



International Carbon
Action Partnership

Scope and coverage of Emissions Trading Systems

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16 October 2023

EMISSIONS TRADING IN PRACTICE:

A Handbook on Design
and Implementation

SECOND
EDITION

ICAP-PMR ETS Handbook

Learning objectives

- Understand which sectors and gases to cover
- Understand the implications of the point of regulation
- Understand how to regulate different entities and the role of thresholds
- Understand the point of reporting obligations



What is the scope?

The scope defines the geographic area, sectors, emission sources, GHGs and entities that will be covered by the ETS.



Broad coverage

Benefits and risks

Broad scope

- **Greater certainty** over national emission targets and ETS cap trajectories
- **Improved market:** Greater efficiency through more abatement options, liquid market, stable prices
- **Competitiveness impacts:** Broad coverage reduces distortions between covered and uncovered firms

Narrow scope

- **Lower transaction and administrative costs** when small emitters are excluded
- **Distributional challenges:** Inclusion of sectors with high marginal abatement costs may lead to a disproportionately high share of compliance costs being borne by them, especially if cost-pass through varies among sectors

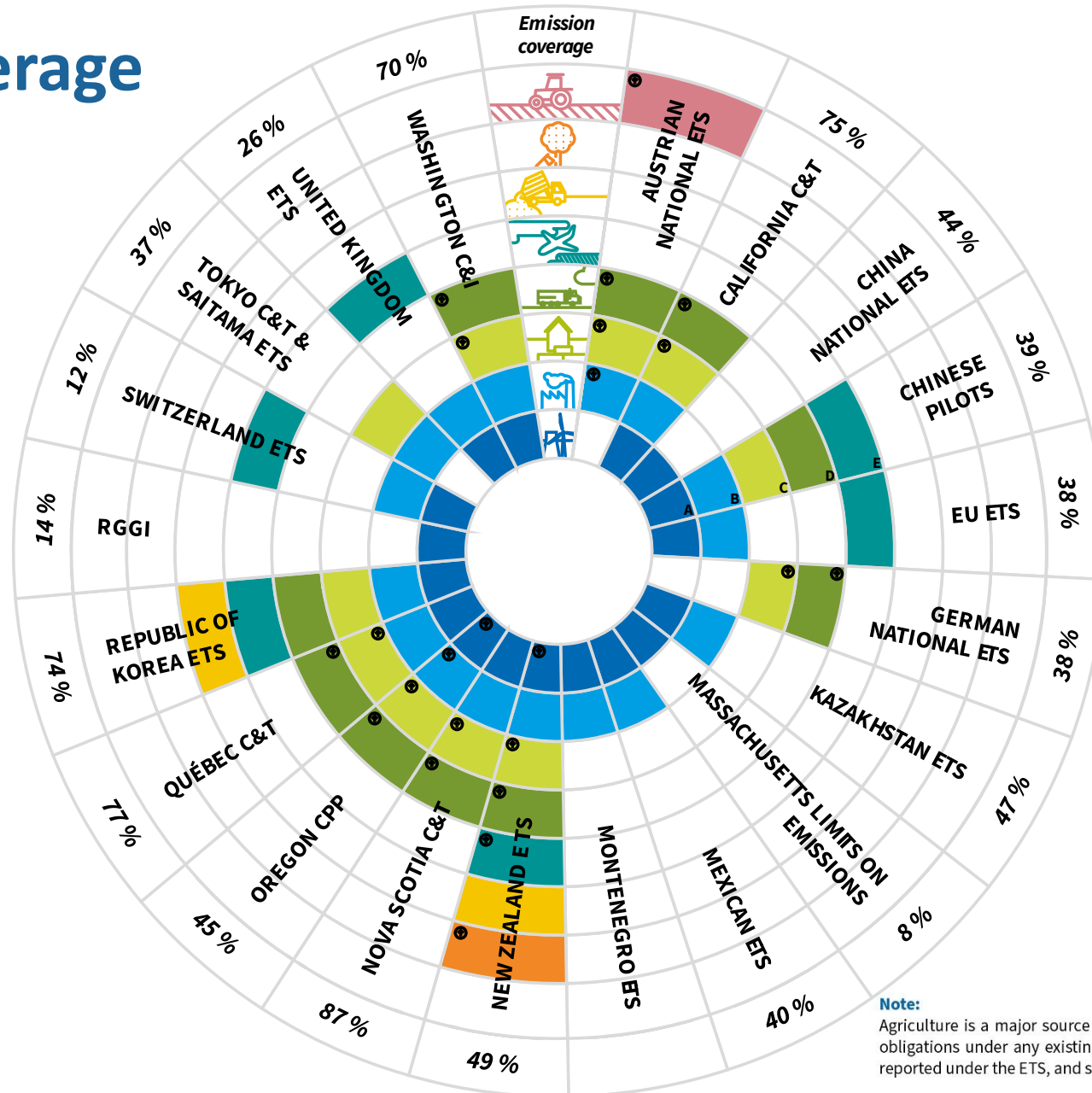
Coverage

Sectors

- How much does the sector contribute to **national GHG emissions**?
- Are there already **other climate policies** in place?
- What is the **composition of the sector**?
 - Small number of large emitters?
 - Many small, diffuse or remote emitters?
 - How hard is it to measure emissions?
 - How much mitigation potential and at what cost?
- What are possible **co-benefits** from including the sector?



Sectoral coverage across ETSs



- Most systems cover **power and industrial** sectors
- Increasing number of systems are covering **buildings and transport**
- Only NZ covers the **forestry** sector

Note:

Agriculture is a major source of biological emissions; however, the sector does not yet face direct compliance obligations under any existing ETS. Currently, in New Zealand, agricultural emissions must be monitored and reported under the ETS, and some offset programs (e.g. California) allow for offset projects in the sector.

Coverage

Gases

- What is the jurisdiction's **emissions profile**
- The more gases you cover, the more **comprehensive** your ETS will be
- Different GHGs have different **global warming potentials**
- How easy/costly is it to **monitor, report and verify** different gases?

