

LKAB

World Materials Forum 2026

Johan Menckel CEO

Europe's leading iron ore & mineral company

1890

LKAB is one of Sweden's oldest industrial companies and is owned by the Swedish state

5,200

Total number of employees

80 %

LKAB mines around 80 % of all iron ore within the EU

12

The group is present in 12 countries

33

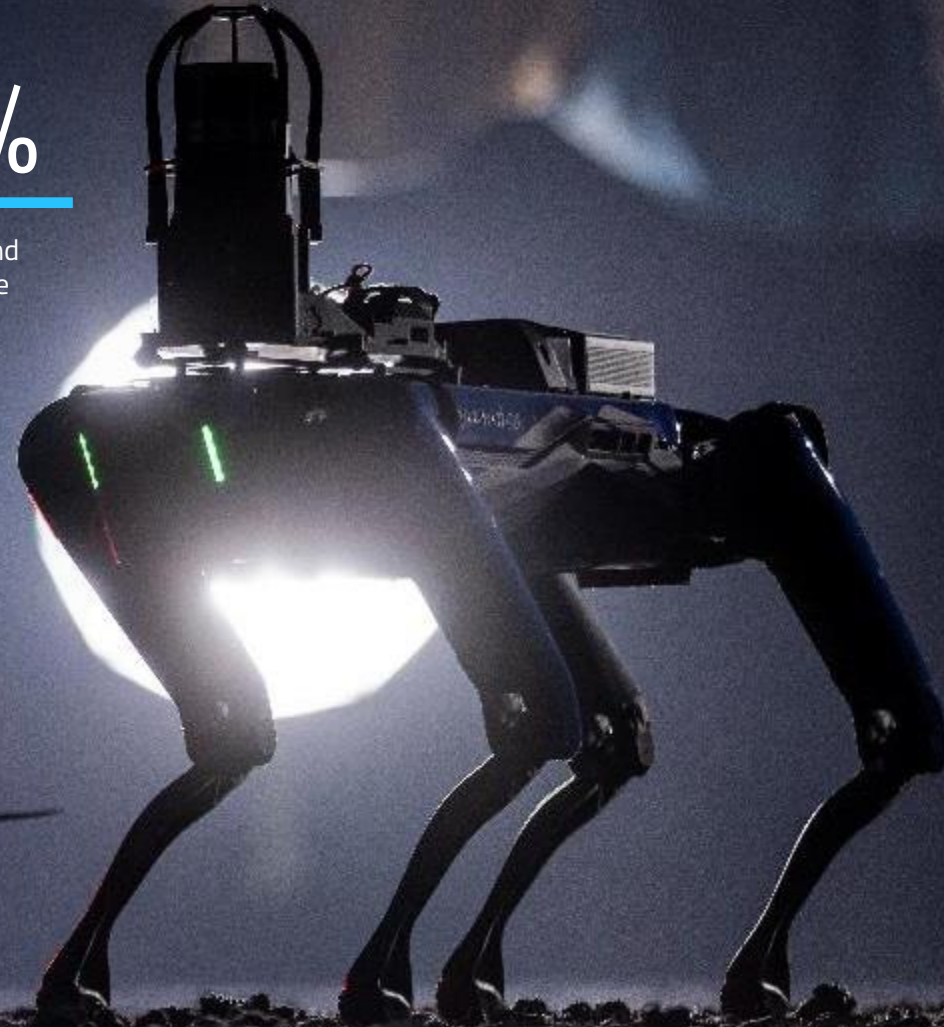
Net sales of SEK 33 billion in 2025

6.0

Approximately SEK 6.0 billion investments in 2025

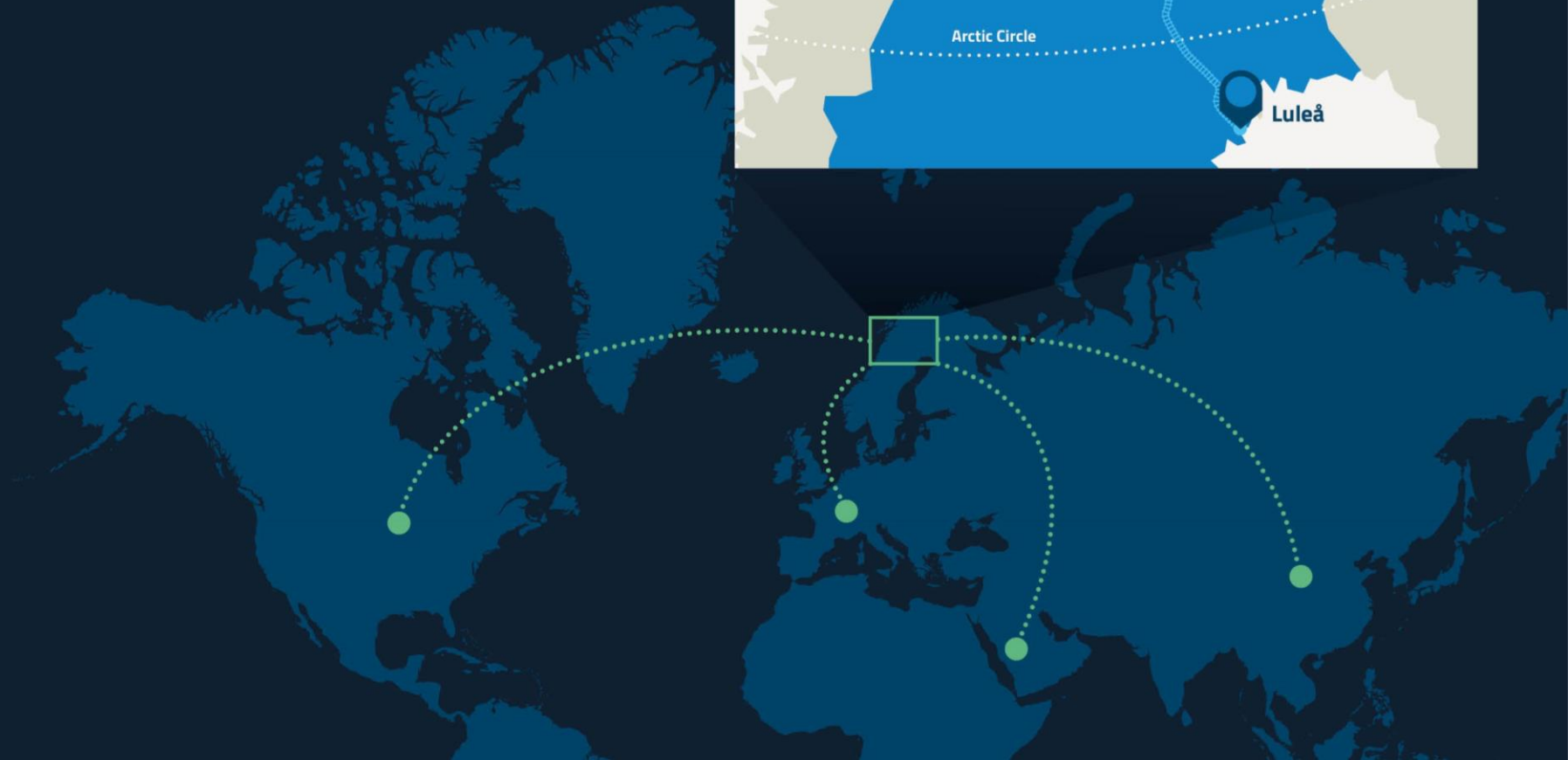
25.8

Million tonnes iron ore products delivered in 2025



Based in the Swedish orefields

Our products are transported to Luleå and Narvik and then shipped out into the world



