



**Institute for Energy Economics
and Financial Analysis**

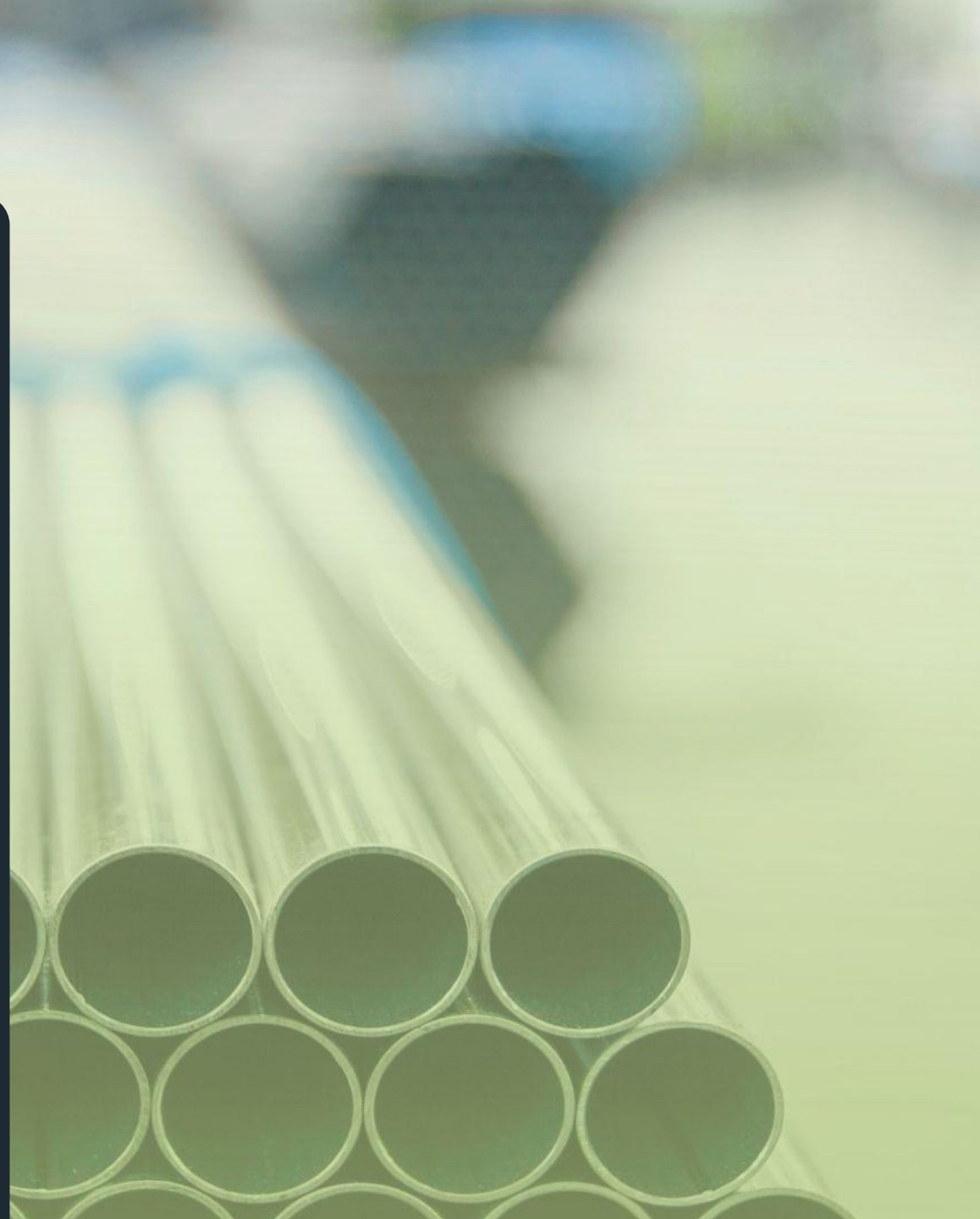
Is Australia at risk of being left behind in the global green iron and steel race?

Simon Nicholas – Lead Analyst, Global Steel

Soroush Basirat – Energy Finance Analyst, Global Steel

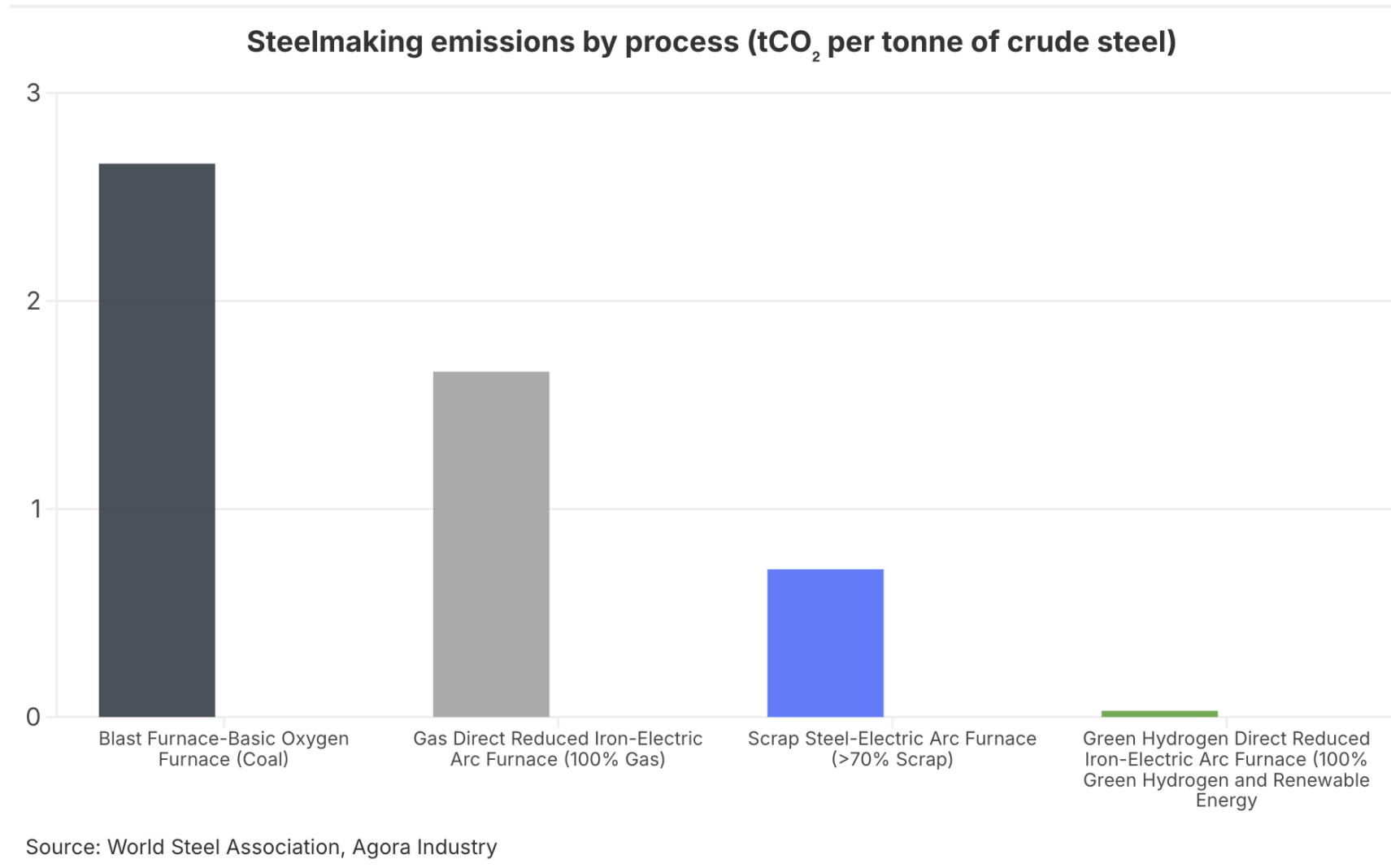
Lachlan Wright – Energy Finance Analyst, Global Steel

