Supporting the Design and Implementation of Emissions Trading Systems in China - 中欧碳交易能力建设项目

Regional Training on ETS

Allocation Part I: Theory and Practice

Maarten Neelis

Developed by: Alyssa Gilbert, Maarten Neelis, Dian Phylipsen, Monique Voogt, Alistair Ritchie

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Supporting the Design and Implementation of Emissions Trading Systems in China - 中欧碳交易能力建设项目

Current status

Capacities built over time

Well-functioning China National ETS

- Road maps
- Cap setting
- Allocation
- MRVA
- Registry
- Market oversight

Exploring allocation

THEORY

Auctioning in theory the best methodology

But free allocation to limit cost burden and protect competitiveness

Each allocation methodology has its pro's and cons

PRACTICE

Allocation, competitiveness protection and auctions in

…Europe

…Chinese pilots

…Other schemes

IN-DEPTH STUDY

The benchmark-based allocation methodology in the EU ETS

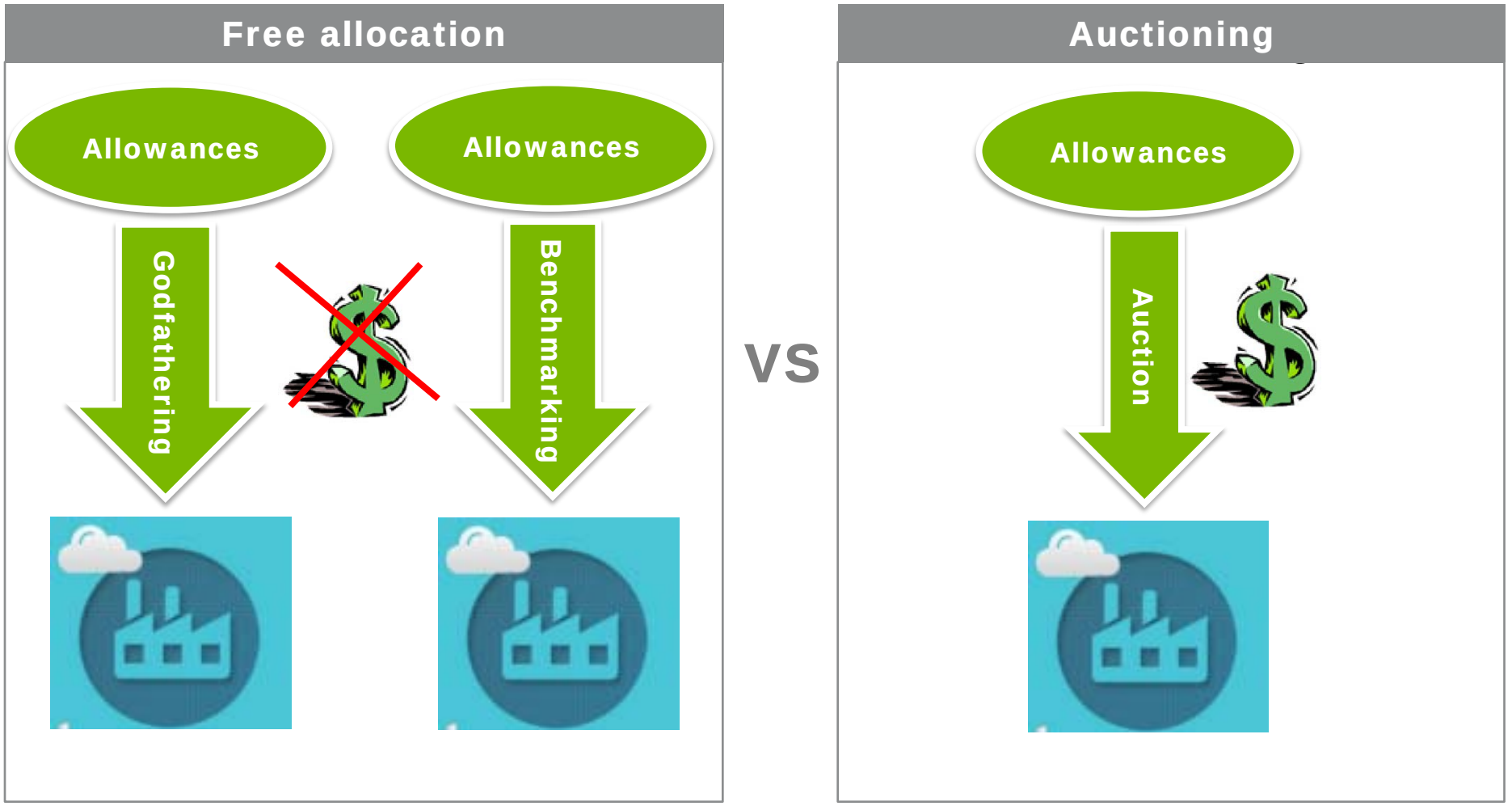
Exploring allocation

Auctioning in theory the best methodology

But free allocation to limit cost burden and protect competitiveness

Each allocation methodology has its pro's and cons

Allowances can be freely allocated or auctioned



Auctioning is the in theory best allocation methodology

Ever since emissions trading appeared in theory, there have been ongoing debates about the appropriate way of allocating emission allowances.

Why auctioning?

- Auctioning guarantees that market participants feel the full carbon costs of their production. This ensures that the carbon price signal incentivizes cleaner production and product substitution
- Auctioning is also relatively simple to implement and is transparent to all participants
- It allows for a good price discovery in the ETS
- It makes it easier to deal with new entrants
- It avoids that companies pass on the costs of allowances they received for free to their consumers resulting in wind-fall profits (due to a monopoly of companies in certain sectors)

Conclusion

- Auctioning (i.e. no free allocation) is in theory the best to have best carbon signal and avoids windfall profits

But industry fears the cost burden in view of competitiveness

Cembureau (European trade association cement)

"…clinker and cement production in the EU would be seriously affected by carbon leakage…[]…as a consequence, the relocation of clinker production to countries with no carbon constraints would accelerate from 2013…" (Oct. 2008)

Eurofer (European steel association)

"…The EU should not be overambitious [in its 2030 emission reduction goals] if no one else on the planet is following…" (March 2014)

Energy ministers from smaller EU countries

"…We will not sacrifice steelmaking competitiveness to meet proposed EU 2030 carbon emissions targets…" (March 2014)

Alliance of Energy Intensive Industries (multi-industry association)

"…The Carbon Leakage protection for industry is under threat…" (Sept 2013)