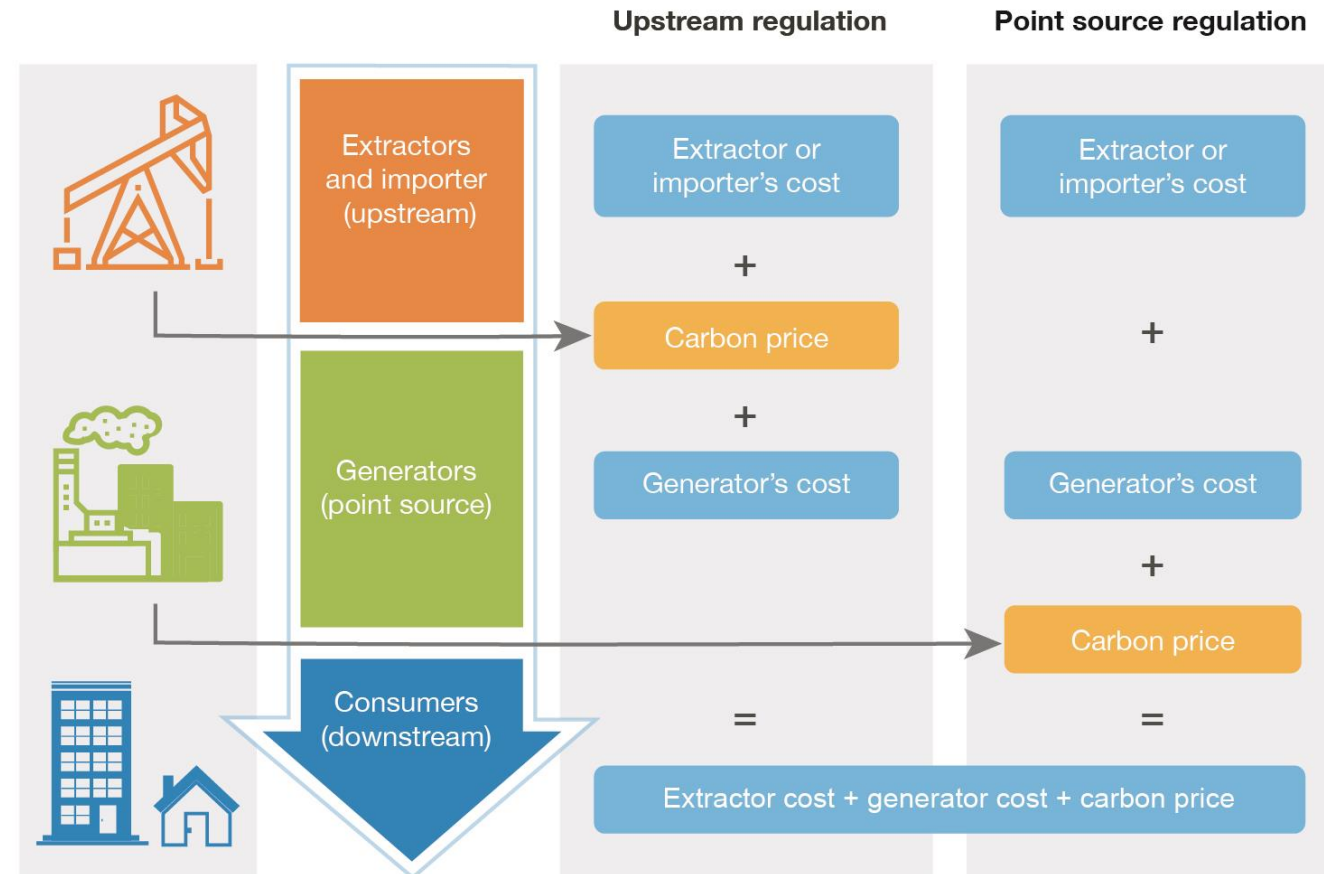
Jurisdiction	CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	NF ₃
California	●	●	●	●	●	●	●
China national and pilots*	●						
EU	●		●		●		
Kazakhstan	●						
Massachusetts	●						
Mexico Pilot	●						
New Zealand	●	●	●	●	●	●	
Nova Scotia	●	●	●	●	●	●	●
Québec	●	●	●	●	●	●	●
Republic of Korea	●	●	●	●	●	●	
Regional Greenhouse Gas Initiative (RGGI)	●						
Switzerland	●		●		●		
Toykyo-Saitama	●						

* With the exception of Chongqing, which covers all the above gases.

