



# Targeting Net-Zero: Leveraging a Just Transformation of the Global Steel Sector

Official UNFCCC COP26 Side Event



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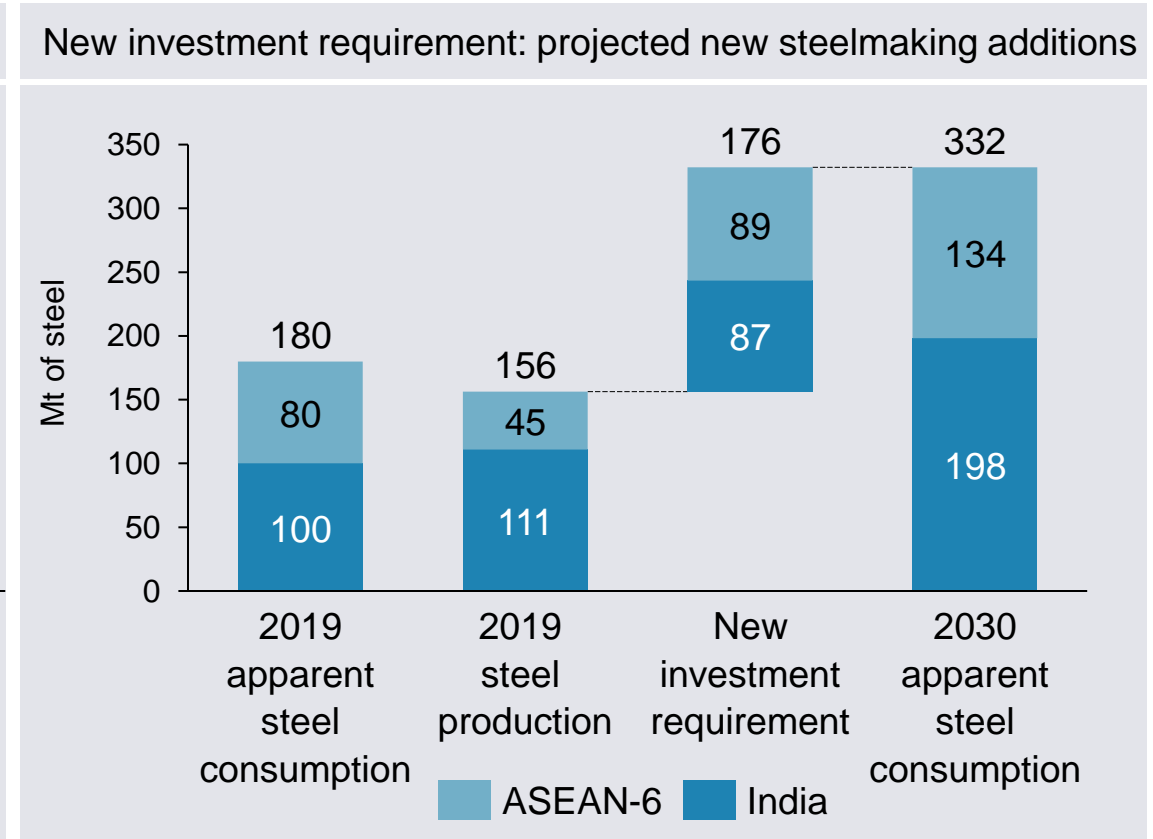
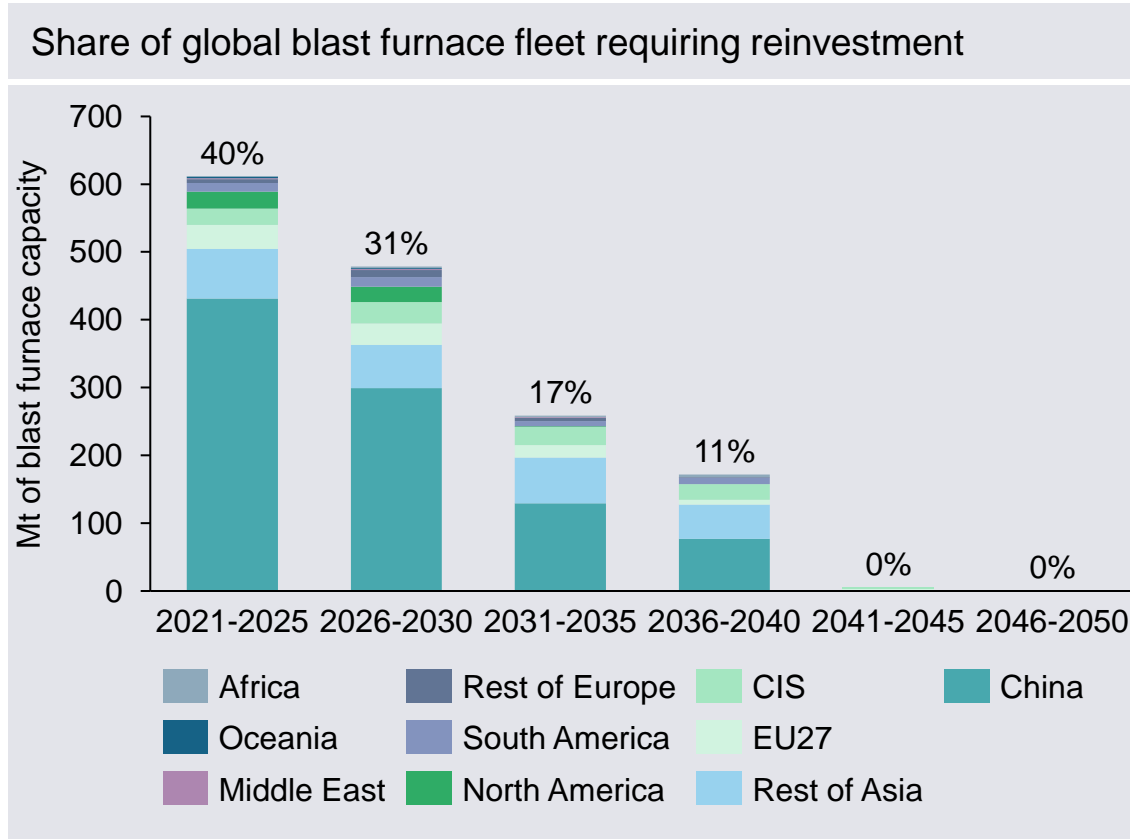


