

INTERNATIONAL RESEARCH NETWORK FOR LOW CARBON SOCIETIES

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# Carbon pricing and beyond - experiences and implications -

Karsten Neuhoff, 12.9.2017

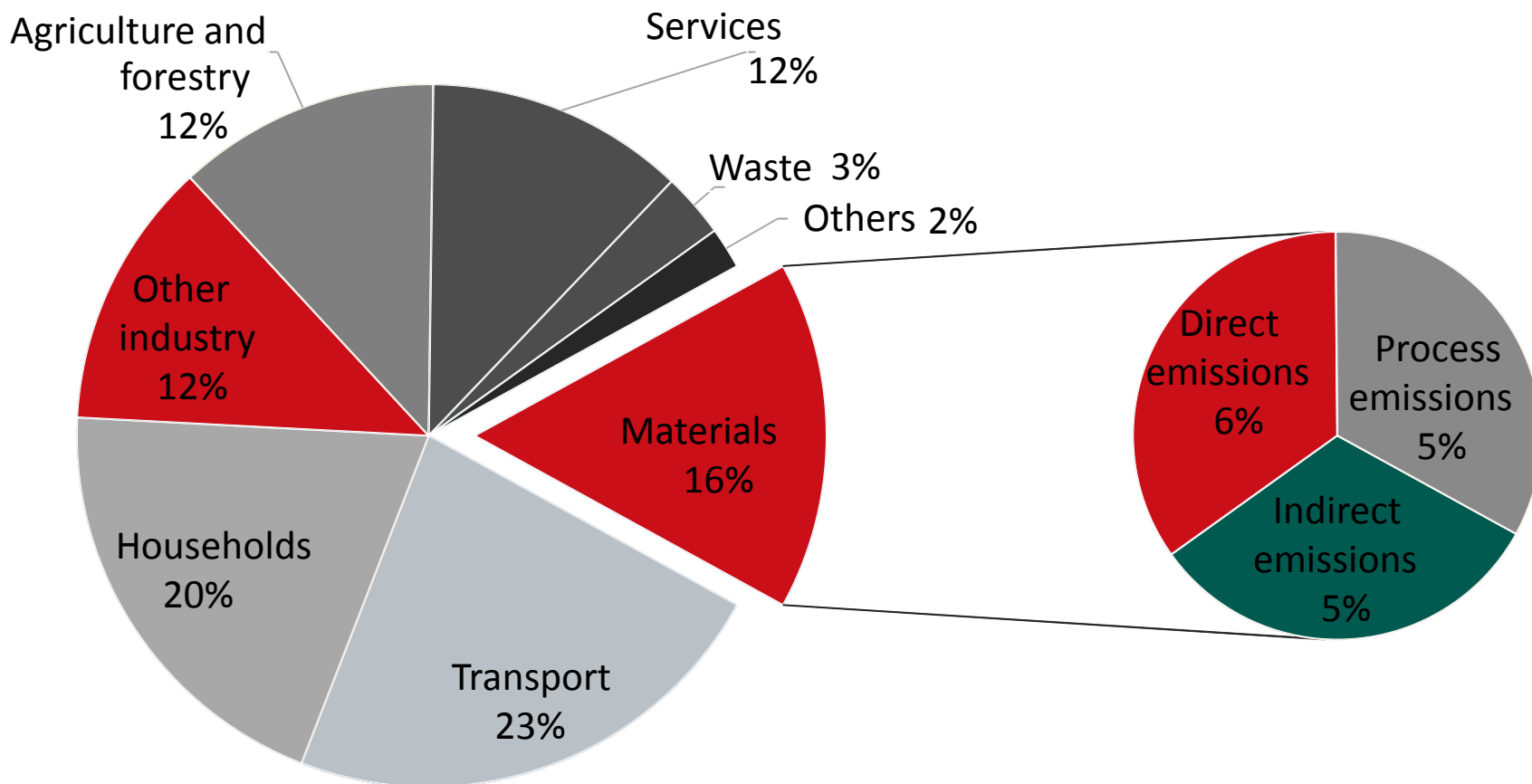
German Institute for Economic Research (DIW Berlin)

