Transportation & Climate Initiative

TCI-P Allowance Market, Auctions, and Program Compliance

MARCH 25, 2021

TRANSPORTATION & CLIMATE INITIATIVE

Today's Agenda – 5 Parts

1. Review of the basic elements of the Transportation and Climate Initiative Program (TCI-P)
2. How would the TCI-P allowance auction work?
3. How does the allowance market work?
4. How does a company comply with a cap-and-invest program and participate in a carbon market?
5. Other questions and answers

PART 1

Review of the basic elements of the Transportation and Climate Initiative Program (TCI-P)

Speaker: *Christine Kirby, Massachusetts Department of Environmental Protection*

Review of the basic elements of the Transportation and Climate Initiative Program (TCI-P)

- Regional approach and program goals
- How does a cap-and-invest program work?
- Prioritizing Equity and how TCI-P is part of a comprehensive and equitable climate response
- Applicability - what kinds of fuel companies are subject to the program?
- What are the requirements on Jurisdiction Fuel Suppliers?
- Emissions and allowance tracking

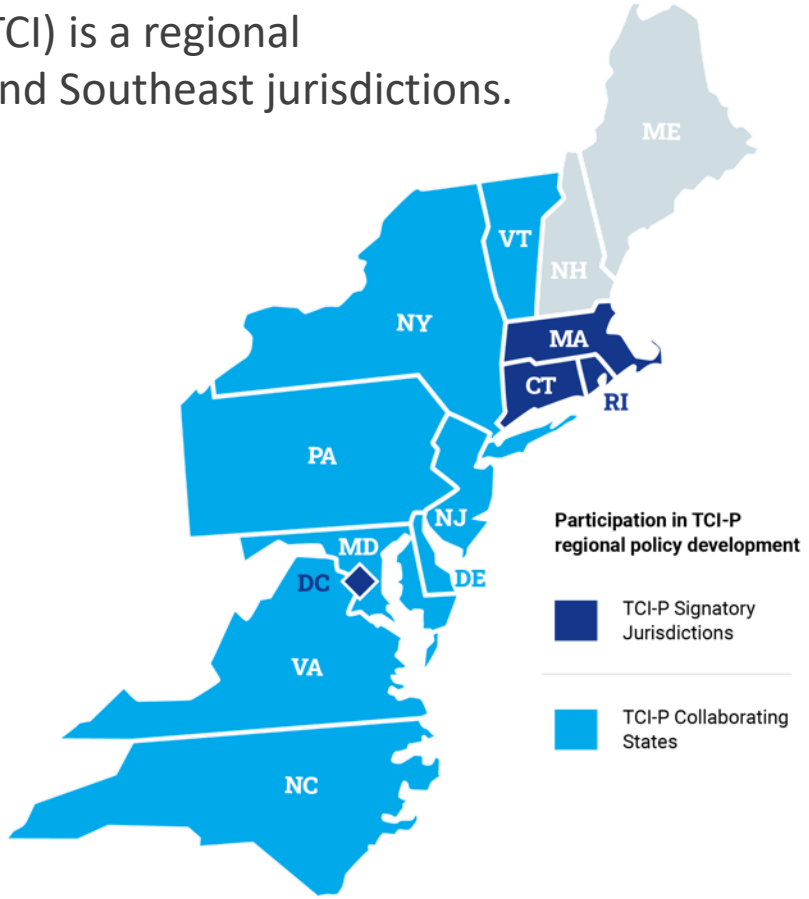
TCI: A Regional Approach

The Transportation and Climate Initiative (TCI) is a regional collaboration of Northeast, Mid-Atlantic, and Southeast jurisdictions.

December 2018: Nine States and D.C. announced their intent to design a regional approach to cap greenhouse gas pollution from transportation

December 2020: Rhode Island, Massachusetts, Connecticut, D.C. are First to Sign MOU to Launch TCI-P

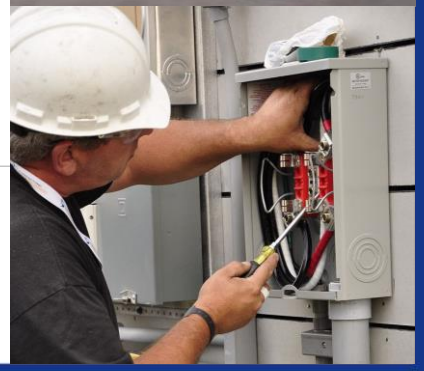
In an accompanying statement, eight other Northeast, Mid-Atlantic, and Southeast states signaled that they will continue to work on the development of the details of the regional program



TCI Program Goals

- Reduce carbon dioxide (CO_2) emissions from transportation sources
- Improve air quality and public health, increase resilience to the impacts of climate change, and provide more affordable access to clean transportation choices
- Promote local economic opportunity and create high quality jobs
- Maximize the efficiency of this multijurisdictional program to ensure greater benefits
- Advance equity for communities overburdened by pollution and underserved by the transportation system

Source: TCI-P MOU, Dec. 2020
(https://www.transportationandclimate.org/sites/default/files/TCI%20MOU%2012.2020.pdf)



TRANSPORTATION & CLIMATE INITIATIVE

How Does a Cap-and-Invest Program Work?

- TCI-P reduces carbon dioxide (CO_2) emissions from gasoline and on-road diesel fuel sold in participating jurisdictions
- This is achieved by **capping** and reducing total CO_2 emissions from these fuels and auctioning "allowances" to regulated fuel suppliers
- Participating jurisdictions use proceeds from allowance auctions to **invest** in low-carbon transportation strategies that give communities, workers and businesses additional clean, safe, and affordable options for getting from point A to point B

*The **cap** and the **invest** parts of the program*

both help to reduce emissions

Prioritizing Equity

- **Dedicated Investments**: a minimum of 35% of each jurisdiction's proceeds to ensure that communities overburdened by pollution and underserved by the transportation system benefit equitably
- **Equitable Processes**: ensure meaningful input, including through an equity advisory body of people from, or who work in partnership with, underserved and overburdened communities
- **Transparency**: assess the equity impacts of the program on an ongoing basis, including by monitoring air quality in communities overburdened by air pollution
- **Complementary Policies**: additional policies to achieve emissions reductions, particularly in overburdened and underserved communities

Source, TCI-P MOU, December 2020: https://www.transportationandclimate.org/sites/default/files/TCI%20Next%20Steps%2012.20.pdf

TCI-P: Part of a Comprehensive and Equitable Climate Response

A variety of strategies are needed to equitably reduce air pollution from transportation sources

- Strategies must address emissions from
  - The vehicles we use
  - The fuels those vehicles use
  - How, when, and where we travel
- Many actors have important roles to play
  - Various agencies within local, state, tribal, and federal governments
  - Communities, workers, and businesses

What is the role of TCI-P?