# Global Steel at a Crossroads

*Why the global steel sector has to invest in  
climate-neutral technologies in the 2020s*

**Jesse Scott, Agora Energiewende**  
**GLASGOW, 3 NOVEMBER 2021**

# Global steel is at a crossroads: By 2030, 71% of coal-based blast furnaces will reach the end of their operating life. New coal-based capacities are being built in emerging economies

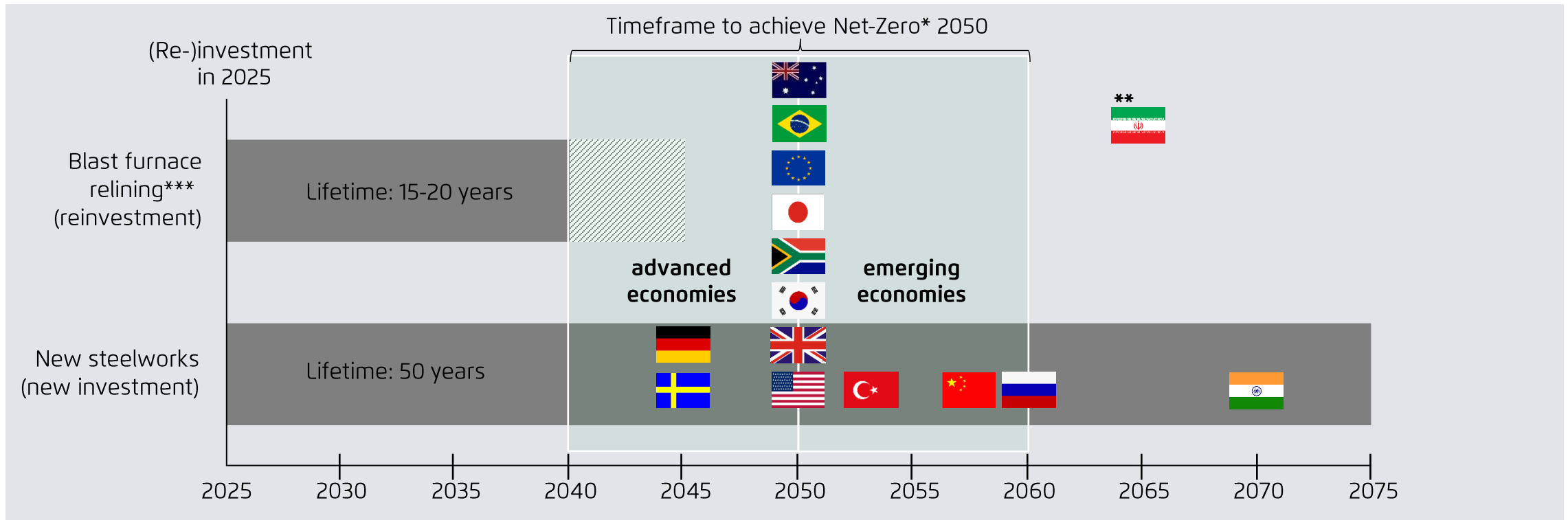


Agora Industry based on World Steel Dynamics, 2021; Agora Industry, Wuppertal Institute & Lund University for China, 2021

Agora Industry based on World Steel Dynamics, 2021, TERI 2020 and SEASI 2020

