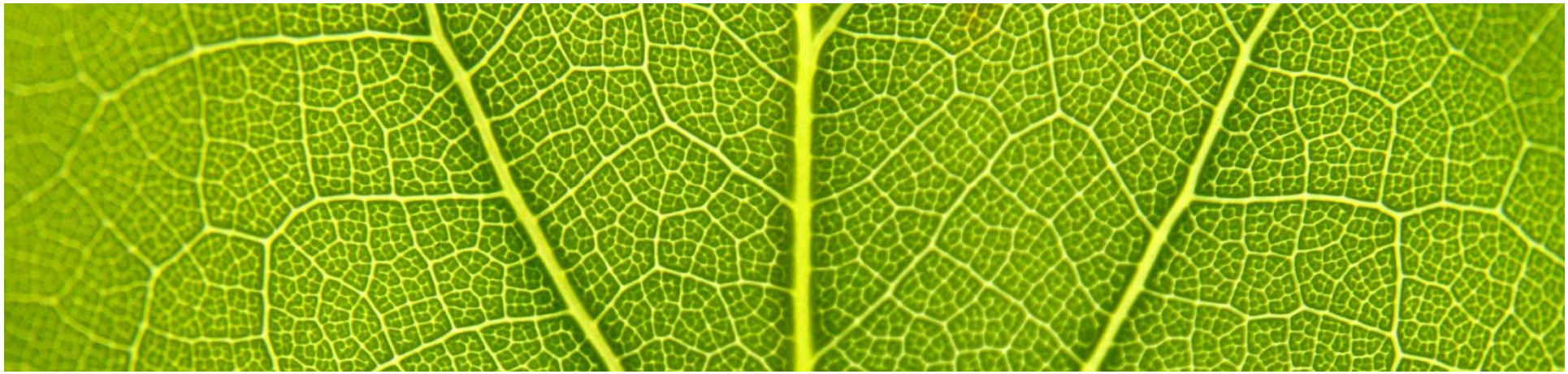
ECOFYS

sustainable energy for everyone



Benchmarking in the EU ETS

A presentation at DIW/KEI/Climate Strategies workshop "experience with emissions benchmarks – options for international coordination"

2015/10/01 Maarten Neelis

2009 – 2011 arguably an heroic effort

5.6.2009 EN Official Journal of the European Union L 140/63

DIRECTIVE 2009/29/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 23 April 2009

amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community

(Text with EEA relevance)

17.5.2011 EN Official Journal of the European Union L 130/1

II

(Non-legislative acts)

DECISIONS

COMMISSION DECISION

of 27 April 2011

determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament and of the Council

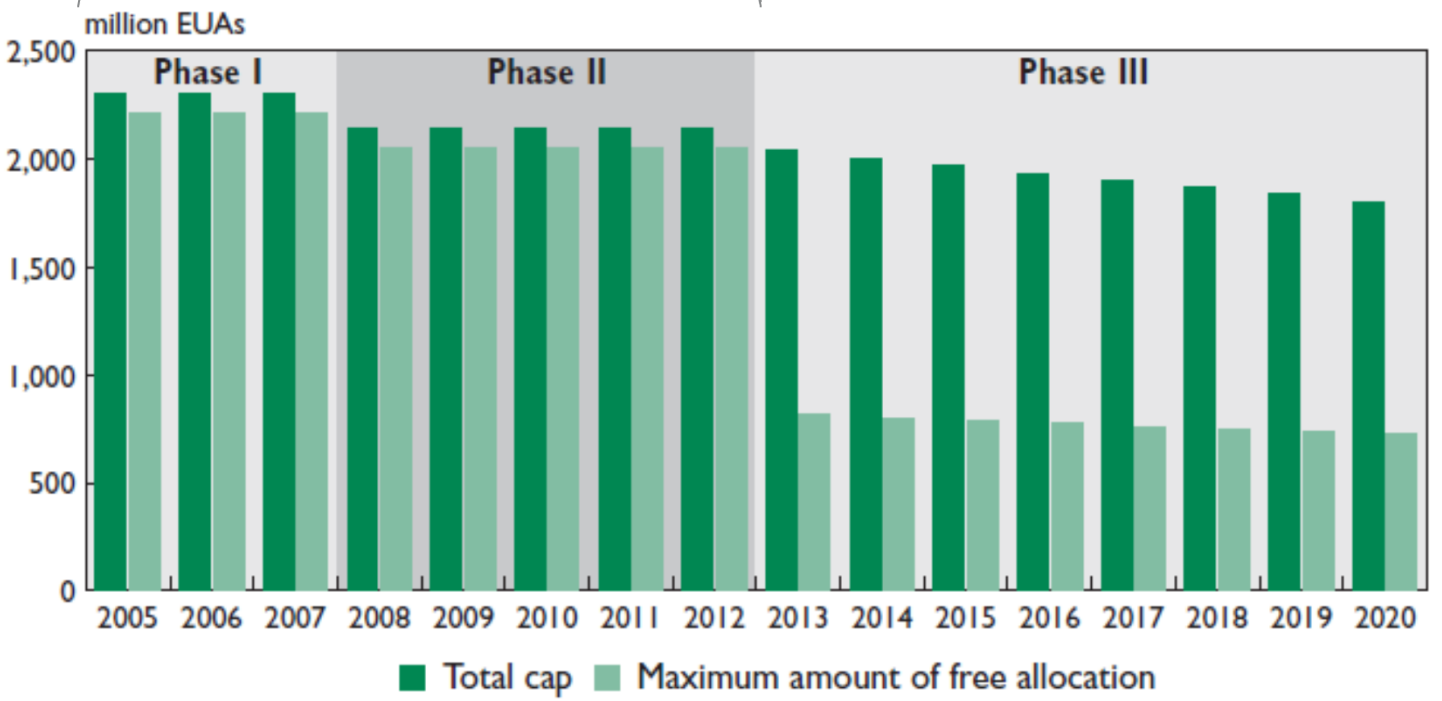
(notified under document C(2011) 2772)

