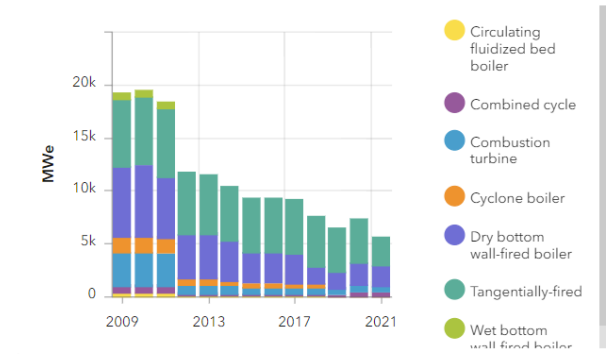
Short Tons | Metric Tons

Gross Load

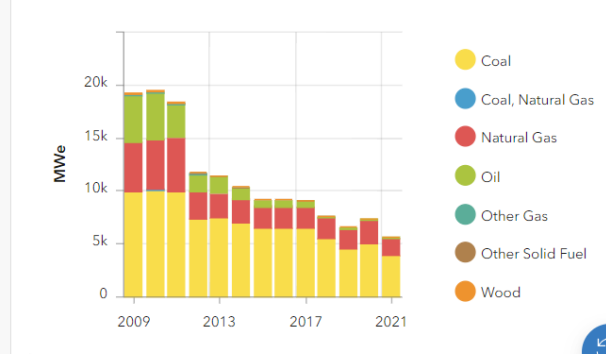


Gross Load | Operating Time

Unit Type and Nameplate Capacity



Fuel Type and Nameplate Capacity



Esri, HERE, Garmin, FAO, NOAA, USGS, EPA Powered by Esri

RGGI Emissions Dashboard

DRAFT RGGI Regional Emissions Dashboard

State
All States

Operating Status
Operating & Retired

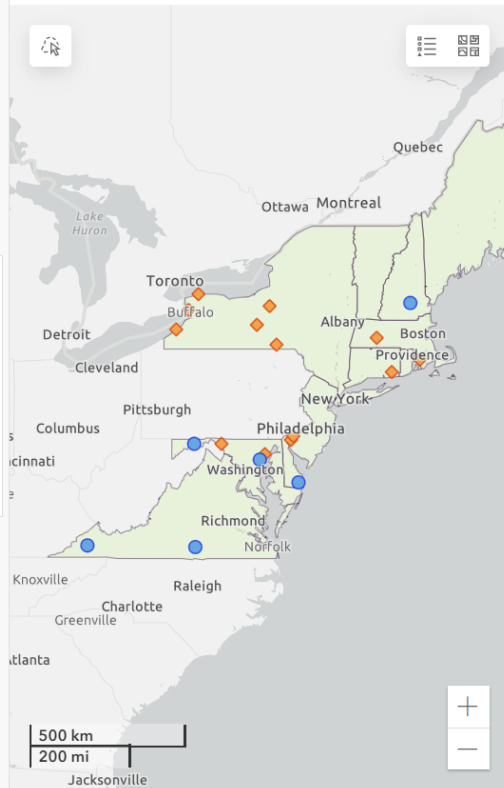
Unit Type
All

Primary Fuel Type
Coal

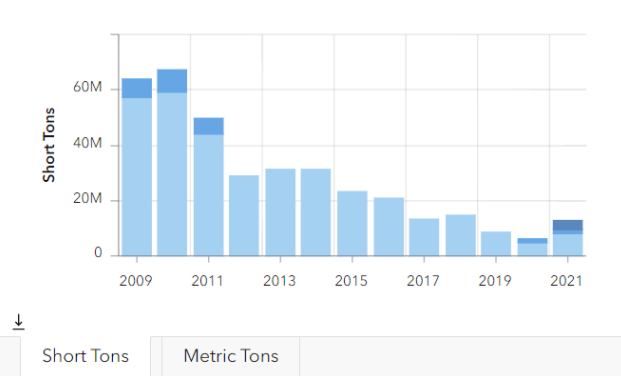
Facility Name
All

Year
2009 to 2021

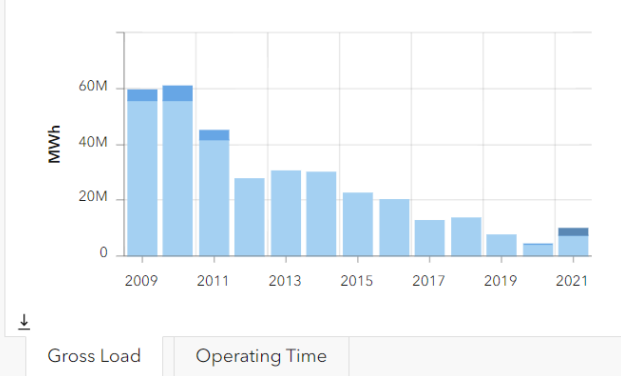
RGGI Facilities - 2021 Data



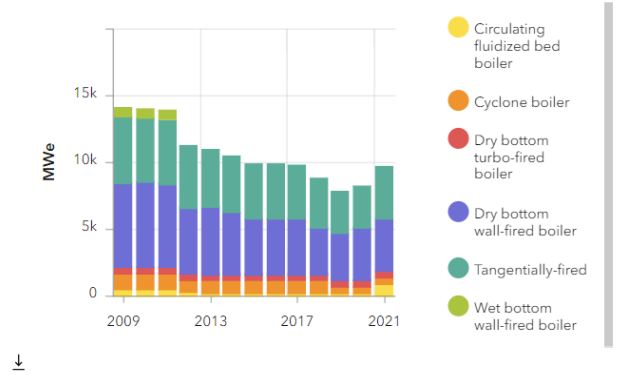
CO₂ Emissions



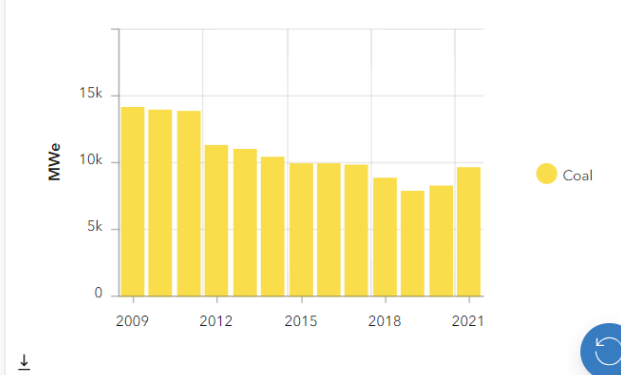
