



Carbon Border Adjustment Mechanism (CBAM): The (Impossible?) challenge of including indirect carbon costs

INESS Conference

Cillian O'Donoghue, Director, Energy & Climate, Eurometaux – European non-ferrous metals association

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Today I will cover the following

1

A brief introduction to the Commission's CBAM proposal

A short analysis of what the Commission has proposed



In particular what it proposes on Scope 2 (Indirect emissions)

2

The technical complexities of indirect emissions vs costs

We'll focus on:

- i. The difference between scope 2 emissions and costs; and*
- ii. A CBAM could cover indirect emissions, but never the real indirect carbon costs European producers face*

3

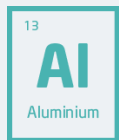
How a CBAM on Scope 2 would lead to market distortions

I will look at Slovakia and show how a CBAM on scope 2 emissions will result in producers paying a higher carbon price than even coal-based producers outside Europe for their output exported to the EU

4 key facts about non-ferrous metals production in Europe

Electro-intensive

Europe's most electro-intensive industries



Electricity =
38-45% of
production costs



35-40%



35-40%

Other
Energy
Intensive
Industries

< 10%

For us, electricity is a
key localisation factor.
But, European
producers face higher
power prices than the
rest of the world.

Rising demand being replaced by imports

Metals demand increase by 2050 *



BUT

European production is being
replaced by imports with higher
CO2 footprint and China controls
the global market



Tonnes of CO₂

China **70** Up to **x 8**
Europe **7** more CO₂

China's global
share in 2016:



Price-taker

As price-takers, we
cannot pass on any
regulatory costs to the
customer



Metals
priced
globally
by London
Metals
Exchange

=

Electricity
costs vary
from
country to
country

Automatic competitive
disadvantage on global
market

Carbon Leakage is a reality

11/35

of European
aluminium
smelters
closed since
2007

i. CBAM: What the Commission has proposed

13 Al Aluminium	29 Cu Copper	28 Ni Nickel	82 Pb Lead	30 Zn Zinc	79 Au Gold	47 Ag Silver	78 Pt Platinum	51 Sb Antimony	4 Be Beryllium	14 Si Silicon	27 Co Cobalt	42 Mo Molybdenum	23 V Vanadium	50 Sn Tin	46 Pd Palladium	44 Ru Ruthenium	75 Re Rhenium	76 Os Osmium	77 Ir Iridium	74 W Tungsten	73 Ta Tantalum	32 Ge Germanium	34 Se Selenium	31 Ga Gallium	24 Cr Chromium	12 Mg Magnesium
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CBAM = A Notional ETS

On 14 July, the Commission came with its CBAM proposal as part of the ‘Fit for 55 package’. A CBAM is designed to be the new carbon leakage measure gradually replacing free allowances and possible indirect costs compensation

The mechanism is a notional ETS

Basically, we are applying an equivalent regime on imports into the Union. Importers have to surrender CBAM certificates (priced on the basis of embedded emissions in imports)



Explained in Recital 37

“The CBAM should be based on a declarative system where an authorised declarant, who may represent more than one importer, submits annually a declaration of the embedded emissions in the goods imported to the customs territory of the Union and surrenders a number of CBAM certificates corresponding to those declared emissions”

Transition period up to 2026

- **Now : Co-Decision Procedure**

The Commission's CBAM proposal now goes through co-decision where the European Parliament and the Council will amend it. At this stage both Slovakia and Slovak MEPs can influence this piece of legislation.

- **From 2023 – 2025: Transitional CBAM with no financial adjustments.**

The CBAM applies only as a reporting obligation from 2023 to 2025 (i.e., no financial obligation to surrender certificates).

