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 II: In-depth study

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Current status

Capacities built over time

Well-functioning China National ETS

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

Exploring allocation

IN-DEPTH STUDY

The benchmark-based allocation methodology in the EU ETS

Allowance allocation in the EU ETS Phase III

How to calculate free allocation exactly?

Allocation (tCO2)

=

Benchmark (tCO2 / t product)

X

Reference production (t / year)

X

Carbon leakage exposure factor

X

Cross-sectoral correction

OR

Linear reduction

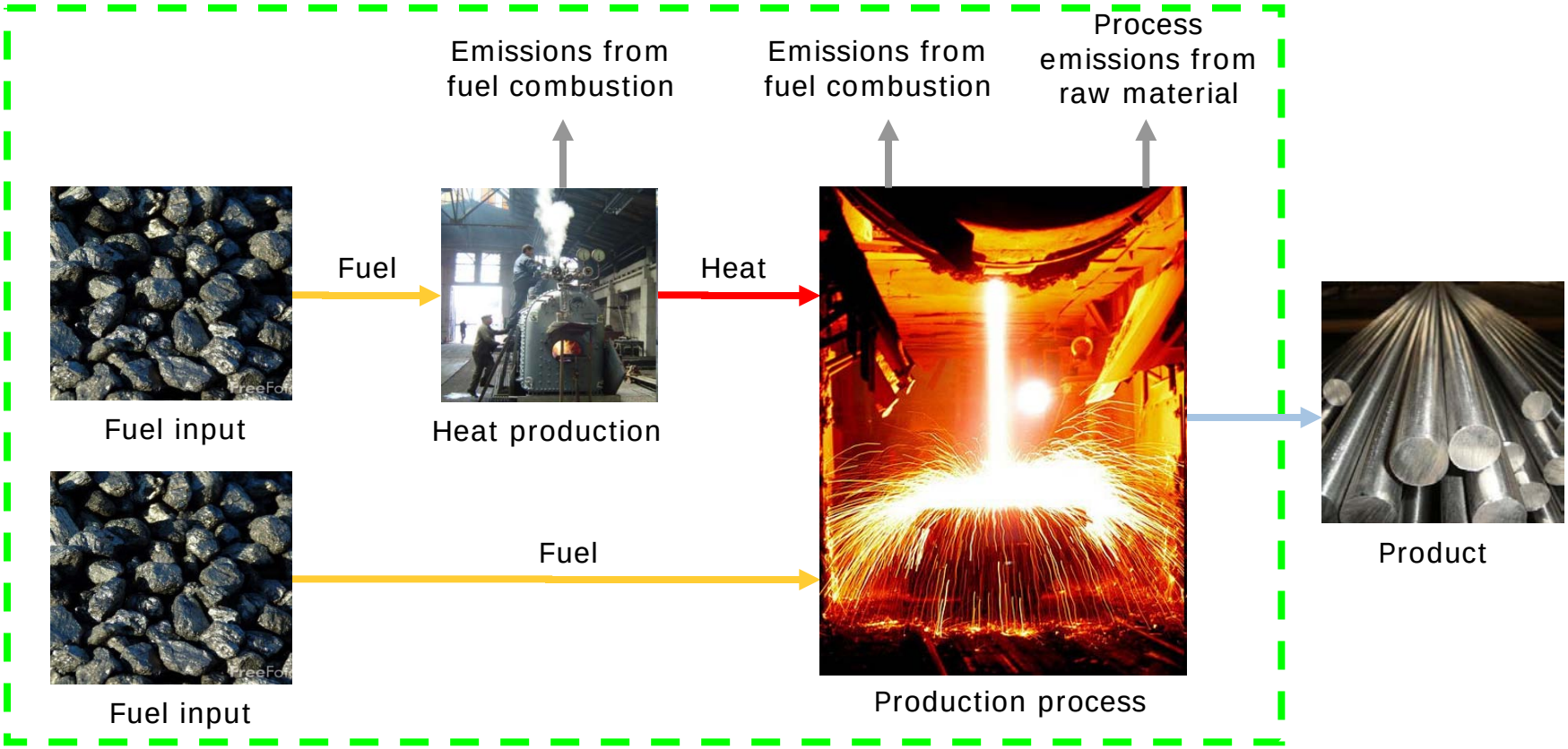
- Installations can choose median of 2005 – 2008 OR 2009 - 2010
- Decreasing from 80% in 2013 to 30% in 2020
- Stays 100% for activities deemed to be exposed to carbon leakage
- To keep the total amount of free allocation below the cap