(2011/278/EU)

Distribution of allowances in the EU ETS changes drastically as of 2013

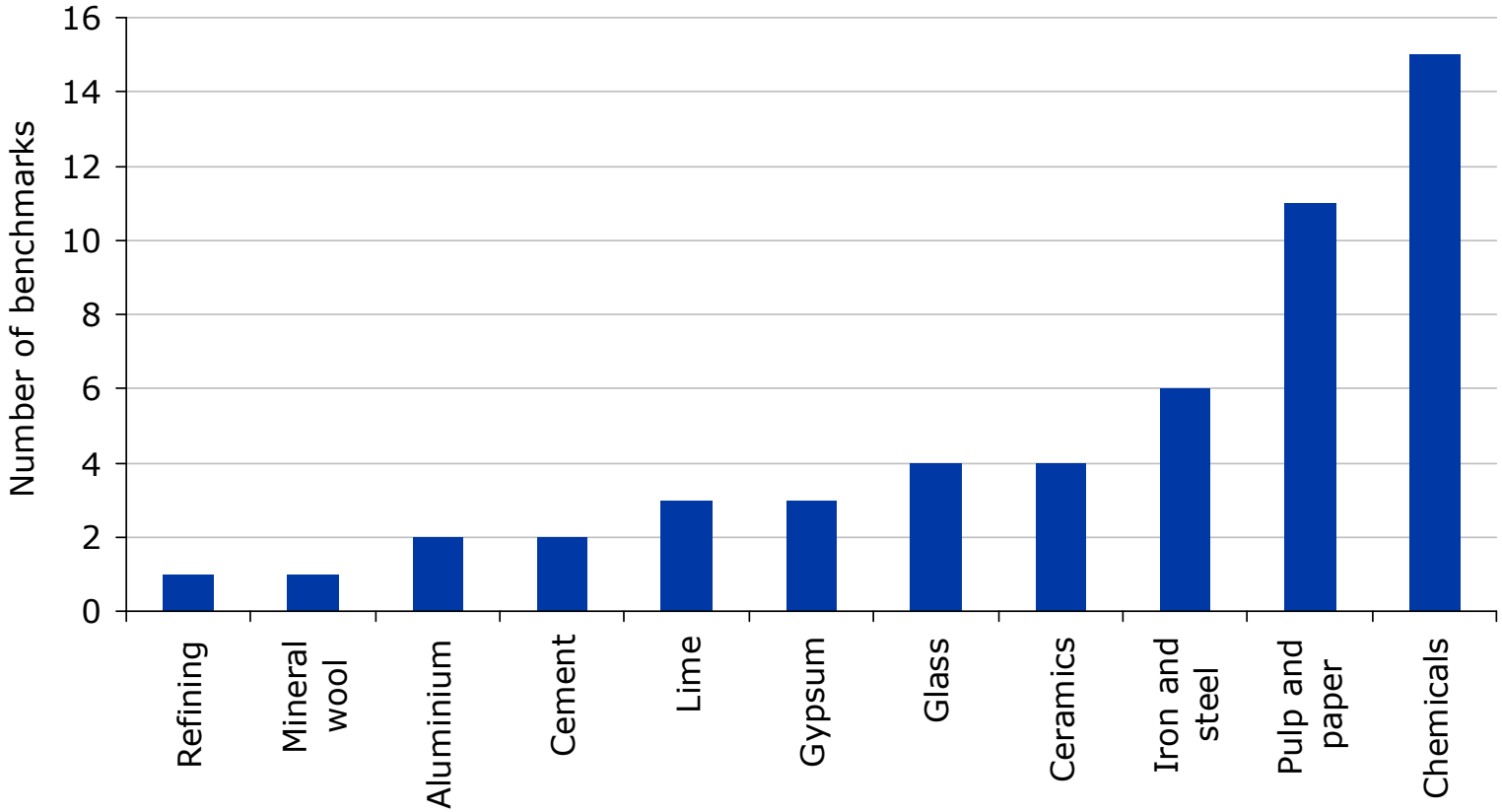
Allocation not harmonised across countries
Allocation based on grandfathering
Limited auctioning

Harmonisation across countries
Auctioning
Power sector: no free allocation
Industry: allocation based on benchmarks



