



The European Non-Ferrous Metals: An electrification frontrunner enabling the Green Deal

EEF Briefing for MEPs Advisors and Assistants

Friday, 22nd January 2021



In the next 10-12 minutes I will introduce you to...

1

Who we are & why we are needed



Non-Ferrous Metals = the key enabler of the transition

2

How can the Non-Ferrous Metals decarbonise



The technology pathways for my sector to become climate neutral

3

What are the framework conditions needed for energy intensive sectors to decarbonise



Our key recommendations

1. Who we are



Europe's non-ferrous metals industry – United



900+
facilities



500,000
direct jobs



€120 bn
annual turnover



1/5
global production

Number of facilities
per country

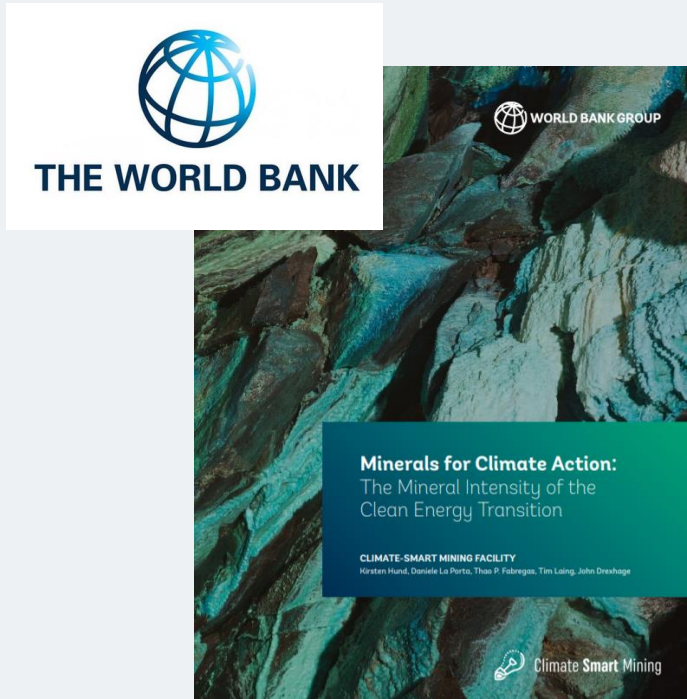


Why we are needed in the transition

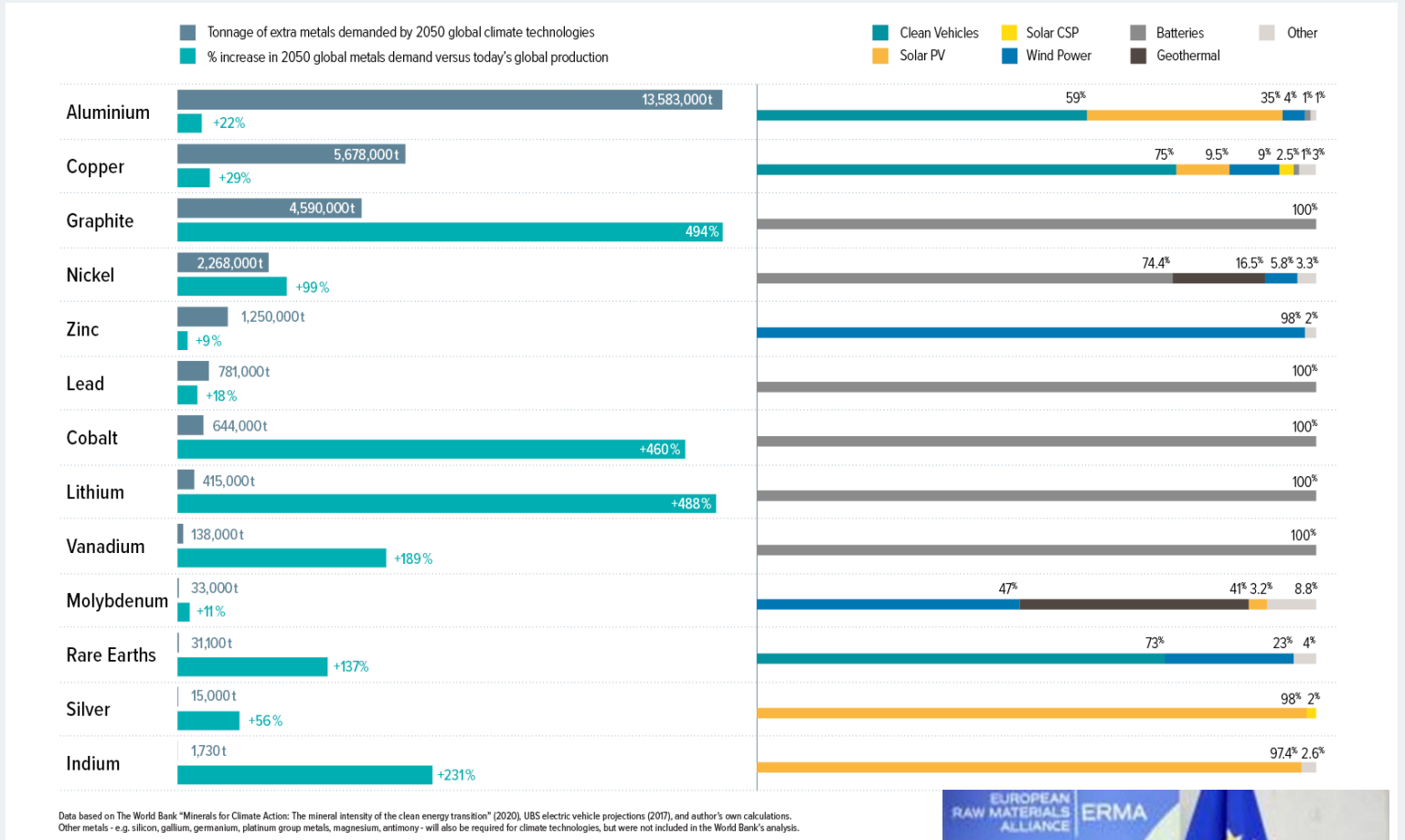
Non-ferrous metals: the key enabler of the transition



