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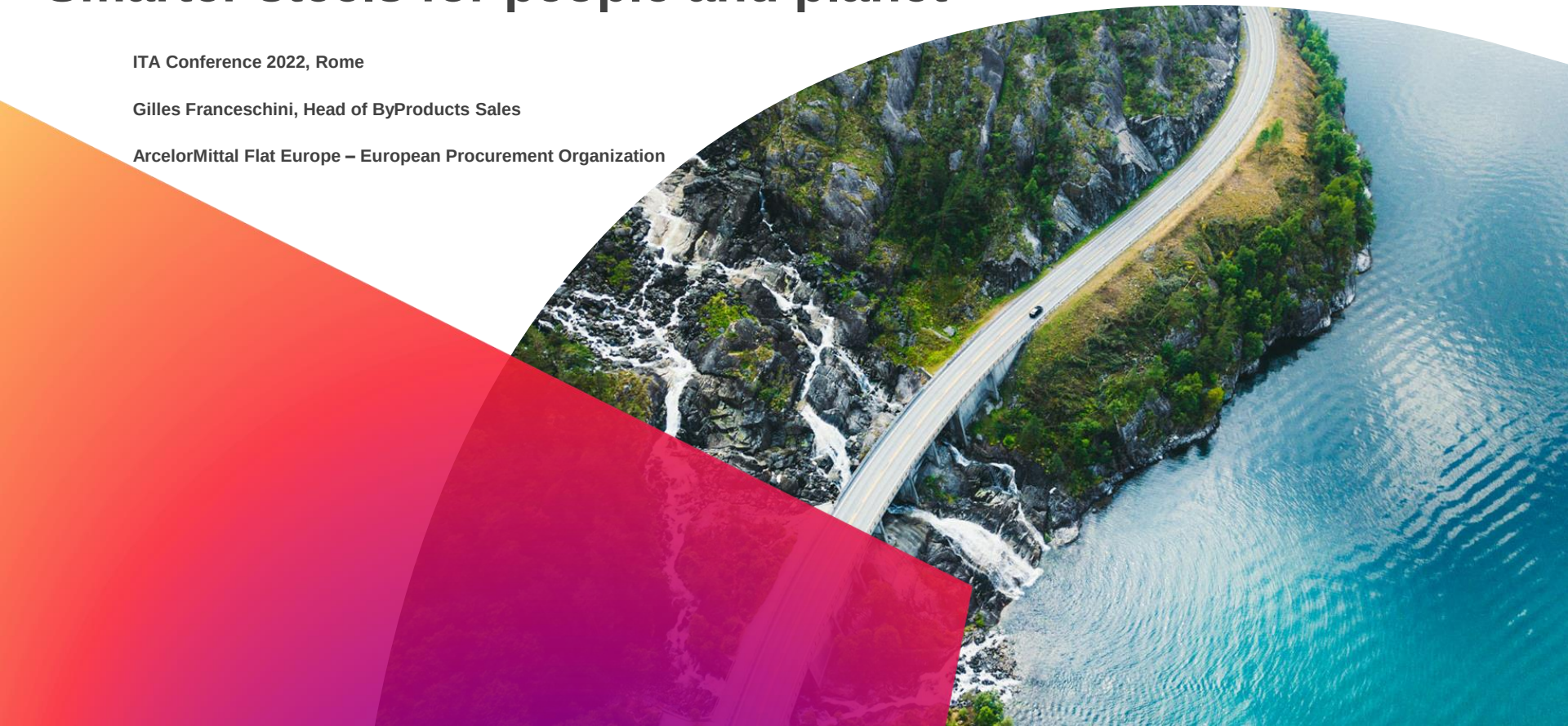
Smarter steels for people and planet