Sources: Cembureau, Eurofer, Alliance of Energy Intensive industries

Carbon cost is driven by several factors and can have a substantial impact on cost - the cement sector as an example

Carbon cost drivers

Driver

Result

Electricity Intensity [0.10 MWh/t cem.[1]]

Electricity mix CO_2 intensity [0.465 tCO_2/MWh[2]]

Electricity emissions [0.04 tCO_2/t cement]

Process emissions intensity [0.52 tCO_2/t clinker[3]]

Clinker content [0.95 t clinker/ t cement]

Process emissions [0.49 tCO_2/t cement]

Fuel Intensity [3.7 GJ/t clinker[4]]

Fuel mix CO_2 intensity [0.086 tCO_2/GJ[5]]

Fuel emissions [0.30 tCO_2/t cement]

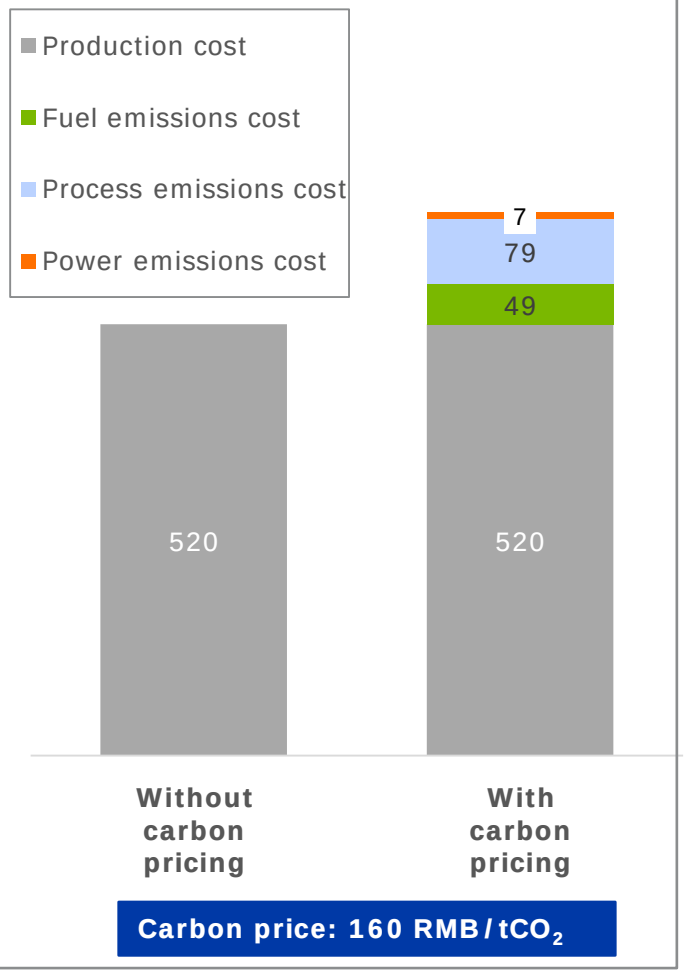
Total CO_2 emissions [0.84 tCO_2/t cement]

Carbon price [160 RMB/tCO_2]

Carbon Cost [135 RMB/t cement]

Impact on prod. cost

Unit: RMB/t cement

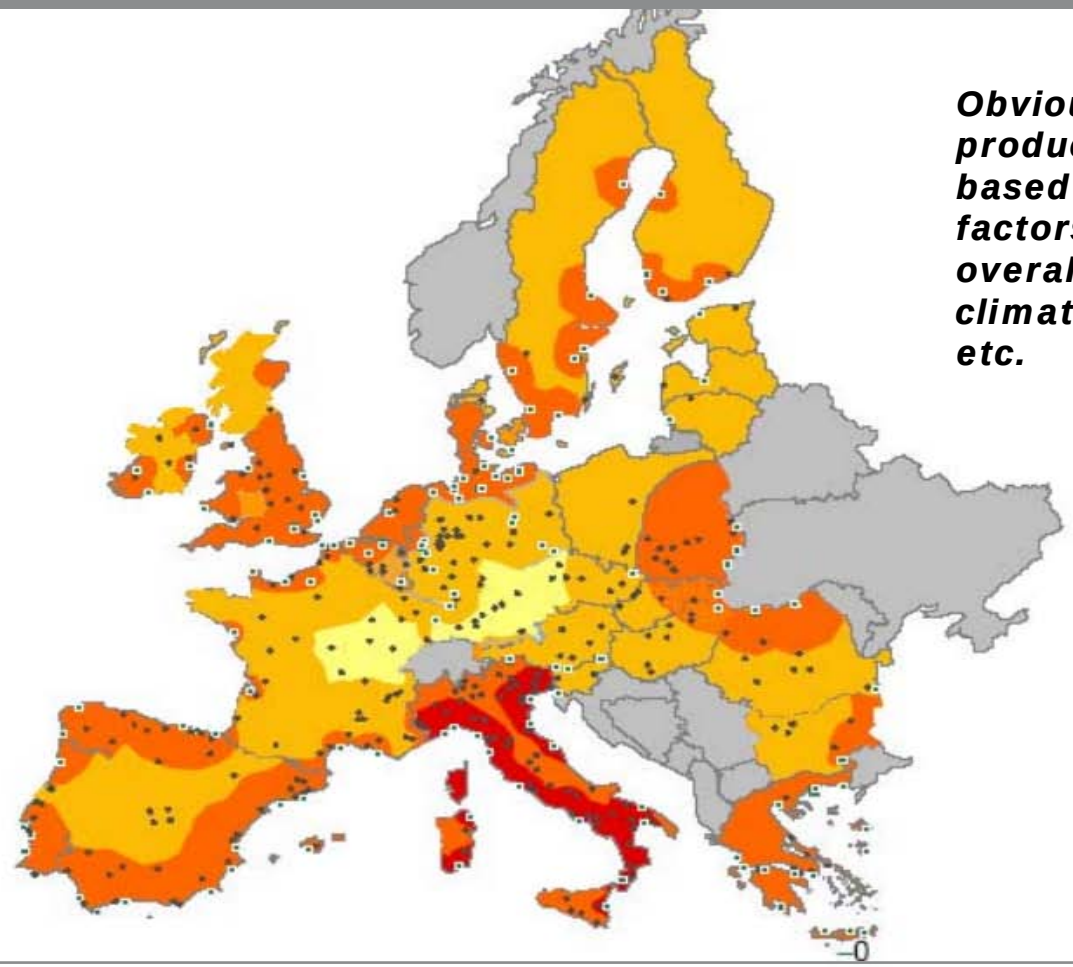


Example is valid for Ordinary Portland Cement which is the prevailing cement type globally. Assumed currency rate: 8 RMB/Euro

Sources: [1] Ecofys; [2] European Commission; [3] EU ETS MRG; [4] WBCSD Getting the Numbers Right Database (valid for EU28 in 2012.) [5] Production cost: IEA ETSAP

The impact on production sites of carbon pricing depends on geographical location – cement industry example

The carbon leakage risk exposure depends on location and carbon



Obviously investment and production decisions are based on a lot of different factors as well such as overall investment climate, proximity to markets etc.