Default values to be used in the absence of real data (article 7 and Annex III, point 4 & 6) during this period

- **From 2026 onwards: Full implementation of CBAM**

In reality, a CBAM begins in 2026

CBAM Sectors

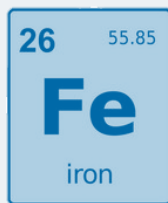
5 sectors will be covered by CBAM. Aluminium, steel, cement, electricity & fertilisers



Cement



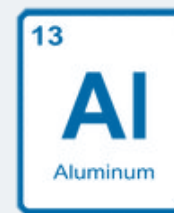
Electricity



Steel



Fertilisers



Aluminium

Why were these 5 sectors chosen? On the basis of the following criteria:

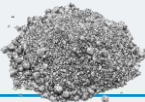
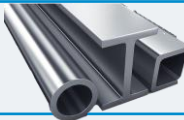
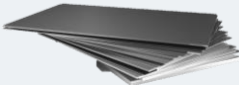
1. Homogeneous products
2. High carbon leakage exposure;
3. Relevance in terms of GHG emissions; and
4. Lower administrative complexity

Other energy intensive sectors may be added at a later stage

- The plan is to add other sectors, i.e. chemicals, refineries, ferro-alloys, etc, after 2025

Unlike with the ETS carbon leakage system, a CBAM applies to products, not NACE codes

The list of products are given in Annex 1. It's not just primary aluminium that is covered but also semi-finished products and some end products (of pure metal):

	7601 Unwrought aluminium: 7601 10; 7601 20
	7603 Aluminium powders and flakes: 7603 10; 7603 20
	7604 Aluminium bars, rods and profiles: 7604 10; 7604 21; 7604 29
	7605 Aluminium wire: 7605 11; 7605 19; 7605 21; 7605 29
	7606 Aluminium plates, sheets and strip, of a thickness exceeding 0,2 mm: 7606 11; 7606 12; 7606 91; 7606 92
	7607 Aluminium foil : 7607 11; 7607 19; 7607 20
	7608 Aluminium tubes and pipes: 7608 10; 7608 20
	7609 Aluminium tube or pipe fittings (for example, couplings, elbows, sleeves)

Scope 2 emissions excluded for now

In the Commission's proposal, Scope 2 emissions are excluded for now and indirect carbon costs compensation maintained until at least 2025



The measure only applies to direct (scope 1) emissions for now (Art 3.15)

Scope 2 excluded for now. But, the intention is to add this in the future



But, the Commission will look at ways to address indirect costs in a CBAM and may adapt the ETS Guidelines to reflect this (Likely after 2025)



For now, only reporting requirements on scope 2. By 2025, the Commission to **report** to the Parliament & Council on the possibility to extend a CBAM to indirect emissions (Art. 30.2)



Recital 17: CBAM should initially apply for direct emissions. After the transition period (2025) and “upon further assessment”, it will apply to indirect emissions

CBAM & Scope 2: Indirect carbon costs vs Indirect emissions

Emissions are decoupled from costs



The 3 Elements a CBAM needs to look at

There are three (not two) different elements which need to be taken into consideration for a CBAM:

1. Direct carbon emissions = direct costs

2. Indirect (Scope 2) carbon emissions

≠

3. Indirect (Scope 2) carbon costs

We can see how a CBAM can cover the first 2 elements

BUT

We cannot see how a CBAM can be designed to cover indirect carbon costs

We have looked into this as Eurometaux and also worked with Brussels based think tanks such as ERCST on this question.



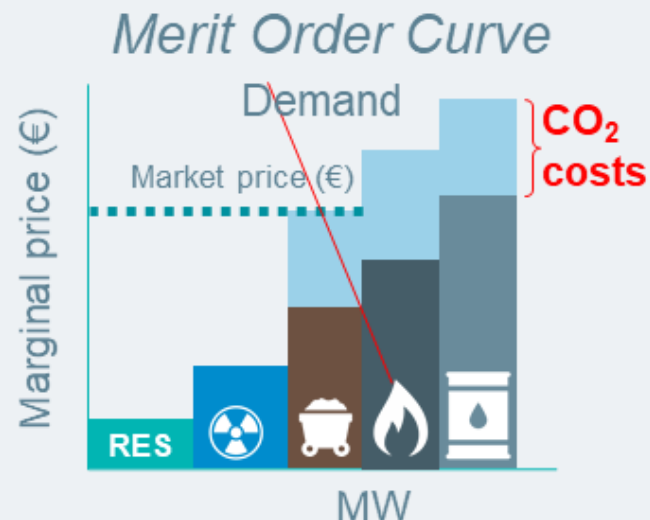
Our conclusion is that since indirect carbon costs cannot be addressed in a CBAM, indirect costs compensation would need to be maintained even with a CBAM

Marginal Pricing design in European Power markets and its carbon costs

European electricity prices are determined by the marginal power plant in the merit order curve, which is usually coal or gas fired.