Technical University Berlin

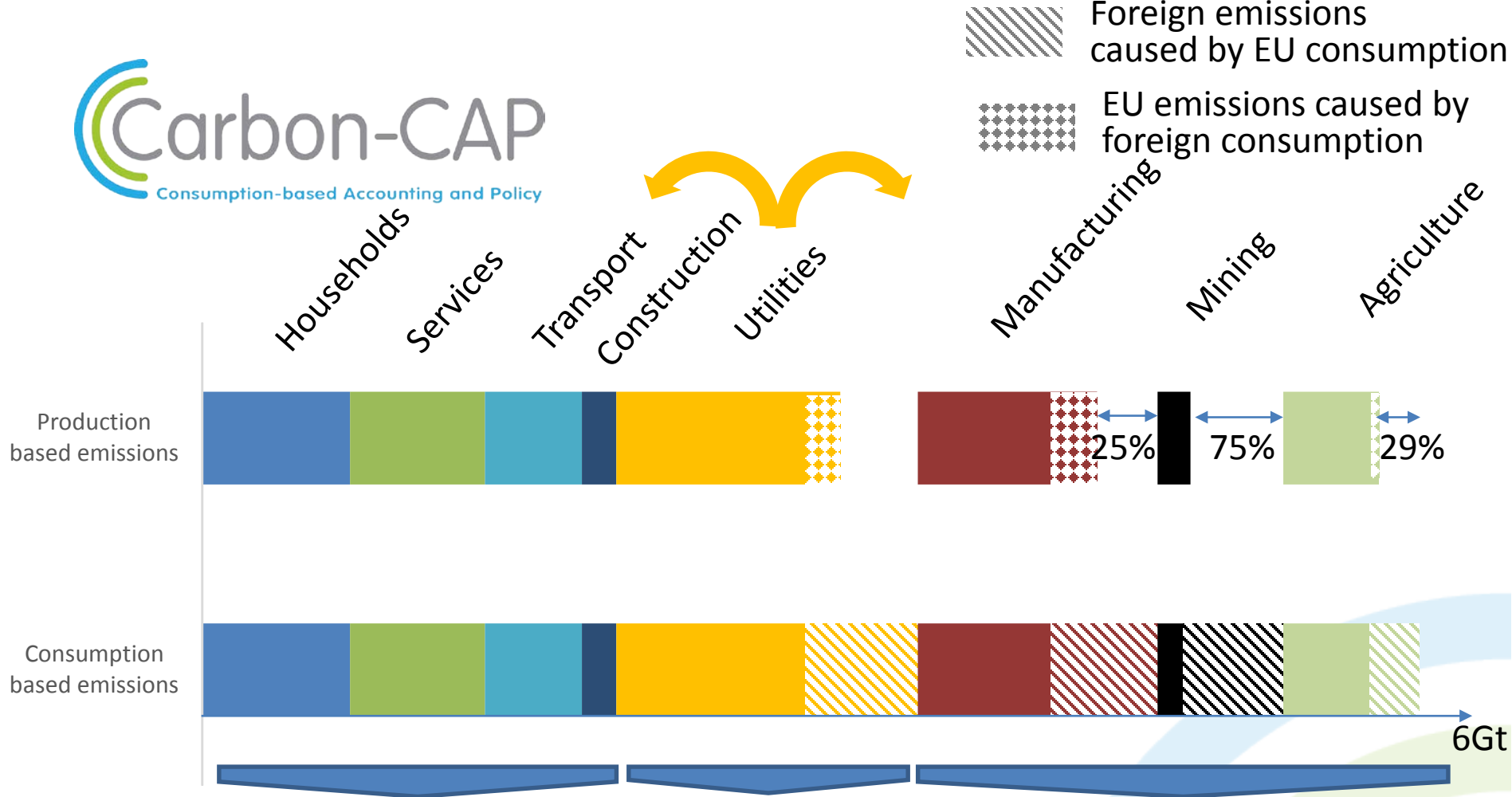
- Distributional effect
  - In most instances small and can be directly compensated
  - > in transport sector effects most prominent but gasoline taxes high
- Complexity of instruments and analysis
  - No different from other taxes, and better data available for analysis
  - > overall increase number of charges and provisions
- Concerns voiced about competitiveness / carbon leakage
  - Motivated exemptions from energy taxes&charges, free EU ETS allowances
  - Motivated reductions in stringency / charge level of EU ETS, RE support ..
  - > Topic of particular relevance for basic material production