ITA Conference 2022, Rome

Gilles Franceschini, Head of ByProducts Sales

ArcelorMittal Flat Europe – European Procurement Organization



Steel is critical to the transition to a carbon neutral, circular economy

Integral to the renewable energy revolution

A core material in the transition to electric vehicles

Supports the next generation of high-performance buildings

Facilitates emerging market infrastructure development

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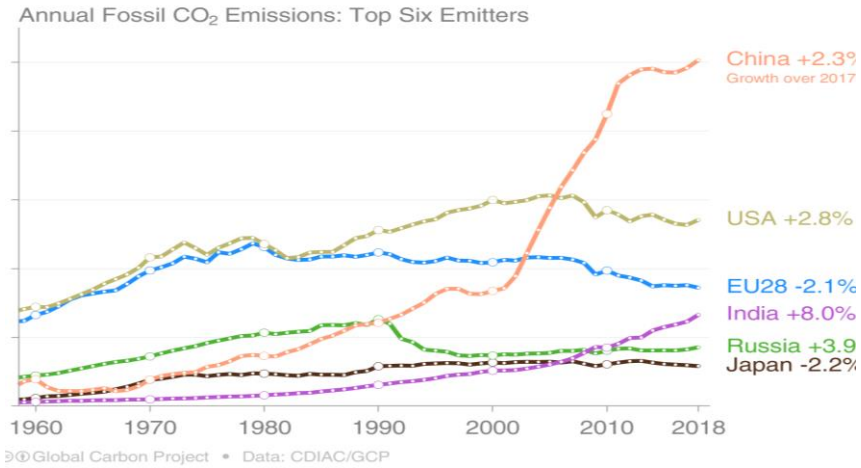
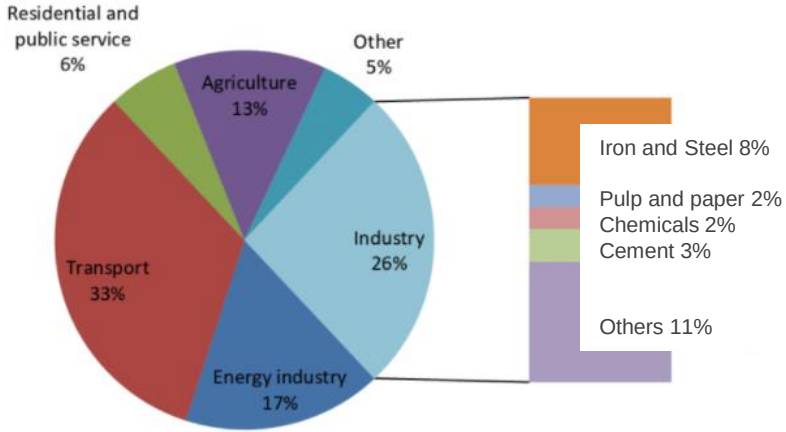
World and EU steel production will likely continue to grow. But emissions shall decrease

CO2 emissions evolution



- Production growing from 850Mt (2000) to 1,8Bt (2020) & expected to continue
- Europe shows a reduction in its emissions, those of China increases sharply