These power plants must purchase emission quotas, which they pass on into the power market.

Thus, the power price includes the cost of CO₂ even in European countries with a large share of emission-free power production



That is to say, regardless of the type of electricity consumed (be it wind, solar, nuclear, gas or coal), the price to be paid is set by the marginal producer (in most cases coal or gas – which has carbon costs embedded)

Indirect carbon physical emissions are decoupled from indirect carbon emissions Costs

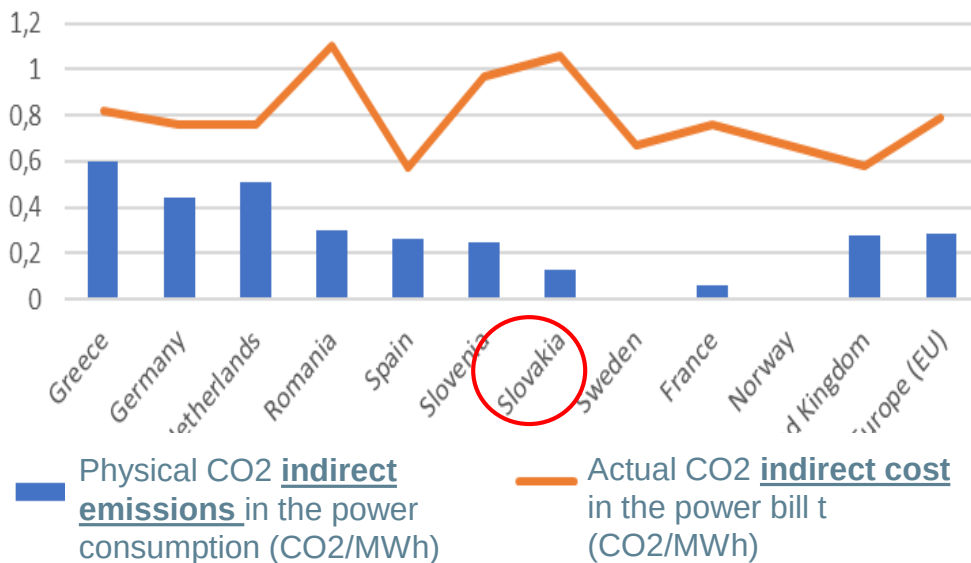
There's a huge difference between actual power carbon footprint vs intensity of the price setting technology in power market (indirect carbon costs)

Czechia-Slovakia market example

In the Czechia-Slovakia electricity market (They are one market in the ETS Guidelines), despite having low physical emissions the actual price effect of the CO₂ (carbon pass through) is much higher. The 2018 value is estimated to be 0,82.

This means that every time the carbon price increases by €1/tCO₂, the power price increases by €0,82/MWh, even if these metals producers consume almost carbon-free electricity.

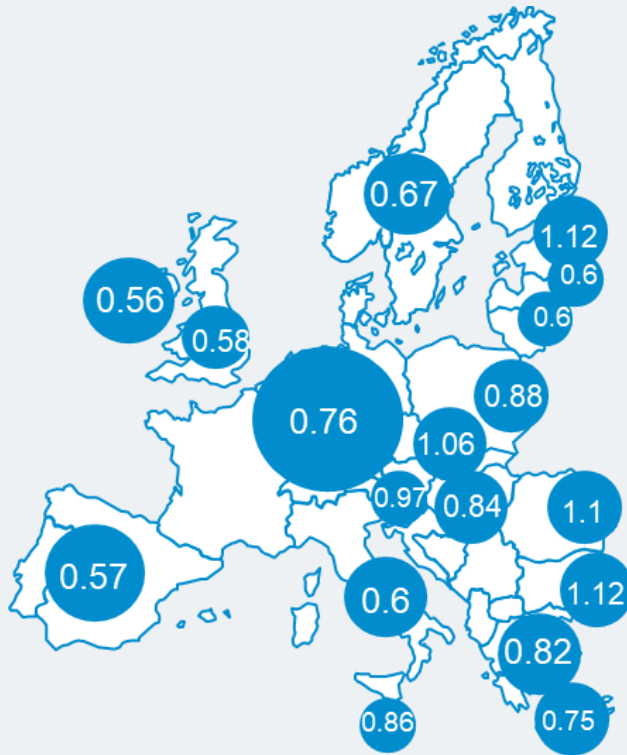
Emission intensity, generation and pricesetting in electricity market