Gross Load



Unit Type and Nameplate Capacity



Fuel Type and Nameplate Capacity



RGGI Emissions Dashboard

DRAFT RGGI Regional Emissions Dashb...

State
All States

Operating Status
Operating & Ret...

Unit Type
All

Primary Fuel T.
All

Facility Name
Athens Generating Com...

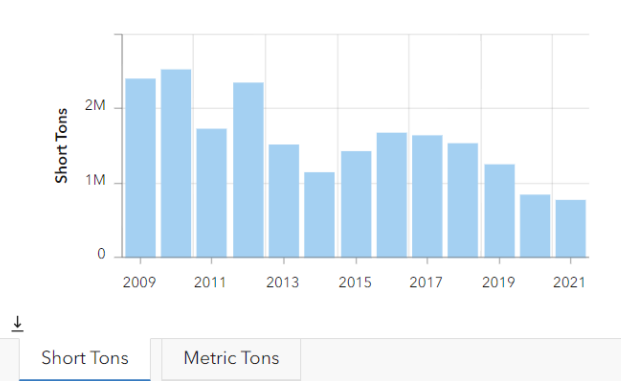
Year
2009 to 2...



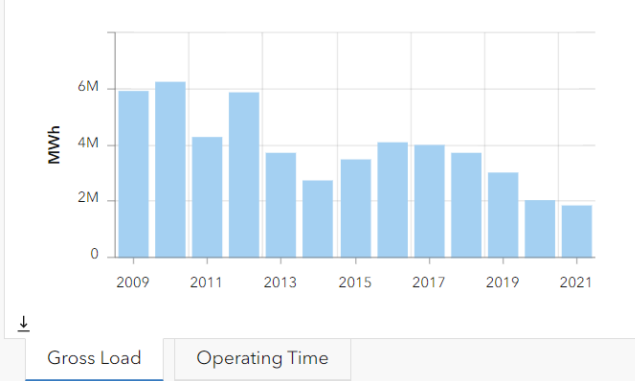
RGGI Facilities - 2021 Data



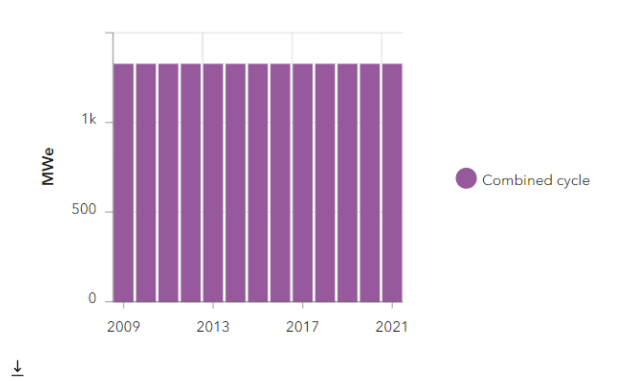
CO₂ Emissions



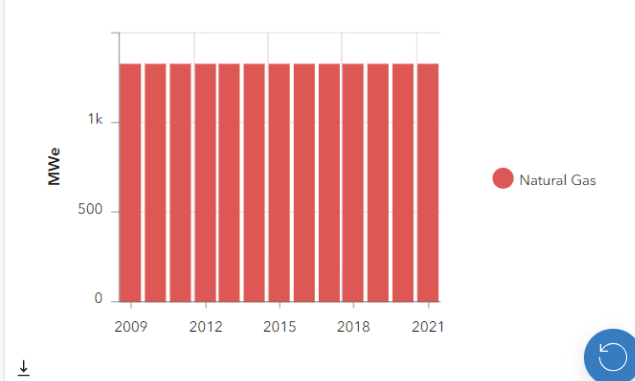
Gross Load



Unit Type and Nameplate Capacity



Fuel Type and Nameplate Capacity



RGGI Emissions Dashboard

DRAFT RGGI Regional Emissions Dashb...

State
All States

Operating Status
Operating & Ret...