Source: Neelis & Borkent, Carbon Finance, Nov 2010, excluding change in scope

There are 52 product benchmarks covering ~75% of industrial ETS emissions



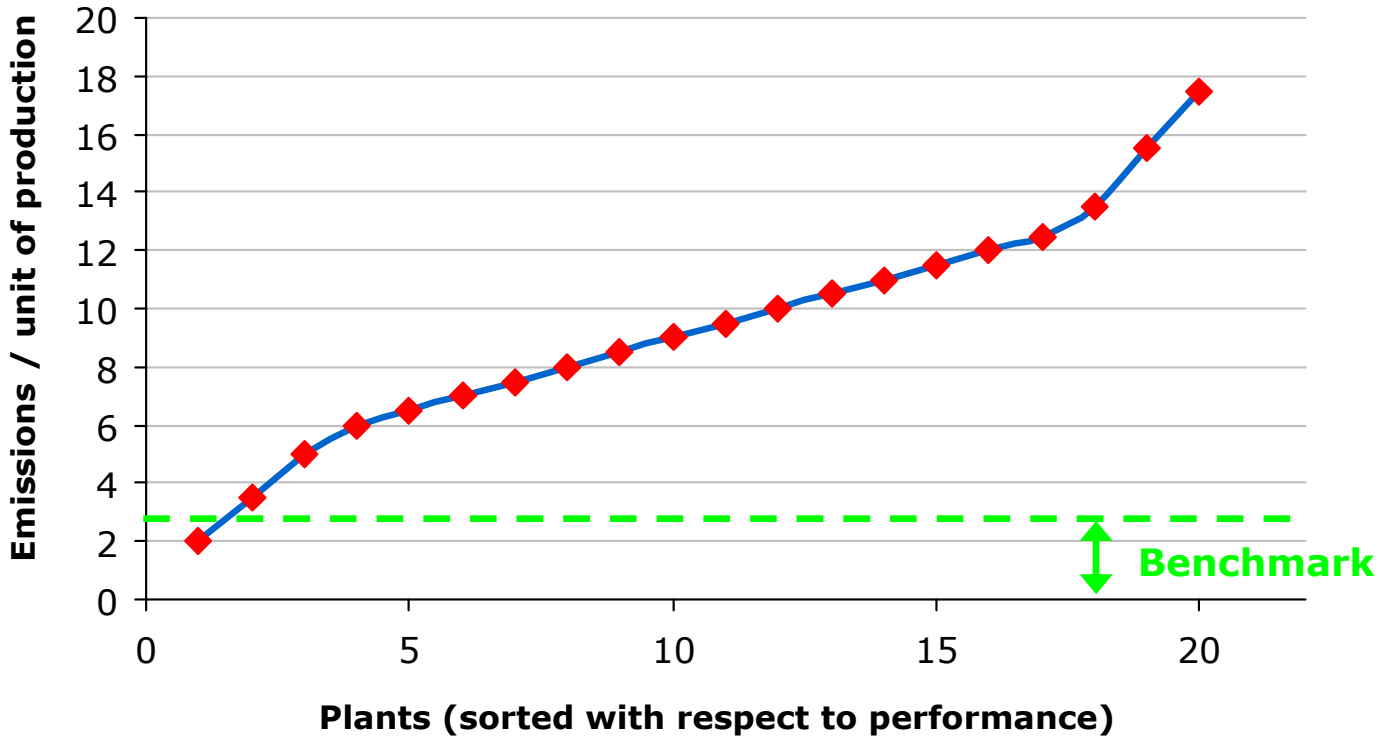
Guidelines for product definition

- Is verifiable production data available based on unambiguous and justifiable product classifications?
- Is there an intermediate product that is traded between EU ETS installations?
- What is the difference in emission intensity with similar products? (we grouped products with similar applications)
- What are the emissions related to the product compared to the total sector emissions?
- What are the emissions related to the product compared to the emissions in the EU ETS?
- How many installations produce the product?

‘One product - one benchmark’ principle

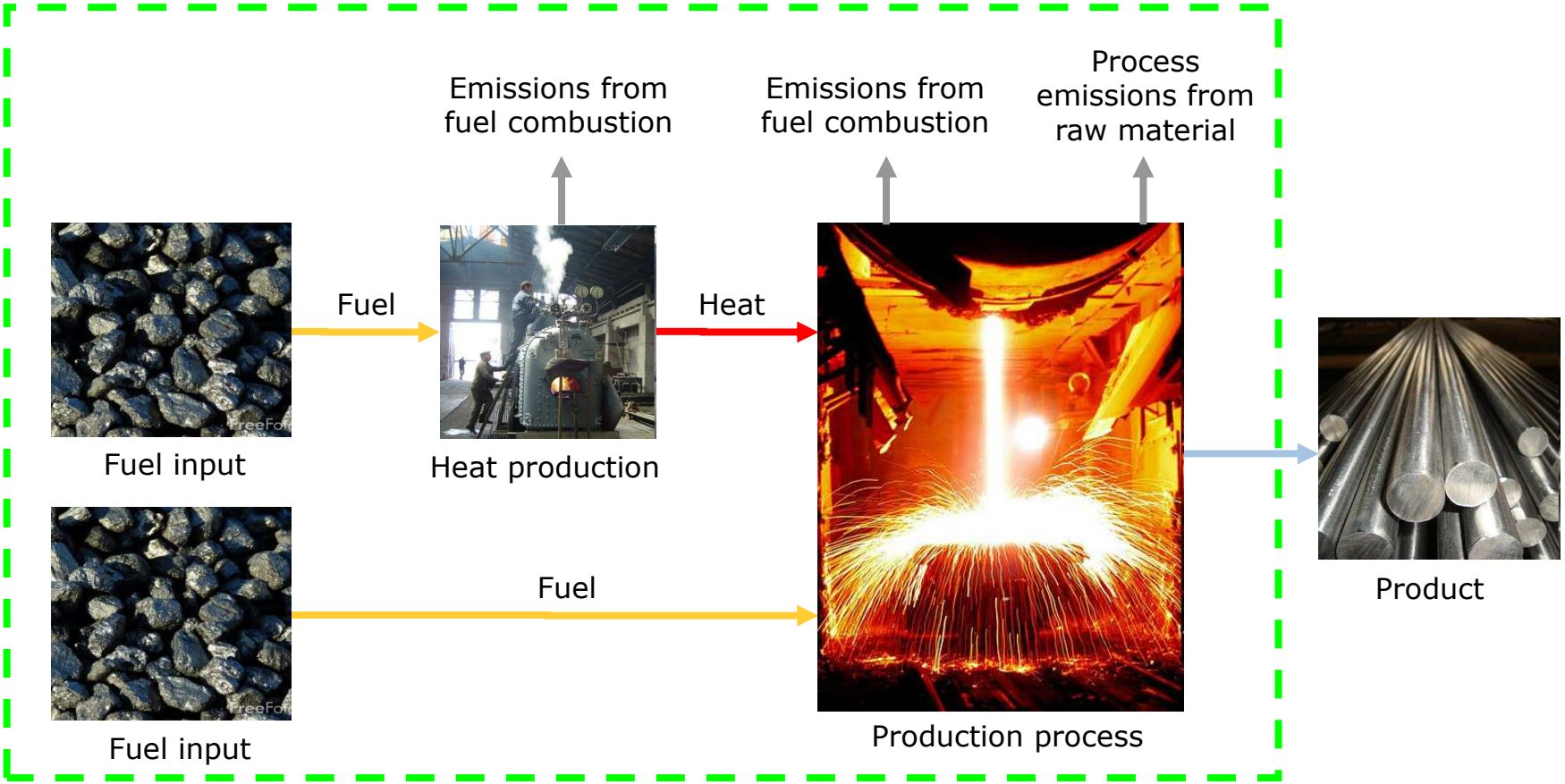
- No differentiation by technology
- No differentiation by fuel type used
- No differentiation by plant age
- No differentiation by country
- No corrections for raw material quality
- No corrections for climatic circumstances