Product benchmarks cover a complete production process

Formula for calculating basic free allocation

Product BM ($t\text{-}CO_2/t\text{-}product$) *x Production (t-product)*

Scope of benchmark



There are 52 product benchmarks in the EU-ETS at present

Overview of product benchmarks in the EU-ETS in 2013-2020

Product	Allowances/t
Coke	0.286
Iron ore pellets	0.019
Sintered ore	0.171
Hot metal	1.328
Pre-bake anode	0.324
Aluminium	1.514
Grey cement clinker	0.766
White cement clinker	0.987
Lime	0.954
Dolime	1.072
Sintered dolime	1.449
Float glass	0.453
Bottles and jars of colourless glass	0.382
Bottles and jars of coloured glass	0.306
Continuous filament glass fibre products	0.406
Facing bricks	0.139
Paving bricks	0.192
Roof tiles	0.144
Spray dried powder for tiles	0.076
Plaster	0.048
Dried secondary gypsum	0.017
Short fibre kraft pulp	0.12
Long fibre kraft pulp	0.06
Sulphite and thermo/mechanical pulp	0.02
Recovered pulp	0.039
Newsprint	0.298

Product	Allowances/t
Coated and uncoated fine paper	0.318
Tissue	0.334
Testliner and fluting	0.248
Uncoated carton board	0.237
Coated carton board	0.273
Nitric acid	0.263
Adipic acid	2.79
Vinyl chloride monomer	0.204
Phenol/acetone	0.266
S-PVC	0.085
E-PVC	0.238
Soda ash	0.843
Refinery products	0.0295
EAF carbon steel	0.285
EAF high alloy steel	0.357
Iron casting	0.325
Mineral wool	0.682
Plasterboard	0.131
Carbon black	1.765
Ammonia	1.612
Steam cracking	0.702
Aromatics	0.0295
Styrene	0.527
Hydrogen	8.85
Synthesis gas	0.242
Ethylene oxide/glycols	0.512*