European smelters extra climate costs on power prices (indirect cost) have no relation to the physical generation emission footprint

CO₂ pass-through in the various regions/Member States

CO₂ passthrough factors
across Member States*



- Note that there is no EU-wide CO₂ pass through value. The CO₂ passthrough values vary widely in Europe.
- An EU-wide CO₂ passthrough value would assume full power market interconnections.
- However, we are nowhere near full power market convergence up to 2030. Analysis shows bottlenecks.
- ***Since there is no uniform CO₂ pass through factor in Europe, it is not clear which factor should be used for CBAM.***

**An average emissions intensity will result in over/under taxation.
Indirects costs compensation guidelines' approach** - based on market principles, which reflect the electricity mix in a given region - is accurate**

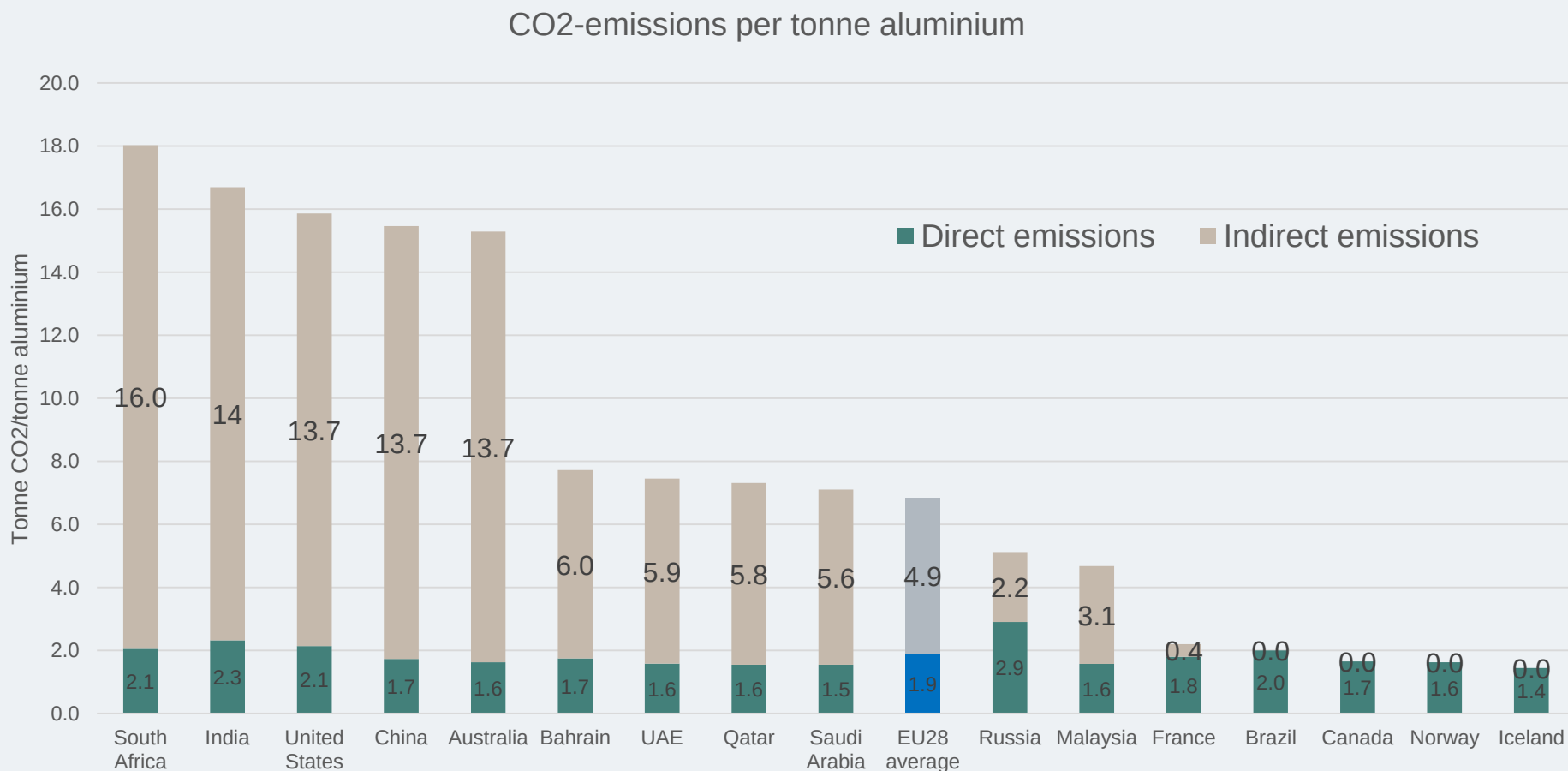
* 2012 Guidelines. The list of passthrough factors post 2021 will be updated in Summer 2021.