- TCI-P caps climate-altering pollution and enables targeted investments and incentives to promote public benefits where they are needed most

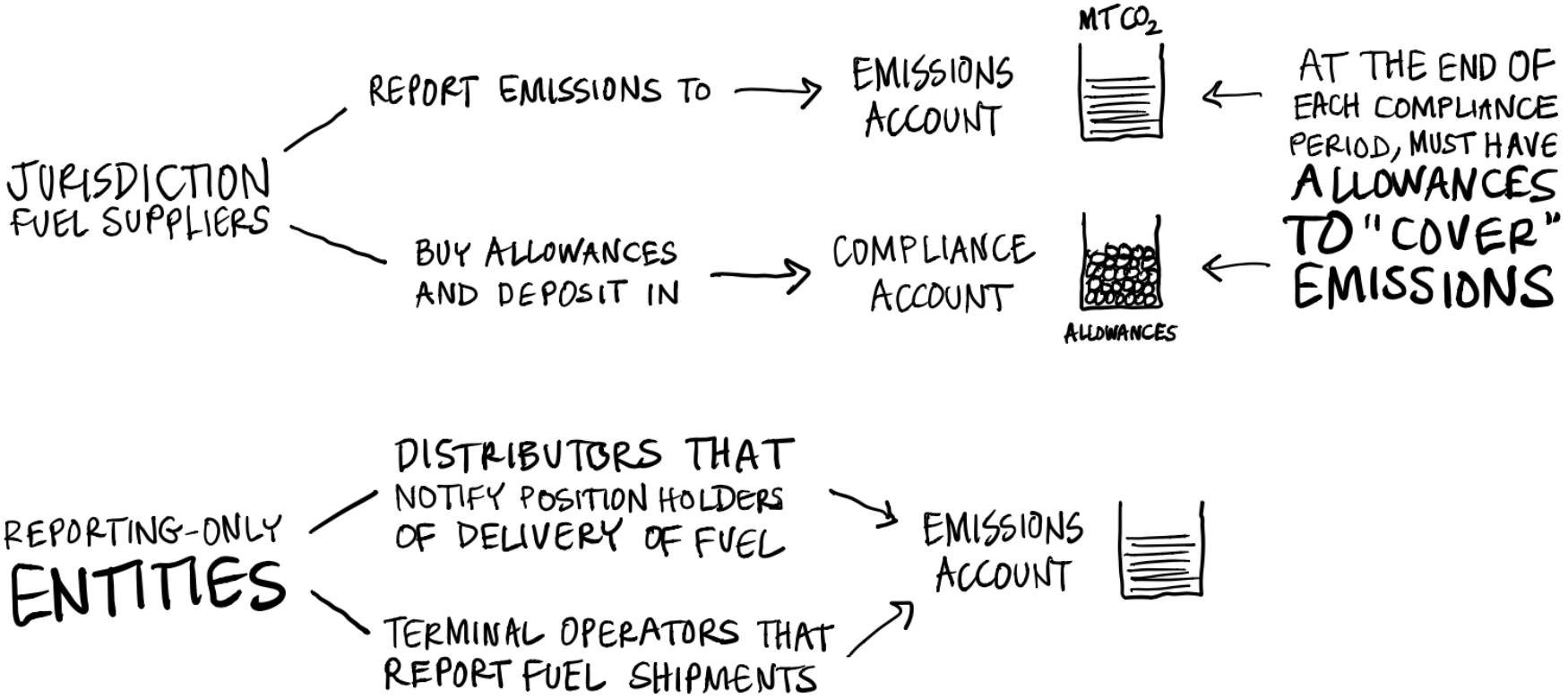
Applicability
(What Type of Companies Will Be Regulated)

- Jurisdiction fuel suppliers
  - Jurisdiction fuel suppliers are (1) position holders at a terminal rack that disburse transportation fuel for delivery in the jurisdiction; and (2) distributors that complete certain other deliveries of transportation fuel in the jurisdiction.
    - Allowance holding and reporting obligation.
- Terminal operators
  - Terminal operators in the jurisdiction must report fuel shipments to the jurisdiction; terminal operators serving the jurisdiction from outside the jurisdiction may elect to report fuel shipments to the jurisdiction.
    - Reporting obligation.
- Distributors
  - Distributors of transportation fuel must notify out-of-state position holders when they deliver fuel in the jurisdiction that comes from an out-of-state terminal that does not report fuel shipments.
    - Reporting obligation, may have allowance holding obligation.

Requirements for Jurisdiction Fuel Suppliers

- Registration
  - Jurisdiction fuel suppliers must register with the program and establish one emissions reporting and one compliance account.
- Emissions reporting
  - Jurisdiction fuel suppliers must use the Emissions and Allowance Tracking System to report the emissions associated with the transportation fuels they disbursed to or delivered in the jurisdiction.
    - Monthly emissions reporting. Emissions reports are due by the end of the following month. Fuel shipment data must also be reported.
    - 3rd party verification. Verification is required after the end of each year.
    - Recordkeeping requirements.
- Allowance surrender and compliance certification
  - Jurisdiction fuel suppliers must surrender allowances to cover the emissions from the transportation fuels disbursed to or delivered in the jurisdiction after each 3-year compliance period and file a compliance certification.

Emissions and Allowance Tracking



PART 2

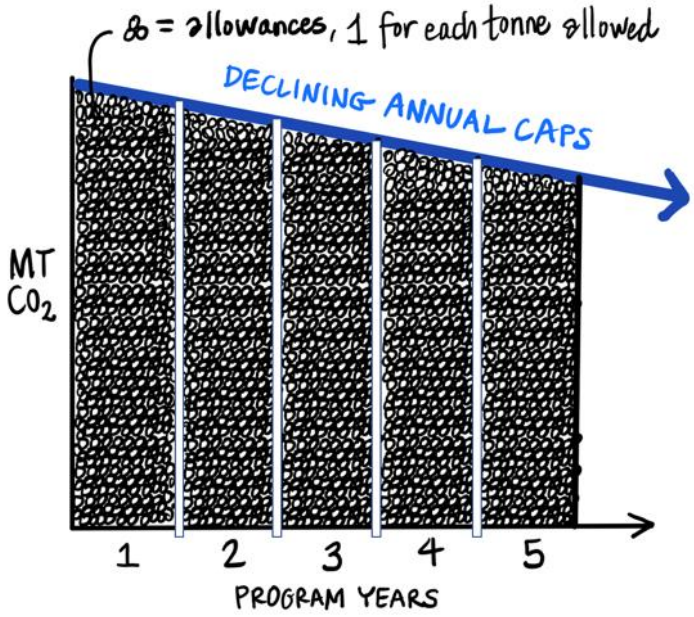
How would the TCI-P allowance auction work?