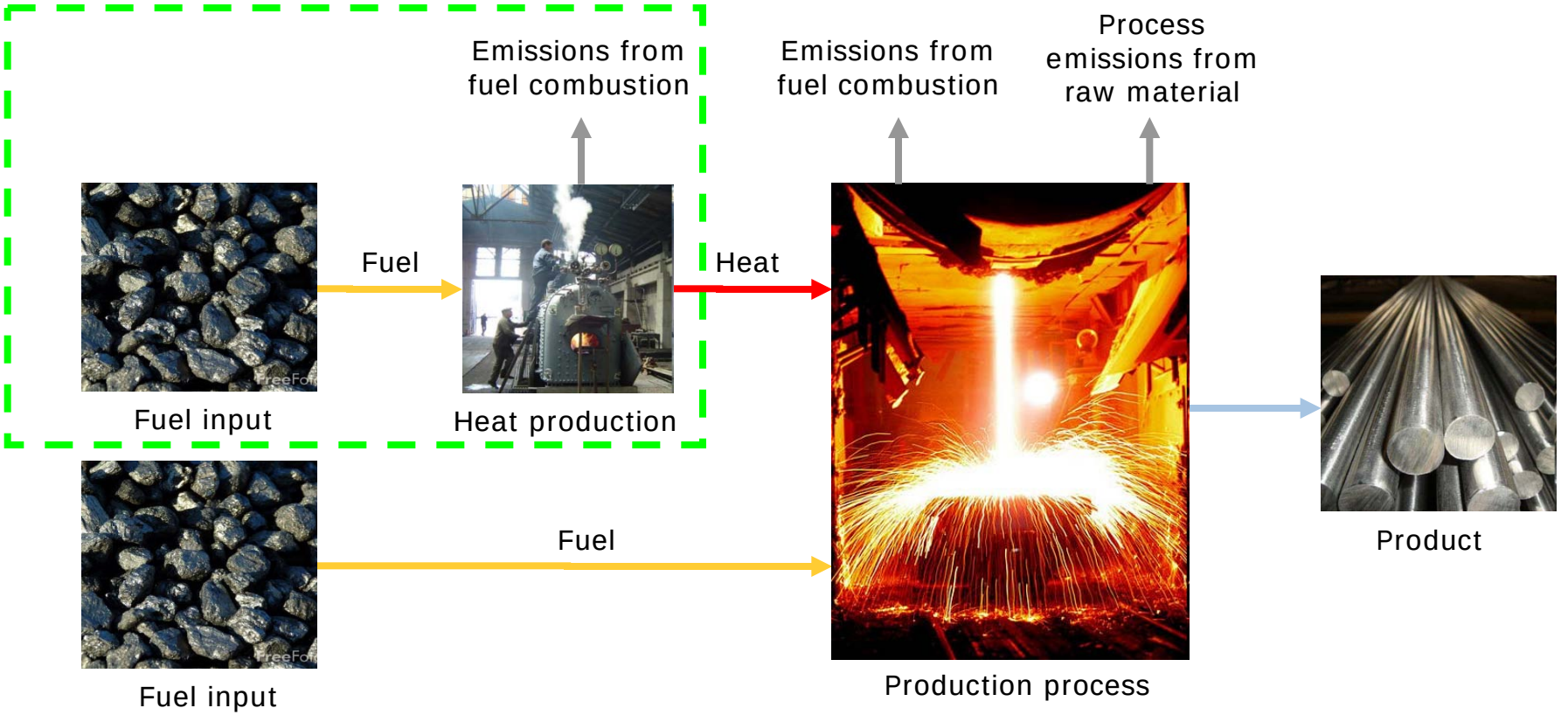
Alternative approaches for activities not covered by a product benchmark (1/2)