April 2026

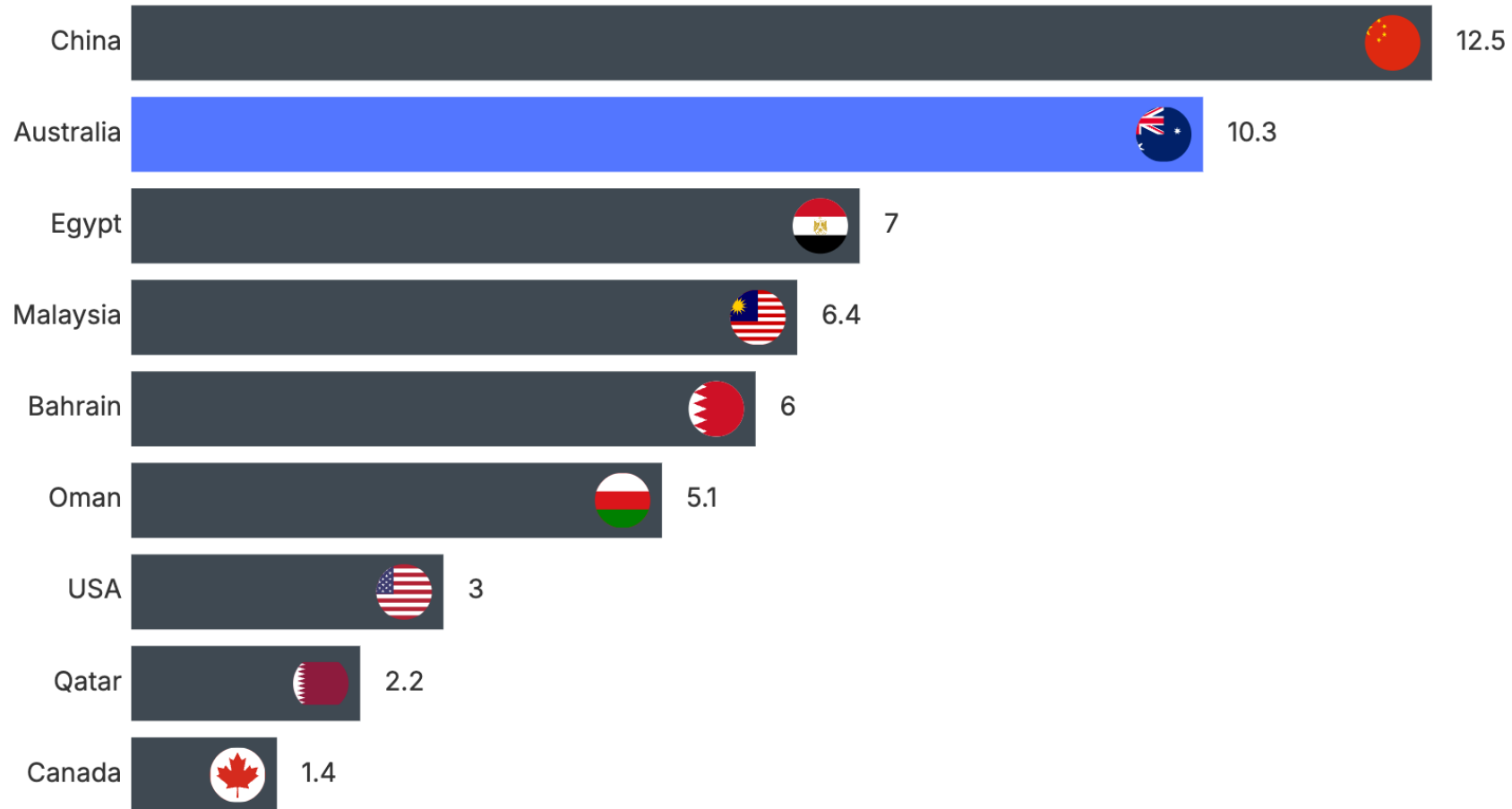


1 Gas or green hydrogen?

You can't make green steel with gas



Wholesale gas prices in selected countries (AU\$/GJ)



Source: BlueScope, Energy Institute Statistical Review of World Energy 2025, IGU Wholesale Gas Price Survey 2025, EY-PS

Lesson from Europe: ArcelorMittal Germany

ArcelorMittal drops plans for green steel in Germany due to high energy costs

By Reuters

June 20, 2025 10:02 PM GMT+10 · Updated June 20, 2025



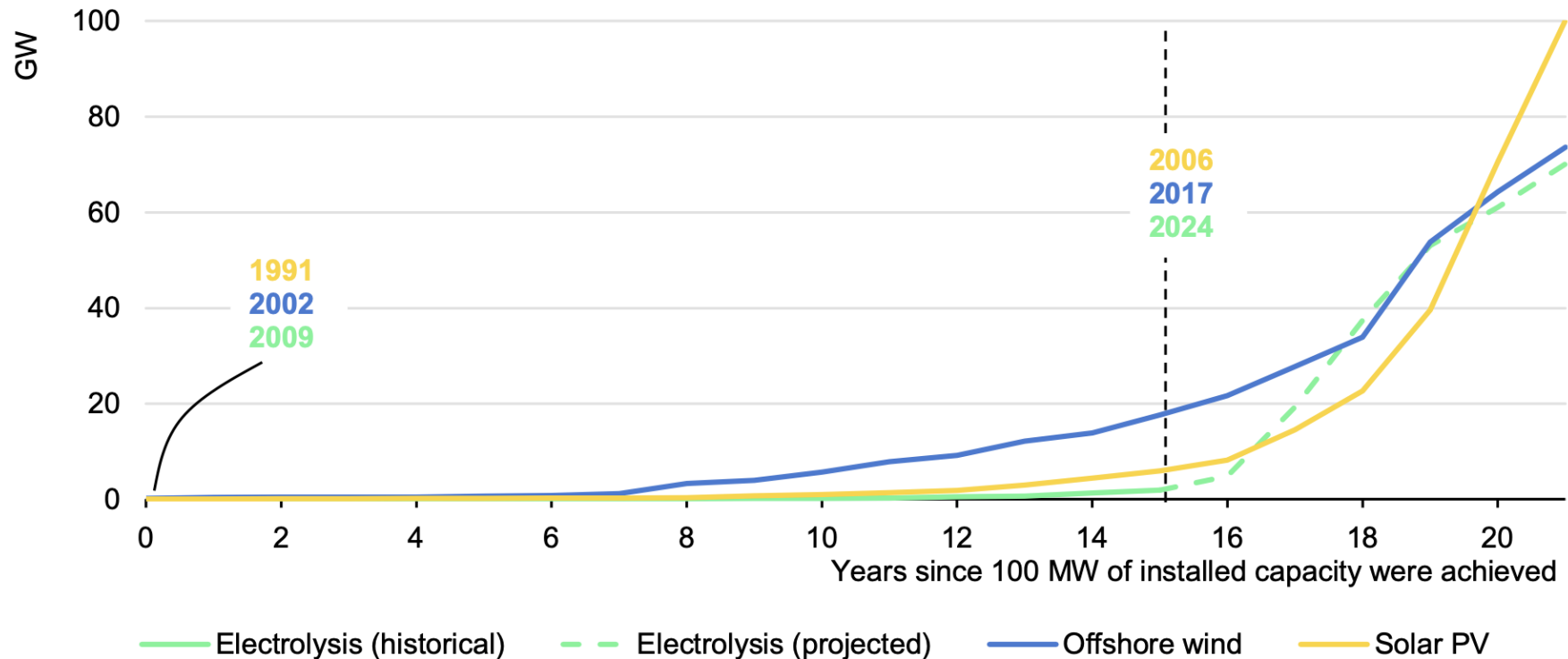
“We appreciate the financing... But even with the financial support, the business case for moving ahead with this transformation is not strong enough”

- Geert van Poelvoorde, CEO ArcelorMittal Europe

Early green hydrogen use has become the global benchmark for low-carbon iron and steel

Country	Company	Green Hydrogen Status	Update
Sweden	Stegra	100% from Day 1	April 2026: Confirmed new funding to complete ongoing construction
Germany	Saltzgitter	10% from Day 1	Feb 2026: German government announced further €300m support (total €1.3bn)
France	Gravithy	100% from Day 1?	Feb 2026: “Our strategy is to start with hydrogen from day one” - CEO
Oman	Meranti Green Steel	10%-15% from Day 1	Jan 2026: Announces 100% offtake of future steel production, FID expected mid-2026
China	Baosteel	Early introduction	Jan 2026: Launches green hydrogen project to supply existing DRI plant

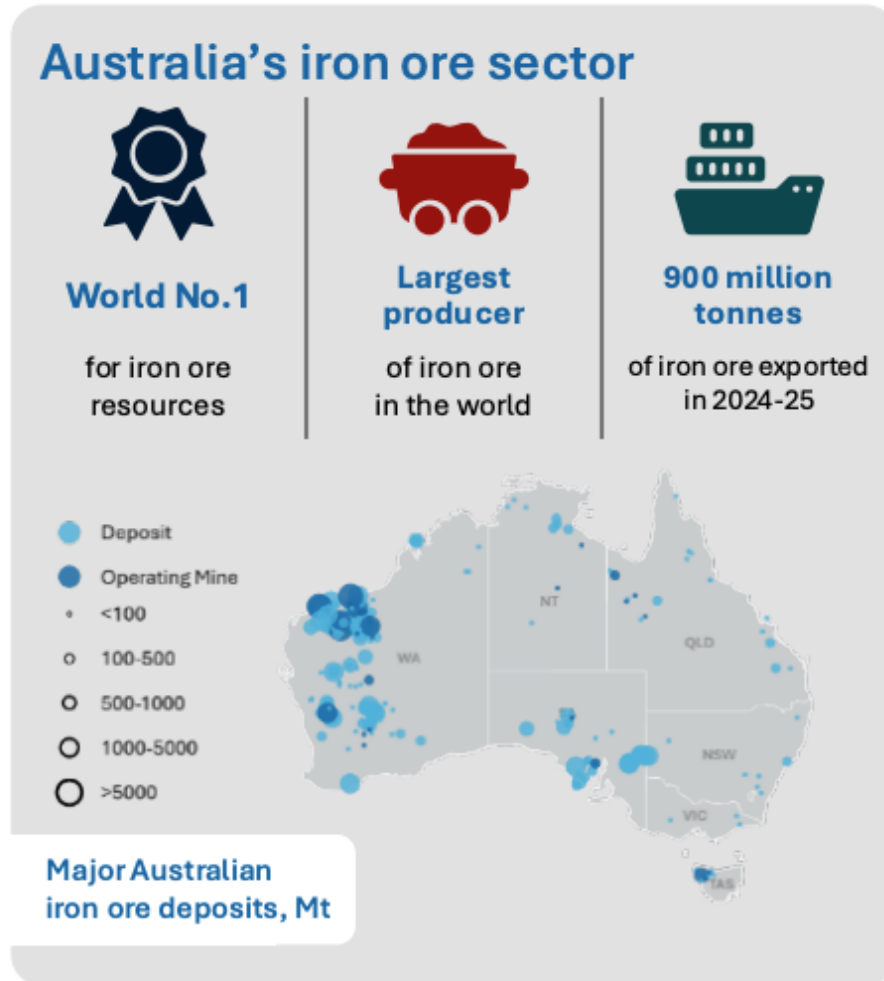
IEA: Green hydrogen is doing better than many realise



IEA. CC BY 4.0.