# Due to the long lifetimes of steelmaking assets, the investment decisions in the 2020s will be crucial for the global steel transformation

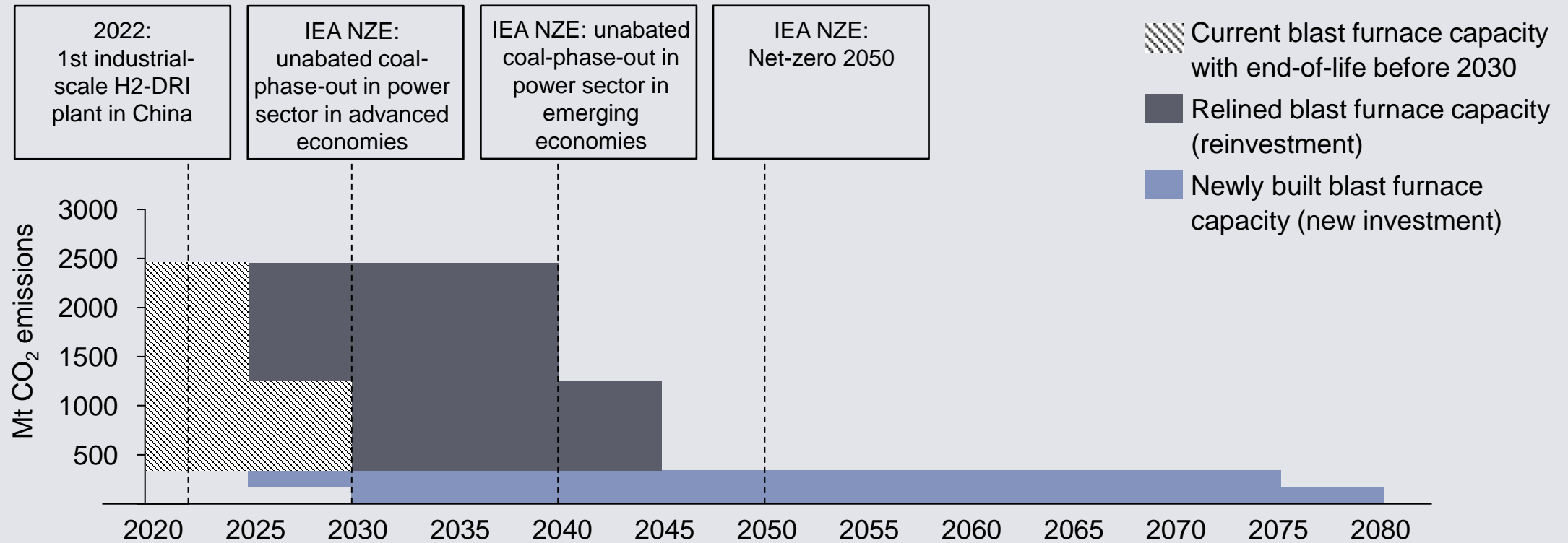
Technical lifetime of coal-based primary steel production capacity and timeframe to achieve Net-Zero 2050



Agora Industry, 2021 \* South Korea and South Africa have announced carbon neutrality targets. The targets of Australia, Russia and Turkey are not official yet. All others have announced net zero targets. \*\*n/a; no target \*\*\* 15 years lifetime in advanced economies; 20 years lifetime in emerging economies

