

Chapters 2 & 3

Allocation Methods Committee

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2. Mechanisms for Distributing Allowances

- General Discussion
- Alternatives for Free Allocation
- Alternative Auctioning Approaches

General Discussion

There are many justifications for the provision of allowance value. Free allocation offers various ways to achieve that. Assigning revenue from an auction is another.

Free allocation embraces lump-sum and output-based (updating) allocation.

Allocation can be used to provide incentives to change production activities. But it can have unintended efficiency costs.

Alternative Ways to Freely Allocate

- **Historic Basis/Grandfathering (SO₂)**
 - Adjustments for new sources/closures? (NO_x, EU, Reclaim)
- **Updating**
 - **To emitters (NO_x, lead phase-out)**
 - Output or input/emissions basis
 - Emission rate benchmarking (fuel specific?)
 - **To consumers**
 - Local electricity & natural gas companies
 - **To households**
 - Dividends
 - **To others**
 - Community grants

General Types of Auction

Features

1. Number of rounds of bidding

- Single (sealed bid)
- Multiple (bidder has chance to change bid):
 - Ascending clock (English)
 - Descending clock (Dutch)

2. How price is set

- Uniform (single price for all transactions)
- Discriminatory (pay as bid, prices differ among buyers)

Types in Practice

- Uniform price sealed-bid (RGGI, Ireland)
- Discriminatory price sealed-bid (SO₂ program)
- Uniform price multi-round (Virginia NO_x)
- Discriminatory price multi-round (FCC)

Criteria for Designing the Auction

- Administrative costs, transaction costs for bidders
- Perceptions of fairness, transparency, and understandable to participants and the public
- Economically efficient —that is, getting allowances to those who value them the most
- Avoiding collusive behavior by bidders and providing good signals about market prices
- Helping to minimize price volatility
- Raising reasonable revenues from the sale of a valuable public asset
- Compatibility with existing electricity & energy markets

Important Features of the Auction Design

- Vintages (spot and forward auctions?)
- Frequency of auction
- Reserve price
 - How to set, modify the reserve price
 - What to do with unsold allowances
- Single or multiple auction platforms for WCI?
- Market monitoring
 - Disclosure of beneficial ownership by participants?
 - Independent monitor?
- Eligibility and financial prequalification
- Information from auction to be revealed

Pros and Cons

	Advantages	Concerns
Free Allocation	<ul style="list-style-type: none">• Can provide compensation (to industry or consumers)• Follows from command and control approach where permits are given for free• Can provide incentives to reduce leakage, ease transition	<ul style="list-style-type: none">• Potentially complicated, and takes various forms with different outcomes• Compensation may not flow to affected parties; potential windfalls• Invites rent seeking• May be perceived as highly political• Updating, or adjustments to allocation, can provide adverse incentives
Auction	<ul style="list-style-type: none">• Revenue can provide compensation to households or public policy objectives (investments, tax reform, etc.)• Leads to efficient prices and lowest social cost• Administrative simplicity• Perception of fairness• Preserves value of early actions	<ul style="list-style-type: none">• Perceived to raise costs for industry, consumers (True only compared to updating allocation to emitters or free allocation to consumers.)• Efficiency, distributional outcome depends on use of revenue

3. Total Allowance Value

Understanding total allowance value is important to its potential uses.

Value = $P \cdot Q$. The most uncertain element is the allowance price.

- Channels for reducing emissions
- Short run opportunities
- Long run opportunities
- Key assumptions, policy variables
- The role of leakage and related policies
- Estimates

Channels for Reducing Emissions

Output (changes in the level, composition of demand)

Input (changes in the quantity and type of fuel used)

Abatement (offsets, CO₂)

- All provide opportunities for short run (behavior), intermediate run (processes, minor capital investment) and long run (major capital investment, R&D).
- Opportunity costs and allowance values over time are related through banking.
- Allowance prices are likely to be affected by CARB's "complementary" policies.

Short Run

Provides an upper bound on allowance price, if technological change is slow to emerge.

- Demand elasticities imply cost per ton of CO₂ reductions through conservation (\$X)
- Relative fuel prices imply cost per ton of CO₂ reductions in electricity sector (\$X)

Intermediate and Long Run

More likely to determine allowance price with banking and declining caps.

- Capital cost in electricity sector (\$X)
- Efficiency, land use, other (\$X)

Policy Variables Will Affect Price

WCI market design guidance addresses:

Scope, compliance period, caps, trajectory, auction requirements, reserve price, banking and Banking and borrowing, offsets, linking

CARB's complementary policies matter if they target actions that would not emerge in the market:

Potentially RPS, solar roofs, vehicle choice, some end use efficiency measures, LCFS

Social Infrastructure:

Rail, land use, electricity transmission, real time electricity meters

Leakage and Related Policies

- Leakage may reduce allowance price by making compliance easier
- Allocation approaches to address leakage are likely to increase price
 - Output based updating allocation encourages in-state activity but tends to increase allowance price (compared to auction).
 - Benchmark allocation for trade-exposed energy-intensive industries may push emission reduction onto other sectors at higher costs, depending on benchmark standard.

Estimates

- CRA, BEAR, WCI (Energy 2020) CARB Cost Study 2008, ongoing CARB Cost study (Energy 2020), electricity studies (RFF, E3, UC Berkeley)
- Other input from the public