** 2021 State Aid for Indirect Carbon Costs Guidelines

ii. The Commission's potential methodology & how it would lead to market distortions



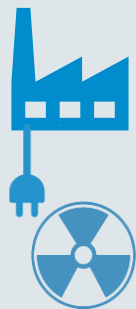
Aluminium producers across the world vary greatly in their CO2 Emissions...



Source: CRU

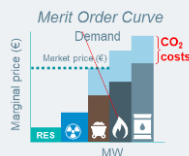


Example: A Slovak powered vs UEA gas-powered smelters



Slovak aluminium smelter

The Slovak power grid benefits from the carbon-free nuclear technologies and its indirect emissions are **close to zero: 0,197 CO2t/MWh**



But... due to the marginal pricing system in Europe, the Slovak smelter has a pass-through of **0,82** (i.e. extra carbon costs per MWh of electricity)

The scope 2 costs* of the Slovak smelter =

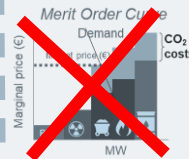
615 EUR/t Al

(15 MWh/t Al × **0.82** CO2t/MWh × 50 EUR/CO2t)



A smelter in the United Arab Emirates (UAE)

The UAE power grid is largely **reliant on gas**. The country's power grid mix (indirect emissions) is: **0.59 CO2t/MWh**



Since the UAE power pricing system is different, their extra carbon costs per MWh electricity will just be the CBAM levy based on indirect emissions (not on costs) i.e. **0.59**

The CBAM levy* on scope 2 of an exporter from the = United Arab Emirates

440 EUR/t Al

(15 MWh/t Al × **0.59** CO2t/MWh × 50 EUR/CO2t)

For the volumes exported by the UAE smelter to the EU, the UAE exporter would pay €175 less carbon costs per tonne of aluminium, despite consuming electricity with considerably higher carbon footprint than the Slovak smelter.

A snapshot of our CBAM scope 2 calculations*

	Norwegian Smelter	Slovak Smelter	UAE Exporter to Europe	Russian exporter to Europe	Chinese exporter to Europe
Actual indirect Emissions for producing aluminium	0 indirect tCO ₂ / t alu	0,197 indirect tCO ₂ / t alu	8.8 tCO ₂ /tAL	0 indirect tCO ₂ / t alu (if hydro based)	13,7 indirect tCO ₂ / t alu
Country Mix Scope 2 emissions**	0,017 CO ₂ t/MWh	0,197 CO ₂ t/MWh	0,59 CO ₂ t/MWh	0,639 CO ₂ t/MWh	0,766 CO ₂ t/MWh
Costs passthrough	0,67 CO ₂ t/MWh	0,82 CO ₂ t/MWh	0,59 CO ₂ t/MWh	0 CO ₂ t/MWh (if individual assessment)	1 CO ₂ t/MWh (if coal & actual emissions were used) 0,766 CO ₂ t/MWh (if average used) 0 CO ₂ t/MWh (if hydro & individual assessment)
Scope 2 costs	503 €/t aluminium	615 €/t aluminium	440 €/t aluminium	0 €/t Al (If hydro and individual assessment possible)	574 €/t aluminium (Coal) 0 €/t aluminium (If hydro and individual assessment possible)
Assessment	The Scope 2 costs for the Norwegian and Slovak smelters are higher than the costs that would apply to Norway's power mix. This is due to the price effect of the European power market design. The ETS State Aid Guidelines correctly factors this price effect		The scope 2 costs that the exporter from United Arab Emirates would face via a CBAM levy would be significantly lower than the European smelters' CO₂ costs, even if their power mix is not as decarbonised.	The exporter from Russia would not face a CBAM levy on scope 2 emissions even if it as the same carbon footprint as the Norwegian smelter.	The scope 2 costs that the Chinese exporter would face via a CBAM levy would be at best similar or considerably lower Scope 2 than the Norwegian and French smelters, even if its carbon footprint is clearly higher.