Benchmarks are based on the average of the best 10% performing installations



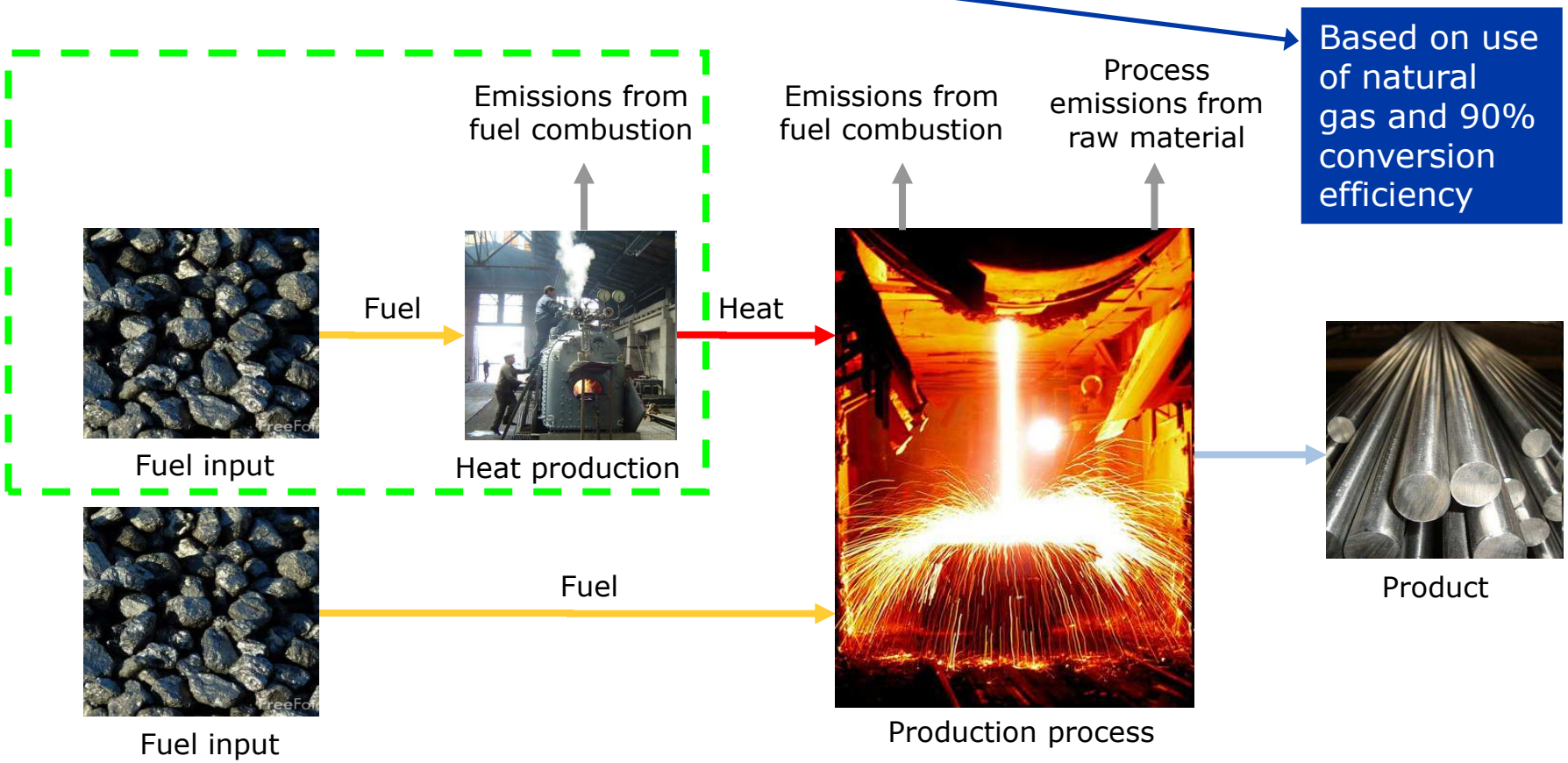
Product benchmarks cover a complete production process