Metals: The key raw materials of Europe's energy transition



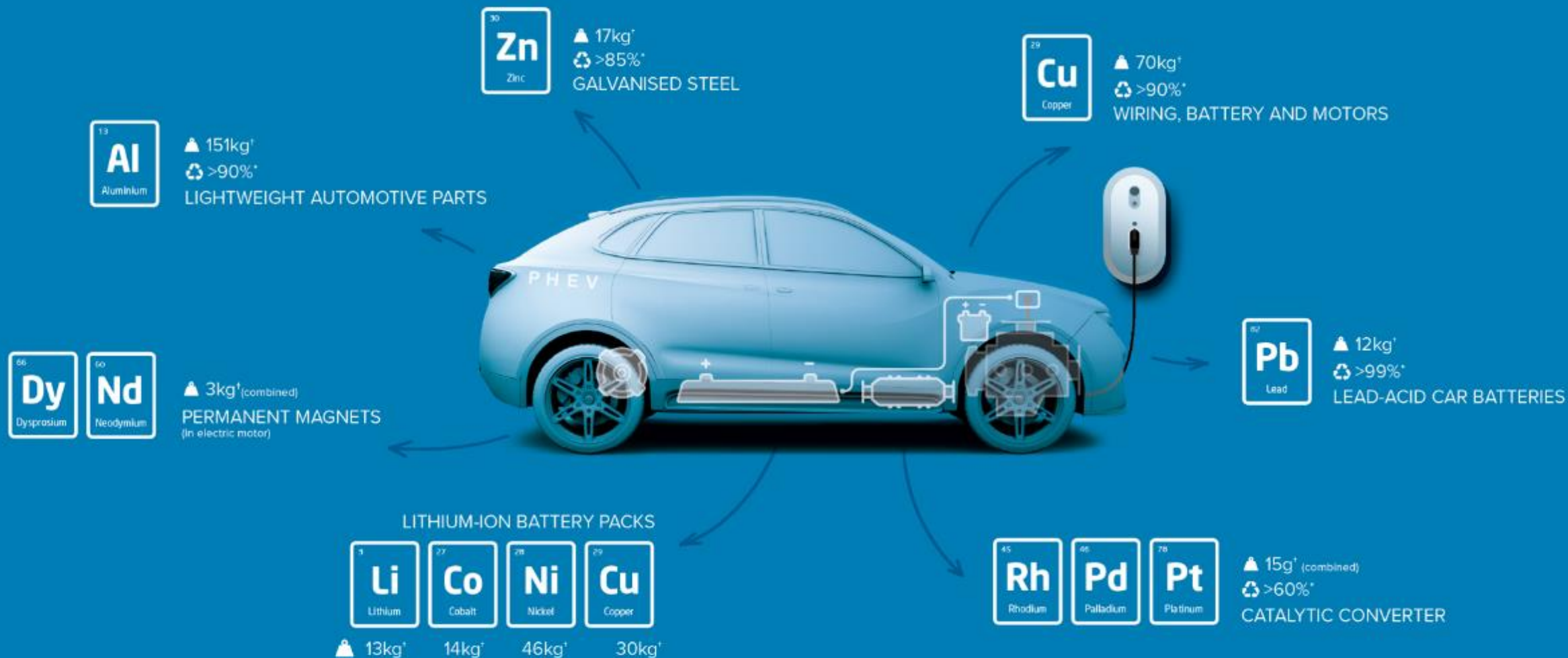
Up to 500% more metals needed in the low-CO2 future