CO_2 price of production at risk

- 0-80 RMB/tCO_2
- 81-160 RMB/tCO_2
- 161-240 RMB/tCO_2
- 241-281 RMB/tCO_2
- Main country entrances
- Integrated plant

Source: BCG

General information: Auctioning

General functioning	• An amount of allowances is auctioned to participants • Participants join an auction on a voluntary basis
Allocation method - incumbents	• Participants take part in an auction to purchase the amount of allowances they need at the price they are willing to pay • Mitigation actions are directly rewarded by a lower need to buy allowances
Allocation method – new entrants	• Similar as for incumbents
Main attractiveness	• In theory highest economic efficiency • Early action fully awarded, delays not incentivised • No discussion on fairness between incumbents and new entrants • No closure rules needed • Simple and transparent, limited data needs, lower transaction costs • No windfall profits from cost pass through of allowances received for free
Main drawbacks	• Higher compliance costs: participants pay for allowances needed • Low acceptance among industry, some governments
Points of attention	• Auction design choices can impact the system's economic efficiency, equity, fairness and transaction costs • Re-distribution of auction revenues may require a secondary allocation mechanism

General information: Grandfathering

General functioning	• Free allocation based on historic emissions
Allocation method - incumbents	• Incumbents receive a number of allowances that is proportional to or derived from their historic emissions NB: this can be adjusted to reflect expected production growth, future emission reductions, or a 'haircut'
Allocation method – new entrants	• New entrants also receive allowances for free from a New Entrants Reserve (NER). • 'Real' grandfathering not possible as no historic emissions exist • Based on actual capacity and assumptions on capacity utilisation factor and CO_2 intensity
Main attractiveness	• Free allocation limits participants' additional costs due to ETS • High acceptance by participants • Relatively simple
Main drawbacks	• Perverse incentive: largest emitters receive highest allocation • Does not reward early action • Can result in high windfall profits
Points of attention	• Needs rules on closures • Can lead to delayed implementation of emission reductions until later allocation periods to maximise allocation • Large need for historic data; complex when inventories are incomplete or inconsistent (across regions/sectors/installations)

Grandfathering: Benchmarking

General functioning	• Free allocation based on a performance measure, i.e. the benchmark.
Allocation method - incumbents	• Based on plant-level activity data and the appropriate benchmark for the type of plant • Benchmark is defined as a carbon intensity, i.e. GHG emissions per unit of input, throughput or output • NB: this can be adjusted to reflect expected production growth, or a 'haircut'
Allocation method – new entrants	• New entrants also receive allowances for free from a NER • Determined on basis of their capacity, with assumptions on capacity utilisation factor and benchmark
Main attractiveness	• Rewards early action; does not incentivise delayed action • If designed well it can achieve both environmental effectiveness (target achievement) and economic efficiency (achieving target at lowest cost)
Main drawbacks	• Defining the appropriate benchmark can be complicated (definition of peers/products to compare to) • High data need (confidential!) and high level of complexity
Points of attention	• Choice of benchmark can determine incentivised measures • May require an extensive process to agree on appropriate benchmarks and collect and verify all required data • Updating of benchmarks may be needed but can lead to distortions

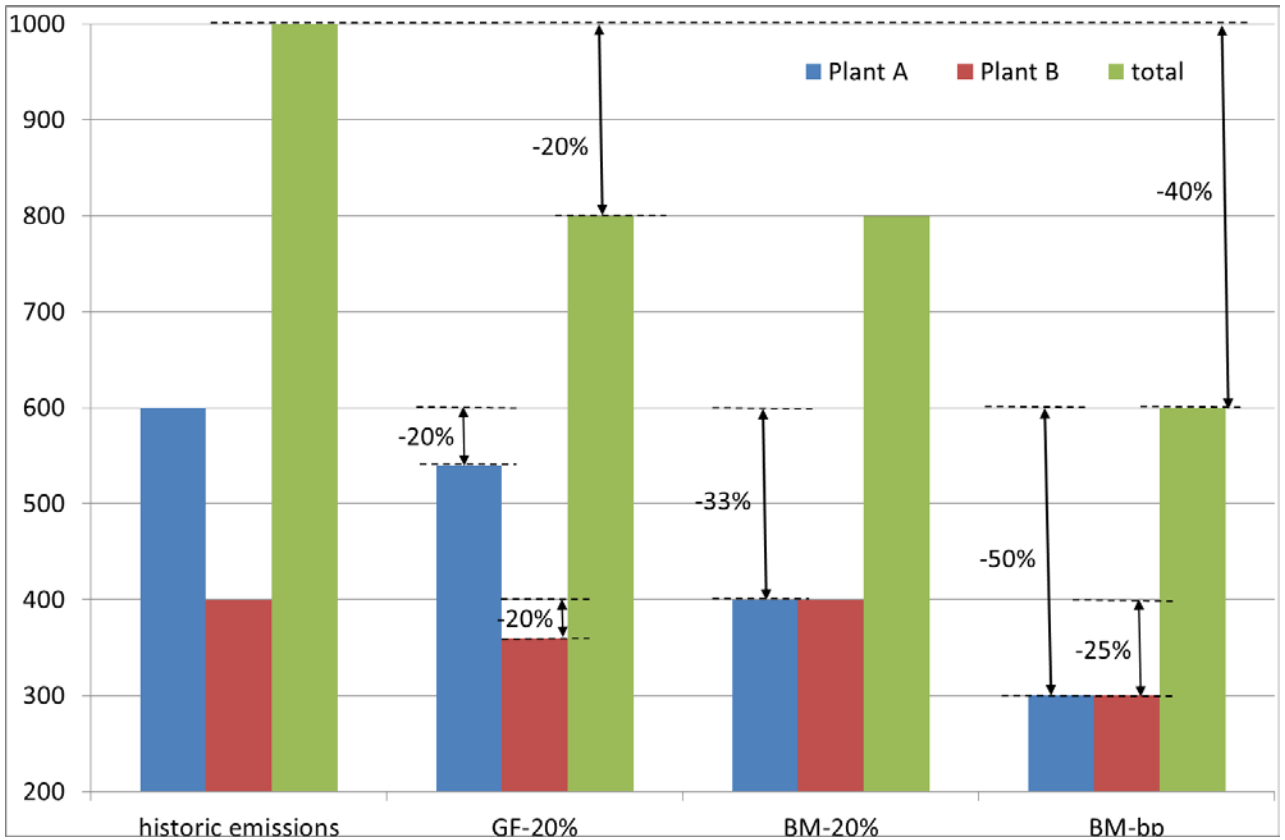
In theory auctioning is the best approach, but in practice its acceptability is low and competitiveness may be distorted

