



LOW-CARBON STEEL PROJECTS

BEYOND THE PLEDGES, WHAT IS HAPPENING ON THE GROUND?

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Setting the Scene

- Context: **First projects** identified for **decarbonisation** goals in Item 6 « *Latest developments in steelmaking capacity* »
- Challenge: To what extent current **low-carbon steel projects** could impact global capacity?
- Objective:

Focus on Low-Carbon
Steel Projects

*Identification of Trends &
Characteristics*

Expected Outcomes

**Effect on Capacity?
Specific Challenges?**



Defining the Project Pipeline

- Announced projects as of Feb.2022, meeting the following **criteria**:

- Low-carbon breakthrough technology (*H2, CCUS..*)

OR

- A dedicated site transformation plan for decarbonisation purpose

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- Involving a facility plant,

- With technology clearly identified

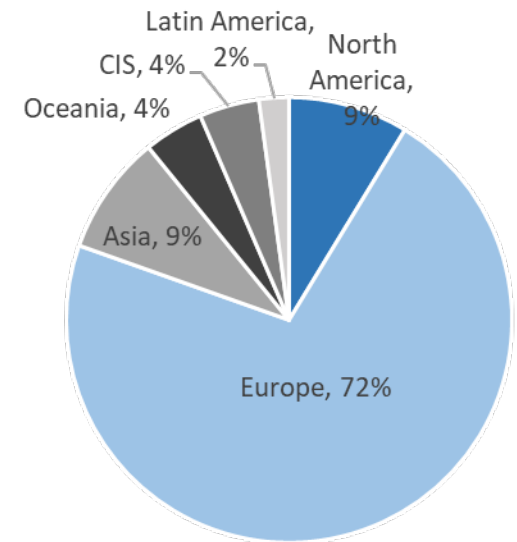
‘Low-Carbon Steel Projects’
~50 projects analysed



Carbon Neutrality Targets Push for Action

Key Trend #1: Low-carbon steel projects are growing

- **70%** are projects announced last year
- **70%** of projects located in **Europe**
- First projects emerge in **China & India**
 - TataSteel (*Blast Furnace CCUS*),
Jianglong (*H2 iron production*)

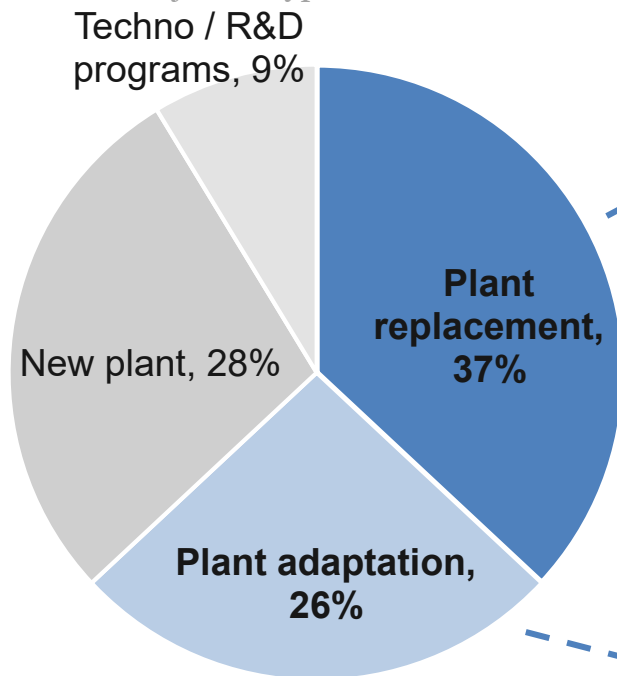




What Types of Low-Carbon Steel Projects?