Weight of Steel industry in EU's CO2 emissions



- Steel industry represents 8% of global CO2 emissions

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Our purpose

Smarter steels for people and planet

-35%

Scope 1 & 2 CO_2 emissions by 2030 across Europe

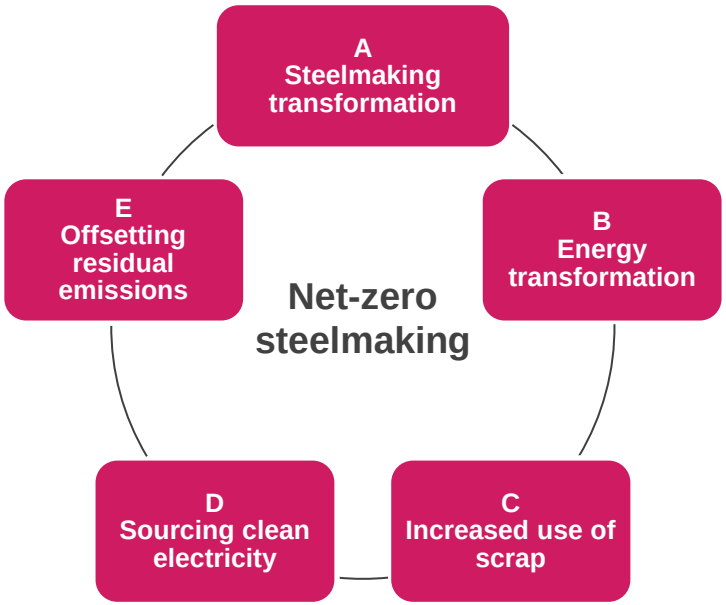
Net zero

CO_2 emissions by 2050

SBTi

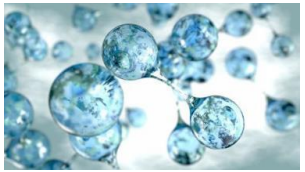
Committed to setting science-based targets aligned with 1.5°

Our roadmap features five groupings of actions and initiatives (‘levers’) that act as stepping stones to achieving carbon-neutrality by 2050:



The technological pathway consisting mainly of:

– **Innovative DRI**: Use of hydrogen to reduce iron ore without emitting CO2



– integrating an increasing share of **recycled steel** into production: already up to 25% in 2022

– Continue **optimizing the blast furnace** production, including use of hydrogen to decrease emissions during the transition phase

Objective to transform the production of the 32 Mt ArcelorMittal produces in EU

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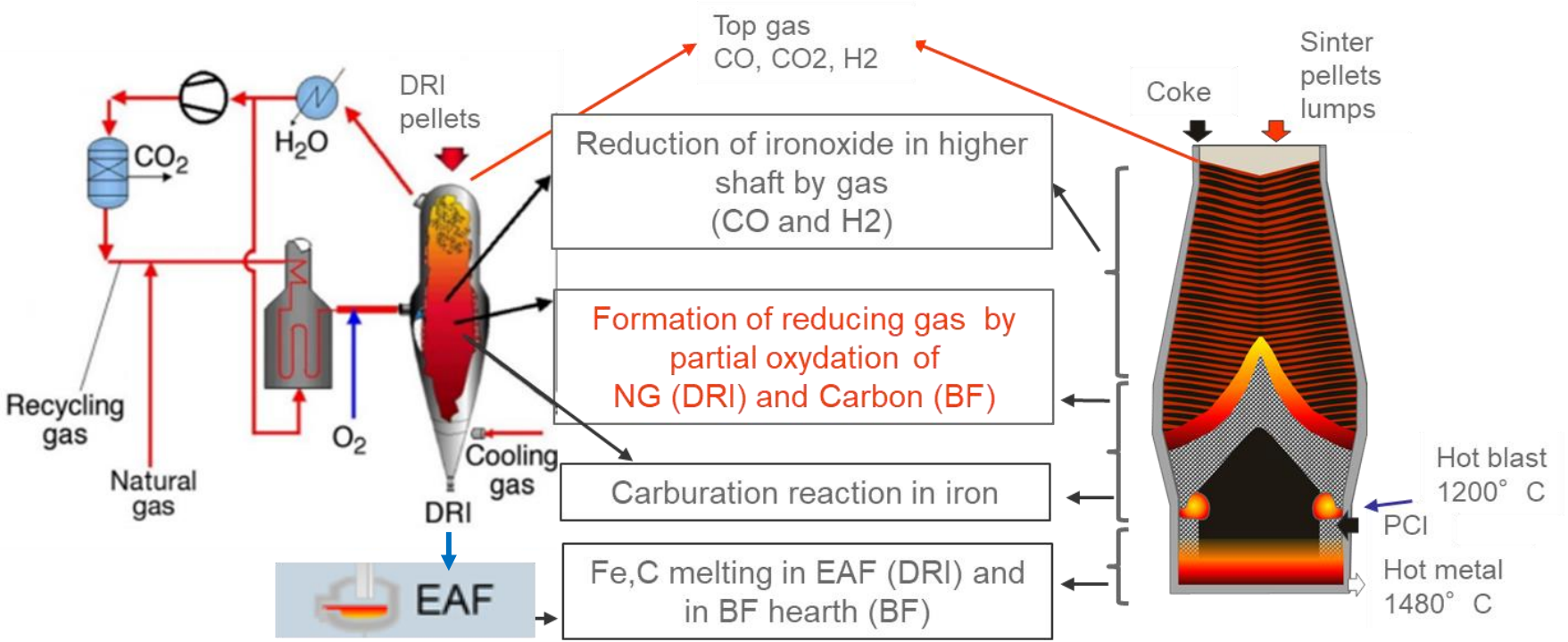
Starting with Steelmaking transformation