Point of regulation

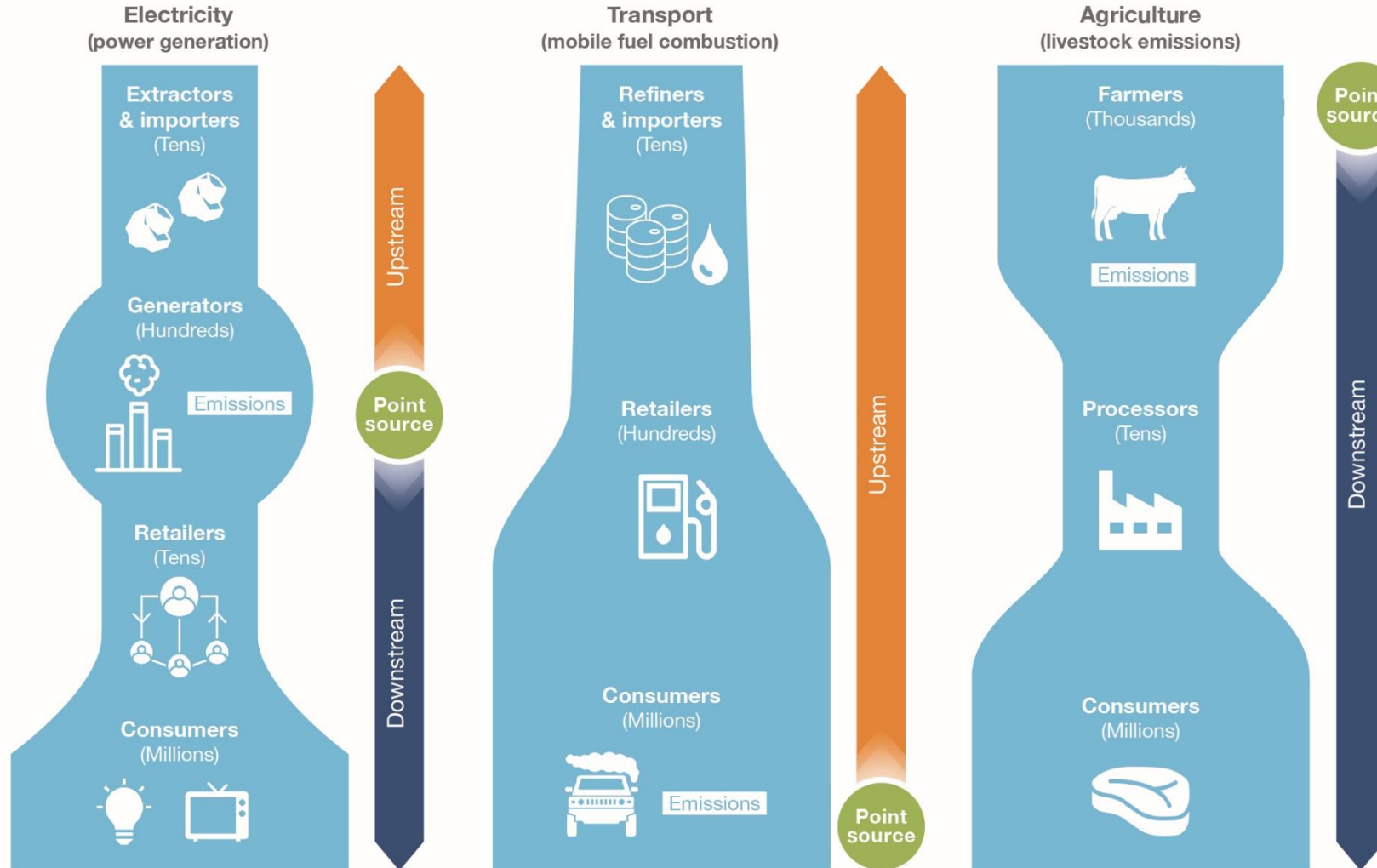
At which point should emissions be regulated?

- **Upstream:** Where the source of emissions is first commercialized by extractors, refiners, or importers
- **Point source:** Where GHGs are physically released into the atmosphere. Emissions can instead or also be regulated at the point of consumption.
- **Downstream:** Consumers



Note: This assumes 100 percent pass-through of the carbon price at extractor/importer and generator levels.

Examples of market concentration across sectors



Upstream coverage

Advantages

- Lower number of entities with large liabilities
- Lower administrative costs
- Thresholds not required
- Higher coverage

Case study

New Zealand's system is as far upstream as possible for most energy-related emissions, but forestry, waste, and industrial emissions dealt with downstream → administrative simplicity while ensuring comprehensive coverage



Point source and downstream coverage

Point source

- Existing reporting practices favor point source coverage
- Cost pass-through higher compared to upstream
- Higher carbon price visibility compared to upstream and more direct behavioural incentive to emitters
- Method of allocation – some allocation methods require downstream regulation (output based)