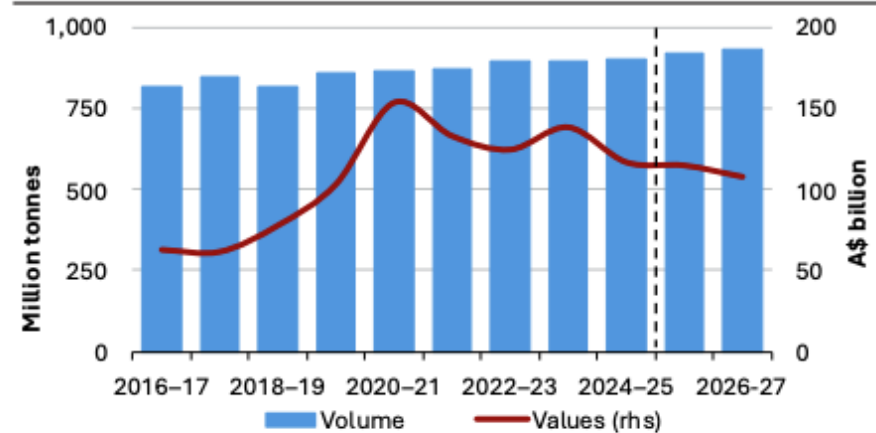
Notes: Year 0 is the year at which global installed capacity of each technology reached 100 MW: 1991 for solar PV, 2002 for offshore wind and 2009 for water electrolysis. The dotted line in water electrolysis shows the installed capacity that could be achieved with projects that are almost certain or have a strong potential to start operating by 2030 according to the analysis presented in our *Global Hydrogen Review 2025* (IEA, 2025b).

An opportunity to add value to Australia's biggest export



Source: GA; ABS; DISR

Australian iron ore exports



Outlook



Iron ore prices to fall as global supply rises



Earnings to fall as prices decline



Export volumes to rise



Exploration strong as producers replace depleting reserves

The risks for Australian iron ore are rising

CBA research note, 4 February 2026: “Is decoupling coming for the iron ore market?”

“Iron ore is China’s largest trade vulnerability... China’s vulnerability is exacerbated by two political factors.”

- “First, Australia is a key strategic ally for the United States.”
- “Second, the United States has leaned on allies in its efforts to reduce economic dependency on China.”

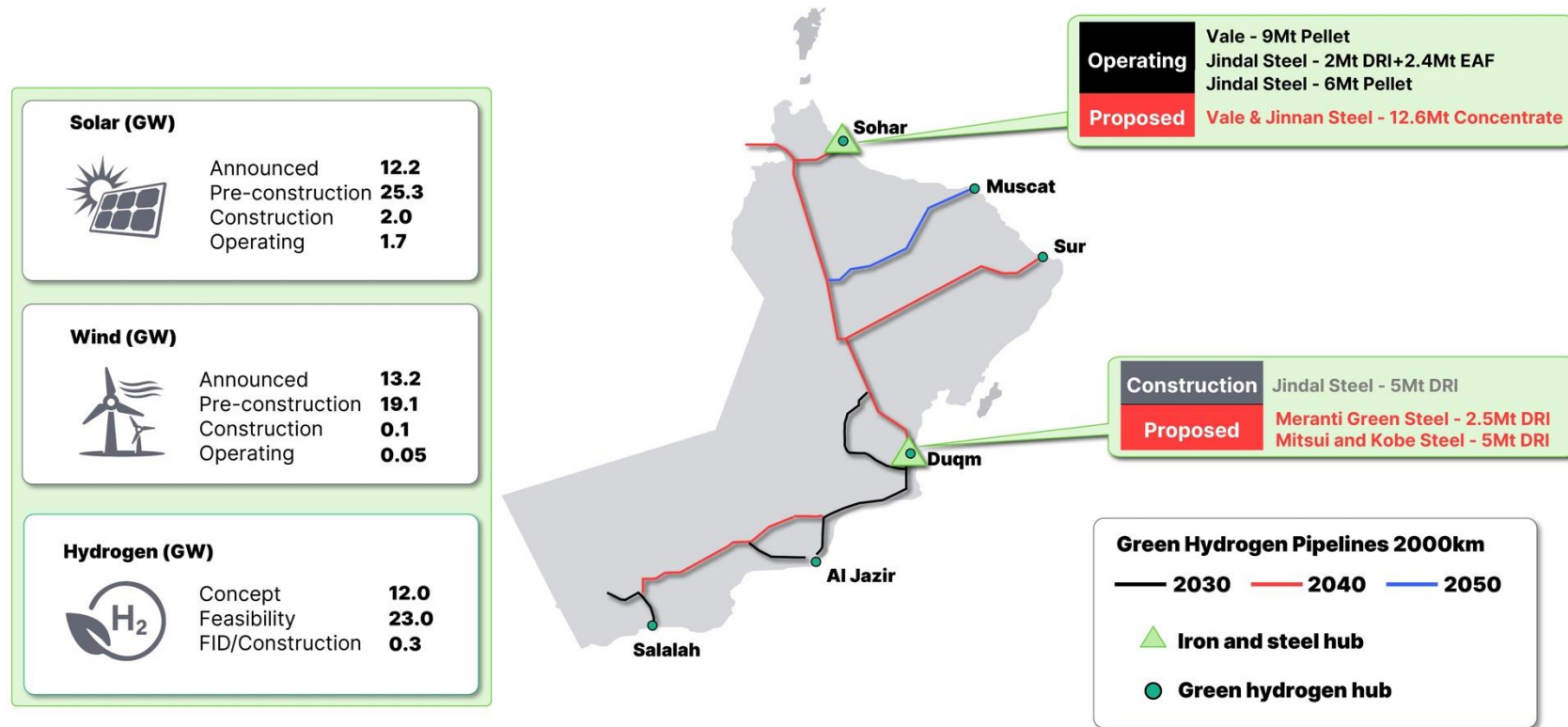
“This provides an incentive for China to neutralise its iron ore dependency on Australia.”



2 Global competition

Case study – Oman

Oman's energy transition and the rise of green iron and steel



- Clean **power** potential based on solar and wind
- Expanding portfolio of **green hydrogen**
- Growing pipeline of **low-emission iron and steel** projects leveraging flexible technologies
- Supportive **regulatory framework** enabling new green hydrogen and industrial hubs

Source: [Oman at the frontline of the green steel transition](#)

Case study – Oman (Meranti Green Steel)



- 2.5MT HBI plant in port of Duqm
- Designed to decouple ironmaking from steelmaking
- Flexible direct reduction technology (ENERGIRON)
- Will start production using a **15% green hydrogen** blend and increase that gradually
- Supply green hydrogen domestically (an MoU was signed with the Amnah consortium)
- FID: Expected by **2026**
- Commissioning: Scheduled for **mid-2029**



Case study – Oman (Project progress amid regional conflict)

Construction of Duam steel project advances



CONRAD PRABHU
PUBLISHED: 7:40 PM, MAR 14, 2026



935 MT reactor arrives at Port of Duqm en route for Jindal Steel Duqm's site (Credit: Kanoo Shipping).



MUSCAT, MAR 14

Conflict poses no risk to HBI project timeline



CONRAD PRABHU
PUBLISHED: 5:39 PM, MAR 30, 2026



Meranti's green iron complex will be developed within an ambitious low-carbon steel mega hub planned by Vale in Duqm.