Sustainable investment prioritised in European Raw Materials Alliance

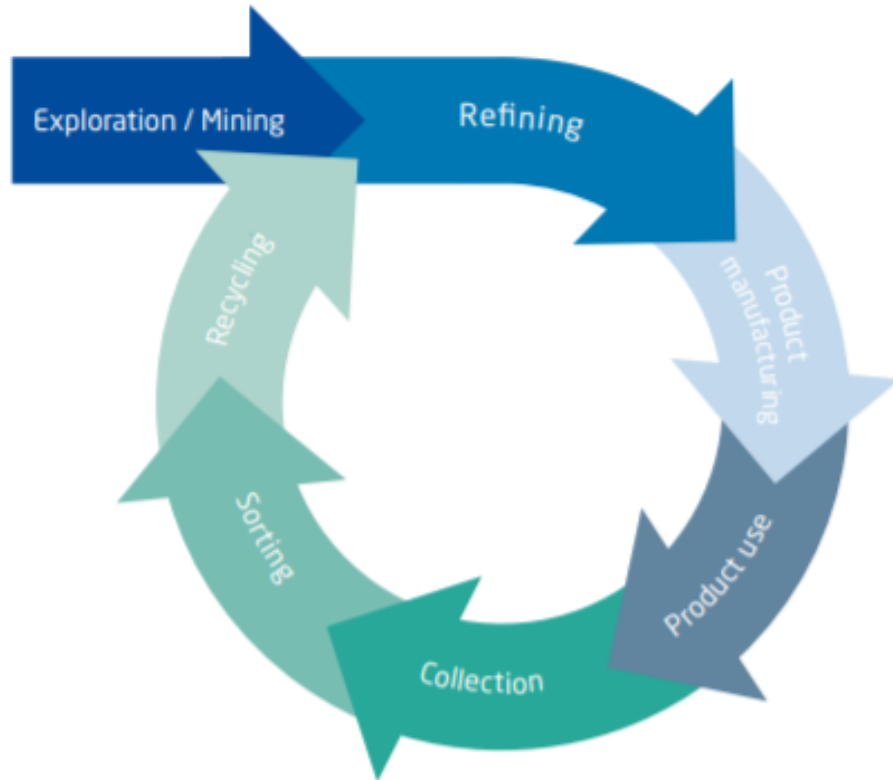


What raw materials drive EU clean mobility?