# If all reinvestments and new steelmaking capacity needs are met with coal-based technology, this will create long-term carbon lock-in, lead to stranded assets and endanger jobs

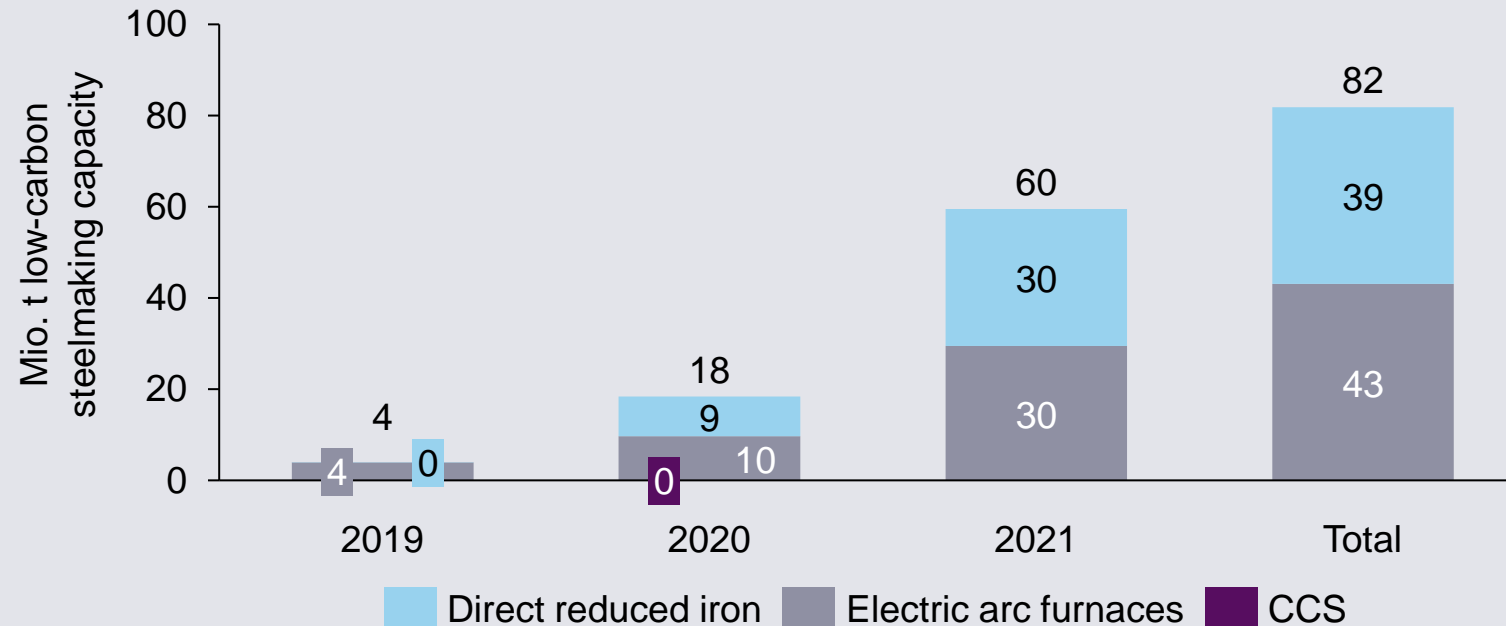
Continued investment in coal-based blast furnaces produces a carbon lock-in