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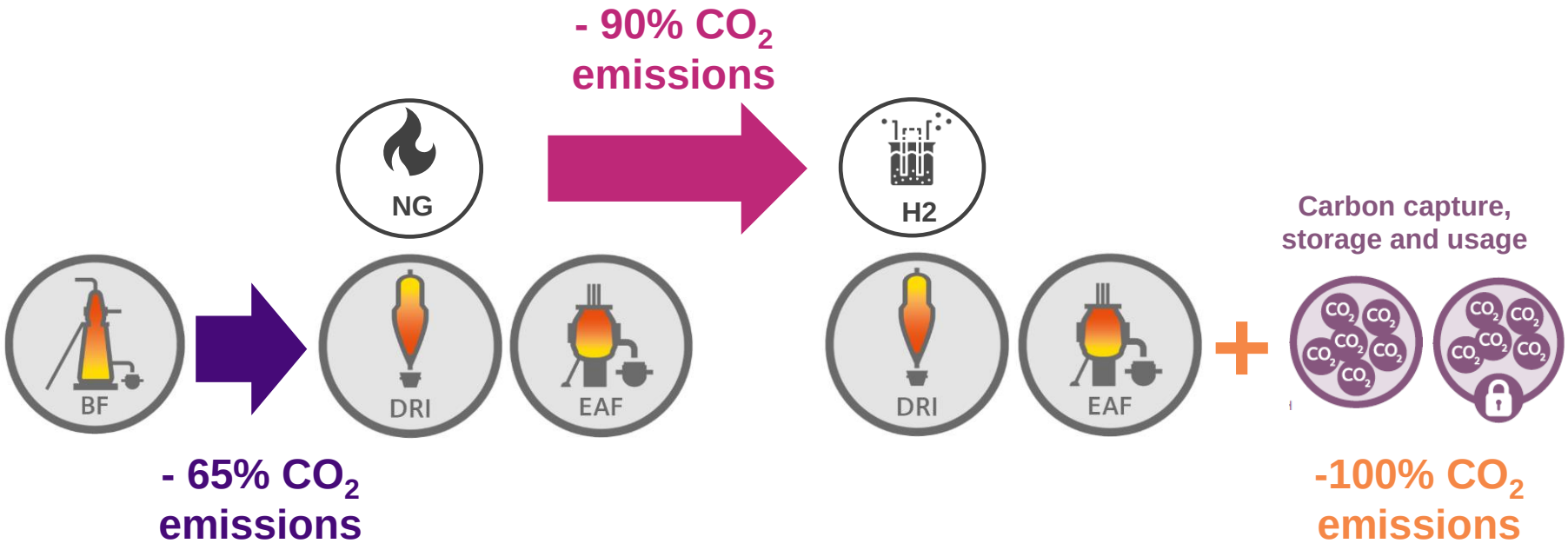
Decarbonising primary steelmaking requires a transformation
Combining DRI with EAFs helps increasing steel recycling and virgin material use