Basic free allocation: Product BM (t-CO_2/t-product) x Production (t-product)



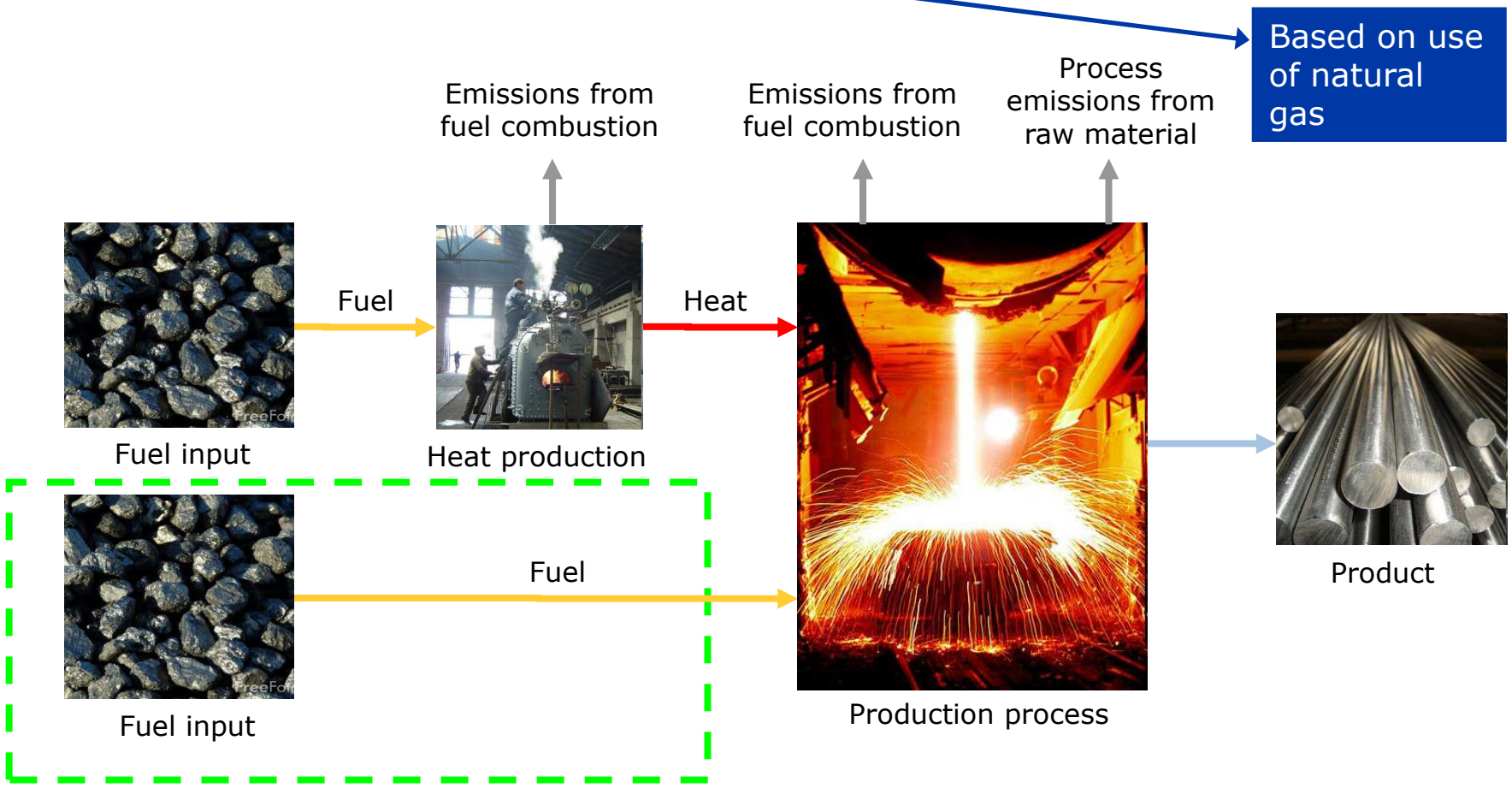
Alternative approaches for activities not covered by a product benchmark

Basic free allocation: Heat Benchmark (t-CO_2/GJ heat) x Heat consumption (GJ)