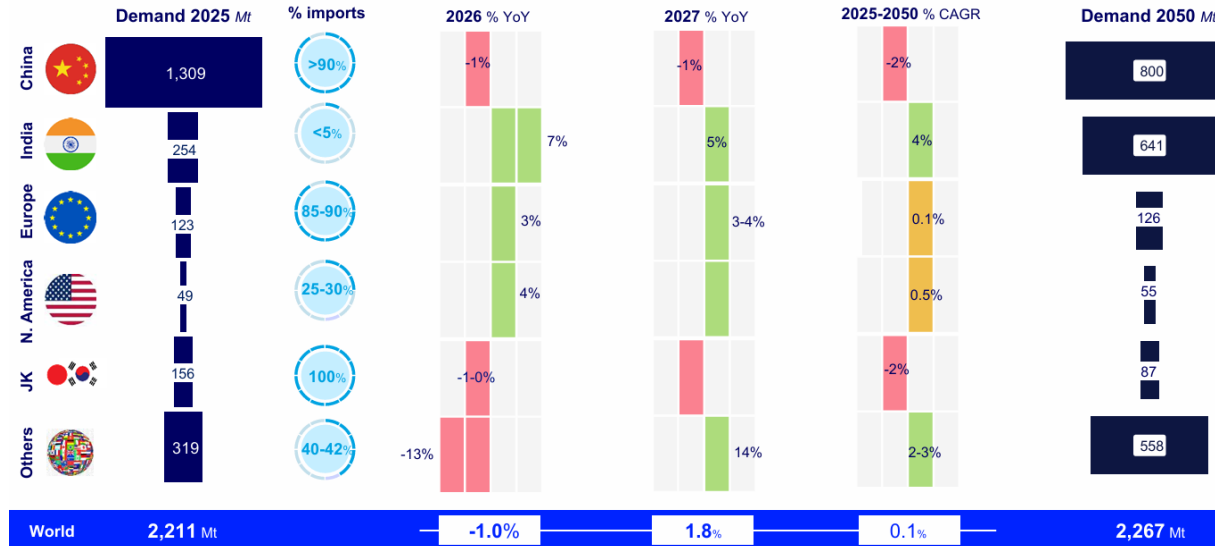
Future steelmaking value chain

- **Demand for high grade ore increasing but supply is limited**
 - Fe grades decline – impurities increase
 - Recycling share of iron raw material mix increasing but scrap accumulates impurities over time
- **Technological innovation essential to decarbonize**
 - Transition away from the blast furnace route requires cleaner iron ore
 - Innovation needed to use the broader volumes of iron ore
 - Innovation needed to take out impurities
 - A range of solutions needed – green fuel and CCUS

Global iron ore demand sideways – up for high grade

Iron ore demand: global demand to stay rangebound

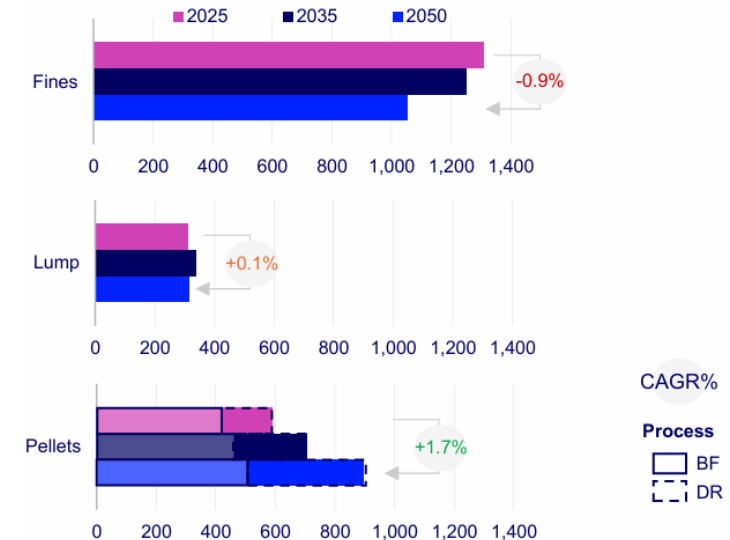
China is to represent only 35% of global iron ore demand by 2050 compared to the current 59%



Source: Woodmac

- Chinese steel demand declining
- Global steel demand growth slows
- More scrap in the metalics mix