Key Trend #2: Most projects aim to replace/adapt existing plants

Low-Carbon Steel Projects - Type Breakdown



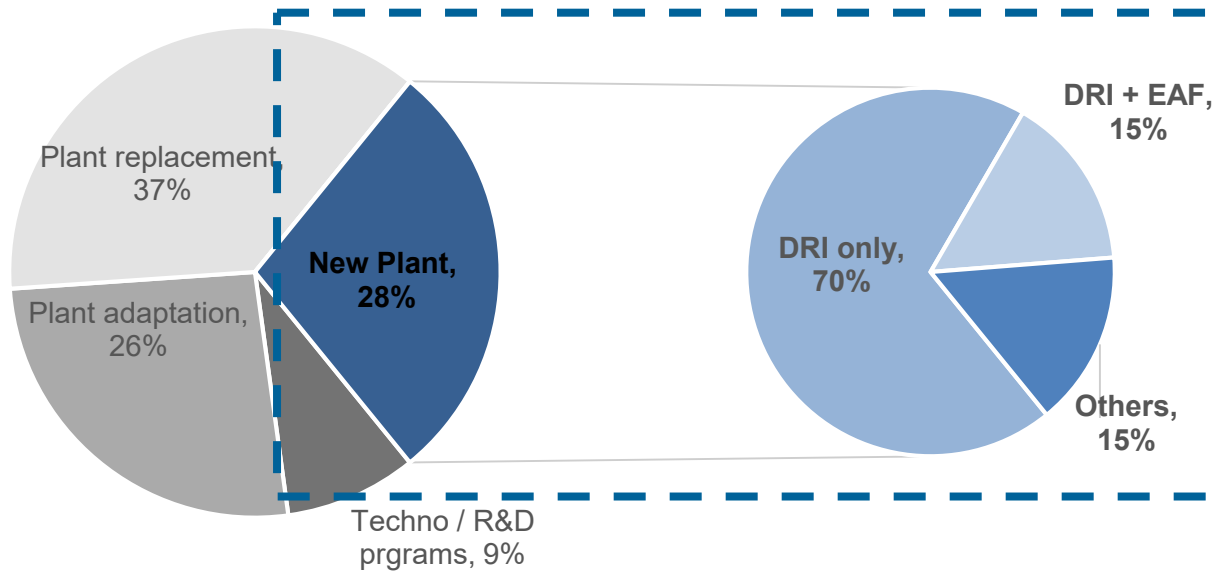
- Implementation by 2030
- From BF-BOF to EAF, with **DRI** as the preferred route

- Implementation by 2025
- Mostly BF with fuel blending / switching (*gas, hydrogen, charcoal*)



Low-Carbon Steel Projects: Focus on New Plants

Key Trend #3: Most new plants target iron production only only



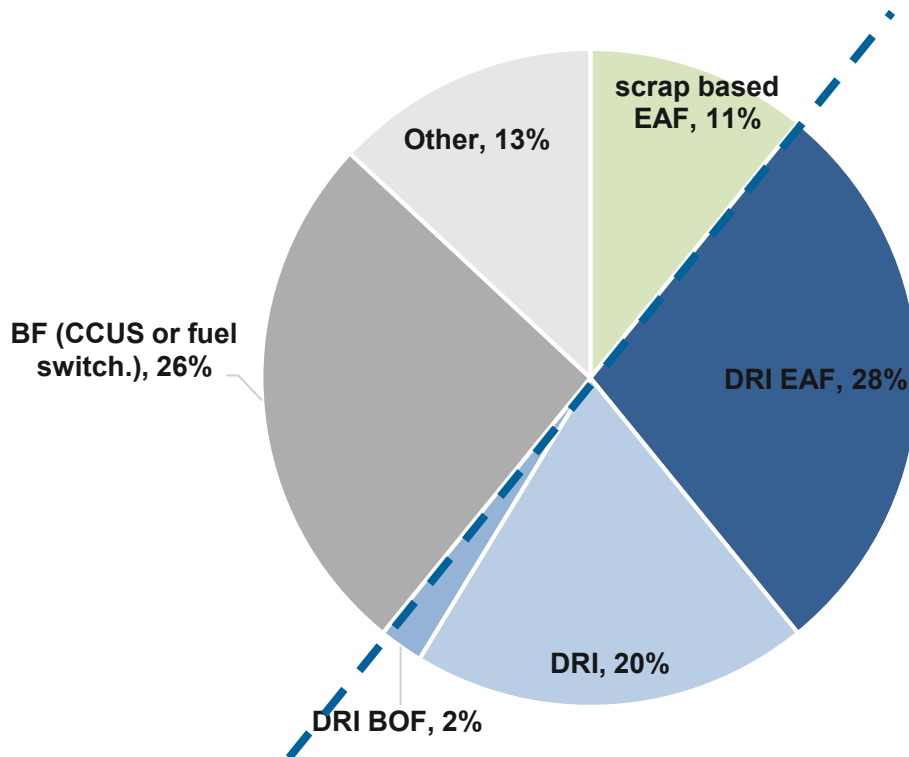
- Hydrogen based DRI as the 'new norm'