Unit Type
All

Primary Fuel T...
All

Facility Name
Athens Generating Com...

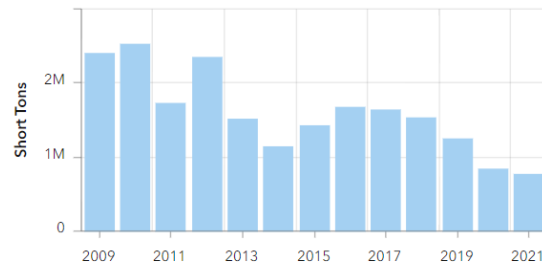
Year
2009 to 2...



RGGI Facilities - 2021 Data

State	NY
Facility Name	Athens Generating Company
Facility ID	55,405
Operating Status	Operating
Unit ID	1, 2, 3
Unit Type(s)	Combined cycle
Primary Fuel Type(s)	Natural Gas
Emissions (Short Tons)	764,976.91
Gross Load (MWh)	1,807,128.17

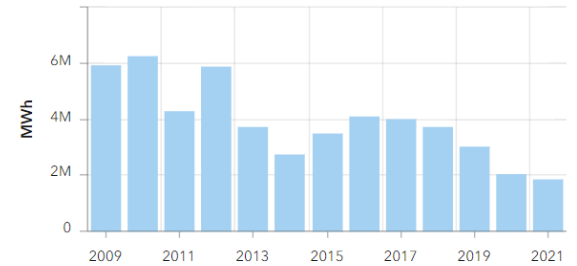
CO₂ Emissions



Short Tons

Metric Tons

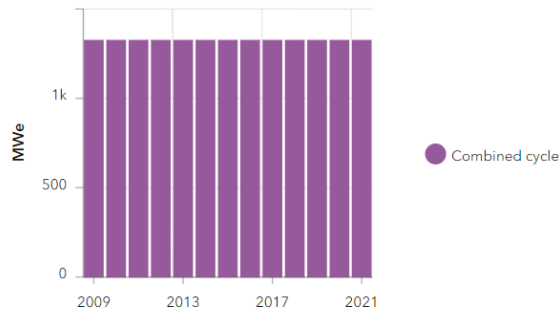
Gross Load



Gross Load

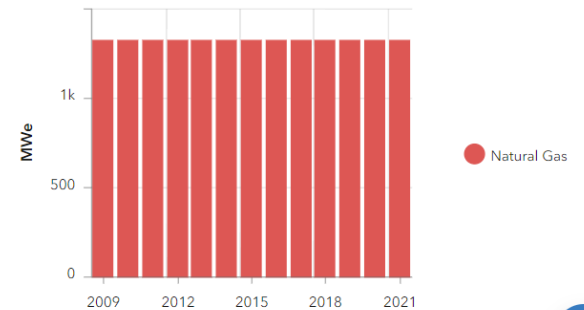
Operating Time

Unit Type and Nameplate Capacity



Combined cycle

Fuel Type and Nameplate Capacity



Natural Gas

RGGI Emissions Dashboard

DRAFT RGGI Regional Emissions Dashboard

State
All States

Operating Status
Operating & Retired

Unit Type
All

Primary Fuel Type
All

Facility Name
All

Year
2009 to 2021

About this Dashboard

This dashboard displays the operating and retired power generating facilities covered by the Regional Greenhouse Gas Initiative (RGGI). Select a facility on the map or use the toolbar at the top of the dashboard to view historic emissions, gross load, unit type and fuel type for the selected facilities.

Data for this dashboard was sourced in 2023 from the U.S. Environmental Protection Agency Clean Air Markets Program Data (CAMPD)¹ for facilities covered by the Regional Greenhouse Gas Initiative. Data represents direct CO₂ emissions from fossil-fuel-fired electric power generators with a capacity of 25 megawatts² or greater.

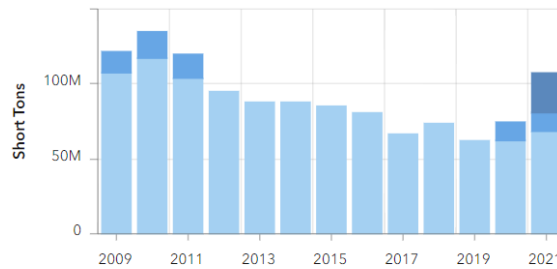
For 2009-2011 and 2020, data is included for the ten-state RGGI region, referred to as RGGI 10, which includes Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

For 2012-2019, data is included for the nine-state RGGI region, referred to as RGGI 9, which includes the RGGI 10 states except New Jersey, which did not participate in RGGI during this period.