Speaker: *Chris Hoagland, Maryland Department of the Environment*

TRANSPORTATION & CLIMATE INITIATIVE

Allowances

- An allowance represents the authorization to emit one metric ton of carbon dioxide pollution from transportation fuel.
- Jurisdiction Fuel Suppliers must turn in allowances to comply with the program.
- Allowances are to be sold at auctions held by the TCI-P jurisdictions.
  - Note: this is in contrast to some cap-and-trade programs which give away allowances instead of selling them.
  - The number of allowances available for sale declines each year and is equivalent to the “cap.”



How often would auctions be held?

- Auctions would be held quarterly

Who could participate in the auctions?

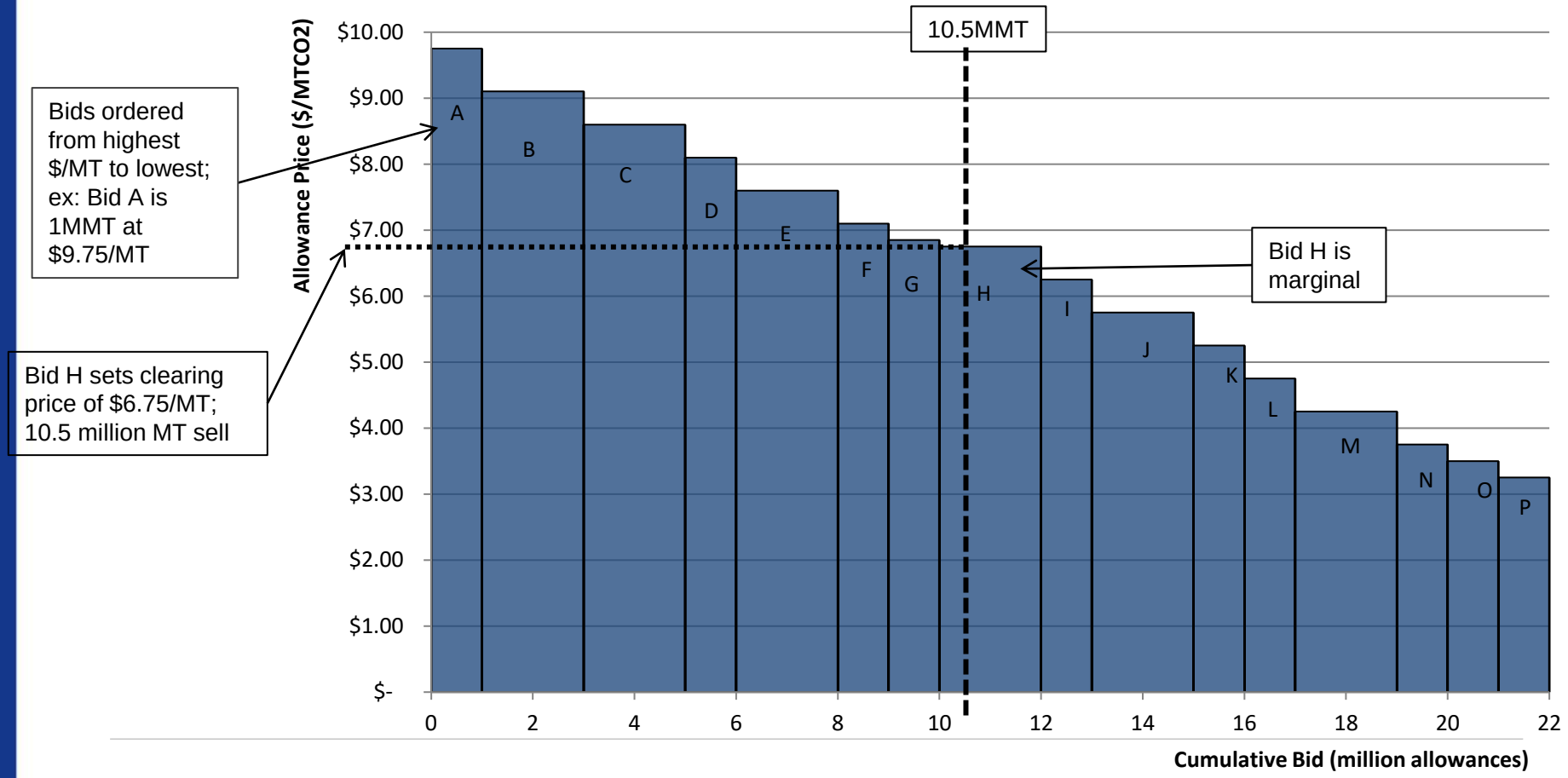
- Compliance entities: jurisdiction fuel suppliers
- Noncompliance entities: organizations without a compliance obligation

How does a “sealed bid, uniform price” auction work?

1. Participants follow approval process, secure financial security in the weeks leading up to the auction.
2. Participants submit bids during bidding period on auction day (e.g. 9AM-12PM in RGGI).
3. Auction manager “opens” the bids, arranges in “bid stack” in descending order of bid price.
4. Auction manager awards allowances to bidders along the bid stack in descending order of bid price until all available allowances awarded.
5. The “clearing price” is the price of the “marginal bid” – the last winning bid.
6. All successful bidders pay the clearing price for the allowances in the winning bids.
7. Participating jurisdictions receive the clearing price for each of their allowances sold.

How does a "sealed bid, uniform price" auction work?

Example Quarterly Auction in 2023: 10.5 million allowances



TRANSPORTATION & CLIMATE INITIATIVE

Hypothetical Example Bid Stack
(real auctions have many more bids)

Stability Mechanisms

1. Cost Containment Reserve (CCR): mitigate price increases

   (does this by releasing additional allowances & increasing cap if prices are high)

2. Emissions Containment Reserve (ECR): take advantage of low costs to get more reductions

   (does this by withholding allowances & tightening cap if prices are low)

3. Auction Reserve Price: prevent allowance price from going to zero

- These mechanisms respond to uncertainty to:
  - Ensure the program achieves its goals
  - Keep impacts within an acceptable range (especially price impacts)
- These mechanisms are in place for Regional Greenhouse Gas Initiative as well

CCR & ECR Design Feature: Trigger Price

Q: What is the "**trigger price**" ($/MT) for the mechanism?