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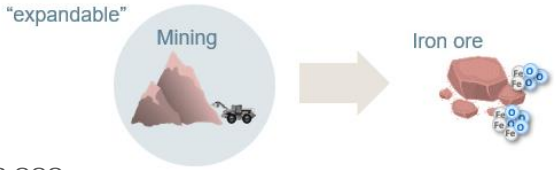
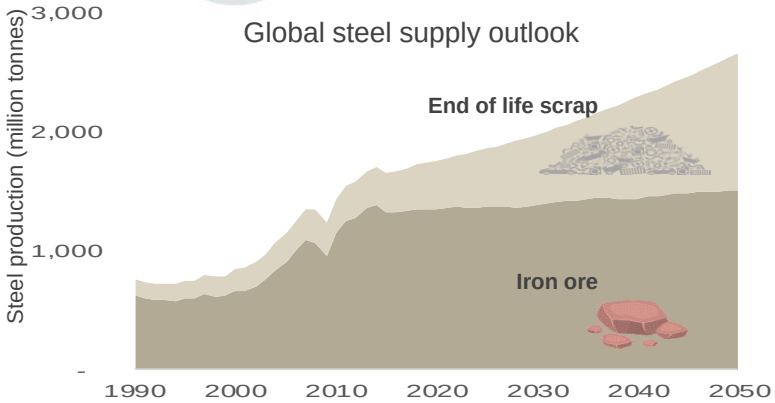
Scrap steel is limited – we are taking steps to increase the share of scrap, but decarbonisation of primary steelmaking is key

Increasing steel recycling



Global steel supply outlook



Innovative DRI

From : $Fe_2O_3 + 3\ CO \rightarrow 2\ Fe + 3\ CO_2$

To: $Fe_2O_3 + 3\ H_2 \rightarrow 2\ Fe + 3\ H_2O$

HDRI

Hot DRI is extracted from the DR plant reactor and is directly conveyed to the furnace at high temperature.

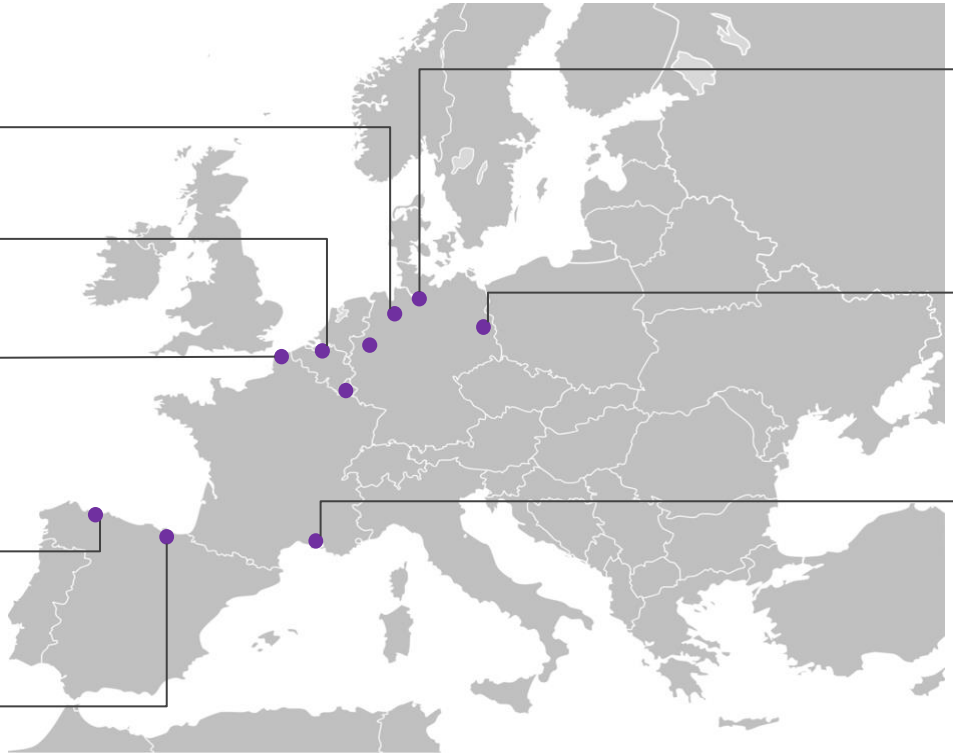
CDRI

Cold DRI is reduced iron in pellet form, however it has the tendency to re-oxidize in contact with water and, at temperature above 80° C, also with air.