For 2021, data is included for the eleven participating RGGI states, referred to as RGGI 11, which includes the RGGI 10 states and

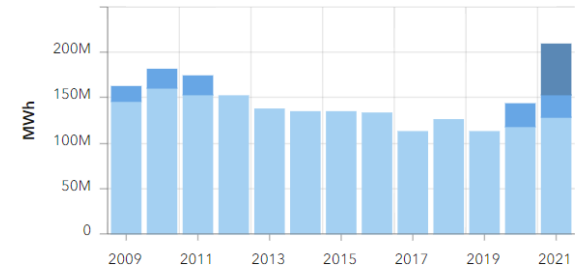


CO₂ Emissions



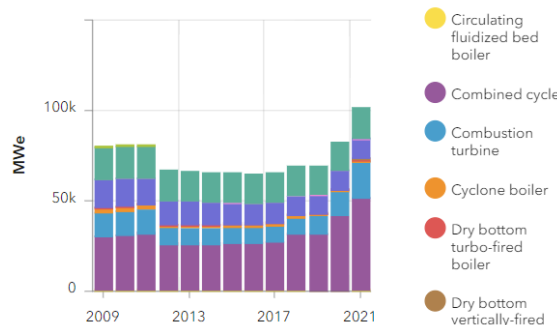
Short Tons Metric Tons

Gross Load

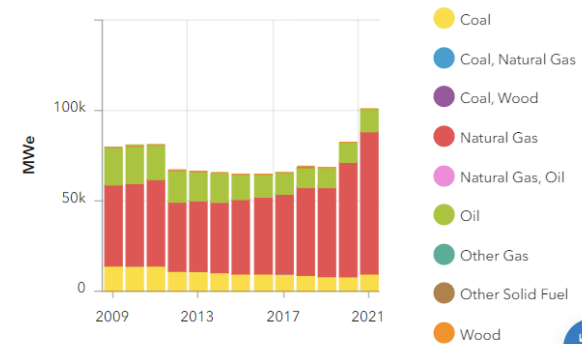


Gross Load Operating Time

Unit Type and Nameplate Capacity



Fuel Type and Nameplate Capacity



Program Review Considerations

- Ongoing discussion of a variety of program design elements
- Considerations informed by state goals, public feedback, and electricity sector analysis
 - [Topics for Consideration](#)

Program Review Considerations

Annual Compliance

- **Current Policy: Three-year control periods.**
 - Years 1 – 2: Interim control periods during which facilities acquire and surrender allowances to match 50% of their emissions each year.
 - Year 3: Facilities acquire and surrender allowances to match 100% of remaining emissions over the three-year period and submit a compliance certification report.
- **State Leanings: Annual Compliance**
 - Facilities acquire and surrender allowances to match 100% of their emissions and submit a compliance certification report each year.
 - Reduced risk of facilities remaining out of compliance.

Spring Modeling Considerations

- Fluidity of state participation
- Climate and complementary energy policies will dramatically impact electricity load
 - Electric vehicles and EV infrastructure
 - Electrification in the building sector
 - Aggressive energy efficiency efforts
- Decarbonization timeline for the electricity sector
 - Participating State timelines vary
 - Implementation of offshore wind deployment
 - Grid-scale battery storage deployment, duration, and supply