Downstream

- Consumers
- Used in, e.g., Korea ETS, Tokyo ETS, Saitama ETS



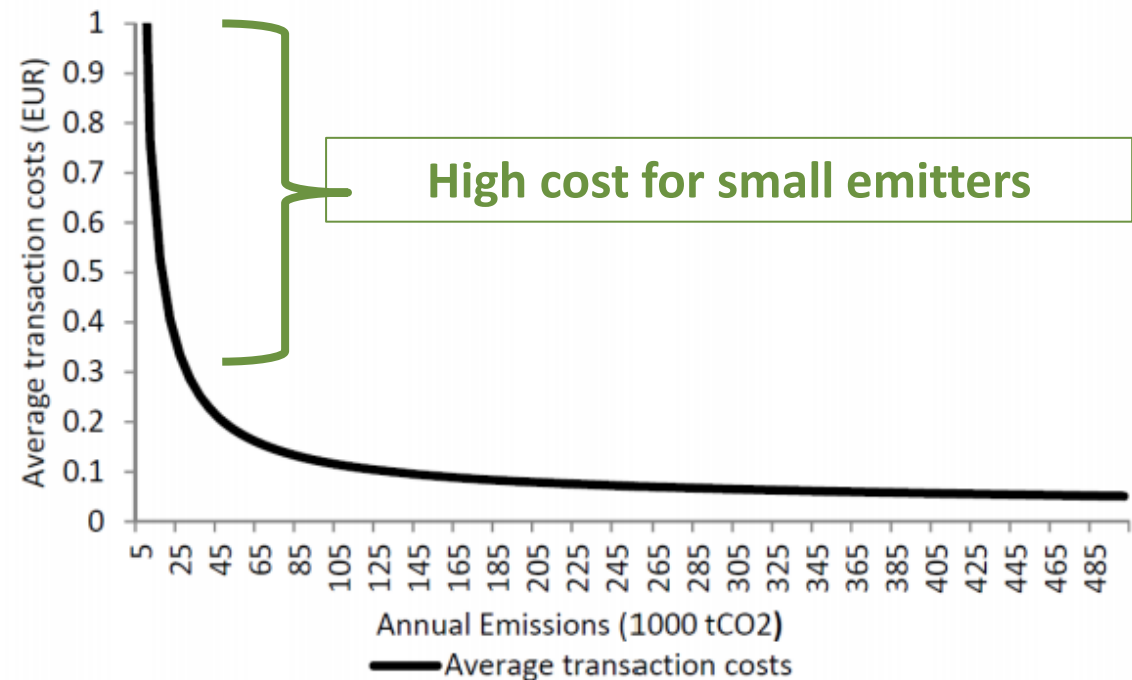
Thresholds

How to avoid too many small entities in the ETS?

Exclude entities below a certain size from the ETS

- Exclude participants without excluding many emissions
- Thresholds can be based on annual GHG emissions, energy consumption, imports, production, capacity, etc.