Low-Carbon Steel Projects: Which Technologies?

Key Trend #4: DRI stands as the cornerstone*, positioning hydrogen as a new strategic input

**all types of projects considered*



**DRI technology,
50%**

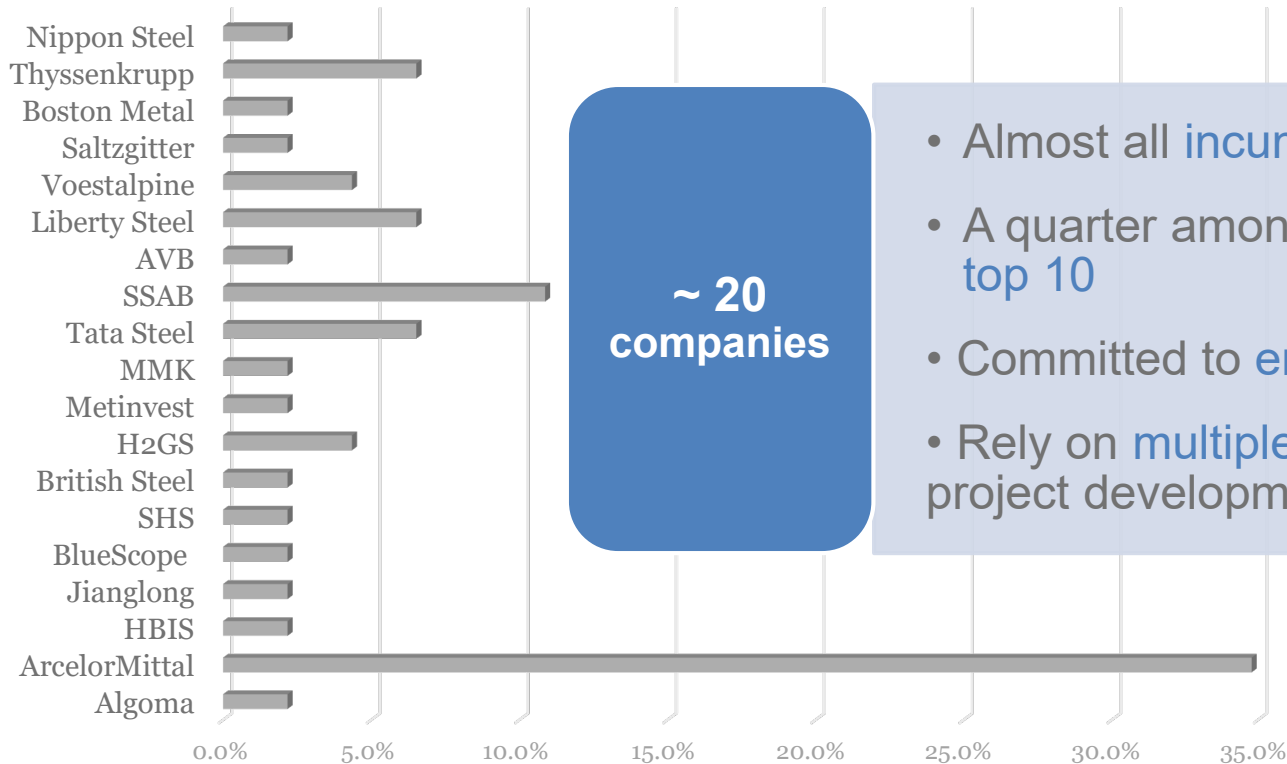
- 2 strategies for DRI:
 - **Green H2,**
 - Natural gas to green H2