- CCR: price point where additional allowances are released, to mitigate allowance price increases
- ECR: price point where fewer allowances are released, to secure low-cost reductions

A:

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
CCR trigger	$12.00	$13.43	$15.02	$16.81	$18.80	$21.04	$23.54	$26.34	$28.19	$30.16

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ECR trigger	$6.50	$6.98	$7.51	$8.07	$8.66	$9.29	$9.97	$10.68	$11.47	$12.30

TRANSPORTATION & CLIMATE INITIATIVE

CCR & ECR Design Feature: Reserve Size

Q: What is the "**reserve size**" (millions of tons) for the mechanism?

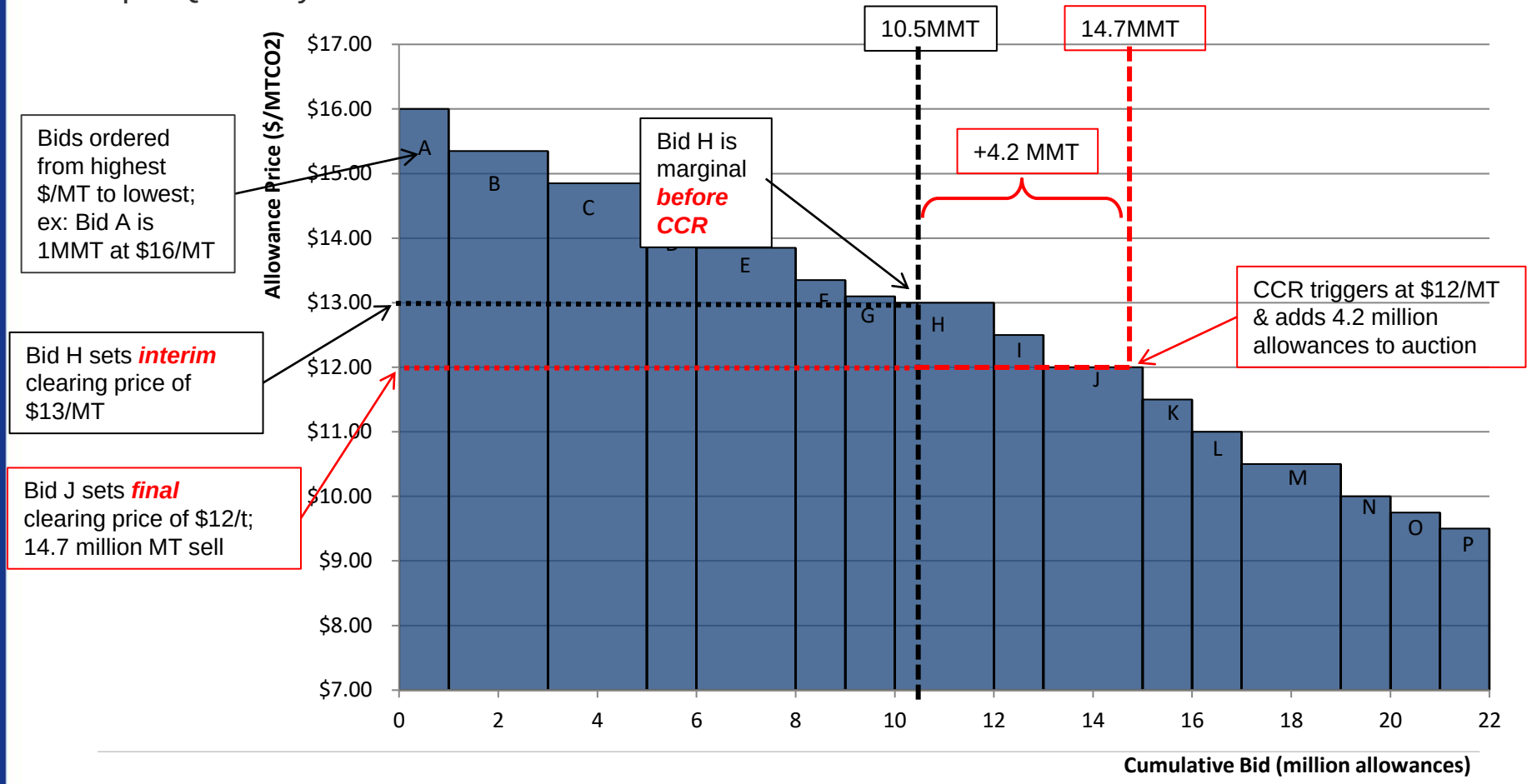
- CCR: How many additional allowances (additional tons of allowed CO_2) will we deploy to mitigate price growth?
- ECR: How many fewer allowances (fewer tons of allowed CO_2 / additional reductions) will we deploy to secure low-cost reductions?

A: To reduce the potential for carbon prices outside of the modeled price range, both ECR and CCR will have reserves equal to 10% of the cap each year.

TRANSPORTATION & CLIMATE INITIATIVE

How does the CCR work in an auction?

Example Quarterly Auction in 2023: 10.5 million allowances & 4.2 million MT CCR at $12/MT



TRANSPORTATION & CLIMATE INITIATIVE

Hypothetical Example Bid Stack
(real auctions have many more bids)

PART 3

How does allowance tracking and allowance markets work?