MUSCAT, MARCH 30

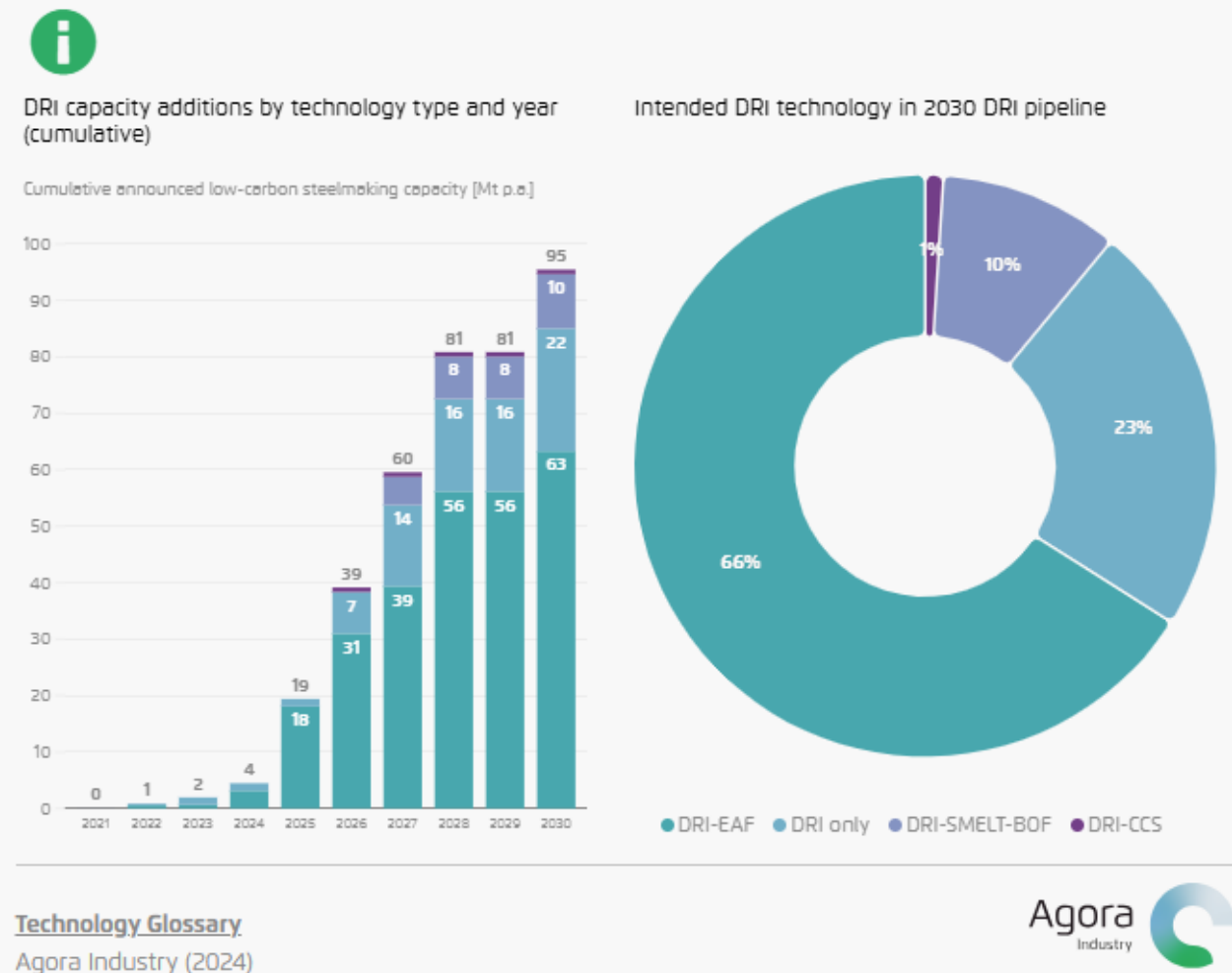


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Global iron and steel in transition

Announced DRI capacity additions and share by technology type



Highly likely DRI projects in 2030s

ArcelorMittal	AM Corpus Christi Phase 2, USA	2.0
BAOSTEEL	Baosteel/Aramco, Saudi Arabia	2.5
GravitHy	GravitHy, Fos-sur-Mer, France	2.0
Hydnum Steel®	Hydnum Steel, Spain	2.0
HYUNDAI STEEL	Hyundai, Donaldsville, Louisiana, USA	2.5
JINDAL STEEL & POWER	Jindal Duqm, Oman	5.0
MERANTI GREEN STEEL	Meranti GS, Duqm, Oman	2.5
KOBEL STEEL	Mitsui - Kobe Steel Oman	2.5
DILLINGER®	Rogesa/Saarstahl, Germany	2.0
SALCOS Younited. Steelmaking. Reinvented.	Salzgitter Salcos phase 1, Germany	2.6
Stegra	Stegra, Sweden	2.1
TERNIUM	Ternium, Pesqueria, Mexico	2.1
thyssenkrupp Steel	TKS phase 1, Germany	2.5
TOSYALI	Tosyali/SULB, phases 1&2, Libya	5.5
Total		37.8

Pursuing two parallel options

Pathway	Iron Ore Feedstock	Ironmaking	Smelting	Steelmaking	Ironmaking Technologies	Readiness Level
1	 Sinter feed fines (Fe: 58-62%)	 BF		 BOF		Commercial Scale
	 Lump (Fe: 62%)					
	 BF-Pellet (Fe: 63-65%)					
2	 Lump (Fe>67%)	 SF DRI		 EAF	Midrex Energiron	Commercial Scale
	 DR-Pellet (Fe>67%)					
3	 Lump (High Grade)	 SF DRI	 Smelter	 EAF/BOF	Midrex Energiron	Pilot and Demonstration
	 BF-Pellet (Fe: 63-65%)					
4	 Fines (Fe>67%)	 FB DRI		 EAF	FINMET FINEX Circored	Demonstration and smaller-scale plants
5	 Fines (Fe: 58-67%)	 FB DRI	 Smelter	 EAF/BOF	Circored HyREX HyFOR	Pilot and Demonstration

Begin with magnetite mining / Conventional DR technology

- Short- to mid-term solution
- Mature technology (no technology development risk or delay)

Alternative technologies

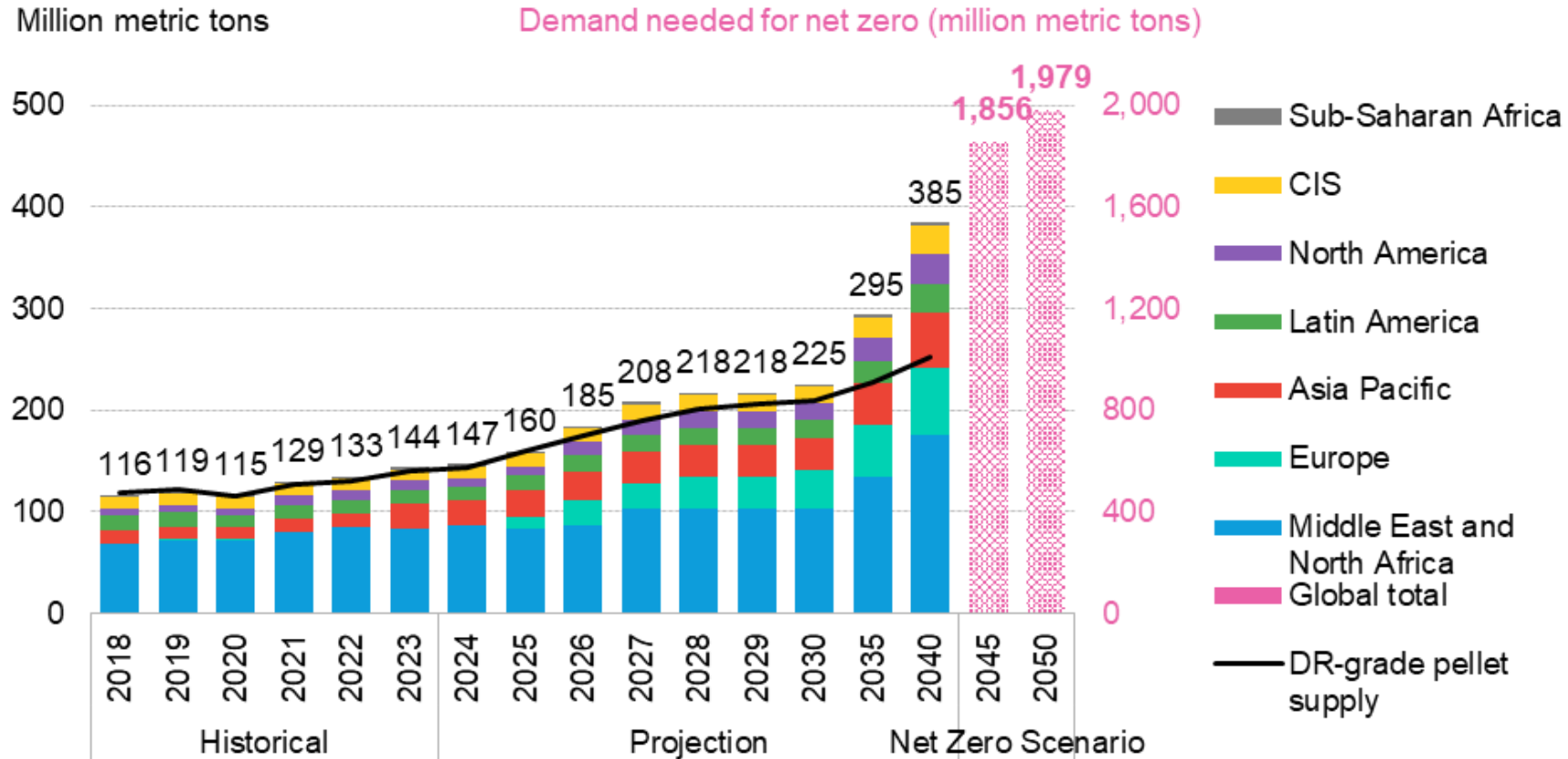
- Long-term solution
- Suitable for **wider** decarbonisation of Pilbara ores
- Scaling from pilot to commercial deployment requires multiple years

BF = Blast Furnace, BOF = Basic Oxygen Furnace, SF = Shaft Furnace, DRI = Direct Reduced Iron, FB = Fluidised Bed, EAF = Electric Arc Furnace

Source: [Australia's path to green iron](#)