iii. Our Assessment

13 Al Aluminium	29 Cu Copper	28 Ni Nickel	82 Pb Lead	30 Zn Zinc	79 Au Gold	47 Ag Silver	78 Pt Platinum	51 Sb Antimony	4 Be Beryllium	14 Si Silicon	27 Co Cobalt	42 Mo Molybdenum	23 V Vanadium	50 Sn Tin	46 Pd Palladium	44 Ru Ruthenium	75 Re Rhenium	76 Os Osmium	77 Ir Iridium	74 W Tungsten	73 Ta Tantalum	32 Ge Germanium	34 Se Selenium	31 Ga Gallium	24 Cr Chromium	12 Mg Magnesium
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Our policy request



Given that a CBAM cannot capture indirect carbon costs, only indirect emissions, indirect costs compensation needs to remain even with a CBAM.



The current compensation scheme: (i) it has recently been agreed; (ii) it is dynamic to reflect the evolving reality of indirect cost pass-through factors; and (iii) it contains conditionality incentivizing ambitious decarbonization efforts.



It should remain in place throughout Phase IV of the EU ETS (Till 2030). CBAM cannot be an alternative to indirect costs compensation.



Looking ahead, it is important the note that given the excellent progress being made on the decarbonisation of power, we can expect indirect carbon costs to be much less an issue post 2030.

THANK YOU

Cillian O'Donoghue

Energy and Climate Change Director
odonoghue@eurometaux.be

 @Eurometaux

www.eurometaux.eu

Avenue de Tervueren, 168 | B-1150 Brussels | Tel: +32 (2) 775 63 11 | eurometaux@eurometaux.be



Annex

Our recommendations on the CBAM reform

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Challenges of a CBAM for non-ferrous metals

- i. Indirect carbon costs vs indirect emissions (previously covered)
- ii. Possibility to circumvent
- iii. Exports adjustments
- iv. Value chain impacts



ii. Possibility of circumvention

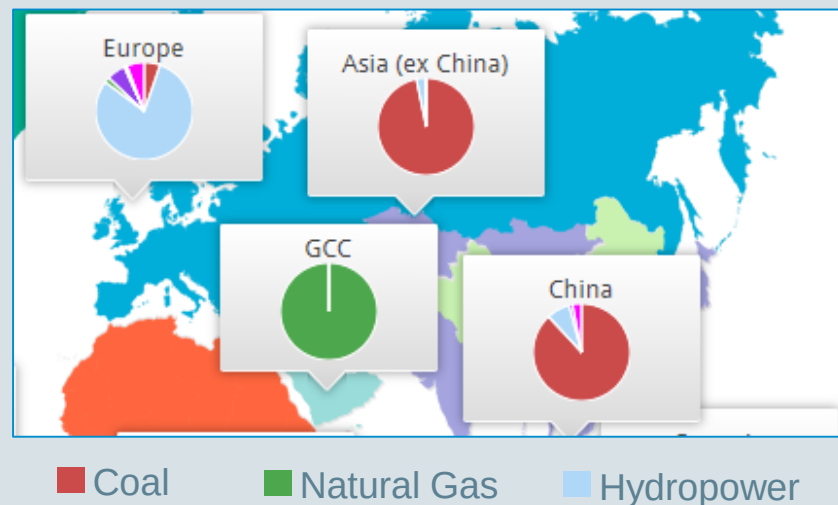
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A CBAM on Non-Ferrous Metals would be easily circumvented

For non-ferrous metals we foresee that it will be possible to circumvent a CBAM via resource shuffling.