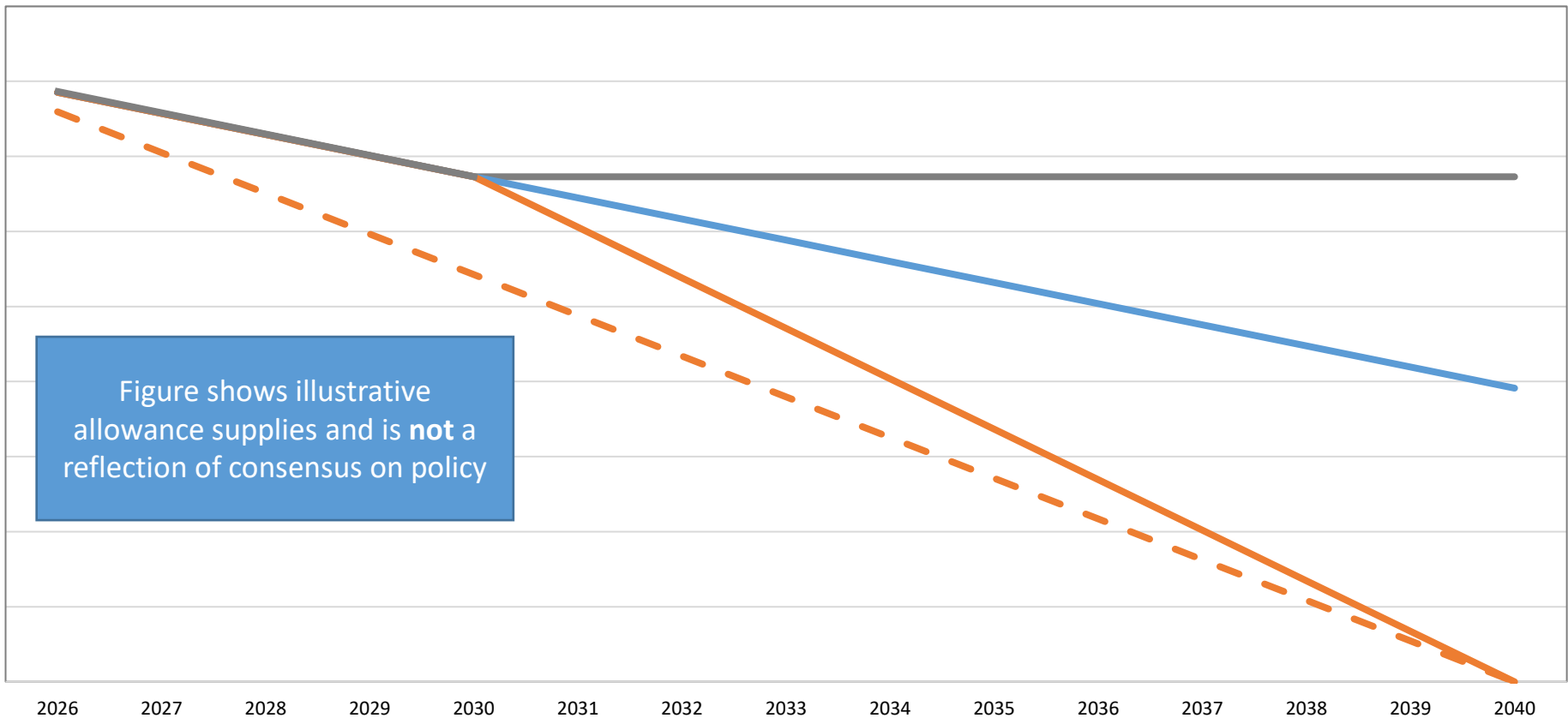
Spring Modeling Framework

Allowance Supply Assumption Set	1: BAU Flat Cap Post-2030	2: Extend Current Cap Reduction to 2040	3: Test Against Zero by 2040
A: Procured Only	A - 1	A - 2	A - 3
B: A + In Statute or Regulation	B - 1	B - 2	B - 3
C: B + Additional Goals	C - 1	C - 2	C - 3

Spring Modeling Framework – Allowance Supply

Illustrative Allowance Supply Cases

— 1 - Current RGGI Trajectory — 2 - Extend Reduction — 3 - Zero by 2040 — Zero by 2040; start in 2026



Updated Modeling Framework

Assumption Set	Allowance Supply
	4: Test Against Zero by 2035 Trajectory
A: Procured Only	A - 4
B: A + In Statute or Regulation	B - 4
C: B + Additional Goals	C - 4

States have modeled an additional stringency scenario to understand how capacity and emissions results change

Updated Modeling Framework – Allowance Supply

States have tested the impact of a 0x2035 allowance scenario

Illustrative Allowance Supply Scenarios

1 - Flat Cap Post-2030 2 - Trend Extension 3 - 0 by 2040 4 - 0x2035

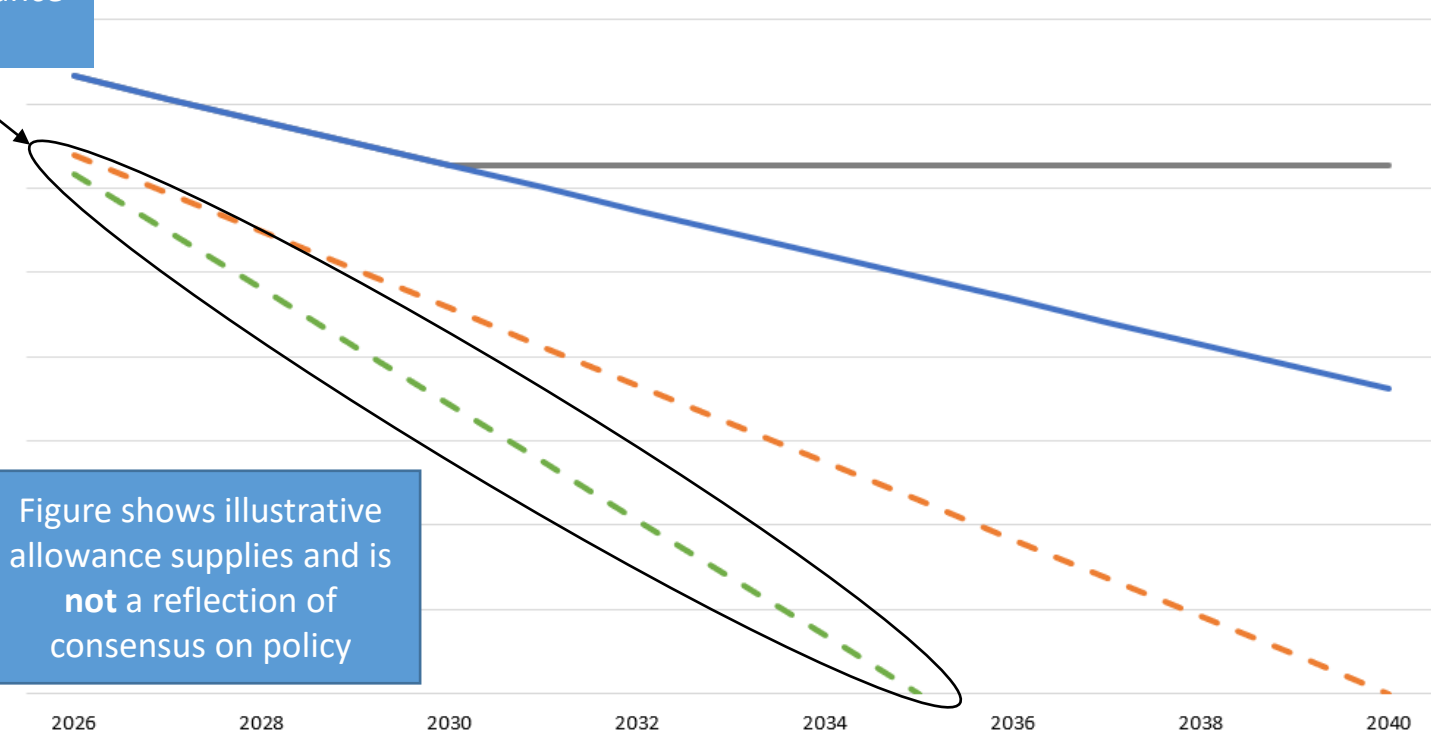


Figure shows illustrative allowance supplies and is **not** a reflection of consensus on policy