DR-grade pellet and supply deficit after 2030



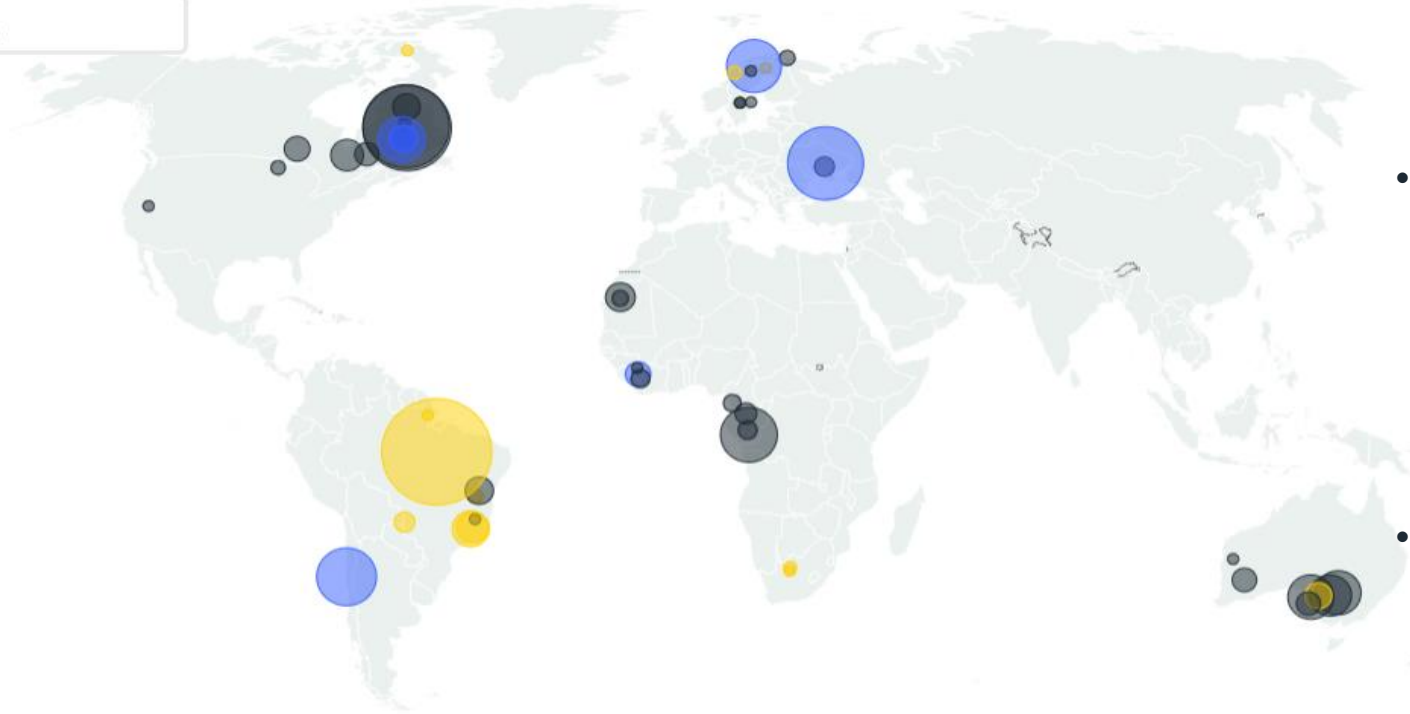
- BloombergNEF estimates that by 2035, the seaborne market for DR-grade pellets will face a supply deficit of **67MT**. (Demand 295 and Supply 228)
- S&P Global expects deficit of **70-85MT** by 2035
- Midrex estimated up to above **16MT** deficit by 2034

Source: BloombergNEF

Prospective seaborne DR-grade suppliers

Resources (Mt) 500 ○ ○ 1000 ■ Deposit ■ Operating ■ Operating & Expansion

Q Search..



- Many new DRI projects in the pipeline will be dependent on the global **seaborne pellet supply** in the future
- **Brazil, Canada** and **Sweden** are the major suppliers of DR-grade pellets for seaborne market. **Bahrain** and **Oman** are major producers for MENA market, which rely on Brazilian high-grade iron ore concentrate
- **Africa**, with many untapped high-grade iron ore reserves, is also able to play a role in the future of this evolving market

Source: [Australian Green Iron Tracker](#)

Options to expand DR-grade supply

UPGRADING

Champion Iron (DRPF)

ArcelorMittal Canada

EXPANSION

Vale

Samarco

LHG Mining

GREENFIELD

Iron Bear

Magnetite Mines (Razorback)

GRANGEX (Sydvaranger)



Could current Australian concentrate producers shift part of their production to DR-grade?

Technically feasible?

Financially viable?



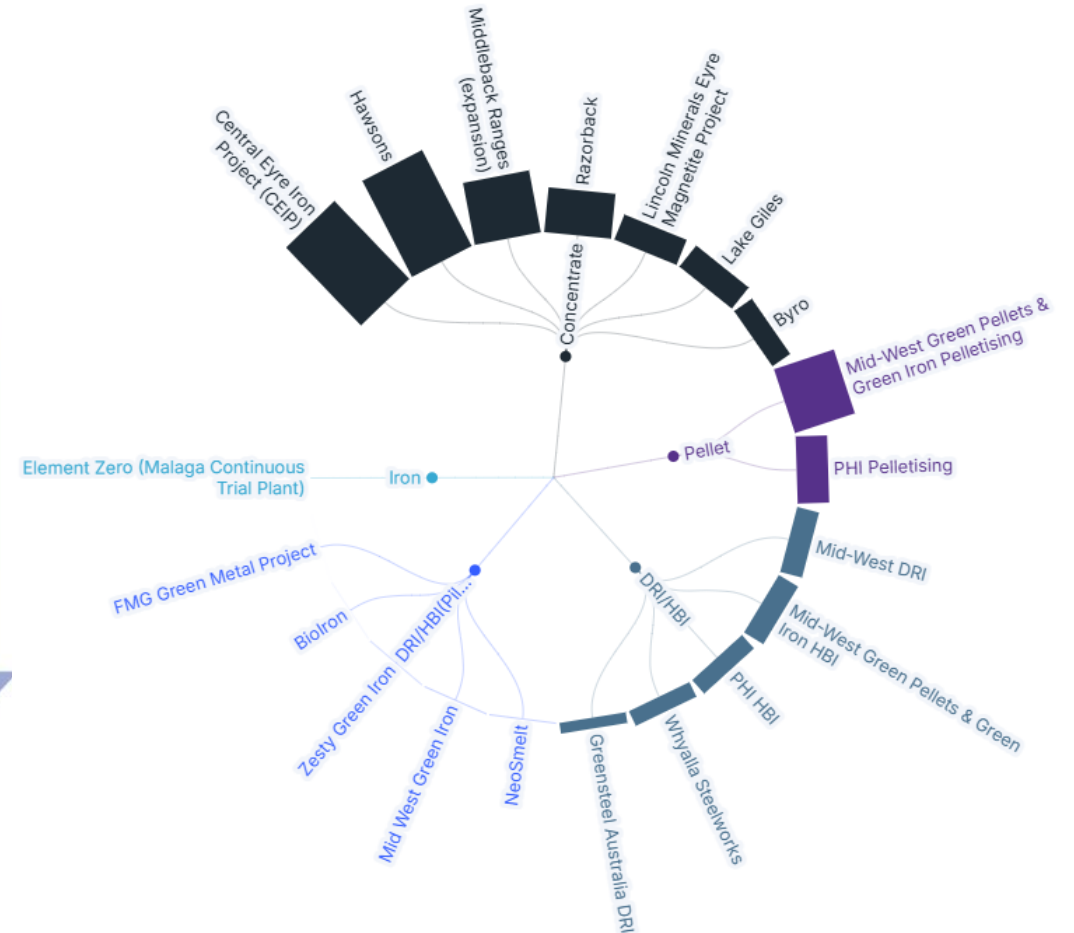
- Less than a quarter of the **~600 MT** annual pellet production is DR-grade, with some potential to upgrade BF-grade pellets to DR-grade where feasible
- Major producers can expand DR-grade pellet capacity by leveraging existing facilities and infrastructure
- Greenfield DR-grade pellet projects are significantly more **capital-intensive**



From ambition to action



Source: [Australian Green Iron Tracker](#)