Iron ore demand by product



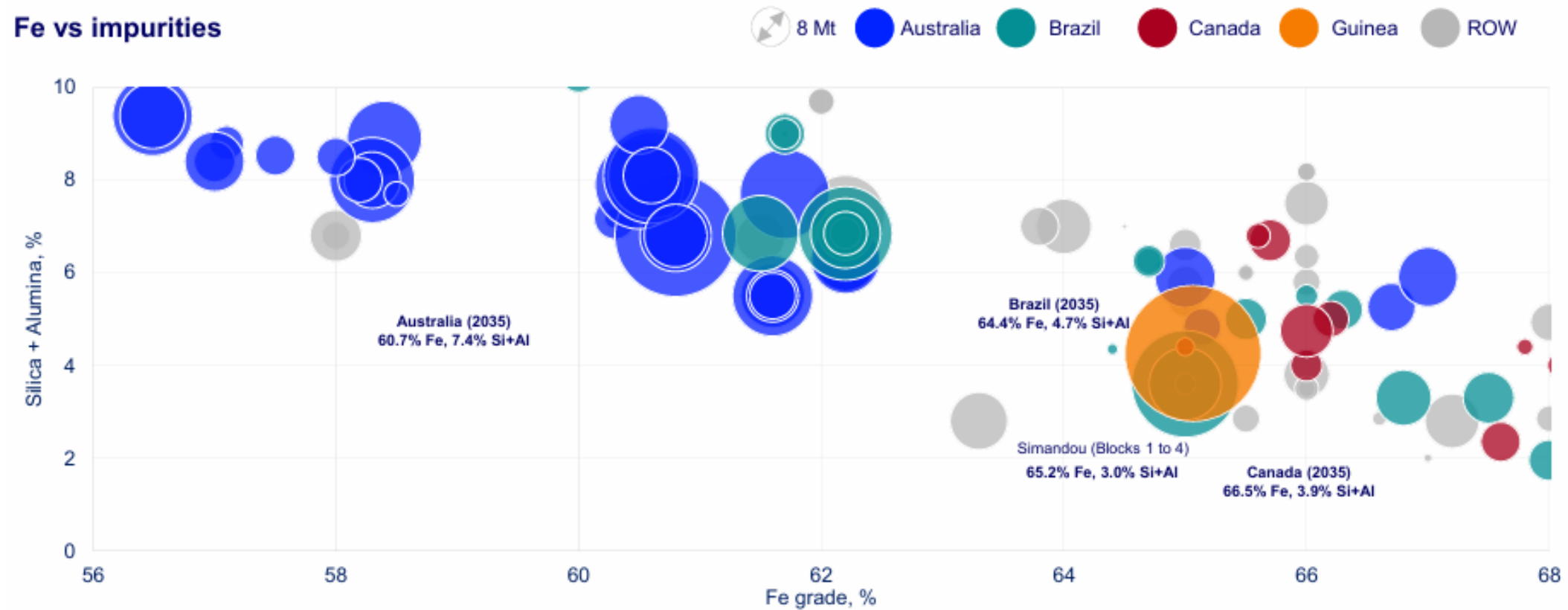
Source: Woodmac

- EAF-based steel production places greater emphasis on raw material quality and impurity management
- Long term trend – Fe grades decline, impurities increase