HBI

HBI is DRI mechanically compressed at high temperature into briquettes, with minimum density of 5g/cm3. This product is a safer form of DRI when transport is needed.

ArcelorMittal Europe has a target to reduce CO_2 emissions by 35% by 2030, and to be carbon neutral by 2050 – many projects already announced



Bremen
DRI + EAF

Gent
DRI + EAF + Steelanol

Dunkerque
DRI + EAF

Asturias
DRI + EAF

Sestao
EAFs zero carbon emissions

Hamburg
Expansion of DRI

Eisenhüttenstadt
DRI + EAF

Fos
EAF

>€5bn investment but waiting for approval from EU authorities

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Decarbonization leadership: ArcelorMittal is at the forefront of the industry, developing clear industrial transformation plans and capturing commercial opportunities

Industry first "Net zero" plant

- "World's first full-scale zero carbon-emissions steel plant" at Sestao by 2025"
- A combination of physical zero carbon emissions steel and net-zero certified tonnes by 2030

First to market

- Customer appetite for low carbon steel is real, as demonstrated by demand for our XCarb™ product offering launched in 1Q' 21

Funding

- $10bn total investment* required to achieve 2030 Group decarbonization target (gross amount pre-government support)
- Securing public support is central to our plans and provides an opportunity to accelerate

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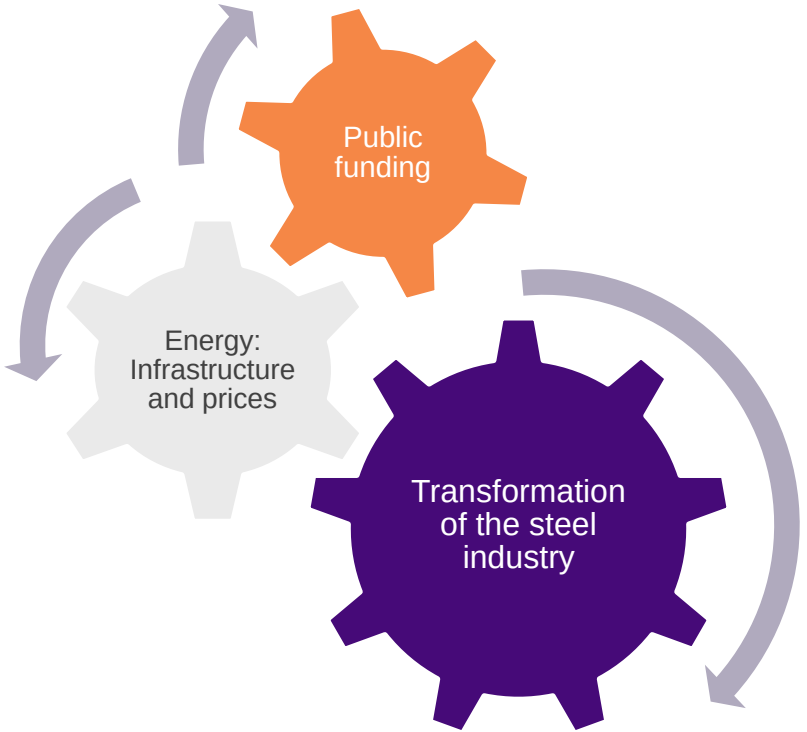
Key success factors: funding, policy support, energy and carbon price

1. **Secure adequate funding support:**
   - granted in most countries but still awaiting greenlight from EC

2. **Clear policy roadblocks to investment**
   - ETS review needs to take into account the decarbonization speed of the European manufacturing industry – and to be coupled with CBAM
   - Hydrogen use / storage
   - Waste Shipment Regulation

3. **Ensure sufficient, affordable, decarbonized and stable Energy**
   - green or low carbon electricity and hydrogen
   - will need to be available soon in large, stable amounts, and at competitive prices



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