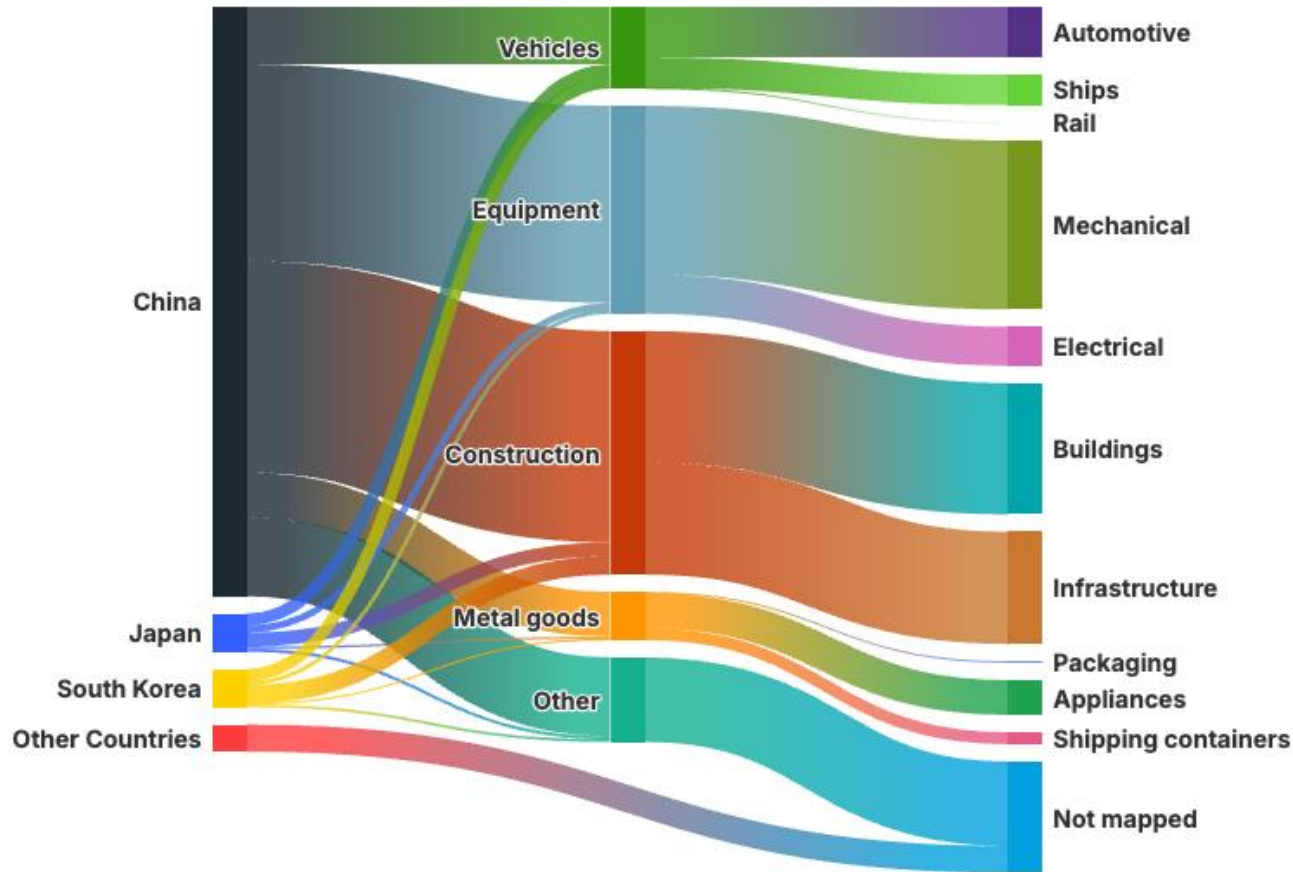


Regardless of project size, **none** have reached FID

Prospective markets

Near-term green iron demand most likely to come from voluntary commitments downstream

Fraction Australian iron ore from trading partners to steel use sectors



Carbon pricing on steelmakers in China, Japan and Korea **is too low** (<US\$15/tCO₂) to directly incentivise green iron purchases

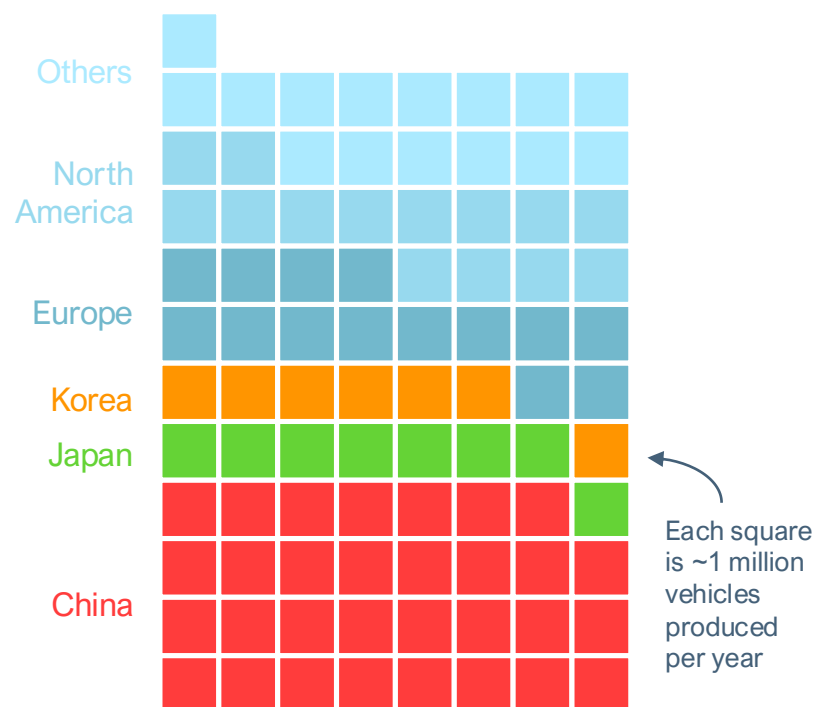
Steelmakers voluntary climate commitments are focused on efficiency and **will not push green iron purchases**

Voluntary corporate supply chain **commitments** from **steel users** could drive green iron, as shown by Microsoft's recent offtake deal with Stegra

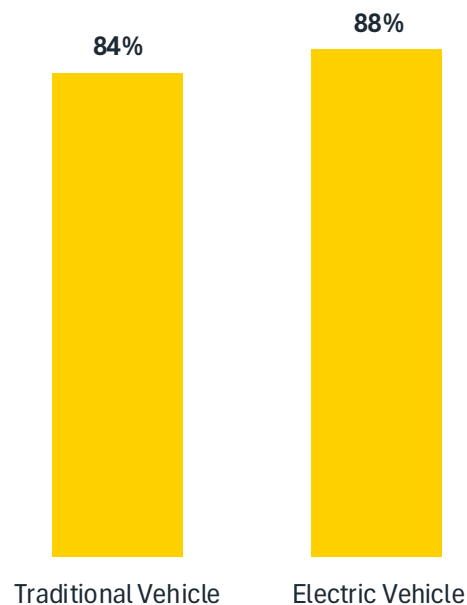
Source: China NBS, Japan METI, Korea SIS, UN Comtrade

Automotive in the region is large and well-placed for green iron but local producer targets are lacking

Vehicle production by region



Fraction of surveyed consumers



China, Japan and Korea are home to **half of global vehicle production** consuming ~43Mt of steel per year

Surveyed auto consumers indicated a **willingness to pay** up to 0.5% for a net-zero supply chain

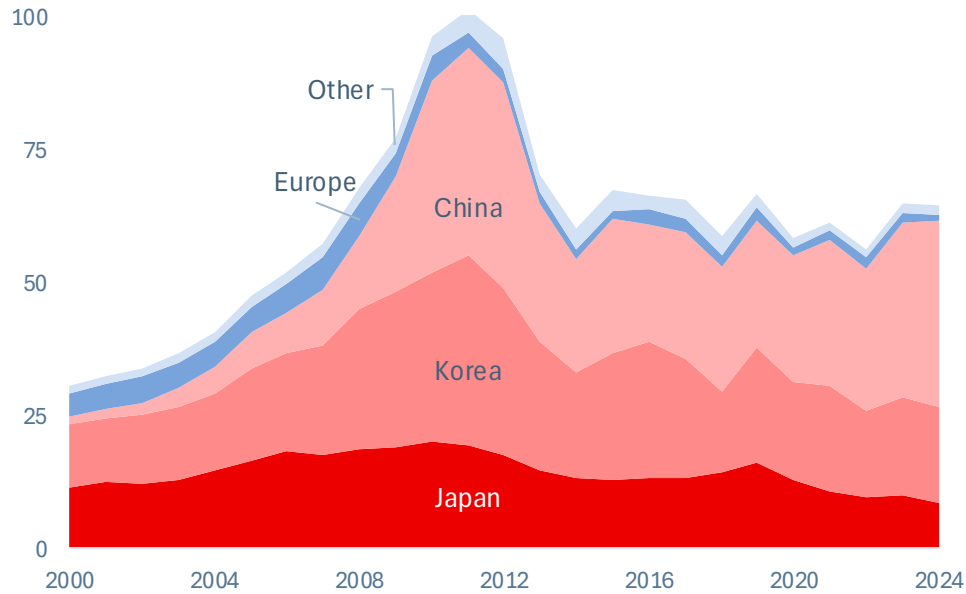
Local brands (e.g. Toyota, Hyundai, Honda, BYD) **do not** have supply chain **targets**

US/EU brands with regional operations (e.g. VW, GM, Volvo) **do have upstream supply chain targets**

Source: International Organization of Motor Vehicle Manufacturers, BCG

Region is dominant in shipbuilding consuming 20-30Mtpa but capacity to pay is downstream

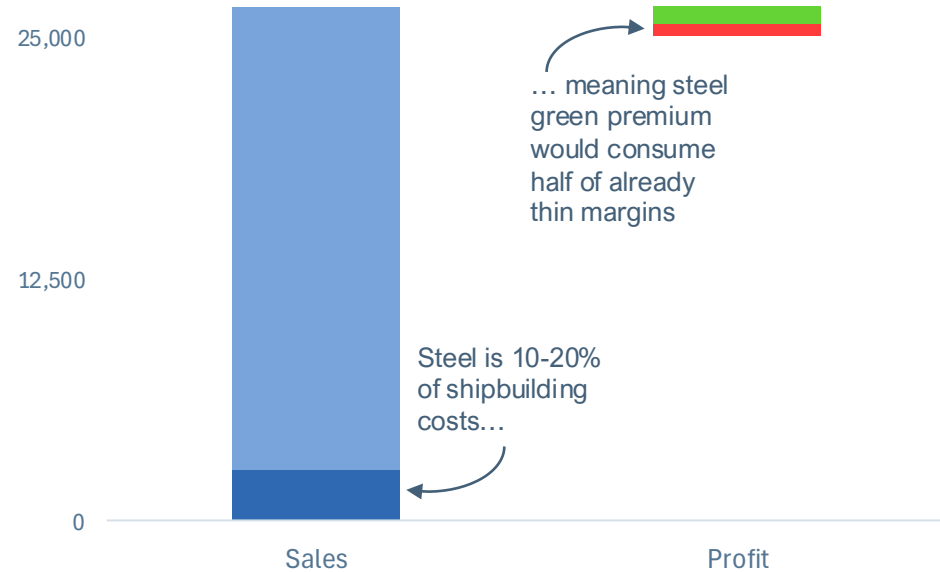
Ship production (millions of gross tonnes)