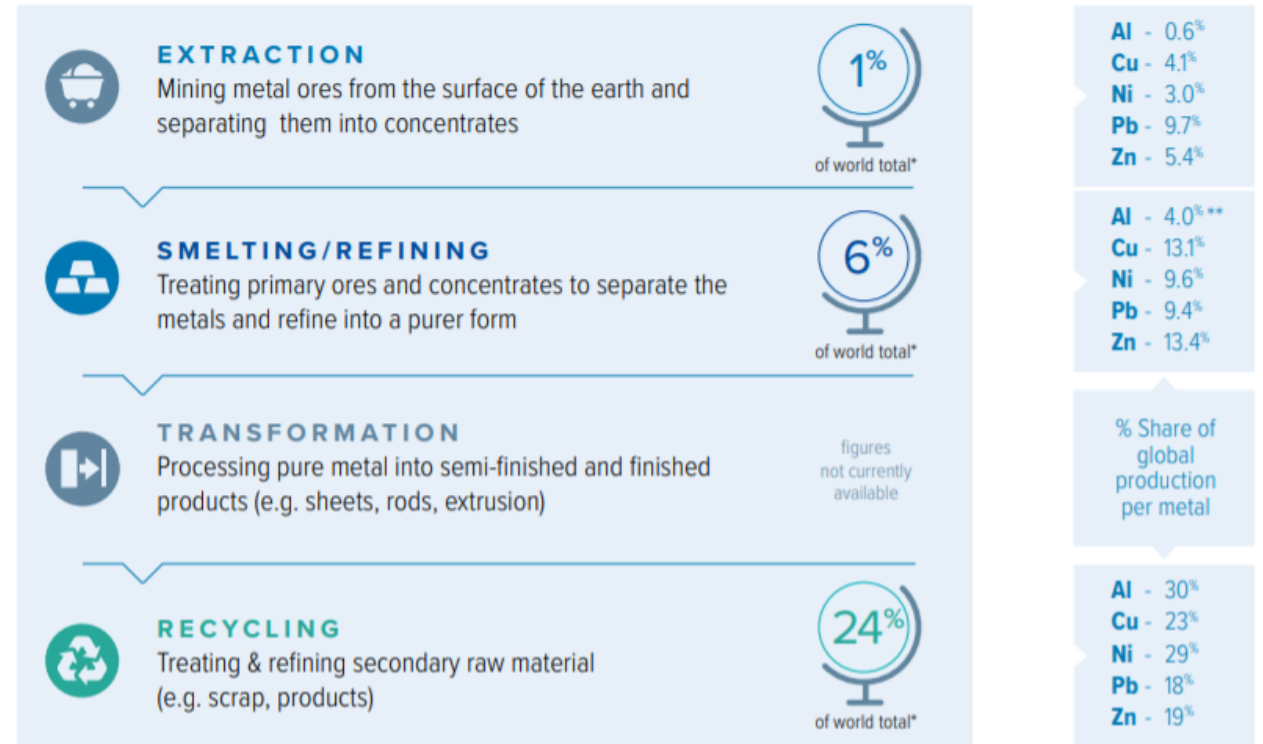


From mining to recycling: The EU metals value chain

The EU Metals Value Chain



Non-ferrous base metals produced and/or recycled in the EU

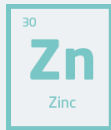


Circularity leader: Over 50% of the base metals produced in Europe are already from recycled sources

3 key climate facts about Europe's base metals production

Electro-intensive

One of Europe's most electro-intensive industries



Electricity = **40%** of production costs

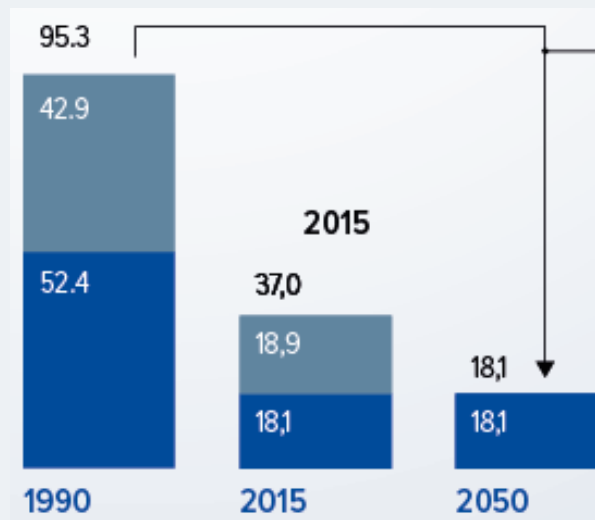


Electricity = **40%** of production costs

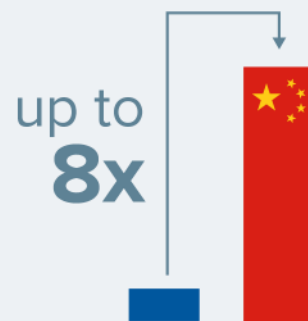


Electricity = **35-40%** of production costs

81% GHG emission reduction potential from a decarbonised power system

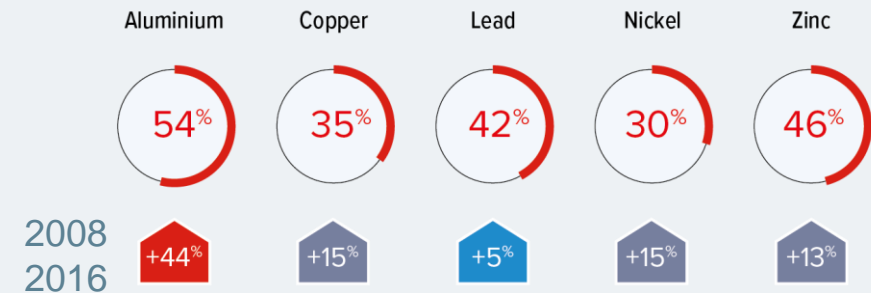


European Metals: Cleaner than our competitors**



European production is being replaced by imports with higher carbon footprint **

China dominates the global market



€5.2bn

Direct subsidies to non-ferrous metals (2011-2016)

= 44% of after-tax profits

2. How can the non-ferrous metals sector decarbonise?



Our Input in the Transition

As Eurometaux, over the past couple of years, we have contributed with the following reports on:

1.