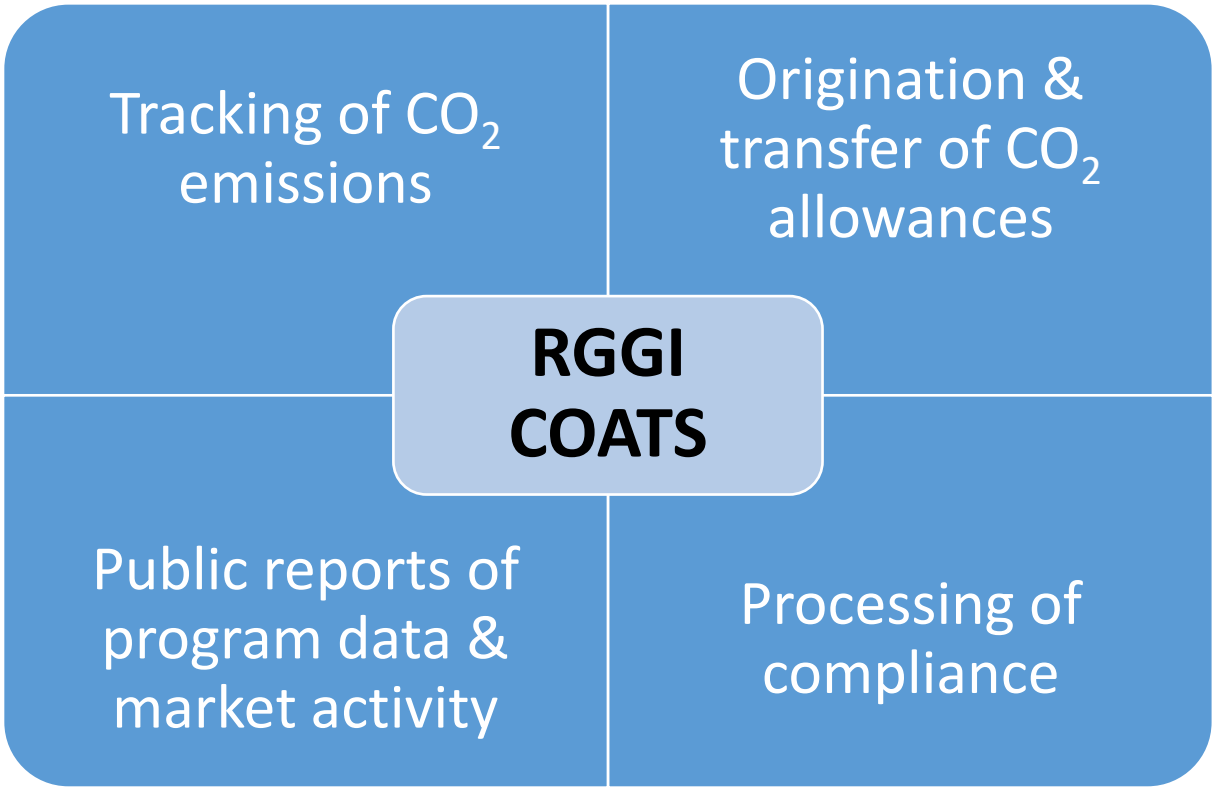
Speakers: *Anna Ngai, RGGI inc; and Pallas LeeVanSchaick, Potomac Economics*

Regional Greenhouse Gas Initiative:
CO_2 Allowance Tracking System (COATS)

RGGI Basics

- Eastern states cap-and-invest program
  - Power sector
  - State-issued CO_2 allowances
    - Auction distribution
    - Fungible, bankable, and tradable
    - Auction proceeds reinvested by states
- Individual state CO_2 budget trading programs
  - Regulations aligned with Model Rule
- 2021 cap: 119.8 million short tons

RGGI CO_2 Allowance Tracking System (COATS)



COATS Account Types

Compliance Accounts

- Required for each CO_2 budget source
- Automatically created
- Hold allowances for compliance demonstration

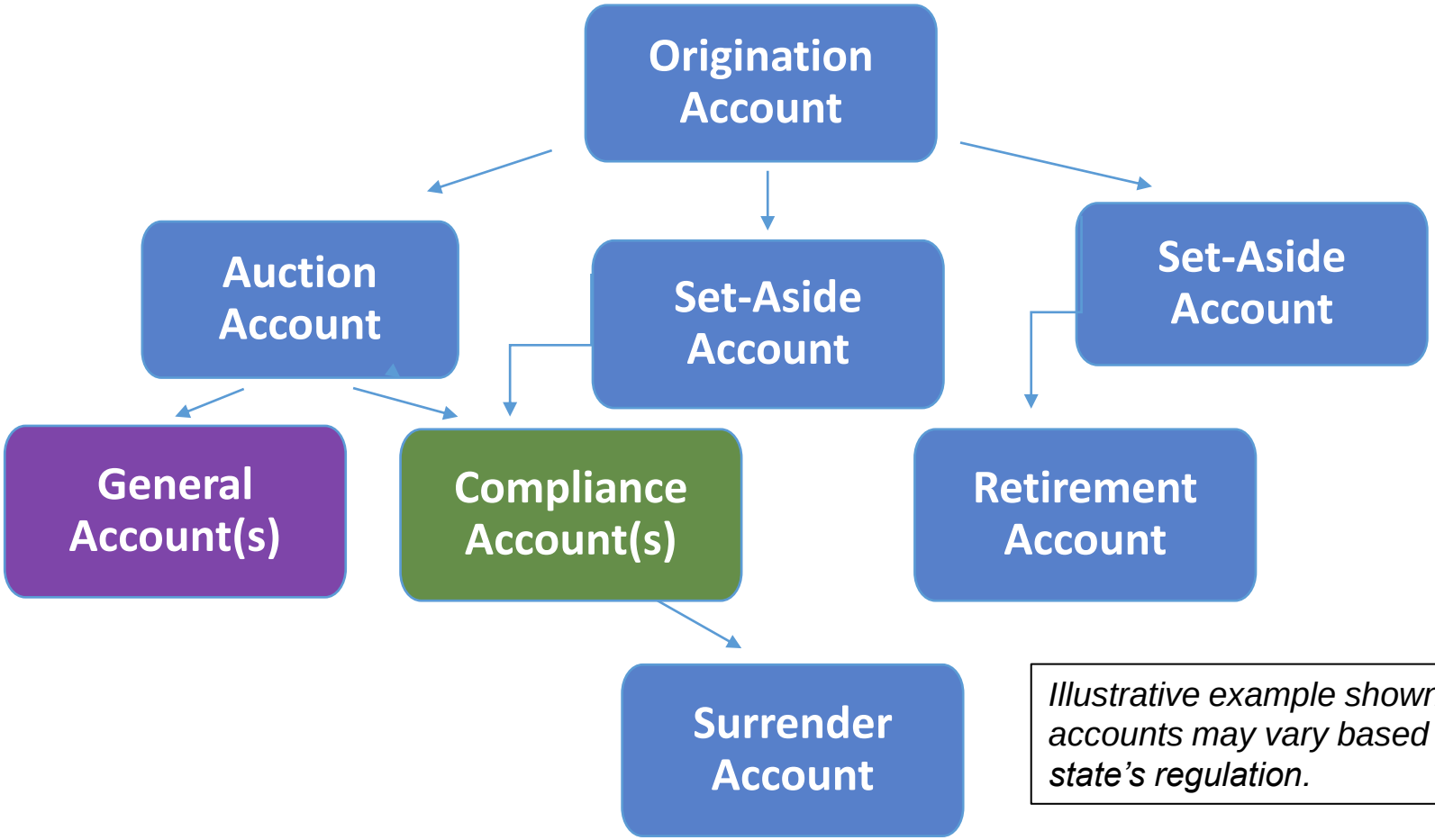
General Accounts

- Created by the user
- Can be used by any interested market participant with RGGI COATS login