	Grandfathering	Benchmarking	Auctioning
Environmental effectiveness	-	0	+
Economic efficiency	-	0	+
Equity	--	+	++
Simplicity	0	-	+
Social acceptability	-	0	+
Acceptability ETS participants	++	+	--
Impact competitiveness outside ETS	0	0	--
Transparency	-	0	+

Score: ++ (very good), + (good), 0 (intermediate), - (poor), -- (very poor)

Different approaches lead to different amounts of allowances

Impact of different approaches on the amount of allowances

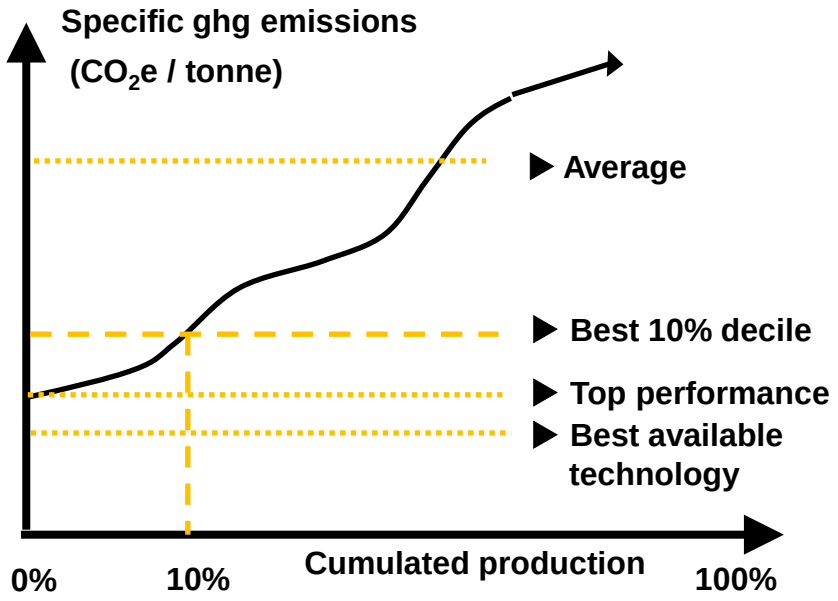


Source: adjusted from Phylipsen, 2014

How to make a benchmark curve and a practical example – the cement industry

Benchmark curve basics

- Benchmarks can be derived from technology standards or from the performance of a set of plants, ordered in a benchmark curve, with different ambition levels



Example for the cement industry

- Using the CSI cement curve as a real-life basis, and assuming:
  - Allocation is simply determined by BM * production
  - BM = 25%-ile CO2 intensity = 587 kg/t cement
  - Plant A performance is at 75% of the curve, Plant B is at 10%
- Per ktonne of cement, both would receive 587 allowances:
  - Plant A would receive 10% more than needed to cover its specific emissions of 553 kg/t
  - Plant B would receive 16% less than needed to cover its specific emissions of 700 kg/t

Source: WBCSD Cement Sustainability Initiative

Benchmark based allocation is worth to consider from the start

Considerations

- Auctioning is the preferred option, but is often politically not acceptable due to the high resulting cost burden to industry
- Grandfathering often chosen at the start of an ETS, because it is relatively simple, has a relation to the actual emissions of the participants and avoids a significant cost burden to tall the participants of the scheme.

However, benchmark-based allocation offers significant advantages

- Same rules for existing and new installations
- Not necessarily data-intensive (e.g. when based on existing standards)
- Reward for early action
- Possibility to combine it with actual production levels providing true competiveness protection even with growing production (combing this with a fixed absolute cap not easy though)

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In EU-ETS phase I and II most allowances were grandfathered and there was only limited benchmarking and auctioning (1/2)

Allocation method - incumbents	• Predominantly grandfathering • Benchmarking only used as underlying factor in allocation or for selected sectors • Auctioning max 5% in phase I (in practice only 0.1%) and max 10% in phase II (in practice only 3.7%) • Each country determined its own allocation approach, based own interpretation of common guidance by Eur. Commission • Usually based on production, energy or emission scenarios; taking into account growth expectations, emission reduction potentials and 'haircut'
Allocation method – new entrants	• Mostly based on benchmarking, either fully or partly standardised (defined at sector level, rather than plant) • In part also 'as requested' (not standardised) • New entrant reserve defined per/by MS, resulting in different sizes and rules
Lessons learned	• High windfall profits from free allocation for participants that could pass on opportunity costs (value of allowances) • Need for allowances was difficult to judge by government, leading to 'error on the side of caution' and over-allocation • Active lobbying by participants to national governments for higher allocation – variation in responsiveness across MS >> High amount of over-allocation and low prices (dropping to 0)

In EU-ETS phase I and II most allowances were grandfathered and there was only limited benchmarking and auctioning (2/2)

Lessons learned (continued)	• Differences across countries in scope (i.e. which participants) and leniency of allocation • Differences between approach towards incumbents and new entrants • Aggregation level, quality and transparency strongly differed between countries, making judgment on compliance with criteria and level playing field difficult • Lack of reliable emission data in first years resulted in large knowledge difference among participants >> Negative effects on competitiveness Availability of verified emissions data strongly reduced price unawareness and volatility and provided a solid basis for phase II allocation
Relevance for China	• Harmonisation across provinces is important • Room for interpretation in regulation can create competitive distortions • Free allocation does not guarantee that consumer prices will not increase • Reliable data is crucial for proper allocation and good functioning of the ETS market

While in EU-ETS phase III, most allowances are auctioning and freely allocation via benchmarking