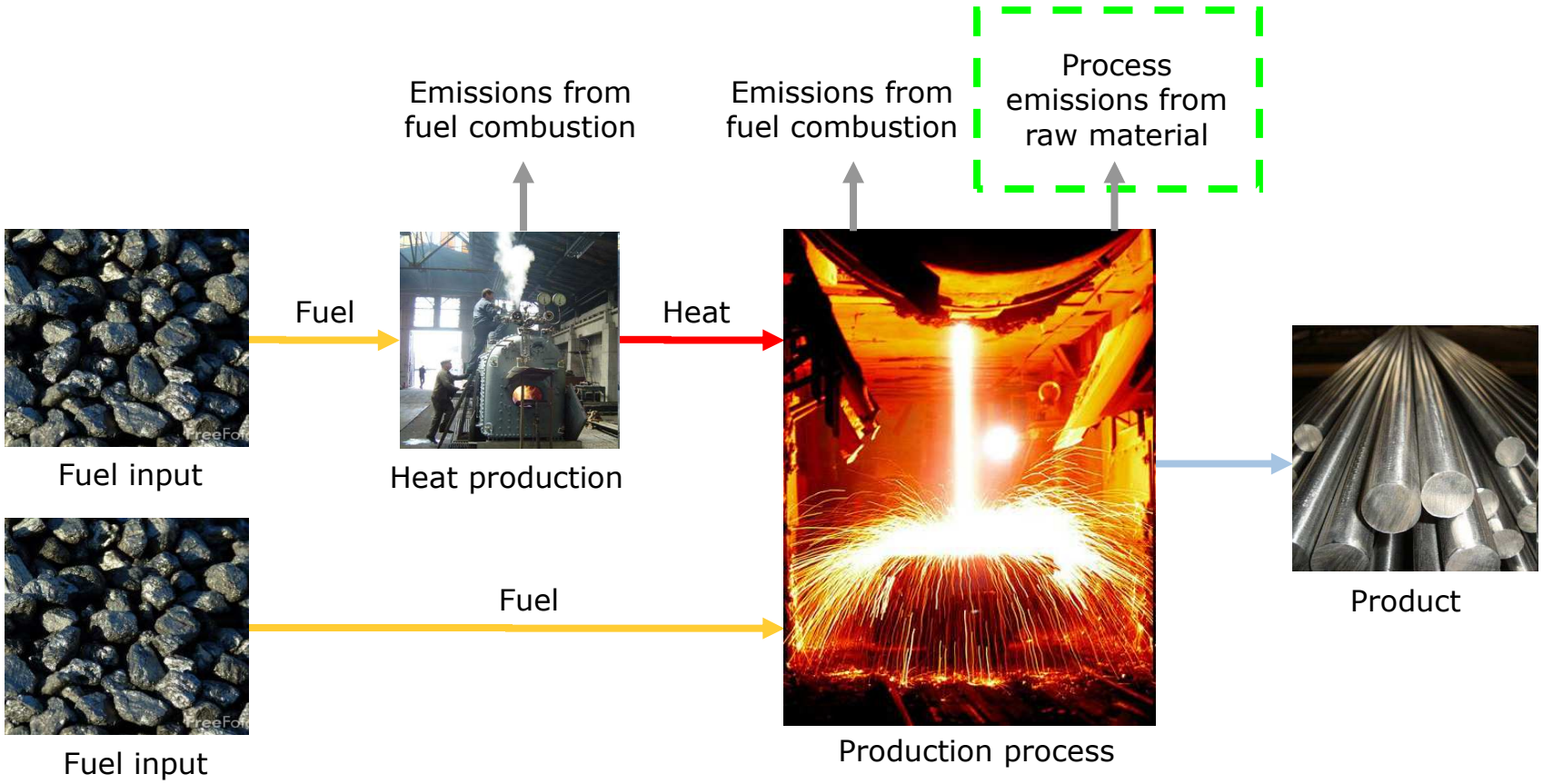
Alternative approaches for activities not covered by a product benchmark

Basic free allocation: Fuel Benchmark (t-CO_2/GJ fuel) x Fuel consumption (GJ)



Alternative approaches for activities not covered by a product benchmark

Basic free allocation: 0.97 x Process emissions (t-CO_2)



Benchmark values (see benchmark decision, I have a copy with me)

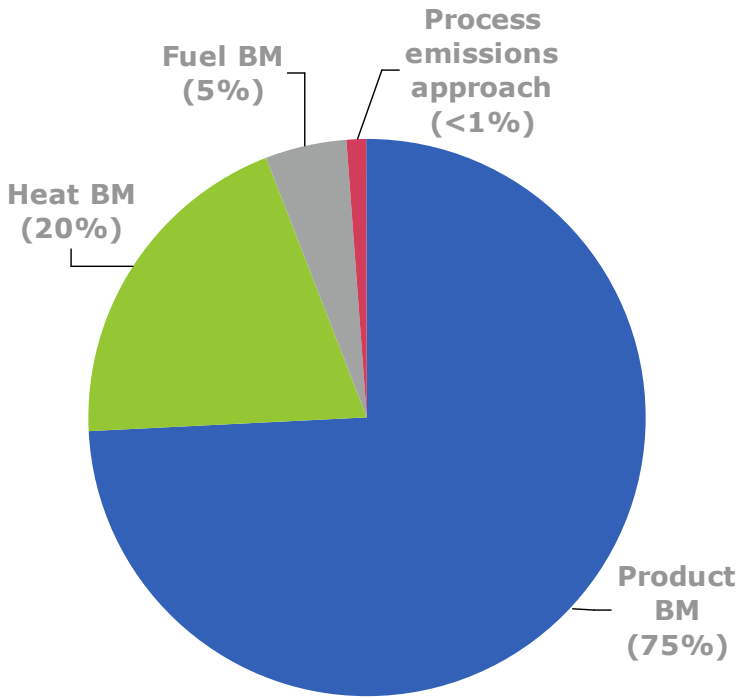
ANNEX I

PRODUCT BENCHMARKS

1. **Definition of product benchmarks and system boundaries without consideration of exchangeability of fuel and electricity**