## Share of EU greenhouse gas emissions

*[power sector emissions are attributed to each sector as indirect emissions reflecting electricity use]*



Mitigation option	Role that carbon pricing can play:	ETS with free allocation	
Fuel shifting and production efficiency	Savings with more efficient production	<b>Carbon price effective with benchmarks (level too low ...)</b>	
Carbon focused process innovation	Extra Innovation funding		<b>Carbon price muted:</b> <ul style="list-style-type: none"> <li>• International Trade</li> <li>• Dynamic allocation: global steel demand 55% of capacity</li> <li>• Persistent allocation at high benchmark level</li> </ul>
	Covering incremental costs		
Material efficiency and substitution	Savings with efficient / lower-carbon material use		



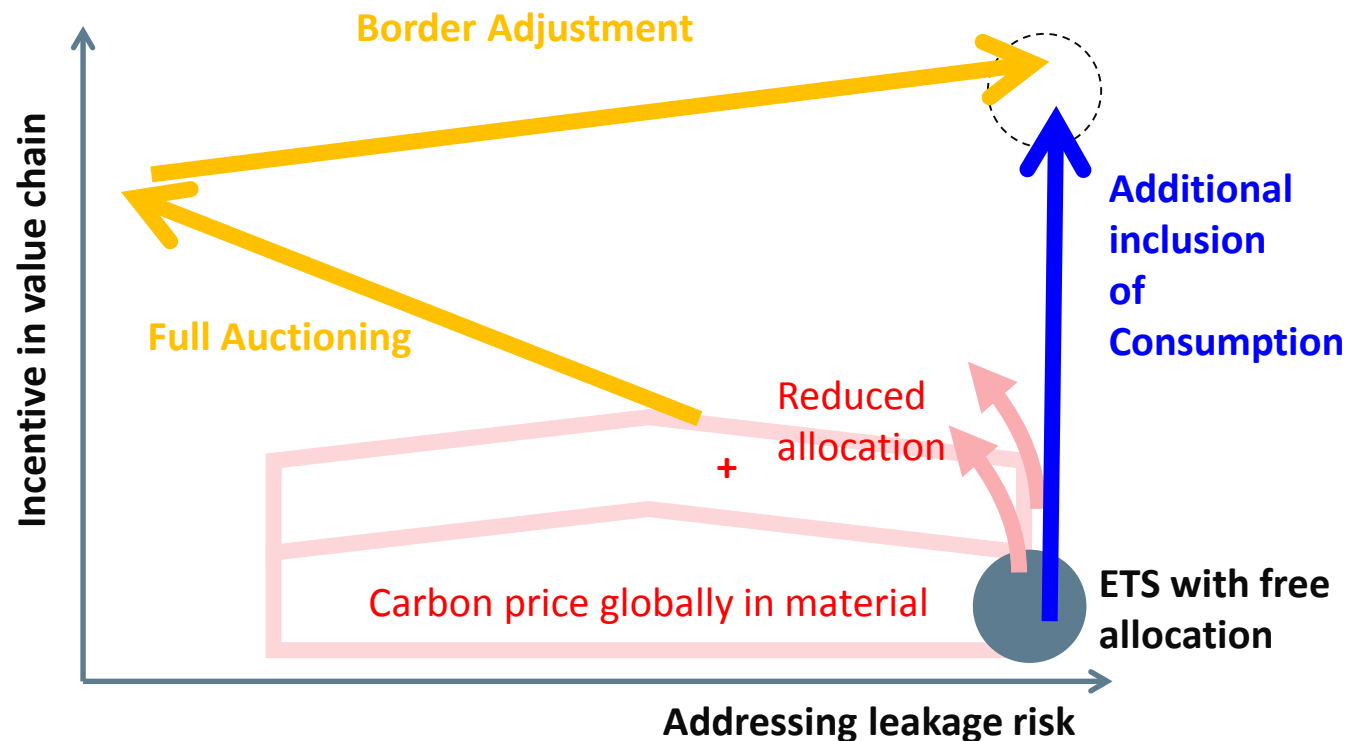
- Success of measures tailored to consumption decisions (efficiency standards, financial support, advice).
  - Higher feasibility and fiscal preference for energy taxes over production based policies (e.g. oil cartel).
  - EU ETS for fuel shift
  - RE policy
  - Largely production based policies like EU ETS, so far with limited impact on consumption choices.
  - Consumption based policy emerging (labeling, Eco-Design), but not price based
- How can we resolve?