Grade and impurities key factors in the iron supply chain

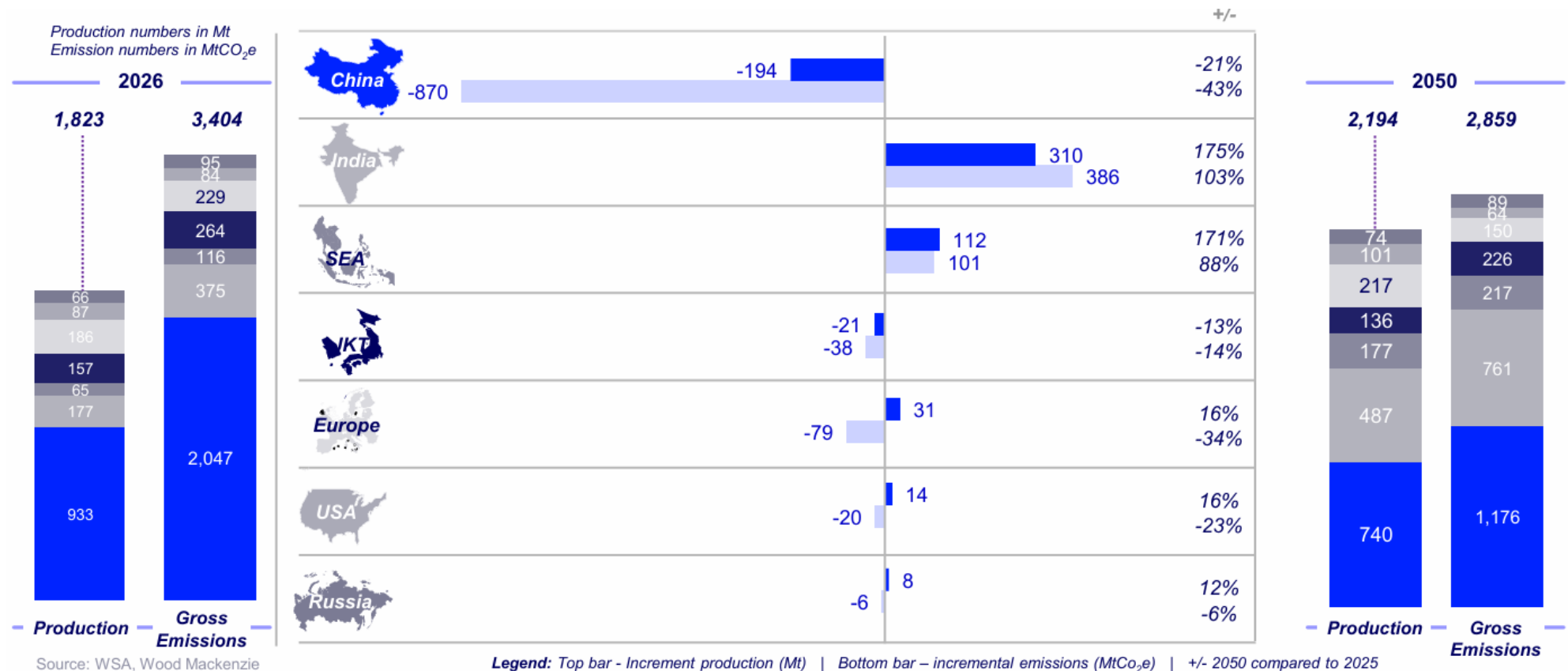
Fines and concentrate products (seaborne market) by mine