China, Japan and Korea manufacture **>90%** of the world's **shipping fleet** (and >95% of containers)

Source: Clarksons, Drewry, Company Reports

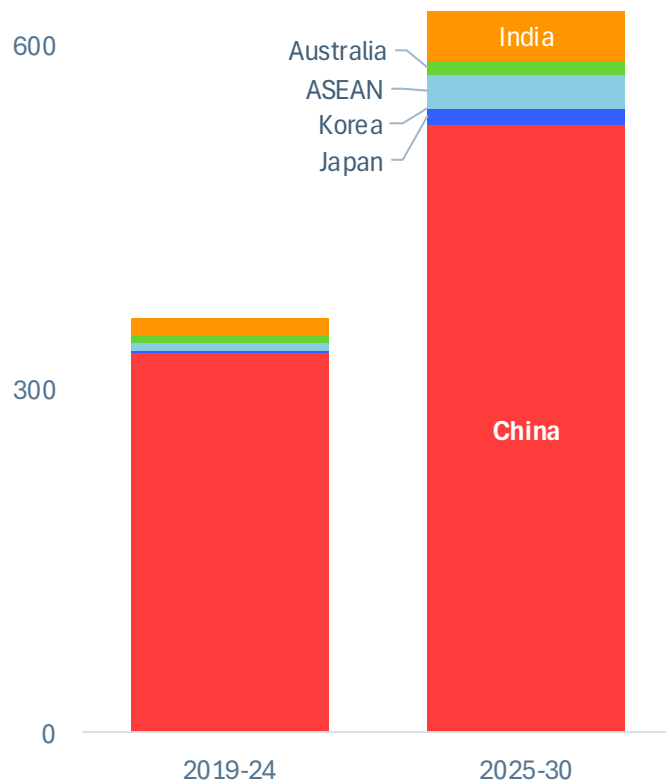
HD KSOE results 2024 (Korean Won billions)



Shipbuilders cannot cover a green steel premium. **Shipowners** could but **only one** (A.P. Moller Maersk) has **set targets** on green steel purchasing.

Strong growth and targets for wind sector, which currently consumes 10Mtpa of steel

Asia-Pacific wind capacity additions (GW)



Source: IEA, Ember

Examples of non-price criteria in auctions



China

Moving to contracts in 2026, GWEC reports some SOEs adjusting bidding rules to consider non-price criteria



United Kingdom

Introduced the Clean Industry Bonus, which provides additional payments for lower-emissions supply chains



Norway

Sustainability requirements introduced as award criteria in the 2023 Utsira Nord auction



France

Introduced a minimum threshold (2,000kgCO₂e/kW) for its offshore AO5 tender.

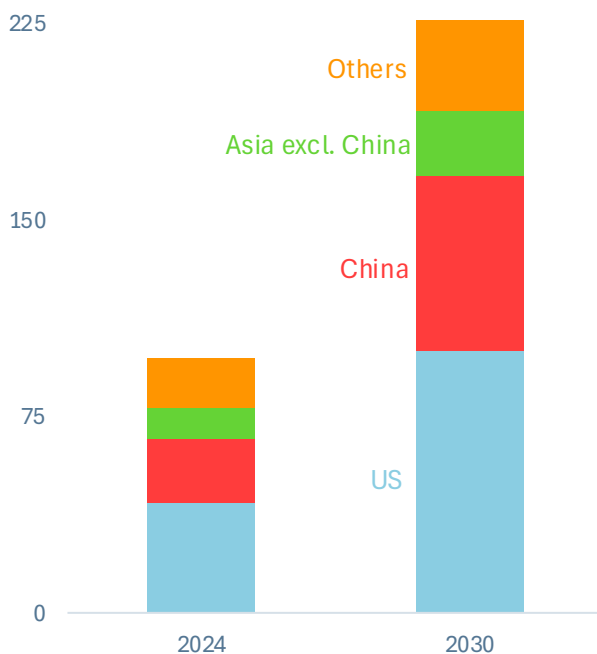
APAC forecast to be home for **~75% of global wind** additions, consuming 10Mt of steel last year

Japan and **Korea** are forecast to have **highest growth** rates coming off a small existing base

Strong targets with both **developers** (Iberdrola, Ørsted & ReNew) & **turbine manufacturers** (GE Vernova, Vestas, Siemens Gamesa) operating in the region setting **steel-specific goals**

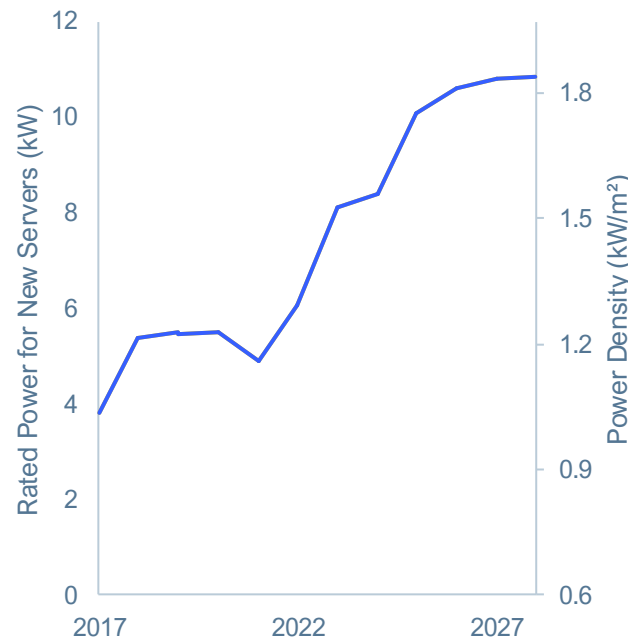
Data centres could drive green steel due to strong regional growth and hyperscaler targets

Total install data centre capacity (GW)



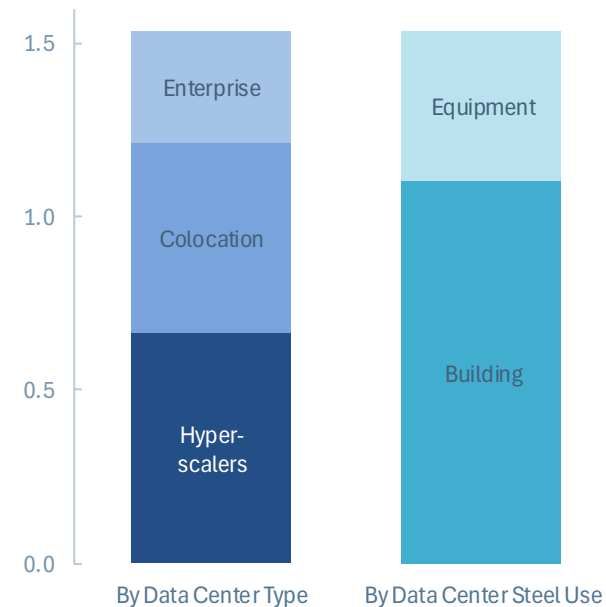
Asia to capture ~43% of new data centre construction to 2030

Rated power (kW) and density (kW/m²)



Chip advances increase power density reducing steel intensity

Estimated data centre steel 2026 (Mt)



Even with improvements high growth → 1.5Mt steel 2026

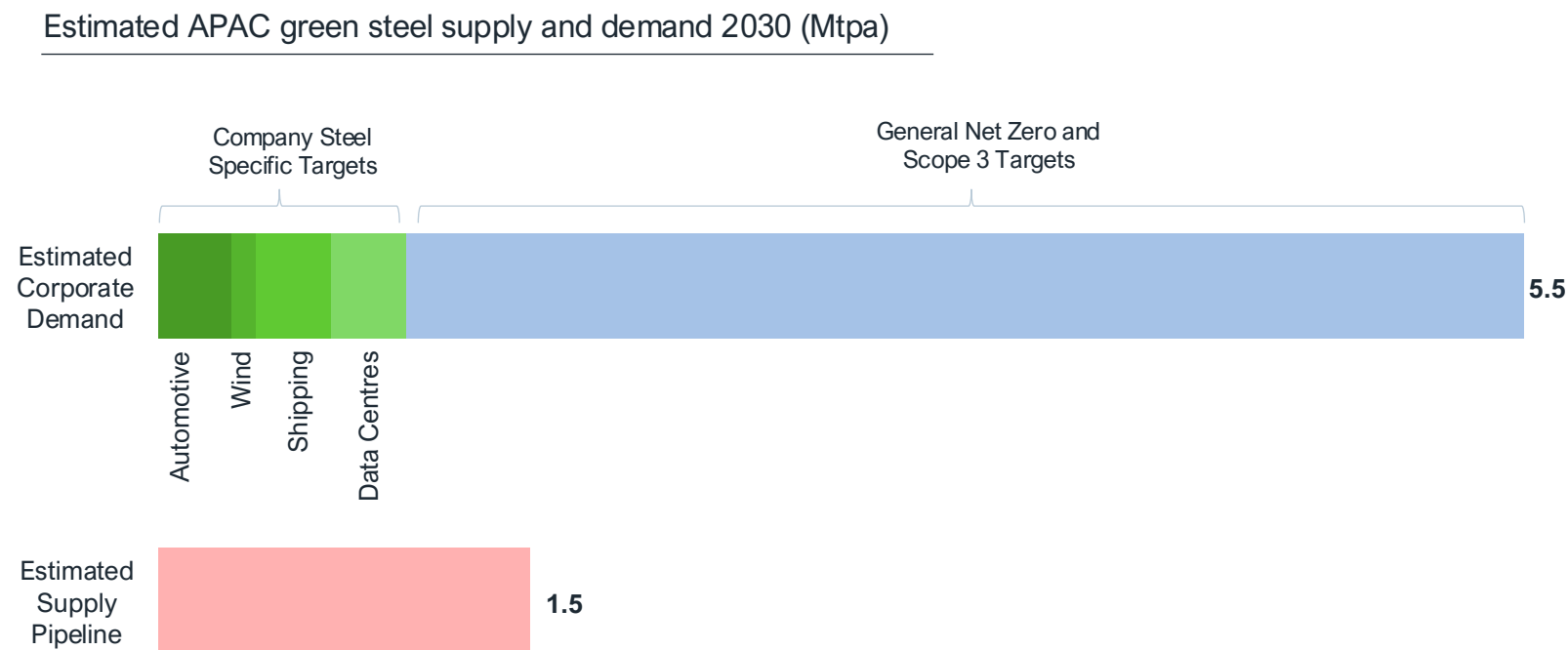
Source: IEEFA Analysis, S&P Global, Bank of America, Goldman Sachs, JLL, LBNL and IEA