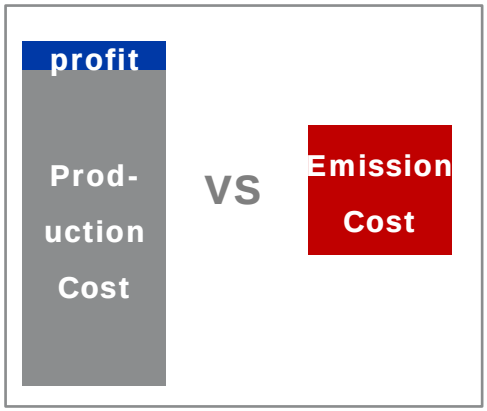
Allocation method - incumbents	• Auctioning as default allocation approach • Full auctioning for power sector from 2013 Exception: transitional free allowances in 8 MS until 2019 • Free allocation for industry based on BM. Gradually reducing from 80% in 2013 to 30% in 2020 (aim to 0% by 2027) • Exception: sectors vulnerable to carbon leakage still receive their allocation for free • Free allocation only part of what is needed to cover emissions • Share auctioning: 40% in 2013; at least 48% in 2013-2020
Allocation method – new entrants	• One NER at EU level: 5% of total quantity of allowances in EU • Allocation approach similar as for incumbents with same activity • Harmonised rules for new entrants , including who qualifies and how allocation is determined • Remainder of NER at the end of the period to be auctioned
Lessons learned (from system development; only 1 year of implementation)	• Strong lobby for carbon leakage status, leading to much larger share of free allocation than foreseen • Level playing field for new entrants and incumbents important • Large phase II overcapacity till date keeps phase III prices low >> further reforms needed (in preparation)
Relevance for China	• Use of auctioning for power sector easier than for industry as competitiveness is less of an issue • Auctioning revenues can be substantial. These can be used to offset negative ETS impacts on participants or end-users • Potential for carbon leakage can exist between between procinces (if allocation rules differ) • The size of NER in case of fast growth is especially important for sectors that are vulnerable to carbon leakage

Summary EU ETS phase I – III

	Characteristics	Implications
Phase 1 ('05- '07) Phase 2 ('08- '12)	> Free allocation mainly distributed based on historic emissions (grandfathering) > Method for allocation not harmonized	> Early-action by an installation is not rewarded > Protection of country's own industry > Wind-fall profits for power sector
Phase 3 ('13- '20)	> Introduction of auctioning > Almost no free allocation for the power sector > Free allocation to industry based on EU-wide benchmarks	> No unfair competition distortion > Early action by installations is rewarded > No wind-fall profits for power sector

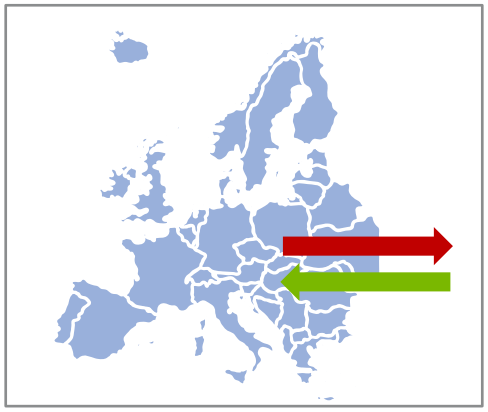
Quantitative criteria and thresholds used for determining eligibility for a carbon leakage status in EU (1/2)

1. Induced carbon cost ratio



$$\frac{\text{ect emissions} * \text{Share Auctioned} + \text{Indirect Emissions}) * \text{Carbon P}}{\text{Gross Value Added}}$$

2. Trade intensity ratio



$$\frac{\text{Export to non} - \text{EU27} + \text{Import from non} - \text{EU27}}{\text{Annual turnover} + \text{Import from non} - \text{EU27}}$$

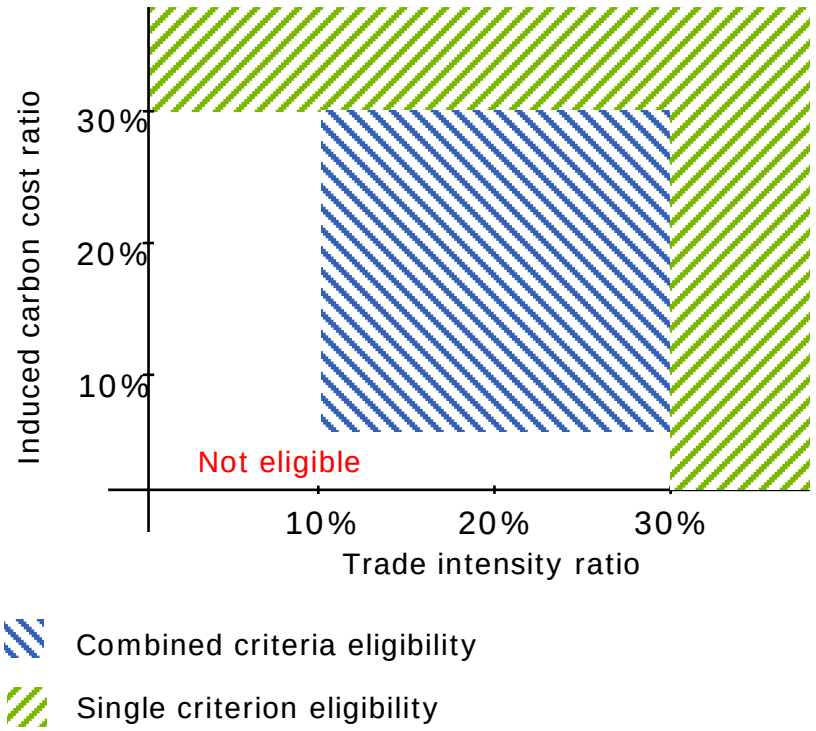
Quantitative criteria and thresholds used for determining eligibility for a carbon leakage status in EU (2/2)

When is a sector eligible for a Carbon Leakage status in the EU?