How metals can achieve Climate Neutrality



bit.ly/metals2050

2.

How the entire energy intensive sectors can achieve climate neutrality



ec.europa.eu/docsroom/documents/38403

How can the Non-Ferrous Metals achieve decarbonisation

Our industry will continue to decarbonise building upon 3 pillars:

1.



Carbon free electricity

2.



Shift to low-CO₂ production processes through electrification and other technologies

3.



Circular Economy

Let's have a look in detail...

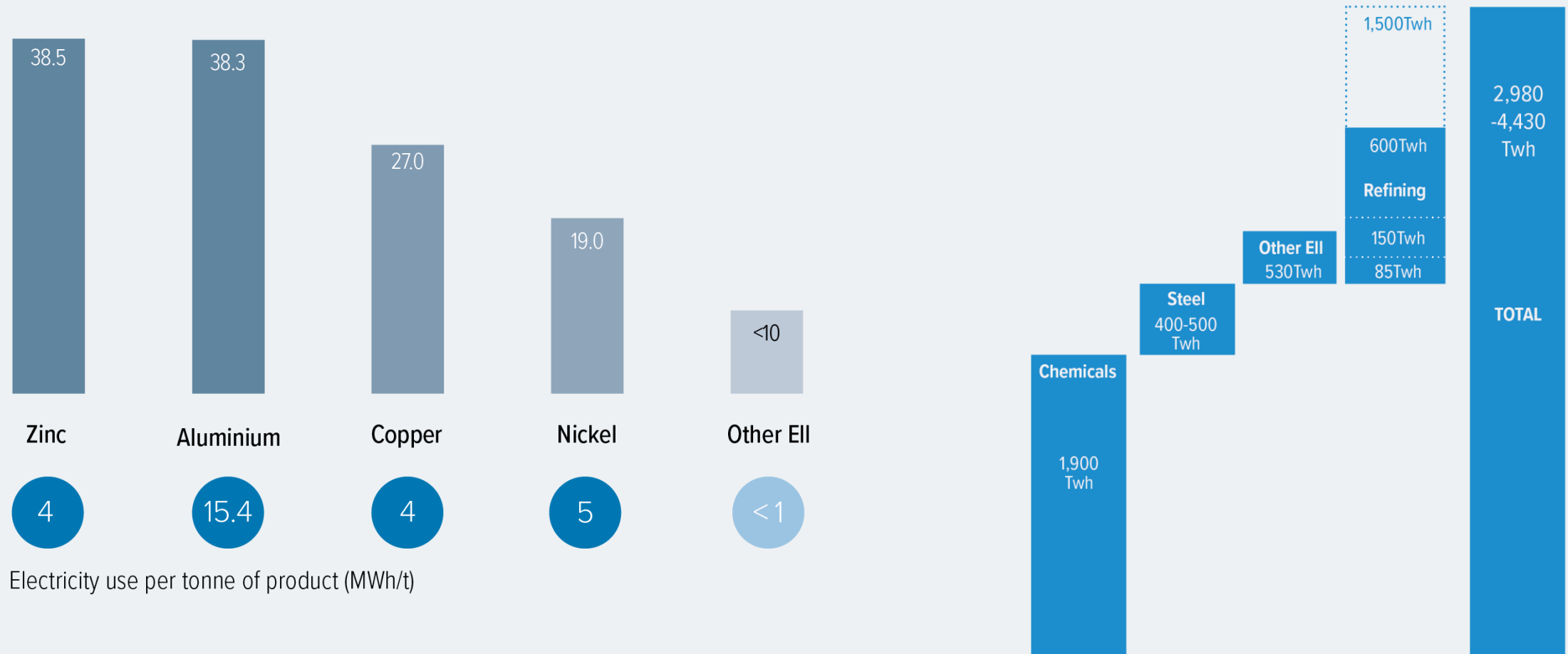
Electricity Consumption

Addressing 81% of our emissions



Electrification: Where the metals industry is a real bellwether

High levels of electrification vs. other energy-intensives

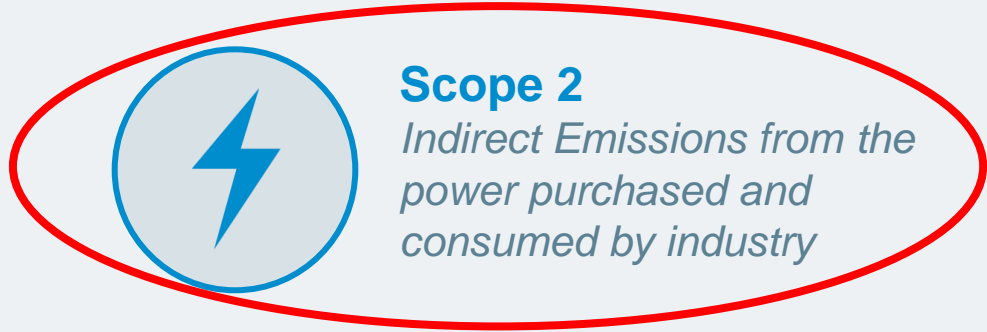


& Other Energy-Intensive Industries are expected to follow

A decarbonised power system: the biggest factor in our climate transition