Agora Industry, 2021

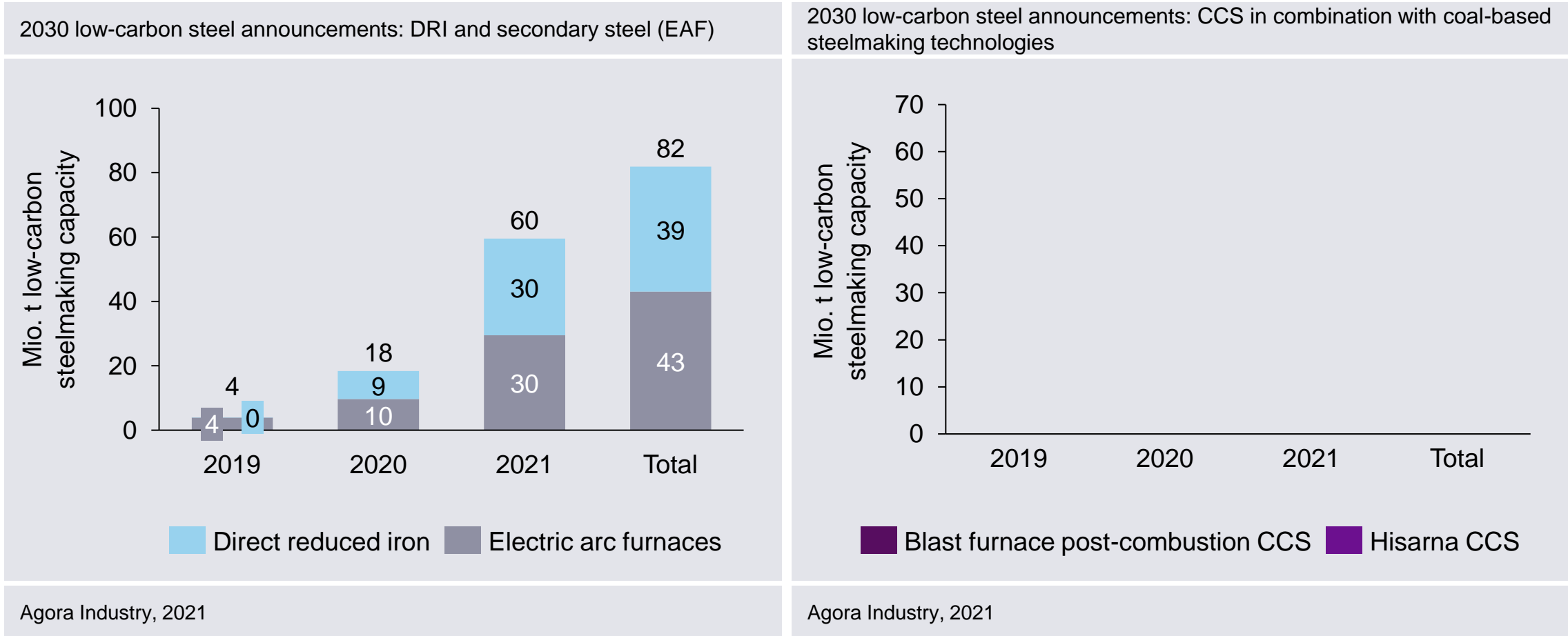
# Low-carbon steelmaking technologies are ready to be deployed now – and the project pipeline of announcements to build them before 2030 is growing rapidly