> In three cases:

1. Induced Carbon Cost Ratio ≥ 30%
2. Trade Intensity Ratio ≥ 30%
3. Induced Carbon Cost Ratio ≥ 5% AND Trade Intensity Ratio ≥ 10%

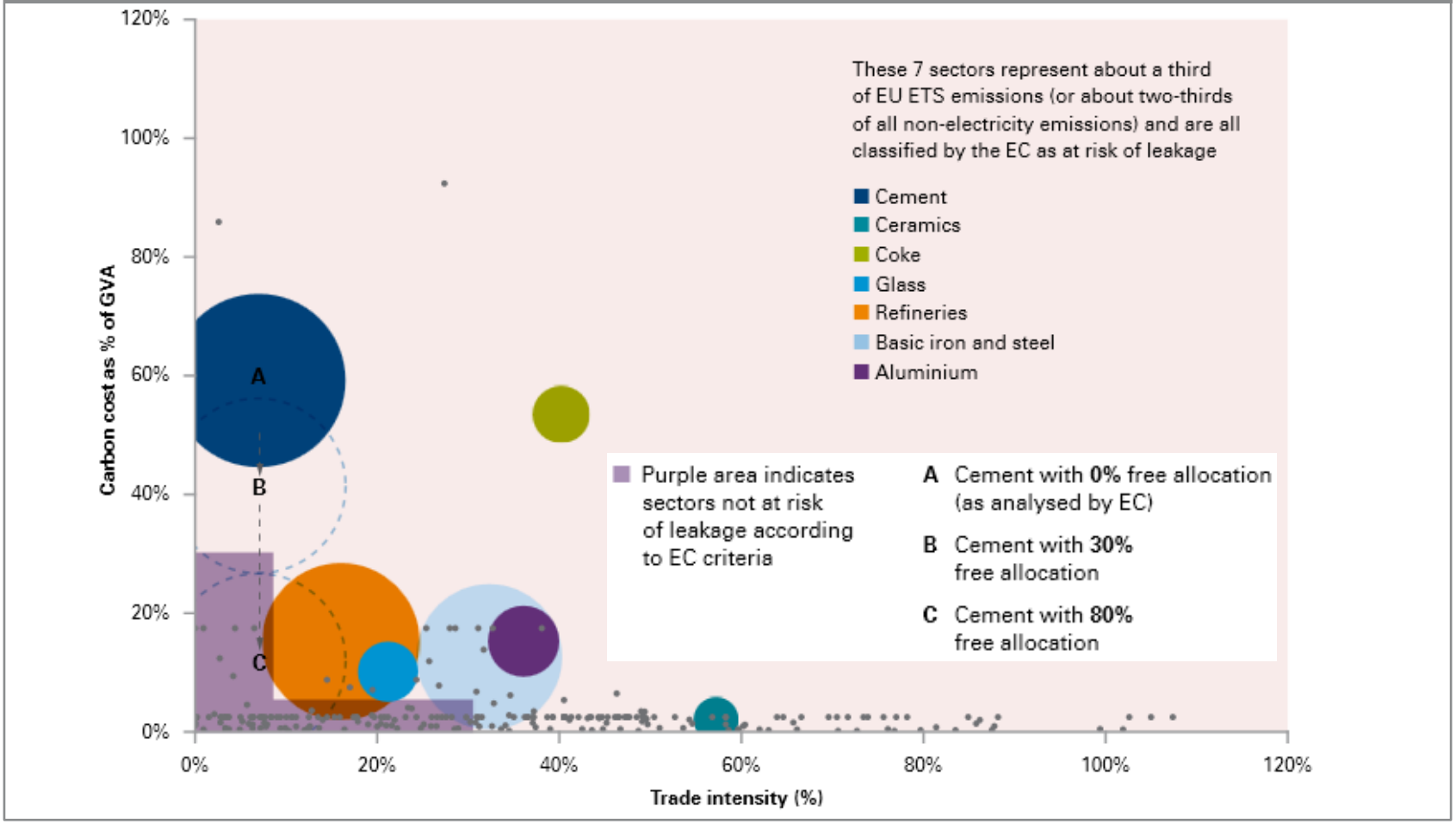
… which can be visualized as follows



Source: European Commission

The cost burden for industry can indeed be substantial

Carbon cost as % of value added VS. Trade Intensity for EU sectors



Notes: Dots illustrate the position of all sectors covered in the EC provisional assessment, with the relative emission scale of main sectors illustrated by the size of bubbles. The chart also illustrates for the case of cement the impact of the proposed 'default' level of free allocation that sectors would receive if NOT classified as being at risk, in 2013 (80%) and 2020 (30%). All calculations at the standard price assumption of €30/tCO2.
Source: The Carbon Trust

Some facts about the Chinese ETS pilots

Facts

- The detailed allocation methodologies are defined in “Carbon Emission Allowance Allocation Plans” by local Development and Reform Commissions
- The allocation methodologies vary from pilot to pilot, even in the same sector.
- The allocation to covered enterprises is primarily based on the historical emissions data.
- The allocation to new capacity is based on benchmarks or expected emissions of the planned new capacity.
- Benchmarking is so far used in power sector, but might be applied more widely in national scheme and following pilot phases
- More and more pilots to experience auctioning (Guangdong, Hubei etc.)

Similarities and differences exist among China's ETS pilot programs

Comparison of China ETS pilot programs

	Guangdong	Shanghai	Tianjin	Beijing	Shenzhen	Hubei	Chongqing
Allowances	2013 (388Mt)	2013 (160Mt), 2014, 2015	2013 (160Mt), 2014*, 2015*	2013 (50Mt)	2013 (33Mt)*, 2014*, 2015*	2014 (324Mt)	2013 (125Mt)
Grandfathering							
Baseline years	2010-2012	2009-2011	2009-2012	2009-2012	N/A	2009-2011	2008-2012
sector	Power and heat cogeneration, mining in cement, petrochemical, iron and steel scrap processing	Industrial, manufacturing and public buildings	Power and heat, iron and steel, chemical, petrochemical, oil and gas	Power and heat, cement, chemical, other industrial and service sectors	N/A	Power, iron and steel, chemical, petrochemical, car making, non-ferrous metals, glass, paper and other industrial sectors	Power and heat, iron and steel, chemical, petrochemical, coal mine, glass, paper and other industrial sectors
calculation	*historical emissions x reduction factor*	*historical emissions + early actions credits*	*Power: historical emissions per production x production Others: historical emissions x efficiency factor x reduction factor*	*Power: historical emissions per production x production x reduction factor Other: historical emissions x reduction factor*	N/A	*historical emissions x reduction factor*	*the highest historical year emissions x reduction factor*
Benchmarking							
sector	Power, cement and long process steel	Power sector, aviation, airports and ports	New entrants and expanded capacity	New entrants and expanded capacity	Power, water, buildings and industrial sectors	Power and heat	N/A
calculation	*benchmark x historical production x control factor*	*benchmark x production*	*benchmark x production*	*benchmark x production*	*benchmark x production***	*benchmark x exceeded production + (historical emissions x reduction factor) x 50%*	N/A
adjust to actual production	no	yes	Yes	yes	yes	yes	yes
Auctioning	3% in 2013, 2014; 10% in 2015	no	no	no	>3% from 2014	30% in 2014	no
New entrants	benchmarking or expected energy consumption	expected capacity and loading rate	benchmarking	benchmarking	benchmarking	N/A	N/A