State Accounts

- Internal accounts used by RGGI states
- E.g., Auction Account
- Accounts can be created to support state-specific requirements

Allowances Flow

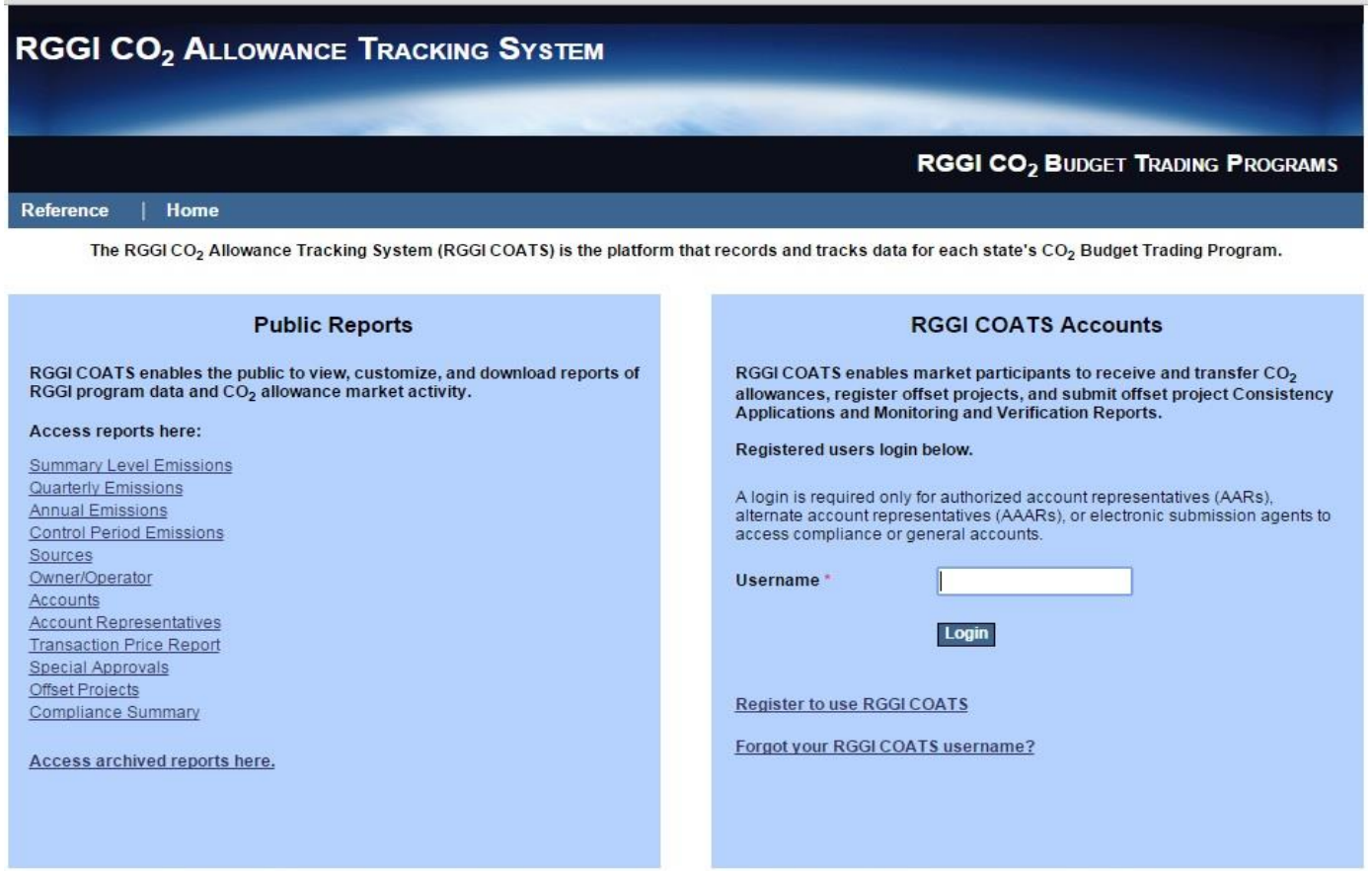


Illustrative example shown; state accounts may vary based on a state's regulation.

COATS User Types

- Authorized Account Representative (AAR)
- Alternate Authorized Account Representative (AAAR)
- Electronic Submission Agent (Agent)
- Reviewer
- State Representatives
- COATS System Administrator

COATS


RGGI CO_2 Allowance Tracking System
RGGI CO_2 Budget Trading Programs
Reference | Home
The RGGI CO_2 Allowance Tracking System (RGGI COATS) is the platform that records and tracks data for each state's CO_2 Budget Trading Program.
Public Reports
RGGI COATS enables the public to view, customize, and download reports of RGGI program data and CO_2 allowance market activity.
Access reports here:
Summary Level Emissions
Quarterly Emissions
Annual Emissions
Control Period Emissions
Sources
Owner/Operator
Accounts
Account Representatives
Transaction Price Report
Special Approvals
Offset Projects
Compliance Summary
Access archived reports here.
RGGI COATS Accounts
RGGI COATS enables market participants to receive and transfer CO_2 allowances, register offset projects, and submit offset project Consistency Applications and Monitoring and Verification Reports.
Registered users login below.
A login is required only for authorized account representatives (AARs), alternate account representatives (AAARs), or electronic submission agents to access compliance or general accounts.
Username *
Login
Register to use RGGI COATS
Forgot your RGGI COATS username?
The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort by participating states to reduce emissions of carbon dioxide (CO_2), a greenhouse gas that causes climate change.