## Incentives for

Climate friendly production with incremental cost

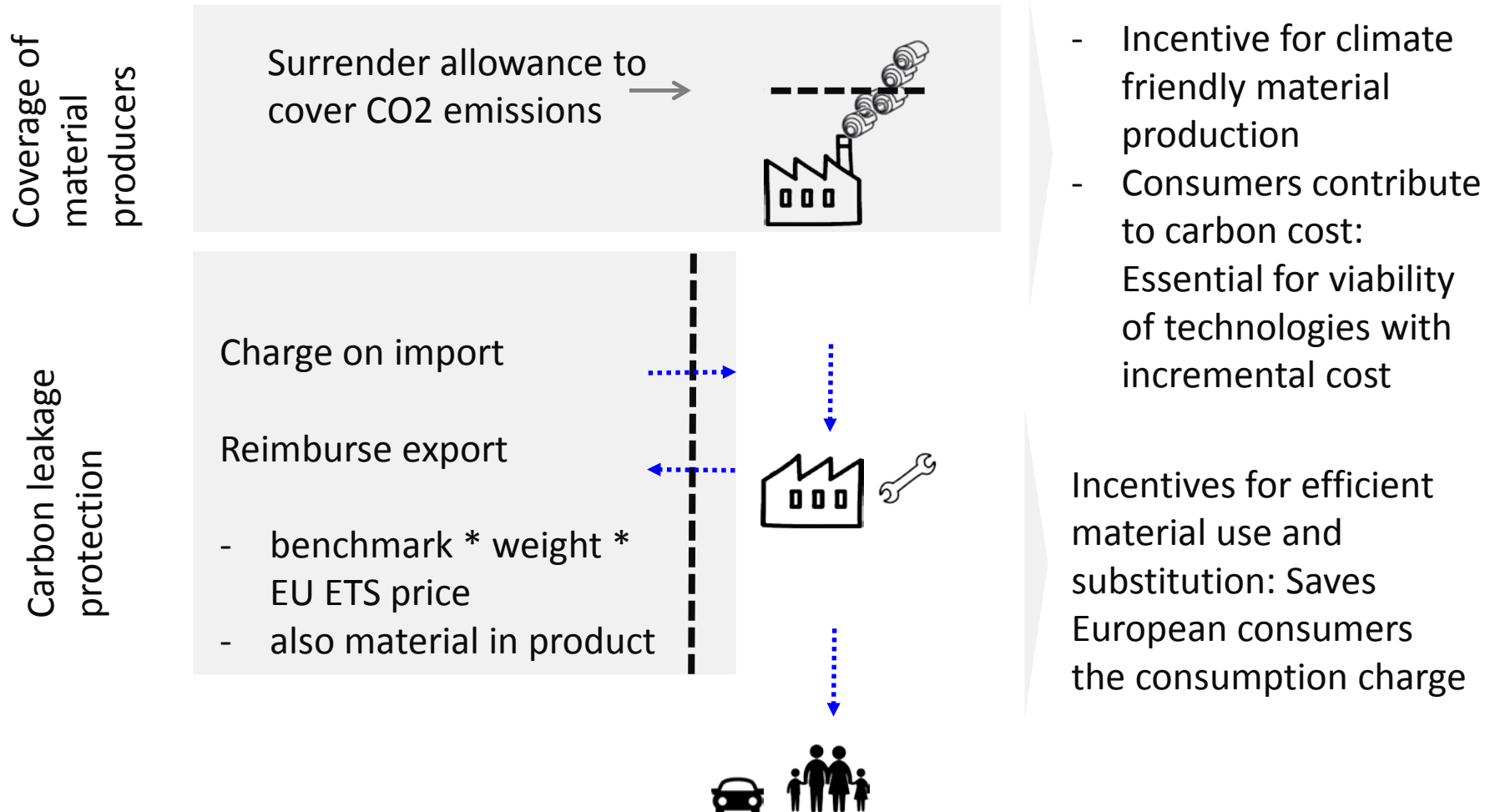
Efficient material use and substitution

Production efficiency and fuel shifting

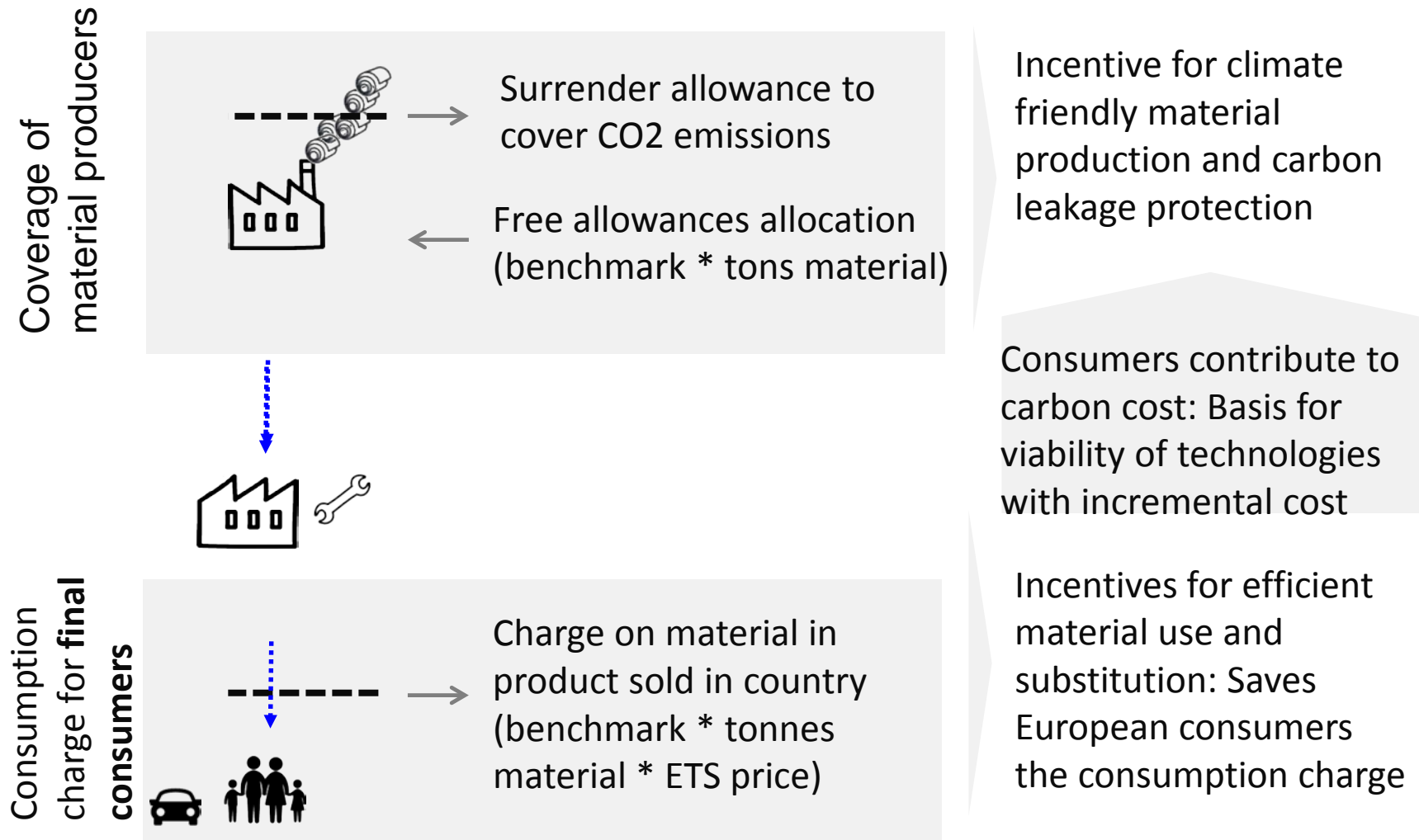


### Three options for leakage protection in post Paris world of differentiated carbon prices:

0. Iterative increase of carbon price in traded materials with reduction of free allocation
1. Full auctioning for incentives backed by Border Adjustment for leakage protection
2. Free allocation for leakage protection & Inclusion of Consumption for incentives



**For WTO compatibility (Art 3 GATT), use best available technology benchmark in combination with full auctioning to avoid discrimination**





**What to learn from international experience?**

- Engaging consumers can unlock unexpected potentials (Japan)
- Inclusion of power consumption established in Korea and China

**What is the legal basis?**

- IoC can be part of EU ETS Directive and deliver environmental objectives