Formula for calculating basic free allocation

Heat Benchmark (*t-CO_2/GJ heat) x Heat consumption (GJ)*

- Benchmark is based on natural gas and 90% conversion efficiency

Scope of benchmark



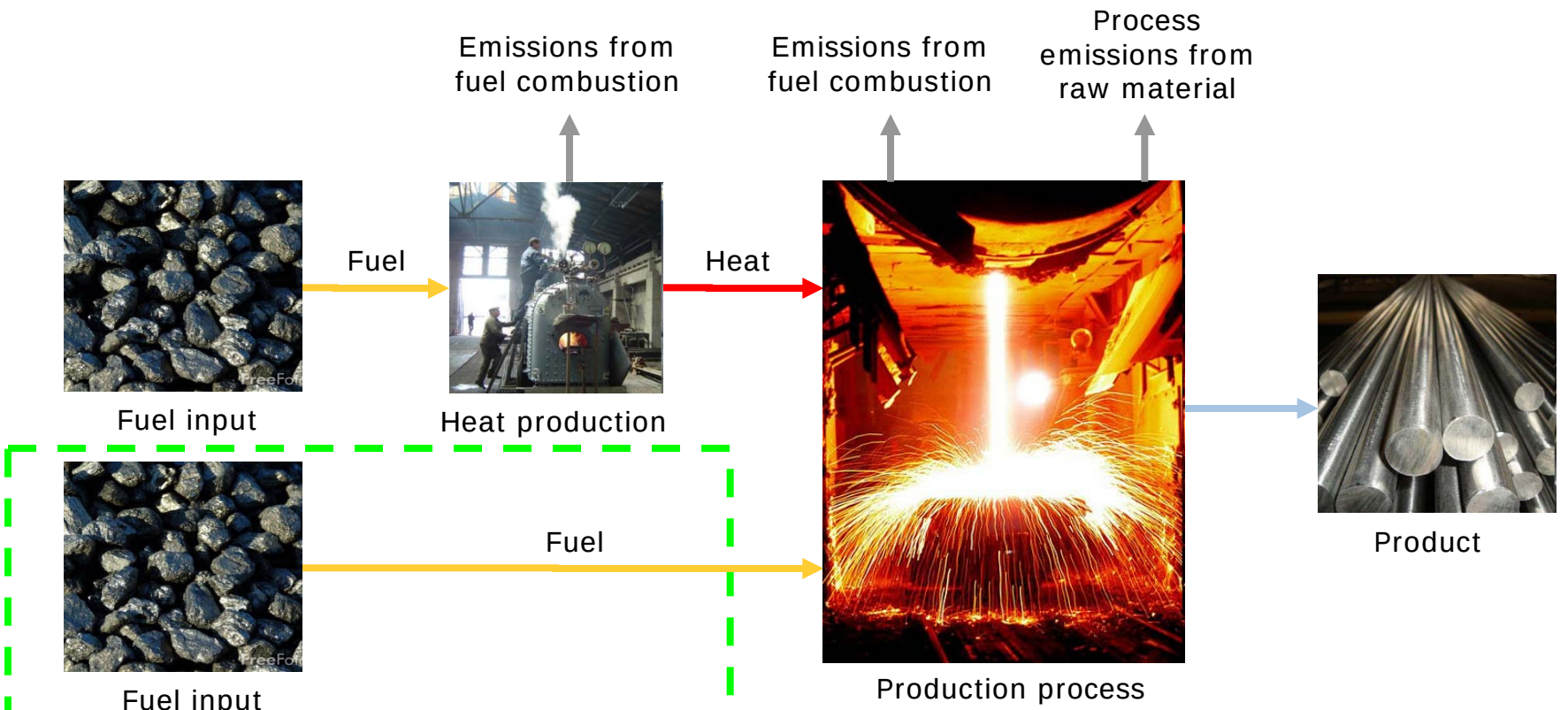
Alternative approaches for activities not covered by a product benchmark (2/2)

Formula for calculating basic free allocation

Fuel Benchmark (t-CO_2/GJ fuel) x Fuel consumption (GJ)