Carbon leakage / allocation in other ETS systems

	California Cap-and-Trade Program	Québec Cap and Trade System
% domestic emissions included / sector coverage	35% (increase to 85% in 2015) / Industry, power	30% (increase to 85% in 2015) / industry, electricity sectors, (starting 2015) Fossil fuel distributors
Allocation method	Free allocation via benchmarking / Auctioning	Free allocation via benchmarking combining grandfathering / Auctioning
Main carbon leakage protection mechanism	Output based free allocation system, based on benchmarks, allocates to sectors according to the risk level classification. Ex post true up is included	Free allocation
Share freely allocated	Share of benchmark, dependent on CL risk of sector: 100% (high), 50% (medium), 30% (low) or no risk	100%
Quantitative criteria	1. tCO_2 / Value added 2. (imports + export) / (shipments + exports)	-
Thresholds	Stand-alone*: not applicable Combined: Criterion 1: (high: >5,000; medium: 1,000-5,000; low: 100-999) Criterion 2: (high: >19%, medium 10-19%, low: <10%)	-
Interesting feature(s)	Amount of free allocation dependent on risk level	-

* "*Stand-alone*" refers to whether a sector (or product) can be eligible for a Carbon Leakage status based on a meeting single criterion only
Sources: CEPS, World Bank, Bloomberg

Carbon leakage / allocation in other ETS systems

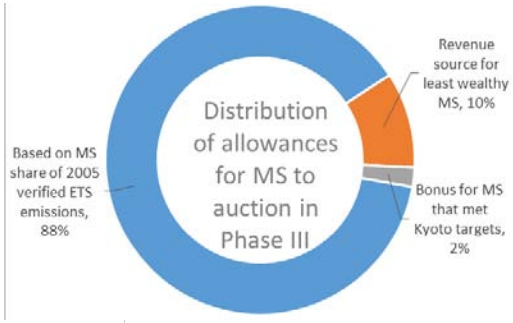
	Australia's Carbon Pricing Mechanism (Cancelled in July 2014)	South Korea's ETS
% domestic emissions included / sector coverage	60% / Industry, transport, waste	60% / Industry, power
Allocation method	Free allocation via benchmarking/ grandfathering/Auctioning	Free allocation via benchmarking/ grandfathering/Auctioning
Main carbon leakage protection mechanism	Free allocation in Australia is done ex-post according to the risk level classification, based on the entity's previous year's level of production, with true up to account for actual production in the previous period.	Free allocation: benchmarking (new entrants) & grandfathering (existing facilities)
Share freely allocated	Share of benchmark. High emission-intensive receive 94.5% and moderately emission- intensive products receive 66% of benchmark	100%
Quantitative criteria	1. tCO_2 / Revenue OR tCO_2 / Value Added 2. (Annual value of imports + exports / annual value of production) > 10%	1. Emission Cost / value added[1] 2. Trade Intensity
Thresholds	Stand-alone*: not applicable Combined: Criterion 1: highly emission intensive: >2,000 tCO_2e / million AUD revenue OR >6,000 tCO_2e per million AUD added value moderately emission intensive: >1,000 tCO_2e / million AUD revenue OR >3,000 tCO_2e per million AUD added value Criterion 2: <10%	Stand-alone*: Criteria 1 or 2 > 30% Combined: Criterion 1 >5%, criterion 2 >10%
Interesting feature(s)	Not sectors but products receive a carbon leakage status, thereby avoiding the need for fallback allocation approaches; Amount of free allocation dependent on risk level	

EU ETS auctioning

- Auctioning increasingly replacing free allocation as the method for allocating allowances to all sectors except aviation
- Member States auction allowances through appointed auctioneers
- Operators can purchase allowances either through auctions or on secondary market
- Auctioning requirements set out in a separate Auctioning Regulation
- Regulated market authorised pursuant to EU financial markets legislation
- From Phase 3, auctions are held on:
  - either the **common auction platform,** appointed through a joint procurement procedure. The EU and 25 MS use the common auction platform European Energy Exchange (EEX) (also used by Germany as opted out platform), as do EEA-EFTA States
  - or an **'opt-out' auction platform** appointed directly by MS. Three MS have opted out. ICE Futures Europe (ICE) is the opt out platform for UK.
- Auctions accessible by internet, dedicated connections, fax.

Sectors have variable auctioning demands depending on carbon leakage status

Allowances for auctioning are primarily distributed among MS based on historical emissions, but includes a share for less wealthy MS to help their economic growth