Scope 1
Direct Emissions from our industrial activities




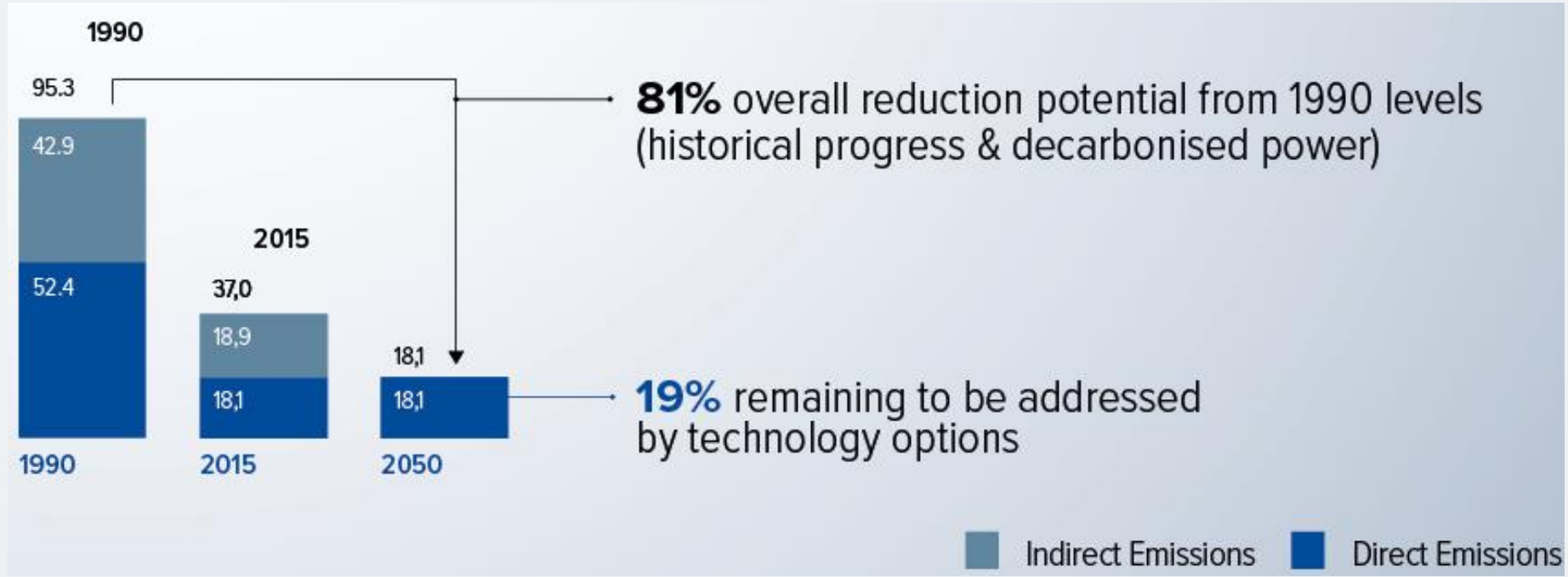
Scope 2
Indirect Emissions from the power purchased and consumed by industry



Scope 3
All other Indirect Emissions from sources industry doesn't control.

Due to our extremely high electointensity, for non-ferrous metals the most important fraction of our GHG footprint to address are the indirect emissions embedded in the electricity we consume

Decarbonisation of power sector is essential

 = **81%**
 reduction of overall GHG emissions vs. 1990



Renewable electricity contracts: Non-Ferrous Metals Leadership

FT

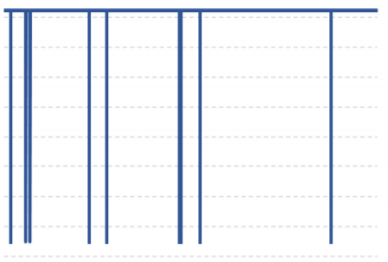
FINANCIAL
TIMES

We are baseload consumers

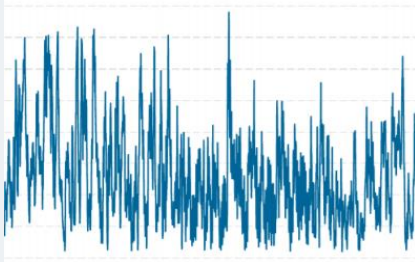
Wind/solar intermittent generation and aluminium baseload consumption production may not be natural allies at first sight...