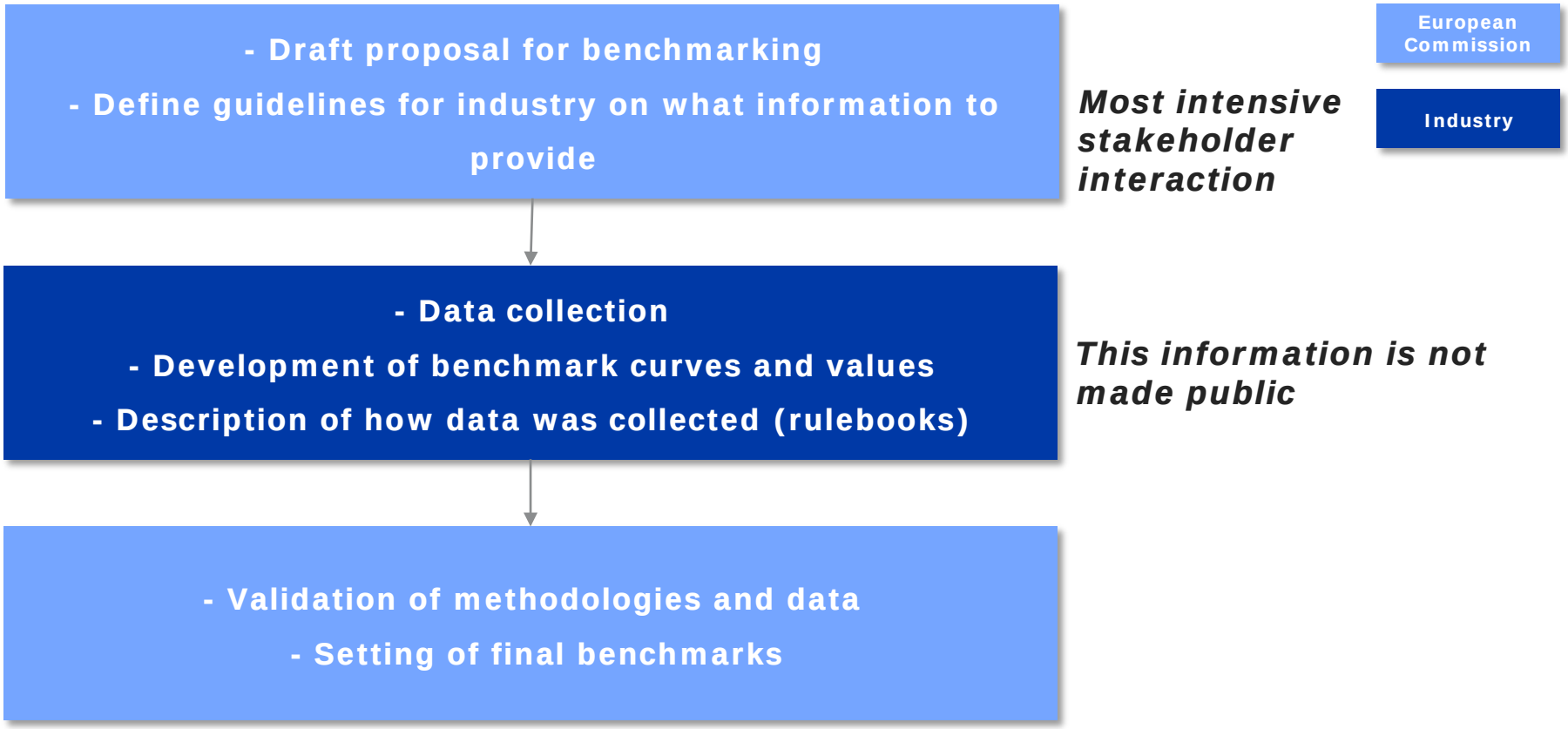
- Benchmark is based on natural gas

Scope of benchmark



Role of various actors in benchmarking process

Process steps in the development of benchmarks



Take away messages

Basic lessons learned

- Allocation deals with the initial distribution of allowances to the market participants
- There are three basic allocation methodologies:
  1. Auctioning (participants need to buy the allowances)
  2. Free allocation through “Grandfathering” based on historical emissions
  3. Free allocation through “Benchmarking” based on performance benchmarks

Conclusions

- Auctioning (i.e. no free allocation) is in theory the best to have a perfect carbon signal and to avoid windfall profits for participants passing on allowance costs
- Free allocation is chosen for three principle reasons:
  1. to lower initial costs of participants
  2. to increase (political) acceptability
  3. to protect industry competitiveness
- Grandfathering is often chosen for free allocation in first phases of ETS systems, but benchmarking and auctioning gain more and more momentum and are used together in California and the EU ETS

Reading materials of allocation

- ***EU Commission Decision concerning national implementation measures for the transitional free allocation of greenhouse gas emission allowances***

  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013D0448

- ***California cap on greenhouse gas emissions and market-based compliance mechanisms to allow for the use of compliance instruments issues by linked jurisdictions***

  http://www.arb.ca.gov/cc/capandtrade/capandtrade/unofficial_c&t_082014.pdf

- ***Australia Clean Energy Act 2011***

  http://www.comlaw.gov.au/Details/C2013C00372

- ***State and trends of carbon pricing 2014*** , May 2014

  http://documents.worldbank.org/curated/en/2014/05/19572833/state-trends-carbon-pricing-2014

- ***An Introduction to Emissions Trading Schemes*** *(website of International Carbon Action Partnership)*

  https://icapcarbonaction.com/ets-topics/introduction