Average transaction cost/tCO₂ emitted in Germany



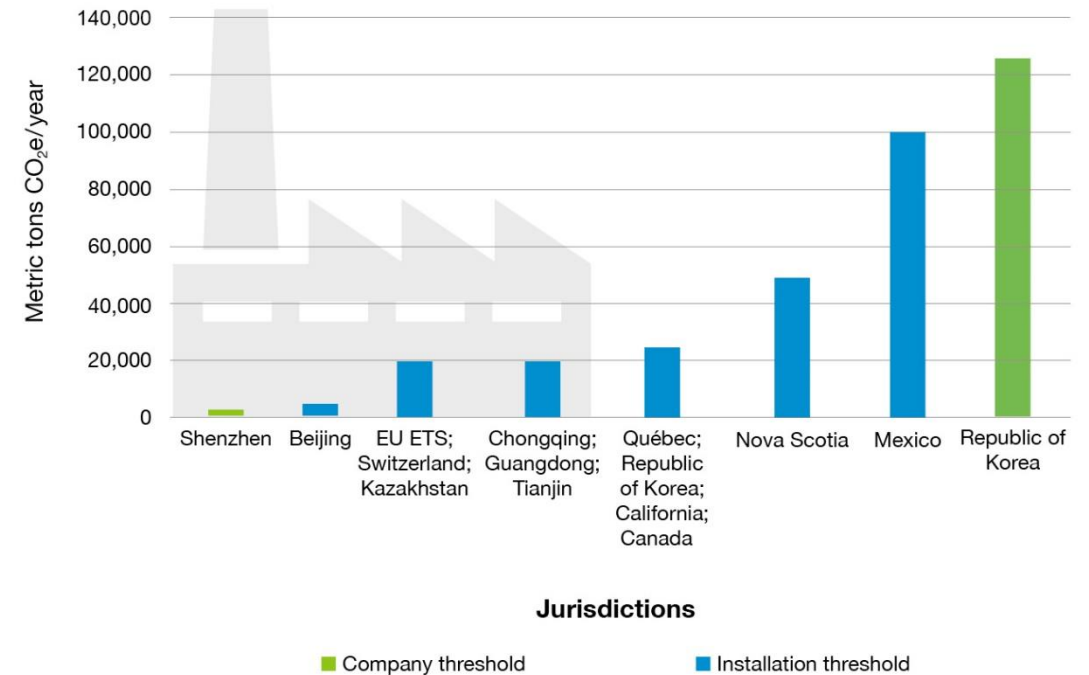
Source: Dutch Emissions Authority (2015) 'A simple and effective EU ETS', based on Heindl, 2012

Thresholds

What to consider when setting thresholds

- **Number of small sources:** many small sources → threshold may need to be lower
- **Regulatory and firm capacities:** small firms may have limited financial and human capital to participate in ETS
- Ability to **implement other climate measures** for firms below threshold
- **Intrasectoral leakage:** may create competitive distortions between those above and below
- **Potential for gaming:** companies may split up to fall below the threshold

Variation in thresholds across selected jurisdictions (metric tons CO₂e/year)



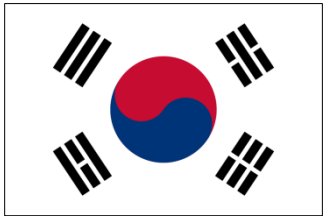
Note: This figure shows only jurisdictions where the inclusion threshold is measured in tons CO₂e of in/direct emissions per year.

Inclusion thresholds can vary by sector and type of entity. In Québec, for instance, fuel importers distributing > 200L are also subject to inclusion. The same threshold applies to Nova Scotia, where electricity importers and natural gas distributors with emissions > 10,000 tCO₂/year are included. Other systems set thresholds at both the facility and company level (e.g. Korea ETS). With certain exceptions (e.g. Shenzhen pilot), thresholds set at the company level are usually highest.

Level of reporting obligation

At which level should emissions be reported?

Company level



- **Lower administrative costs** – lower number of entities with large liabilities
- **Greater flexibility** – companies can manage emissions between installations without the need to trade
- ***E.g., Republic of Korea, Chinese pilots, Kazakhstan***

Installation level



- **Can be simpler** if multiple companies operate within the same installation
- Avoid **double counting**
- ***E.g., European Union, Tokyo***

Path dependency: consider the existing regulatory framework and point of reporting obligations