Navigating the Modeling Matrix

Fewer Allowances Available/Greater Stringency →

Allowance Supply	1: BAU Flat Cap Post-2030	2: Extend Current Cap Reduction to 2040	3: Test Against Zero by 2040 Trajectory	4: Test Against Zero by 2035 Trajectory
Assumption Set				
A: Procured Only	A - 1	A - 2	A - 3	A - 4
B: A + In Statute or Regulation	B - 1	B - 2	B - 3	B - 4
C: B + Additional Goals	C - 1	C - 2	C - 3	C - 4

More Renewables & Electrification ↓

Column results do not provide significant insights; states will update Allowance Supply 1 cases for points of reference

States not currently pursuing Allowance Supply 2 case updates further

Allowance Supply Assumption Set	1: BAU Flat Cap Post-2030	2: Extend Current Cap Reduction to 2040	3: Test Against Zero by 2040 Trajectory	4: Test Against Zero by 2035 Trajectory
A: Procured Only	A - 1	A - 2	A - 3	A - 4
B: A + In Statute or Regulation	B - 1	B - 2	B - 3	B - 4
C: B + Additional Goals	C - 1	C - 2	C - 3	C - 4

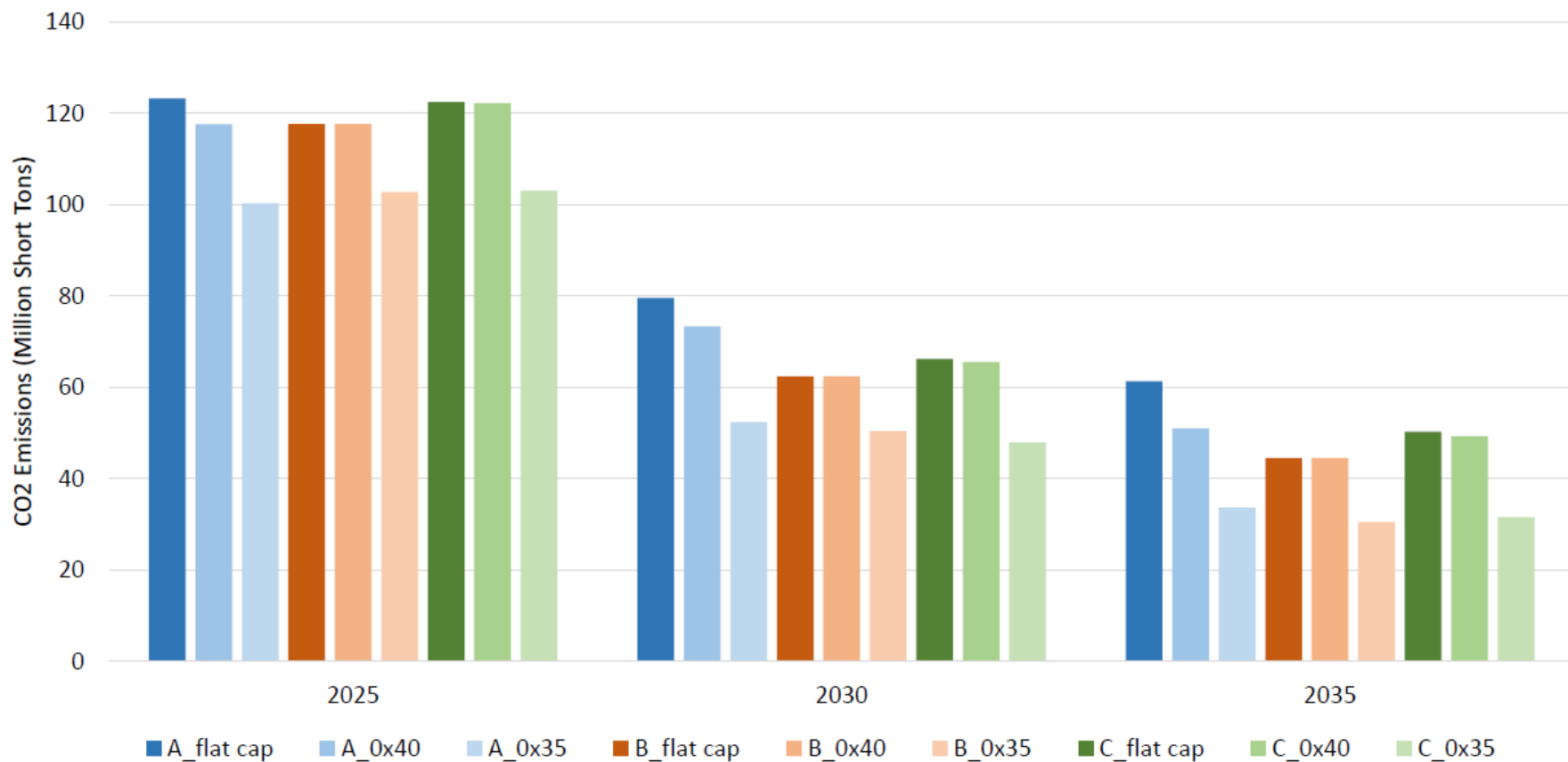
Updated Modeling Matrix

Allowance Supply Assumption Set	3: Test Against Zero by 2040 Trajectory	4: Test Against Zero by 2035 Trajectory
A: Procured Only	A - 3	A - 4
B: A + In Statute or Regulation	B - 3	B - 4
C: B + Additional Goals	C - 3	C - 4