In any event, a CBAM on indirects can easily be circumvented by changing trade flows of low-carbon products only to Europe and/or exporters claiming their power source is renewable

Primary Aluminium Smelting Power Consumption per region



88% of Chinese primary aluminum production based on **coal-fired power**, whereas the remaining 12% is hydropower.*

So it would be easy to allocate this 12% for exports to Europe and still maintain the major carbon intensive production.

In result, CBAM would not incentive third country non-ferrous metals producers to reduce emissions

iii. Export Rebates

13 Al Aluminium	29 Cu Copper	28 Ni Nickel	82 Pb Lead	30 Zn Zinc	79 Au Gold	47 Ag Silver	78 Pt Platinum	51 Sb Antimony	4 Be Beryllium	14 Si Silicon	27 Co Cobalt	42 Mo Molybdenum	23 V Vanadium	50 Sn Tin	46 Pd Palladium	44 Ru Ruthenium	75 Re Rhenium	76 Os Osmium	77 Ir Iridium	74 W Tungsten	73 Ta Tantalum	32 Ge Germanium	34 Se Selenium	31 Ga Gallium	24 Cr Chromium	12 Mg Magnesium
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Rebates – exports out of the EU



One underlying problem is how to handle the exports out of the EU?

The EU's specific carbon costs will have to be reimbursed somehow in order to make exports competitive.

\$10bn European Aluminium producers today export 3,5mt of semi-finished products. This represents ca \$9bn that will be at risk.

50% Some of our other metals companies sell half of their production outside Europe.

The Commission seemed not to have found a way to include export rebates.

Most likely this will be regarded as an export subsidy by the WTO and hence be challenged by our global competitors.

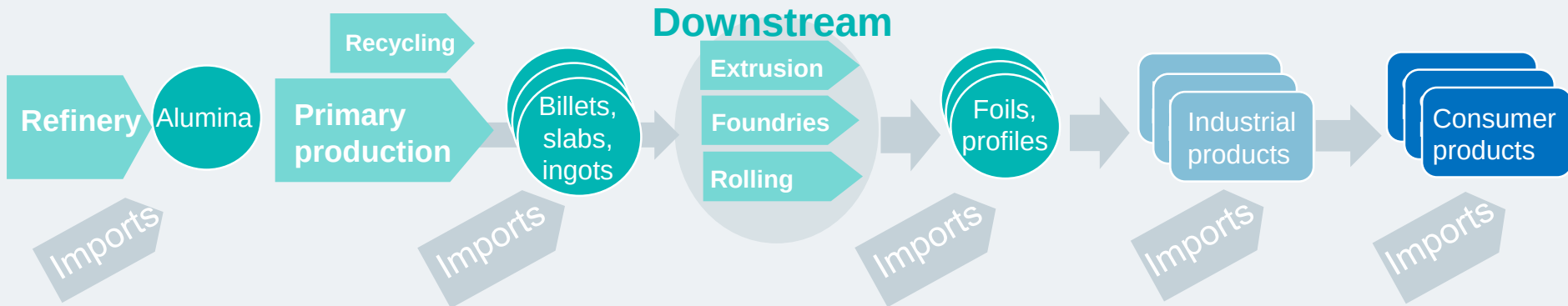
Then, how can we ensure the competitiveness of our exports in global markets?

iv. The complexities of our value chain



Value chain - EU producer's competitiveness will diminish at the cost of climate and jobs

Aluminium value chain production



Whole range of finished and semi-finished products are produced in Europe

Example of value chain distortions:



A CBAM only on upstream primary aluminium or semis would lead to higher costs for EU downstream producers and producers of final products, pushing production outside Europe

Even if some CBAM along the value chain it will:

- a) Never be able to cover the whole value chain - large number of important products will not be under any carbon cost regime
- b) Verification of carbon content for complicated products cannot be established in phase 1. Need experience.