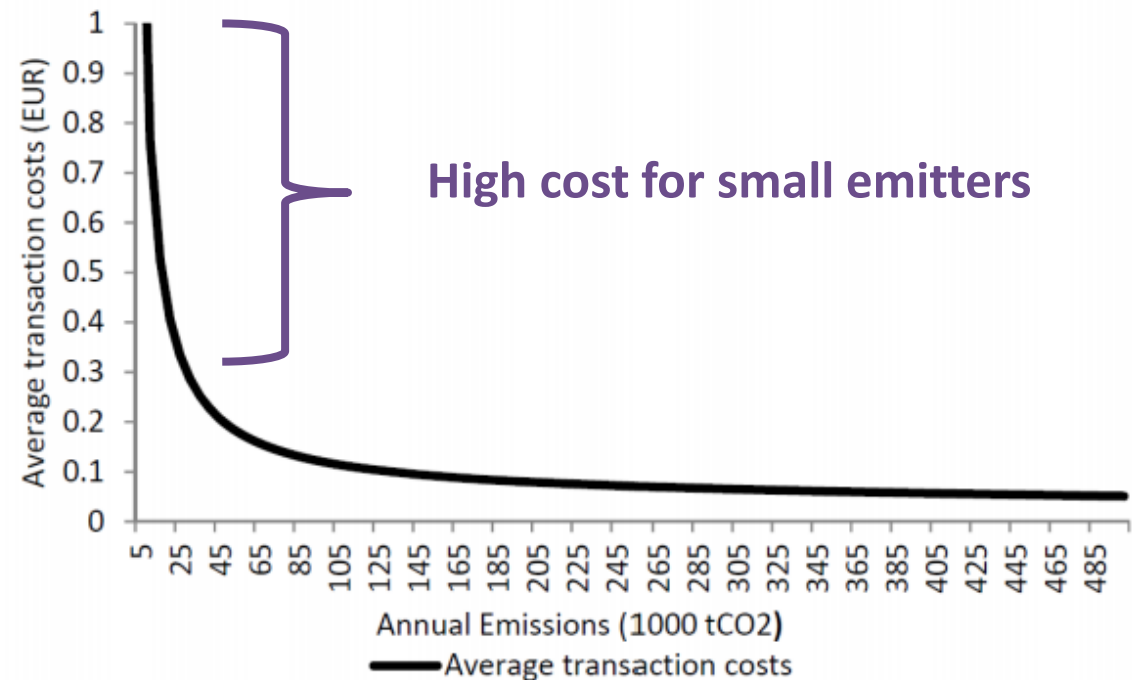
Conclusions

Key takeaways

Exclude entities below a certain size from the ETS

- Exclude participants without excluding many emissions
- Thresholds can be based on annual GHG emissions, energy consumption, imports, production, capacity, etc.

Average transaction cost/tCO₂ emitted in Germany



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Decisions on scope

	More	Fewer
Sectors/ Gases Covered	<ul style="list-style-type: none"> ▲ Greater opportunity for low-cost reductions ▲ Avoids risk of leakage between sectors ▲ Greater ability to align carbon pricing with economy-wide emissions reduction targets 	<ul style="list-style-type: none"> ▲ Lower administrative and transaction costs ▲ Less risk of leakage between jurisdictions
Point of Regulation	<p>Point source of emissions</p> <ul style="list-style-type: none"> ▲ Provides direct incentives for polluters to reduce emissions ▲ Possible behavioral benefit of regulating at the point of emission ▲ Can build on existing regulatory frameworks 	<p>Upstream</p> <ul style="list-style-type: none"> ▲ Can be cheaper and simpler to administer, particularly in the energy sector ▲ Potentially greater coverage with fewer points of regulation ▲ Can reduce competitive distortions between and within sectors
Threshold Level	<p>Low</p> <ul style="list-style-type: none"> ▲ Greater opportunity for low-cost reductions ▲ Reduces risk of leakage between firms above and below the threshold 	<p>High</p> <ul style="list-style-type: none"> ▲ Lower administrative costs ▲ Protects smaller firms where administrative and transaction costs might be prohibitive
Level of Reporting Obligation	<p>Installation</p> <ul style="list-style-type: none"> ▲ Can simplify reporting when multiple companies are operating at the same installation 	<p>Company</p> <ul style="list-style-type: none"> ▲ Allows companies to choose how they manage internal reporting and data collection/management and compliance costs

Thank you



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