Vs.

Aluminium smelter hourly consumption profile in a year



Wind hourly production profile in a year



However, these obstacles can be overcome

Renewable Energy

+ Add to myFT

Norsk Hydro in 'biggest' deal to secure wind farm energy

New renewables PPAs in our industry:



Hydro

~ 9 TWh/yr

Wind Power contracts in Norway beyond 2021

~4.5 TWh/yr

Wind Power contracts



Alcoa

~ 3 TWh/yr



Elkem

~ 1.8 TWh/yr

Long term renewable PPAs – a 'win-win' for both:

- **Developers:** Enabling new large scale wind farms through a stable revenue
- **Industry:** Long term horizon for investment– reduce risk of volatility by achieving predictable power costs



Shift to low-carbon production processes







Tackling the remaining 19% direct emissions



Remaining **19%** direct emissions requires a mix of mitigation technologies

Technology options	Relevance
Energy efficiency	+++
Anode technology aluminium	+++
Electrification (incl. shift to hydrometallurgical processes)	+++
Fuel shift – bio-based	+++
Higher metals recovery (slag and scrap)	+++
Sector coupling: demand response and waste heat	+++ (Decarbonisation enabler for other sectors)
Non-carbon reducing agents/hydrogen	++
CC(U)S	+

New innovation: within reasonable business models

  			
Elysis: Carbon-free aluminium in Canada	Karmoy: world's most efficient aluminium	Using copper heat to power Hamburg	Towards carbon-neutral silicon
<ul style="list-style-type: none">• Eliminates 100% GHG emissions from the smelting• First technology ever that emits pure oxygen as by-product	<ul style="list-style-type: none">• 12.3 MWh energy consumption• 15% more efficient than world average	<ul style="list-style-type: none">• 20,000t CO₂ savings• 7x potential increase potential in future	<ul style="list-style-type: none">• CO2 neutral biomass charcoal• 1.6mt potential CO₂ savings

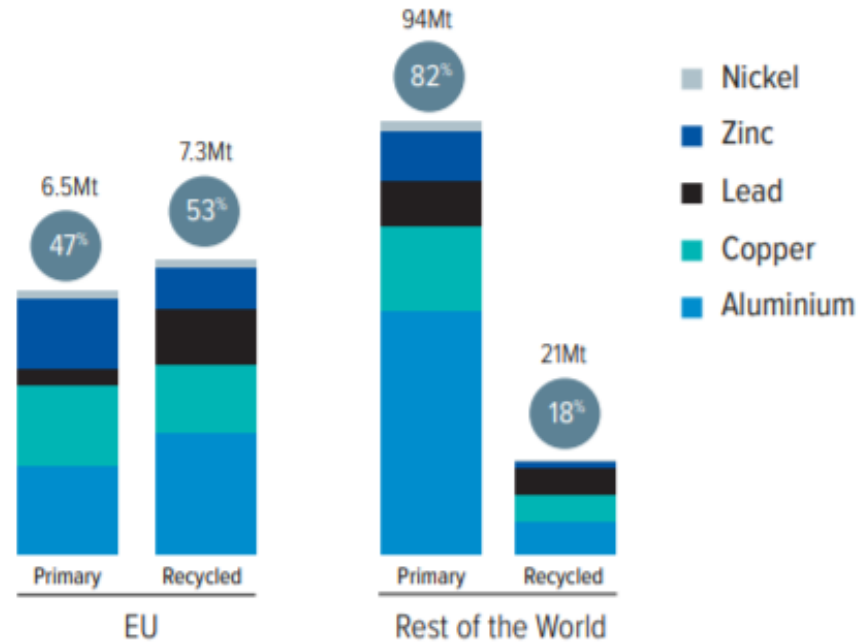
We are committed to invest & innovate when business conditions are right