Green demand estimated to exceed supply in near term

Demand to meet general net-zero targets is highly dependent on **green steel definitions** used by corporate buyers

Policy could shift demand significantly e.g. changing criteria for Japan's CEV subsidy would add ~1.2Mtpa by 2030

With corporate targets mostly set on 2030 timelines **project developers need to move quickly** to establish offtakes to take advantage of this opportunity

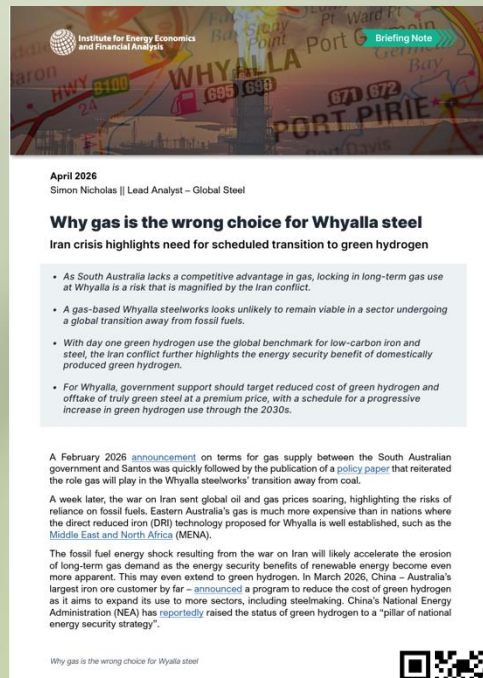


Source: IEEFA Analysis, Company Reports, LeadIT

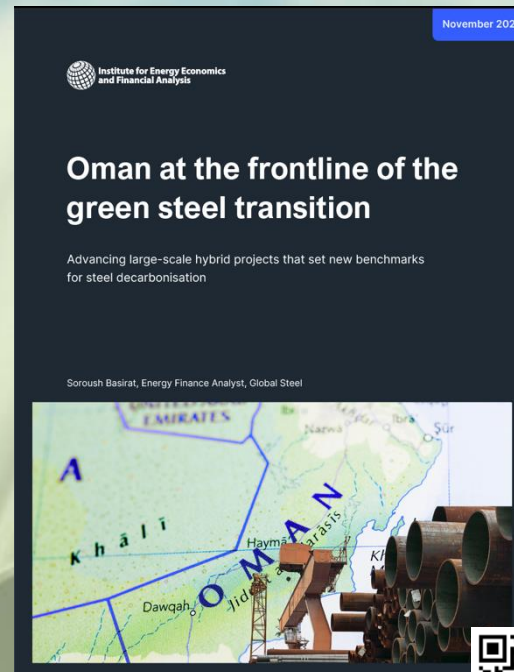
Supply estimate based on LeadIT tracker announced projects with estimates for green fraction (when using a mix with fossil) and likelihood to proceed.
General demand estimate based on coverage by end-use sector of net-zero targets across the Forbes 2000 (from Net-Zero Tracker) for China, Japan & Korea

Read our work

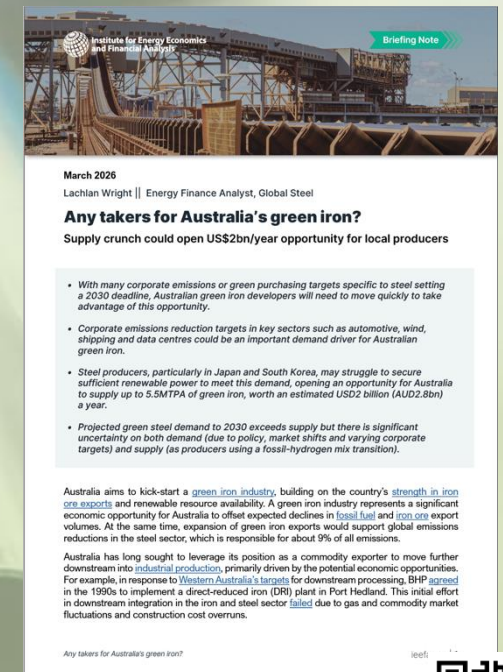
Why gas is the wrong choice for Whyalla steel



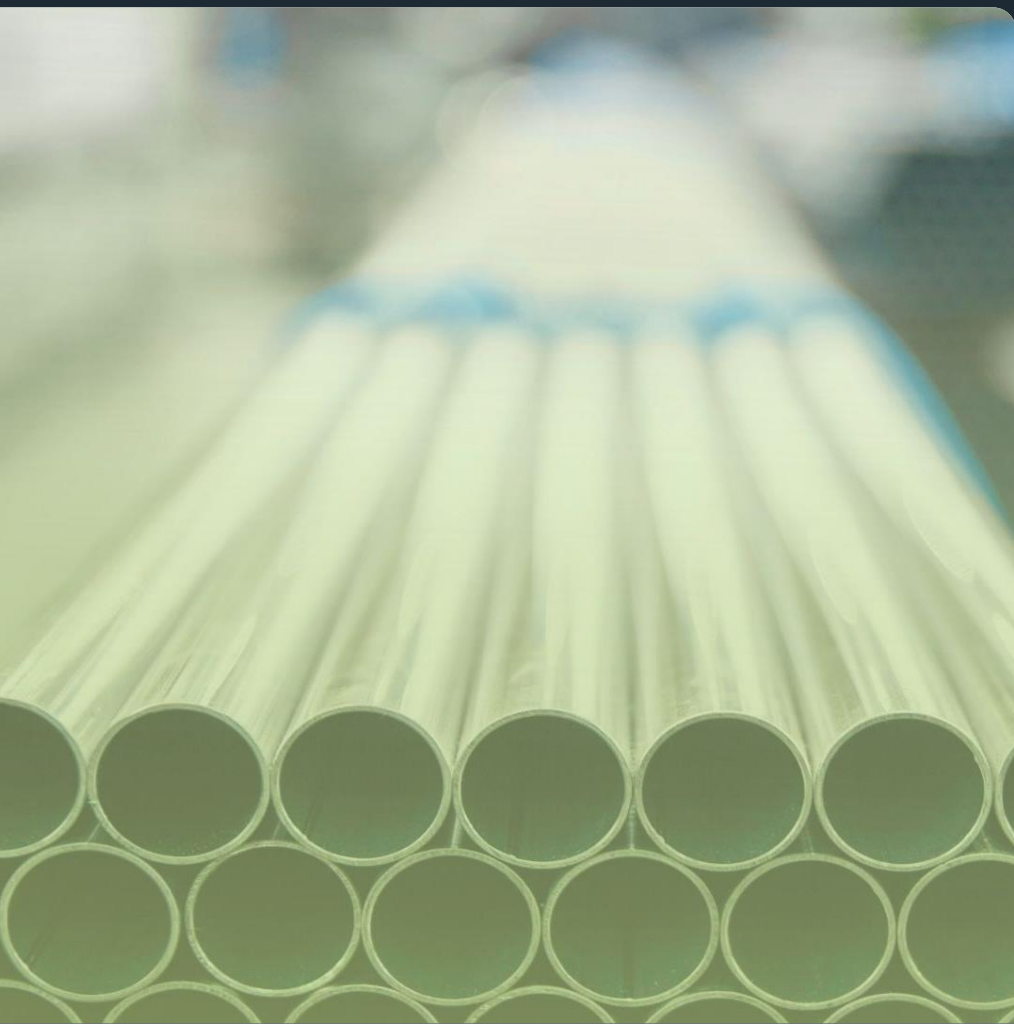
Oman at the frontline of the green steel transition



Any takers for Australia's green iron?



4
Any questions?

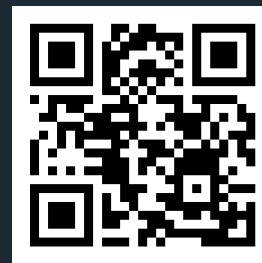


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