Global low-carbon steel announcements to be built before 2030

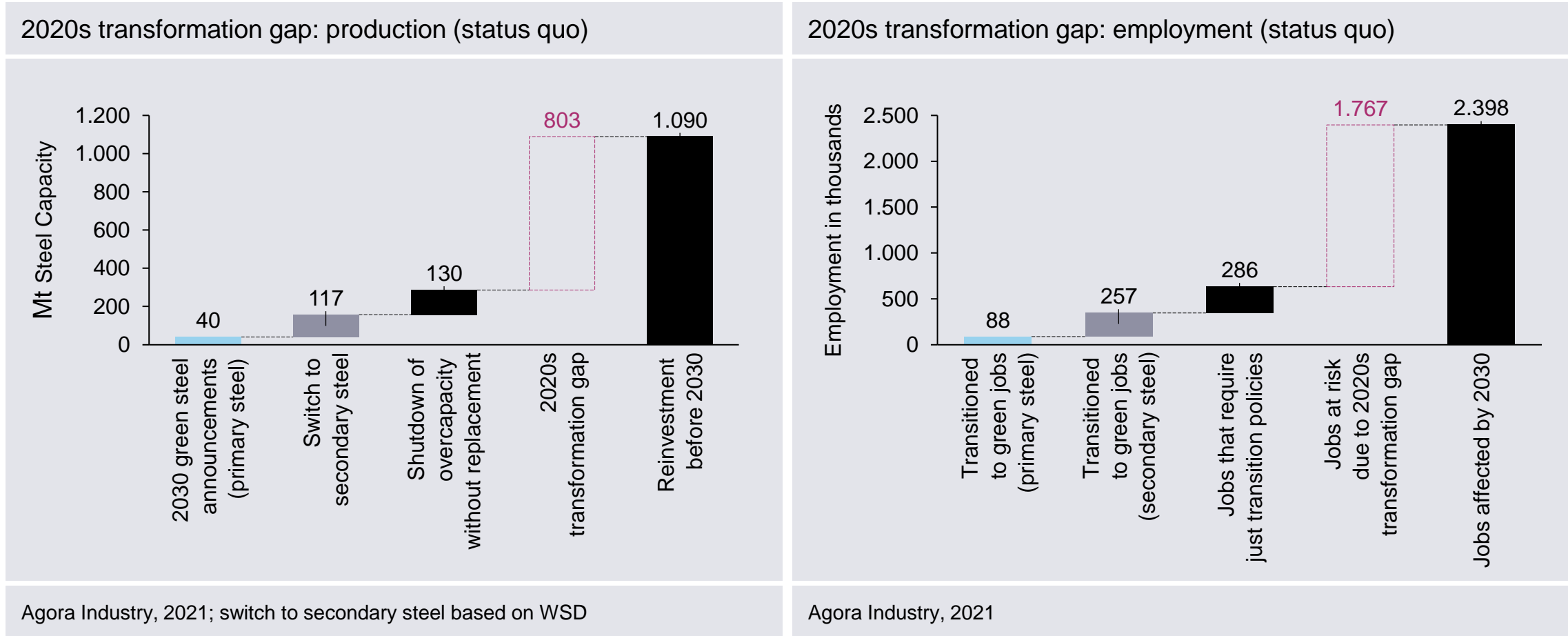


Agora Industry based on Agora Industry Global Steel Transformation Tracker, 2021

# The retroactive retrofit of coal-based steelmaking capacities with CCS after 2030 may be a dead-end road – no steel company is working on an industrial-scale project...



# Therefore, the 2020s need to put the asset transition from coal to clean at its core – each low-carbon steel plant will transition thousands of jobs from coal-based to green, future-proof jobs





## Conclusions

- The global steel transformation needs to start in the 2020s. Key low-carbon technologies are ready and can be deployed now.
- Aligning the steel sector with a 1.5°C compatible scenario needs to put the asset transition from coal to clean at its core. The best strategy is to avoid reinvestments into new blast furnaces by instead prolonging lifetimes of old assets by 2-5 years and after 2025, invest into DRI directly.
- By 2030, the global steel sector would require 390 Mt of DRI capacity and 278 Mt of additional secondary steel capacity. This is feasible – and would save the atmosphere 1.3 GtCO<sub>2</sub> per year.
- For advanced economies this means that each blast furnace that reaches the end of its lifetime will be replaced with a technology that is compatible with climate neutrality.
- Emerging economies with rapidly rising steel demand such as India and Southeast Asia should consider a technology leapfrog into new technologies that are compatible with climate neutrality.
- A single-speed global steel transformation can bring enhanced international cooperation and a level playing field. The transformation will help to transition millions of workers to clean, future-proof jobs.

# Upcoming: „Global Steel at a Crossroads“ Paper and the „Global Steel Transformation Tracker“



### Global Steel Production and Capacities

The **Global Steel Production and Capacities Map** shows the locations and production processes of the world's steel making assets.

It is apparent that the bulk of **steel production capacities** consists of **coal-based blast furnaces** and is located in **Asia**, notably **China**. Other steel production hubs are in **India**, **Europe**, **Russia**, the **US** and **Brazil**.

**Natural gas based Direct Reduced Iron (DRI)** is an economically viable technology in all countries that are endowed with **abundant natural gas resources** and therefore have the advantage of comparatively low natural gas prices. This includes the **Middle East**, **Northern Africa**, **Russia** and a few installations in **North America**.

Currently, **secondary steel making capacity** is mainly located in geographies with a larger turnover of steel scrap such as the **US** and **Europe**, but is projected to grow in **China**.

**Agora Energiewende**  
Anna-Louisa-Karsch-Str.2  
10178 Berlin

T +49 (0)30 700 1435 - 000  
F +49 (0)30 700 1435 - 129  
[www.agora-energiewende.de](http://www.agora-energiewende.de)

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The background of the slide is a collage of images related to pipes. On the left, there are stacks of pipes in various colors: grey, blue, and green. On the right, there are stacks of grey pipes, some with a blue coating. In the center, there is a pattern of overlapping circles, some solid and some outlined, in shades of blue and green. The text "Thank you for your attention!" is overlaid on the left side of this collage.

**Thank you for your attention!**

Questions or comments? Feel free to contact me:  
[Jesse.Scott@agora-energiewende.de](mailto:Jesse.Scott@agora-energiewende.de)