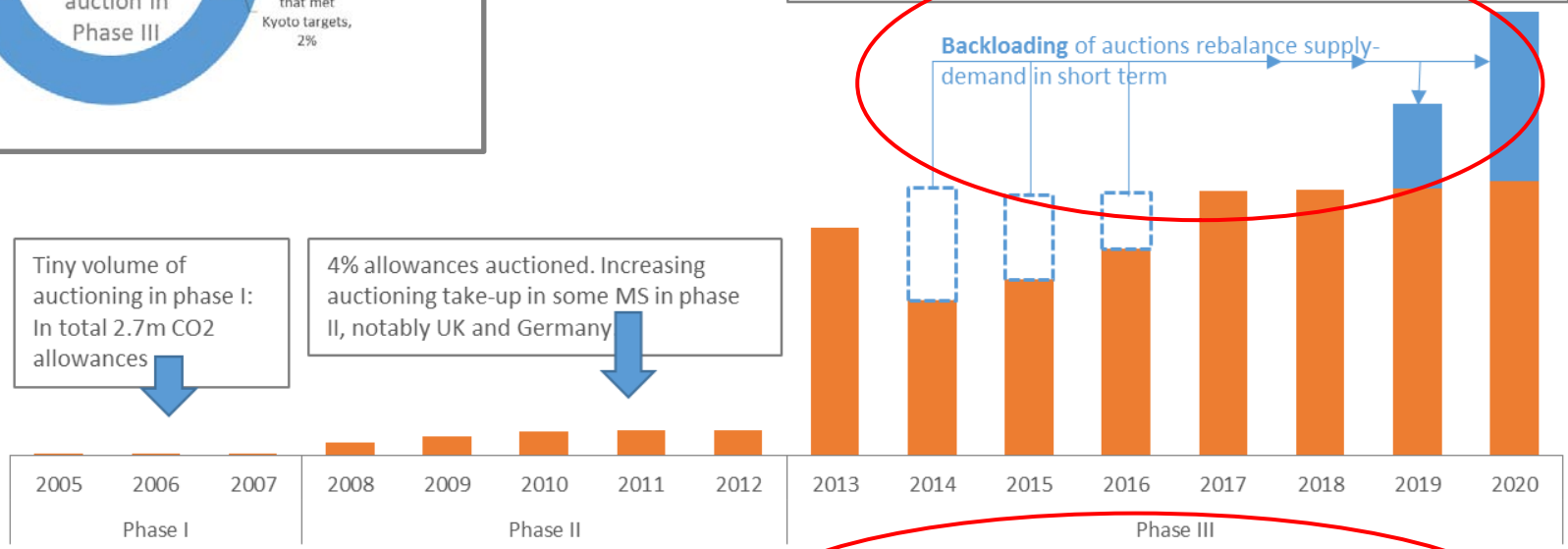


In phase III: >40% of allowances required to be auctioned, share increasing over time, annual average of nearly 1 billion EUAs to be auctioned.

Backloading of auctions rebalance supply-demand in short term

Tiny volume of auctioning in phase I: In total 2.7m CO2 allowances

4% allowances auctioned. Increasing auctioning take-up in some MS in phase II, notably UK and Germany



Optional auctioning: MS option to sell <5% of CO2 emission cap

Auctioning optional: MS option to sell <10% of CO2 emission cap.

Power sector: 100% auctioning; exception for 8 MS that need time to modernise - these get declining % free allocation 2013-2019
Manufacturing industry 20% auctioning in 2013, rising to 70% in 2020
Aviation: 15% auctioning over whole period

EU ETS auction operation – actors and roles

Auction platforms

- Advertise auction calendar
- Conduct auctions
- Publish auction results
- Check eligibility of bidders: only authorised bidders may participate
- Ensure all information available to market is timely and non-discriminatory
- Manages confidentiality of bidders / business secrecy

Auctioneers

- Appointed by each MS
- Pre-depositing allowances to the auction platform on behalf of the appointing MS
- Receives auction proceeds and disburses them to the appointing MS

Bidders

- Apply for admission to participate in auction
- Place bids for allowances
- Professional intermediaries (e.g. investment firms, credit institutions, or authorized persons) who bid on behalf of others must be licensed and supervised by national authorities and have to abide by the rules set out in the Auctioning Regulation and/or in Directive 2004/39/EC.

National competent authority

- Responsible for supervising the conduct of investment firms, credit institutions and other persons authorised to bid on behalf of others including any necessary investigation and prosecution of fraud, money laundering or market abuse

Auction monitor

- Responsible for reporting to MS and the Commission on the functioning of all auction platforms

European Commission

- Overall oversight

EU ETS auction functioning

- Held (mostly) weekly, publicised long in advance
- Single-round auctions with sealed bids, uniform prices (i.e. all successful bids are allocated at the auction *clearing price*).
- Lot size of 500 or 1000 allowances. All allowances in the lot are auctioned, or none at all
- Products auctioned are spot products (i.e. delivery within 5 days of auction) not futures
- Each auction has a single window, open for at least two hours
- Bid(s) may be submitted, modified and withdrawn during the bidding window. Bids specify: volume, price, identity of client
- Immediately after auction closes:
  - **Clearing price** is determined as the price at which sum of (descending ranked bids) volumes matches or exceeds allowances auctioned. Auction house publishes clearing price
  - All bids with price higher than auction clearing price are successful
  - **Auction reserve price** – minimum clearing price set on the basis of the market price for emission allowances before the auction
  - Tied bids dealt with through random selection
- Auction cancelled if clearing price is less than auction reserve price or if bid volume less than lot size.

Managing EU ETS auction revenue

- MS-auctioned allowances generate revenues that accrue to the MS (Article 10(3) of the ETS Directive), less costs of auction monitor
  - Non-legally binding recommendation that at least 50% is dedicated to mitigating / adapting to climate change in the EU and in third countries
  - MS should inform the Commission how the revenues are planned to be used
  - ETS Directive gives examples of ways to use the revenues
- 300 million allowances from the new entrants reserve also auctioned
  - Revenue results in NER300 funding programme supporting commercial demonstration projects in renewable energy and Carbon Capture and Storage (CCS)
  - European Commission has overall responsible for NER300
  - European Investment Bank responsible for selling the allowances at auction
- Revenues clearly vary depending on carbon price → uncertainty

California ETS auction overview

- Quarterly allowances let market participants purchase allowances directly from the California Air Resources Board (ARB)
  - Covered entities and opt-in covered entities – 15% of allowances offered for auction;
  - Electrical distribution utilities – 40% of allowances offered for auction; and
  - All other auction participants – 4% of allowances offered for auction.
- In addition to auctions ARB allocates allowances to electric utilities. Investor-owned utilities (IOUs) must use a reverse auction and use the proceeds to offset higher electricity costs to ratepayers; not so for publicly-owned utilities (POUs).
- Transportation fuels, which come under the cap in 2015, will have to buy all allowances at auction (because ARB believes the sector would not pass savings from free allowances to consumers)
  - ARB determines and posts the number of allowances available for auction 60 days prior.
    - At each auction State of California auctions vintages for the current year (2014) and for a future vintage (2017).
    - Eight auctions to date. August 2014 vintages sold at $11.50 per allowance; 2017 sold at $11.34 per allowance.
    - When transportation fuels come under the cap in 2015, auction is expected to generate up to $1 billion per year in State of California revenues. 25% of revenues to projects that benefit disadvantaged communities

California ETS auction details

- Auction platforms
  - Participants must first register to Compliance Information Tracking System Service (administered by third-parties)
    - All compliance instruments (allowances and offsets) must exist solely-in ARB's CITSS system
  - Auction platform designed and administered by Markit
    - Jurisdictions that link to California's cap regulation may use both platforms
- Unique design features
  - The auction contains a floor price ($10.71) and a three-tiered reserve ($42.38; $47.68 and $52.98). ARB offers reserve sales six weeks after each quarterly auction.
- CITSS contains both compliance accounts and accounts that limit the number of allowances a market participant can hold at any one time.
  - Allowances once placed in a CITSS compliance account are permanently retired for compliance purposes
- Auction oversight
  - Qualified ARB staff and Market Monitor (Market Analytics)