Market Monitoring, Price Discovery, Efficiency, and Transparency in Allowance Markets

Presented by:

Pallas LeeVanSchaick, Ph.D.
Potomac Economics

TCI-P Webinar
March 24, 2021

POTOMAC ECONOMICS

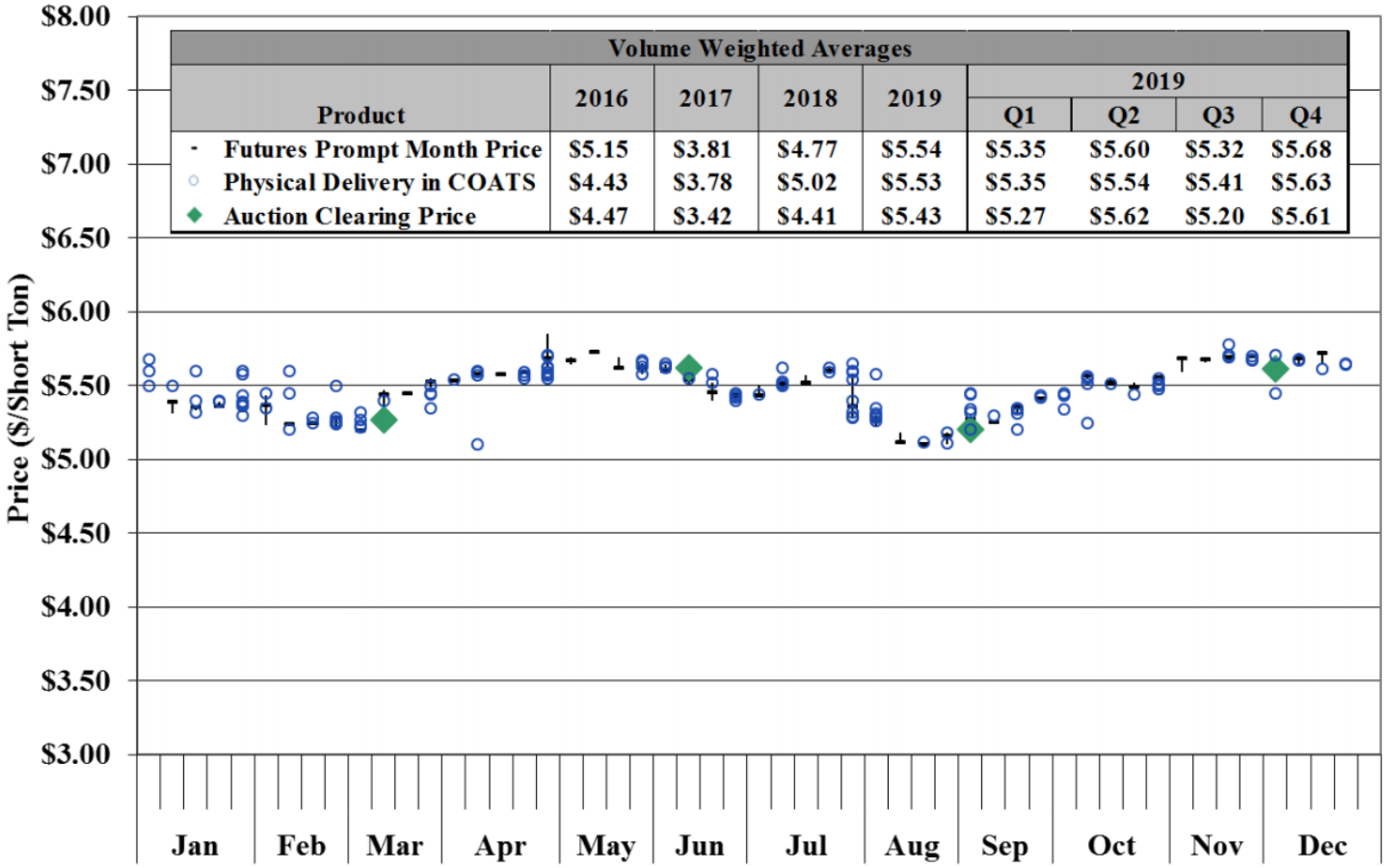
Market Monitoring Promotes Transparency & Efficiency

- Analyze auction results and bidding behavior
  - ✓ Efficiency
  - ✓ Competitiveness
- Evaluate secondary market activity and holdings
  - ✓ Efficiency
  - ✓ Competitiveness
- Advise program administrators on market issues
  - ✓ Market effects of program changes
  - ✓ Information disclosure and transparency

Price Discovery

Figure 1: CO_2 Allowance Prices in the Auctions and Secondary Market 2019

Volume Weighted Averages								
Product	2016	2017	2018	2019	2019 Q1	2019 Q2	2019 Q3	2019 Q4
Futures Prompt Month Price	$5.15	$3.81	$4.77	$5.54	$5.35	$5.60	$5.32	$5.68
Physical Delivery in COATS	$4.43	$3.78	$5.02	$5.53	$5.35	$5.54	$5.41	$5.63
Auction Clearing Price	$4.47	$3.42	$4.41	$5.43	$5.27	$5.62	$5.20	$5.61



POTOMAC ECONOMICS

Price Discovery

- Auction Results
  - ✓ Reports from program and market monitor
- Secondary Market
  - ✓ Regular reporting on trades
- Commodity Exchanges
  - ✓ Ex: Futures and options contracts on the Intercontinental Exchange (ICE)
- Market Intelligence Services
  - ✓ Ex: Platts, Argus

Transparency Promotes Liquidity

- Transparency enhanced by prompt disclosure of info on:
  - ✓ Allowance supply and demand
  - ✓ Prices for current and future allowances
- Liquidity facilitates hedging contracts:
  - ✓ Helps regulated firms limit price risk

Efficient Secondary Markets

- In an illiquid market:
  - ✓ Poor price discovery
  - ✓ Difficulty identifying counterparties when needed
- Participation of non-regulated entities promotes liquidity
  - ✓ More hedging opportunities
  - ✓ More potential counterparties
  - ✓ Contracts can be indexed against a liquid commodities
- Efficient secondary market provides flexibility to operations

PART 4

How does a company comply with a cap-and-invest program and participate in a carbon market?