Fe vs impurities



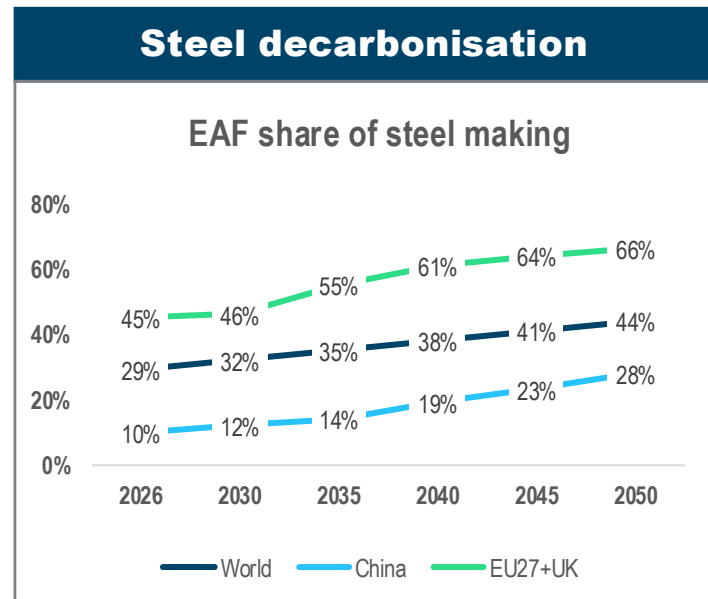
Source: Woodmac

Global steel production and CO2 emissions



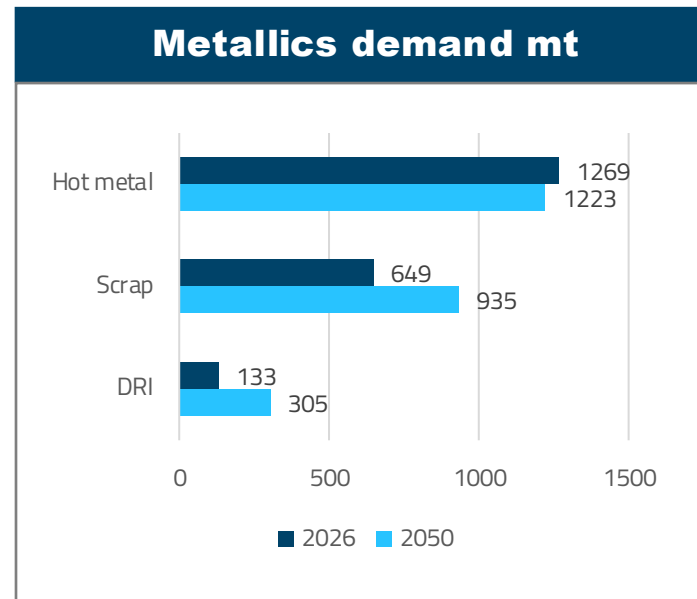
Source: Woodmac

Decarbonization in global steel progressing slowly



Source: Woodmac

- Decarbonization efforts continue but at a slower pace
- BF-BOF capacity expansion in India – limited scrap supply – access to domestic iron ore and coal



Source: Woodmac

- Access to quality scrap a key challenge
- Residual elements to accumulate in the steel recycling loop over time