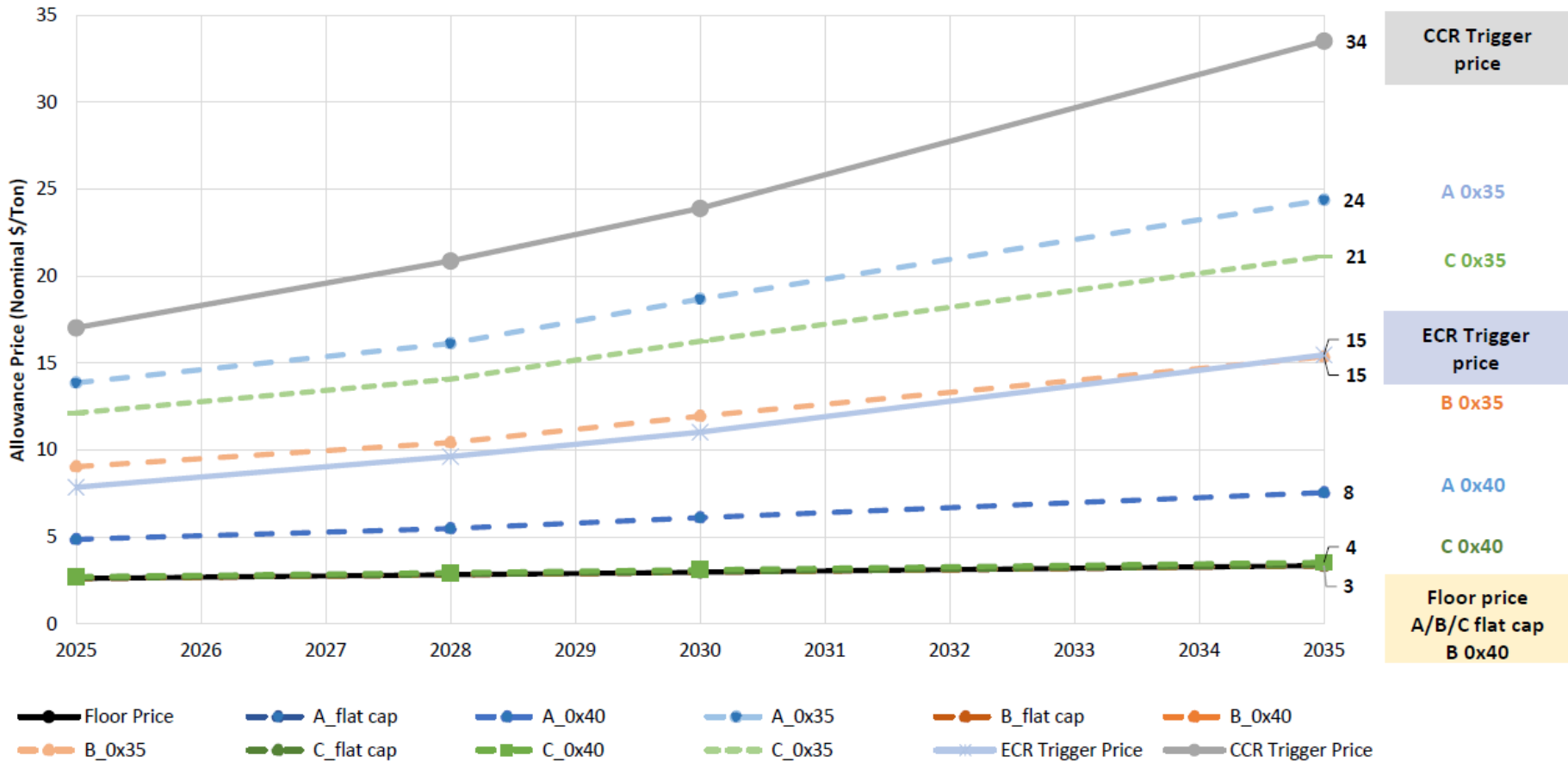
RGGI Program Review – Modeling Methodology

- Time Horizon
 - Results for model runs are presented for 2025 - 2035
 - Modeling extends through 2040 to capture impacts of cap decline trajectories beyond 2035, as appropriate
- ECR/CCR Methodology
 - For Program Review purposes, ECR and CCR are not modeled in the runs presented
- Assumption Update
 - Renewable cost data has been updated to align with NREL's 2023 release of the Annual Technology Baseline dataset