Speakers: *Rajinder Sahota, California Air Resources Board*

Transportation Fuel Suppliers in California's Cap-and-Trade Program

RAJINDER SAHOTA

MARCH 2021

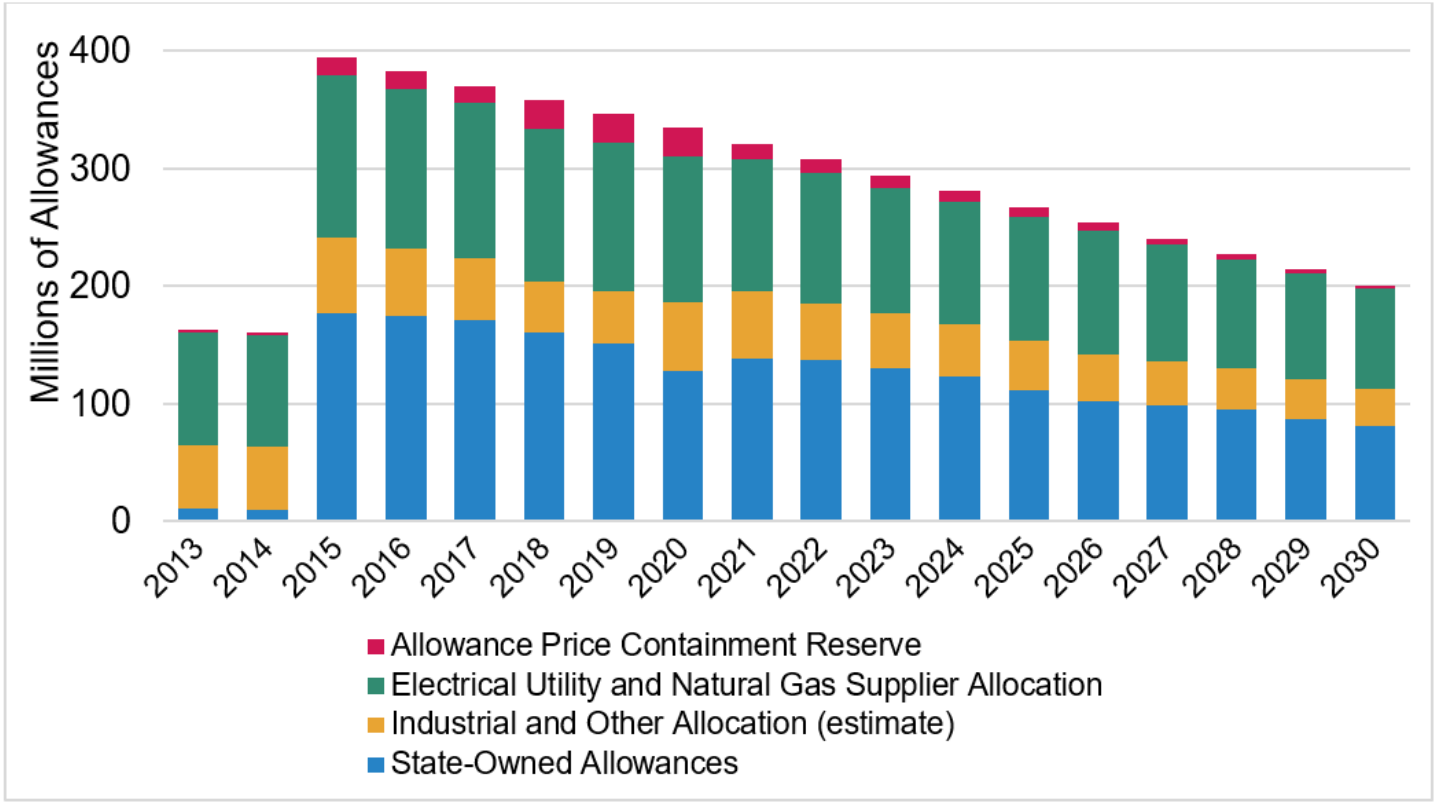
Cap-and-Trade Program Background

- Critical part of State strategy to achieve 2020 and 2030 GHG reduction targets
  - Ensure GHG reduction targets are realized through a strict limit
  - 2017 Scoping Plan that includes Cap-and-Trade is four times less costly than alternatives
- Works in concert with other complementary air quality and climate policies
- Provides compliance flexibility to achieve cost-effective reductions
- Facilitates integration of regional, national, and international GHG reduction programs
- Program linked with cap-and-trade system of Québec

Cap-and-Trade: Facts and Figures

- Covers ~80% of State's emissions
- ~450 covered facilities in the Program
  - Based on annual, third-party verified reported GHG data
  - Industrial sources & electricity generators with emissions ≥ 25,000 $MTCO_2e$ per year
  - Electricity importers, natural gas suppliers, and transportation fuel suppliers
- State sets annual, declining allowance caps. Allowances distributed via:
  - Direct allocation to minimize leakage and protect ratepayers
  - Quarterly auctions
- 34 auctions held to-date (26 joint-auctions)
- Over $14.8 billion generated for California Climate Investments
  - ~50% of investments are benefiting disadvantaged communities

Cap-and-Trade Allowance Budgets



Fuel Supplier Inclusion in Cap-and-Trade

- First year of Mandatory Reporting of GHG emissions (MRR) was 2008, and the first year of Cap-and-Trade was 2012
- Fuel suppliers have been reporting GHG emissions since 2011 and subject to Cap-and-Trade since 2015
- Currently there are 32 covered fuel suppliers in the Cap-and-Trade Program
- Like TCI-P, California defines fuel suppliers as position holders at terminal racks
- Fuel suppliers have accounted for slightly less than 50% of covered CO_2e from all sectors

Point of Regulation & Fuel Supplier Concerns

- Initially CARB considered regulating the point of production or import
- Fuel suppliers expressed concerns on the ability to track fuel exported out of California
- Ultimately, CARB placed the point of regulation on position holders “at the rack”
  - This approach aligns with existing excise fuel tax reporting
- Initial concerns related to potential costs of third-party verification services; however, verification costs have proven to be fairly insignificant
- Fuel suppliers campaigned against Cap-and-Trade in late 2014, incorrectly claiming it would raise the cost of a gallon of gasoline by $0.76, or that rural regions would face supply shortages
- There have been no significant impacts on logistics of fuel supply or production/importation of petroleum products

Compliance with MRR and Cap-and-Trade

- Minimal instances of noncompliance with MRR prior to 2015
  - Late reporting/failure to report, and initial errors in reporting biofuels
  - MRR errors had no impact on Cap-and-Trade compliance
- 100% compliance at all seven Cap-and-Trade compliance events to date
- Fuel invoices can bundle the cost of Cap-and-Trade compliance into the wholesale price or break it out as a separate line item
- Some smaller fuel suppliers have moved to buy fuel “below the rack“
- There has never been a shortage of allowances in California

Resources

- Cap-and-Trade Program Website

https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program

- Mandatory Greenhouse Gas Emissions Reporting Program Website

https://ww2.arb.ca.gov/our-work/programs/mandatory-greenhouse-gas-emissions-reporting

PART 5

Other Questions and Answers

Moderator: *Drew Veysey, Georgetown Climate Center*

Thank you!

You can submit comments through the TCI web portal:

https://www.transportationandclimate.org/main-menu/tci-regional-policy-design-stakeholder-input-form

TRANSPORTATION & CLIMATE INITIATIVE