DRI production

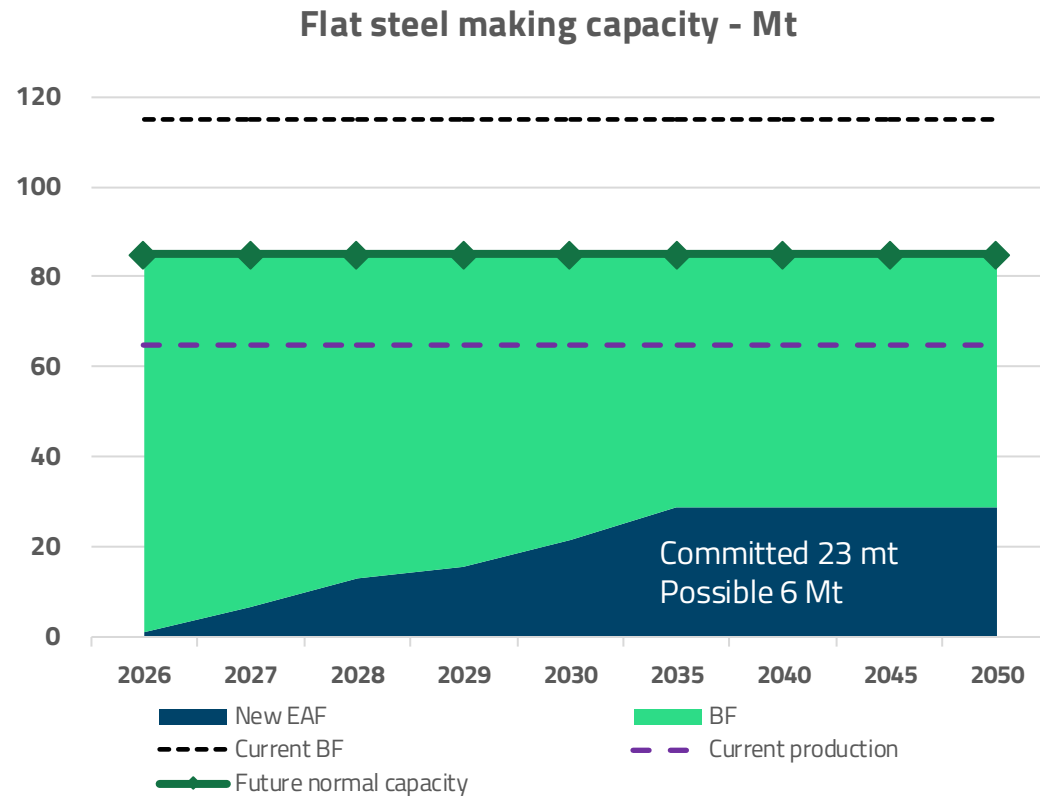
DRI production Mt

	2026	2035	2040	2050
China	3,1	5,6	11,0	22,0
India	65,8	59,0	58,0	62,5
Middle East	28,0	59,0	68,6	87,0
JKT	0,0	1,0	3,8	6,3
EU27+UK	0,2	10,8	16,6	25,0
USA	5,7	7,4	8,1	10,0
World	133	199	235	302

Source: Woodmac

- Securing sufficient DRI supply a major challenge with conventional technology
- Solutions to use broader volumes of iron ore in the future value chain likely to drive costs upwards

Transformation of flat steel production in the EU27 & UK



LKAB Research

Steel making capacity

- Normalized flat steel demand could be 80–85 Mt – currently BF production is 63 Mt
- Currently 23 Mt of flat steel EAF capacity committed

Iron raw material

- BF capacity fully converted to EAF could require >25 Mt of DRI/HBI and >35 Mt of DR pellets** depending on the use of pig iron in the metallics mix
- 9 Mt DR capacity currently committed
- Global DR pellets supply (seaborne) around 30 Mt

CO2 emissions

- The current pace of transformation-a 20–25% reduction* in steel industry CO₂ emissions scope 1 by 2035

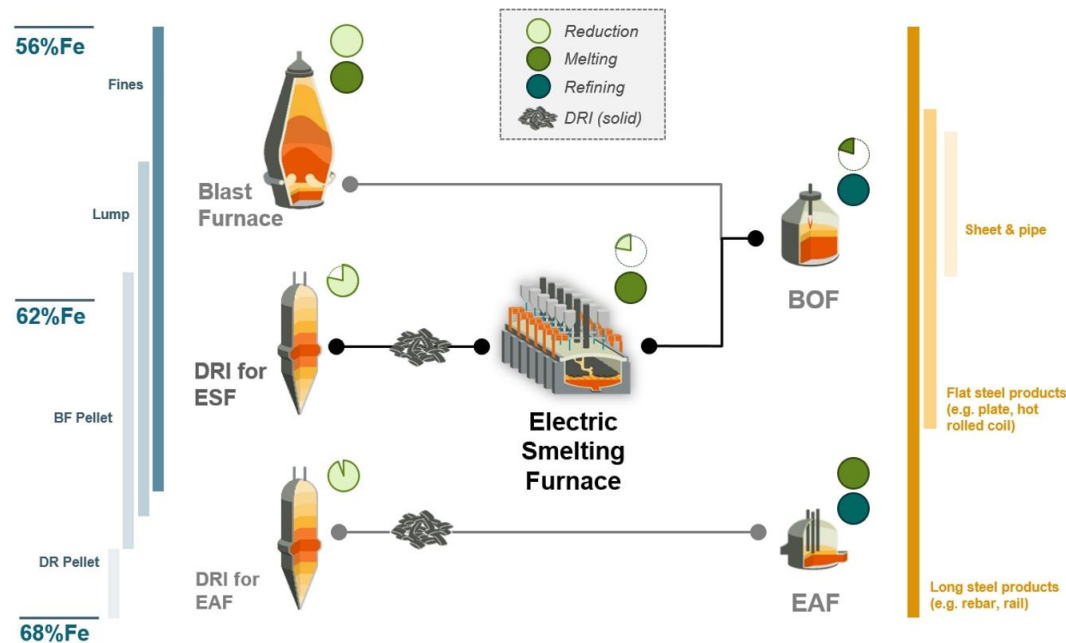
* Assuming CO₂ 1,6 t/t crude steel in BF-BOF, reduction 1.1 t CO₂/t crude steel with EAF and NG-DRI