- IoC is consumption based and thus on good side of WTO law

**What administrative approach can limit public and private costs?**

- Small fraud risk because no pay-out and value only fraction of product price
- Simplified procedures possible , e.g. aggregate quarterly reporting

**What can we learn from quantifying the impact across product categories?**

- Focus on basic materials: steel, clinker, aluminum (plastics, pulp&paper)
- De-minimis rules possible

### **Policy packages essential for low-carbon transformation**

- Can effectively address satisficing, optimizing and strategizing behavior.
- Carbon pricing particularly important in industry and power.

### **Carbon pricing approach in industry has been focused upstream**

- Trade of materials creates leakage concerns, free allocation -> muted price.
- Carbon leakage concerns have undermined effective carbon pricing.

### **We need a new strategy for making ETS effective for industry**

- Converging carbon prices + phase out free allocation: **Slow +Uncertain**
- Shift from auction to border adjustment: **Difficult politics/economics**
- Inclusion of consumption in ETS: **Suitable for basic materials**

**IoC restores carbon price signal to be effective for all mitigation opportunities**

-> More mitigation opportunities can be realized at lower cost.

**Effective carbon price provides clarity for strategic choices of companies**

-> Makes ETS more effective in supporting innovation and investment.

**IoC builds on international experience and avoids lock-in with national systems**

-> Pool data for better benchmarks and thus stronger incentives.

-> Once carbon prices converge, free allocation with IoC can be easily abandoned.

**Producers of materials covered by IoC receive free allocation at full benchmark**

-> Long-term clarity on carbon leakage protection good for investments.

-> Addresses political concerns about leakage allowing for stringent carbon prices.