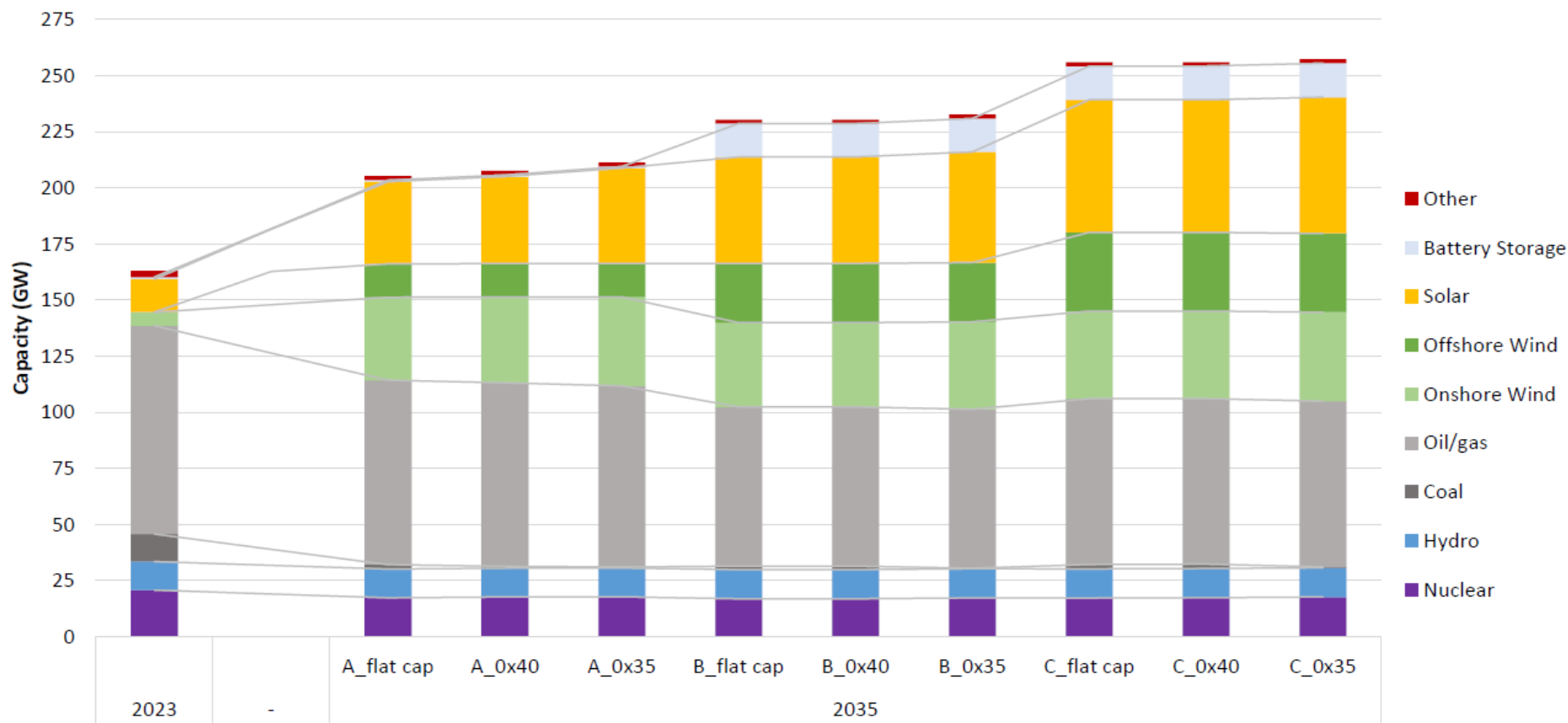
11-State RGGI-Affected CO₂ Emissions 2025 - 2035



11-State RGGI Allowance Price: 2025-2035



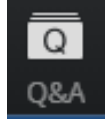
11-State RGGI Capacity Mix (2023 – 2035)



Key Observations

- Federal incentives for clean energy have the potential to rapidly transform the RGGI region generation mix
- Modeling shows how current state decarbonization and renewable requirements can significantly reduce emissions
- Scenarios modeled to date show relatively low allowance prices compared to the ECR/CCR price triggers in the Model Rule

Clarifying Questions

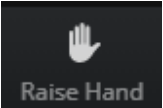
- Use the Q&A function  to send a question to the host.
- Send additional questions to info@rggi.org

How to Provide Comment

- 1. Submit verbal comments during public meetings:** Meetings throughout Program Review will include opportunities for verbal comment from members of the public.
- 2. Submit written comments during open comment periods:** Public meetings will be paired with comment periods, during which comments may be sent to info@rggi.org.

*Submit written comments for this meeting by **October 24, 2023.**
with the subject line “RGGI Program Review Comment.”*

Public Comment

- Individuals who reserved time to comment will provide comment first.
- Use the raise hand function to let us know you would like to comment.  (*phone participants dial *9*)
- The host will let you know when it is your turn to speak.
- Speakers will have 3 minutes to provide comment.

Note: *This meeting is being recorded. If you prefer, you may submit a written comment to info@rggi.org*

Next Steps

- Submit written comments to info@rggi.org by **October 24, 2023**. Use the subject line “RGGI Program Review Comment.”
- States will review and incorporate feedback into the electricity sector analysis and program considerations.



Thank You!