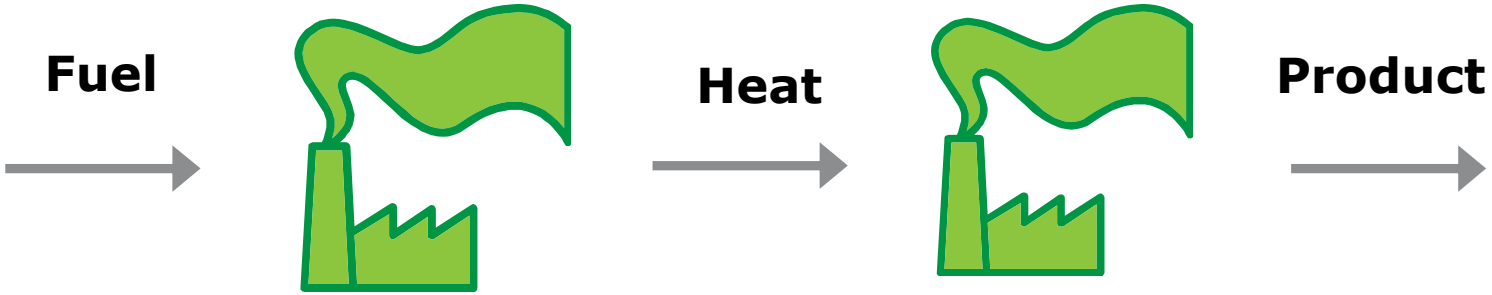
Product benchmark	Definition of products covered	Definition of processes and emissions covered (system boundaries)	Carbon leakage exposure as determined by Decision 2010/2/EU for the years 2013 and 2014	Benchmark value (allowances/t)
Coke	Coke-oven coke (obtained from the carbonisation of coking coal, at high temperature) or gas-works coke (by-product of gas-works plants) expressed as tons of dry coke. Lignite coke is not covered by this benchmark	All processes directly or indirectly linked to the process units coke ovens, H_2S/NH_3 incineration, coal preheating (defreezing), coke gas extractor, desul-phurisation unit, distillation unit, steam generation plant, pressure control in batteries, biological water treatment, miscellaneous heating of by-products and hydrogen separator are included. Coke oven gas cleaning is included	yes	0,286

Estimated free allocation from different methodologies



Note: there is no free allocation for electricity production or consumption!

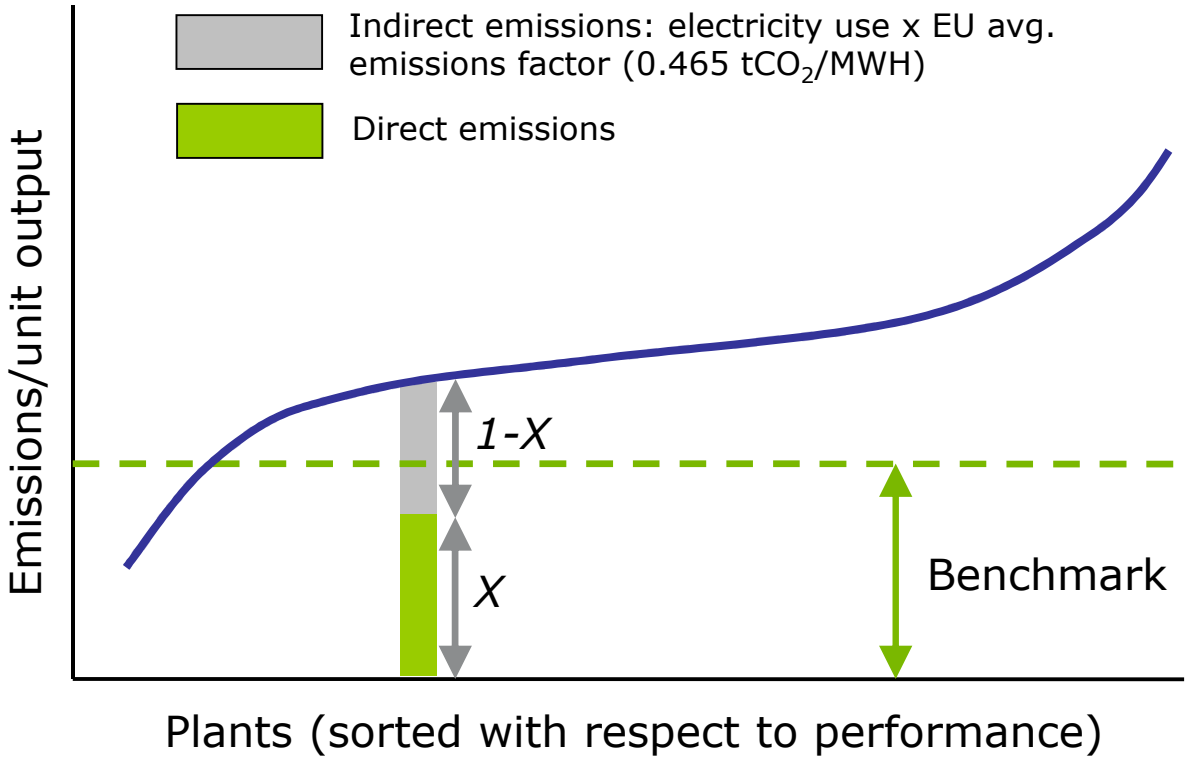
Complexity: cross-boundary heat flows: problem



- Allocation based on product of installation Y
- (Part of) the emissions occur in installation X

Complexity: exchangeability of fuel and electricity

Allocation = X * Benchmark * Activity Level



For 14 out of 52 benchmarks:

- Refineries
- EAF carbon steel
- EAF high alloy steel
- Iron casting
- Mineral wool
- Plasterboard
- Carbon black
- Ammonia
- Steam cracking
- Aromatics
- Styrene
- Hydrogen
- Synthesis gas
- Ethylene oxyde/ethylene glycols

Who did what in the development of benchmarks?