Circular Economy



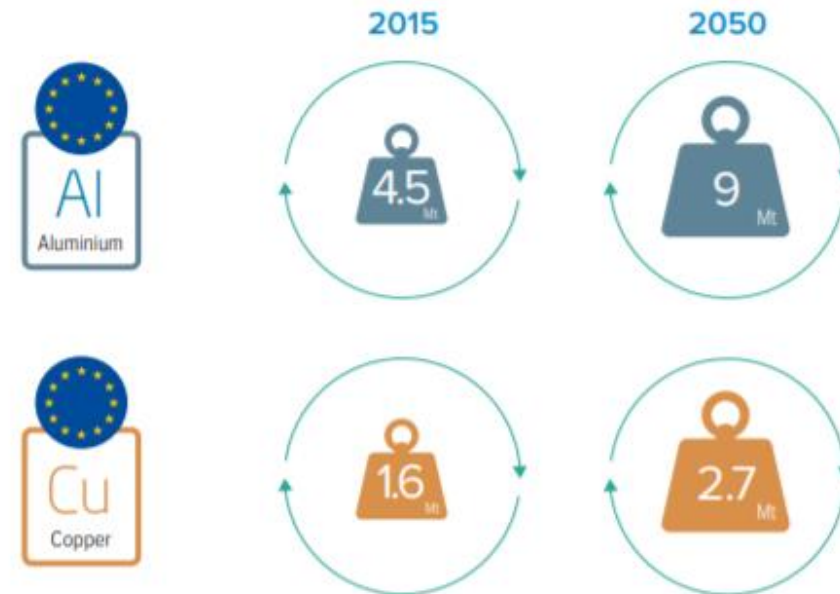
Circular Economy: Europe's metals scrap volumes to double between now and 2050

Percentage of primary and recycled base metals production in total base metals production EU and the Rest of the World.



Source: Fraunhofer ISI, OECD

Projected increase in EU aluminium and copper scrap volumes, 2015-2050 (Mt)



Sources: European Aluminium & OECD

Europe's shift to more secondary production should aim to replace dependence on high-polluting imports, complementing consistent European primary production levels to match demand requirements

3. The Framework Conditions to Decarbonise

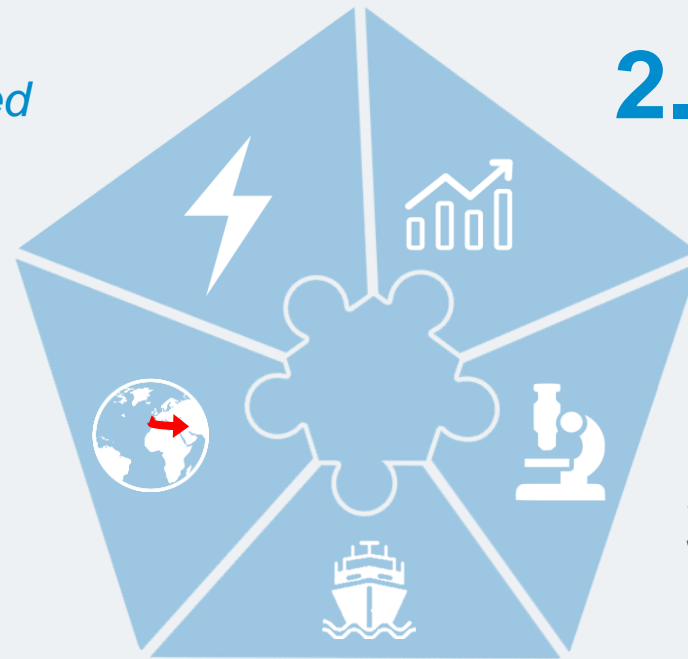


A five-part Industrial Strategy is needed to grow Europe's metals ecosystem alongside EU 2050 climate-neutral strategy

The framework conditions have been identified. We now call on EU policymakers to come forward with a combined climate and industry plan on how to deliver these conditions:

1. *Unlock competitively priced carbon-free electricity*

2. *Create Demand for low-carbon products*



3. *Financing & funding of breakthrough climate-neutral solutions*

5. *Adequate Carbon Leakage Protection*

4. *Assertive competition & trade policies*

Our Policy Requests

1

Our main policy request is to ensure a level playing field vis-à-vis non EU regions for our industry to compete.

2

In order to achieve this, we need three things:

- i. **Competitive industry electricity prices;**
- ii. **Adequate carbon leakage protection;** and
- iii. **Funding for research and innovation**

3

Key pieces of legislation will soon be going through co-decision, most notably:

- **EU ETS review** → adequate carbon leakage protection
- **Carbon border adjustments mechanism (CBAM)** → a level playing field on indirect carbon costs

THANK YOU

- Any Questions?
- If you want to learn more, please
 - ✓ Have a look at the IES/VUB 2019 Report →
 - ✓ Reach out to us at:



bit.ly/metals2050



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