** With conventional DRI shaft technology combined with EAF

Pathways to utilize a broader range of iron ore qualities

A process to use lower quality iron units in steel making – a plant being installed in Germany

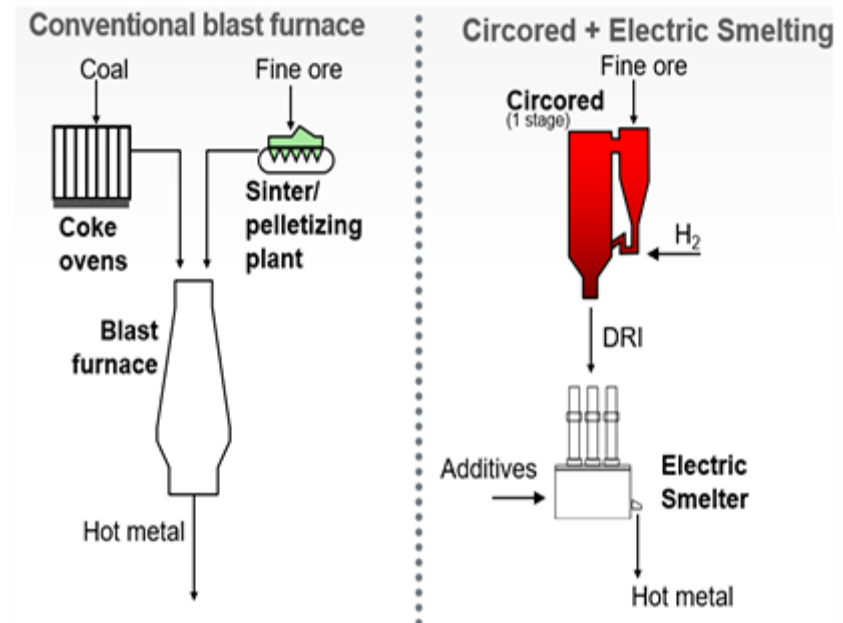
Smelter furnace as option to EAF



A process to use low-grade sinter fines – uncertain when commercially viable

Fluidized bed to produce DRI

Low grade iron ore scenario





Hybrit project – Green direct reduced iron since 2021

- A new sponge iron with markedly improved characteristics compared with iron reduced using fossil gases such as natural gas
- The Luleå pilot plant has operated with green hydrogen since 2021 - about 5 kt produced in JV up to 2025, LKAB producing around 3 kt in its own campaigns
- A high metallization level (98–99%), withstands mechanical pressure, drops and abrasion better than comparable industrial references, stable chemical properties
- The Malmberget demonstration plant project progressing, including evaluation of when capital costs become competitive with a natural gas-based pathway and the conditions required for the steel industry to source iron units of the necessary quality

LKAB experiences from the Hybrit project

What are the technical lessons learned and challenges faced over the last 8 years?

- The development regarding hydrogen has not progressed at the pace that was anticipated.
- We have had to change direction regarding electrolyzers.
- Large-scale reference facilities are still lacking

How do you navigate uncertainties regarding electricity costs and emission trading systems?

- We need a strong and credible ETS that provides long-term investment signals
- We need electricity grids and competitive fossil-free electricity.
- We need faster and more predictable permitting processes.

What are the financial challenges of scaling demonstration plants

- The absence of large-scale hydrogen production today creates uncertainty in calculations.
- We are talking about a scale-up of 180 compared to the Pilot. It is still industrially small.
- The question is where the balance between scale-up/risk level/industrial logic lies.

Conclusion:

The time-line to transform the EU steel industry

- The timeline from decision to producing DRI can be long
- Significant volumes of high-quality iron units are required some years after 2030
- At that point, carbon costs may have risen sharply, scrap prices may have risen significantly, and high-quality iron units will probably be a scarce resource
- **The EU steel industry—and globally—requires high-quality iron units, and companies in the value chain must align its timeline with the pace of these significant structural changes**