- Draft proposal for benchmarking
- Define guidelines for industry on what information to provide

Most intensive stakeholder interaction

- Data collection
- Development of benchmark curves and values
- Description of how data was collected (rulebooks)

This information is not made public

- Validation
- Setting of final benchmarks

European Commission

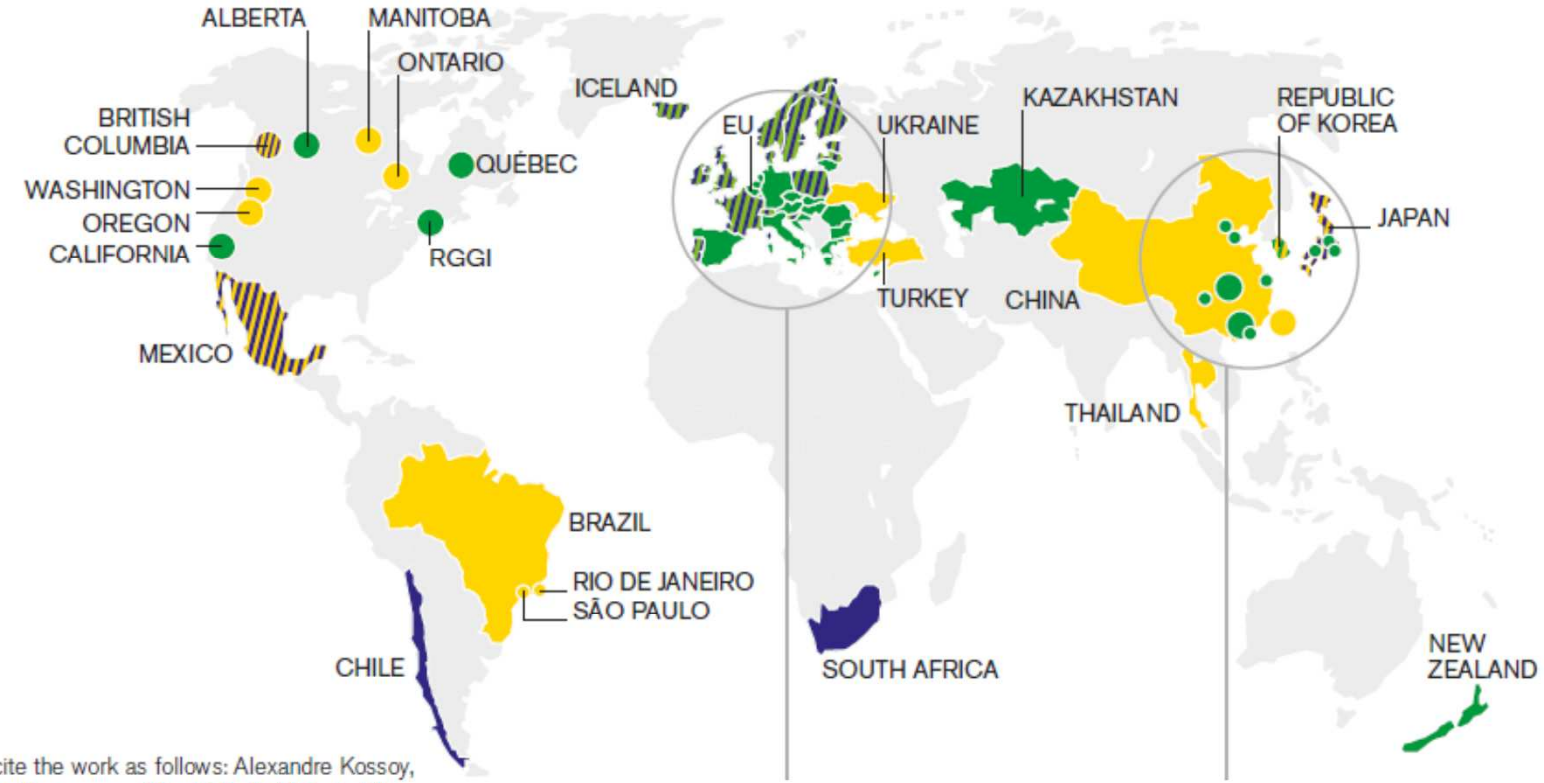
Industry

Benchmarks and innovation, input for the discussion

- Very little opposition to the approach as such. The ETS proposal for phase IV proposes to more or less copy-paste the methodology towards phase IV with a benchmark update as only change
- Shape of the benchmark curve will have role in the benchmark update as one of the proxies indicating the potential to abate
- One product, one benchmark approach ensured that incentives to abate were kept as much as possible in the system
- Ultimately, the carbon price remains the key incentive
- Especially for the heavy emitting sectors, the benchmark exercise in the EU did not yield too much additional insights to the already known

Room for international coordination, input into the discussion

Figure 1 Overview of existing, emerging, and potential regional, national, and subnational carbon pricing instruments (ETS and tax)



Attribution – Please cite the work as follows: Alexandre Kossoy, Grzegorz Peszko, Klaus Oppermann, Nicolai Prytz, Noémie Klein, Kornelis Blok, Long Lam, Lindee Wong, Bram Borkent. 2015. State and Trends of Carbon Pricing 2015 (September), by World Bank, Washington, DC.
Doi: 10.1596/ 978-1-4648-0725-1

Revert to report for full figure including legend etc.

International coordination, input for the discussion

- To streamline leakage protection, facilitate linkages, and support industry claims on potential etc., international guidance on benchmark development is much needed
- International sector representations (ICCA, World Steel etc.) could have a leading role, potentially supported internationally (e.g. via the WB-PMR, WBCSD, others)
- There are ways to go around data confidentiality (see e.g. the WBCSD-CSI experience)
- Arguably, also industry has only to gain from harmonization

Please contact us for more information

Ecofys Netherlands B.V.

Kanaalweg 15G

3526 KL Utrecht

The Netherlands

Maarten Neelis

T: +31 (0)30 662-3241

E: m.neelis@ecofys.com

I: **www.ecofys.com**