Low-Carbon Steel Projects: Which Steel Producers?

Key Trend #5: Well established producers take center stage

Share in Total Projects - Company Breakdown



~ 20
companies

- Almost all incumbent producers (90%)
- A quarter among the ww producers' top 10
- Committed to emission reductions
- Rely on multiple partnerships for project development



Wrapping-up on Trends: Which implications for Excess Capacity?

Given the types of projects / level of maturity →
Very limited effect on global capacity in the short-term

Impact on Excess Capacity: Criteria of interest

Industrial scale
+
New plant
+
Incl. steelmaking (not only iron)

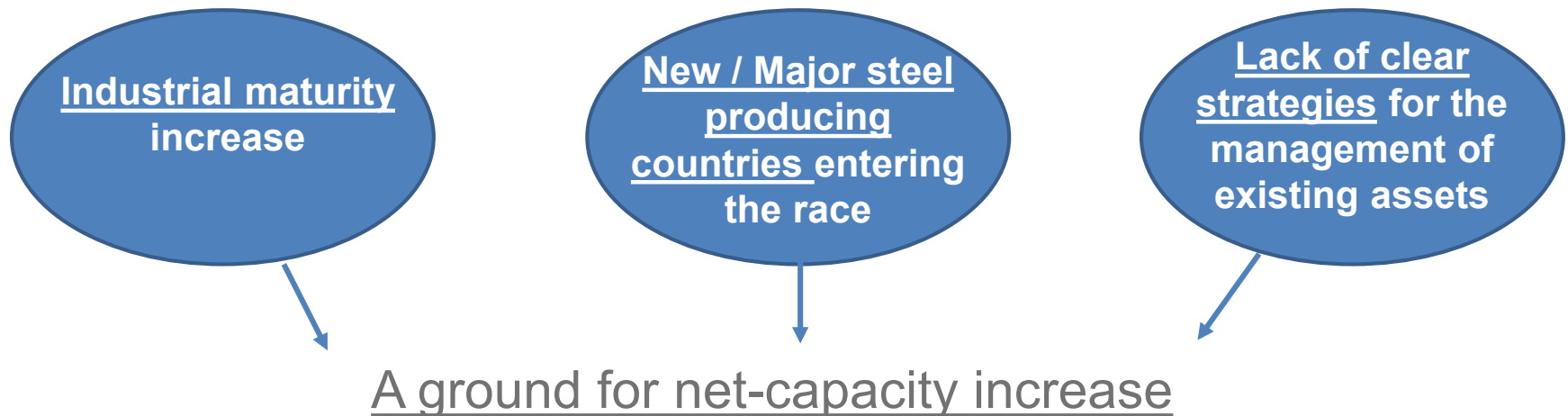


About 5% of the projects
Projects not in operation (2030)
Representing less than 1% of
global steelmaking capacity



Conclusion: Anticipating Next Challenges

Monitoring new Low-Carbon Projects is crucial



Key Trends confirming Decarbonisation Challenges

- Low-industrial maturity: **Scaling-up** breakthrough technologies
- Large steel producers, partnerships: High **investments** required
- New strategic inputs: **Availability** (access) & **affordability** (competitiveness)