CLIMATE ENERGY FINANCE

MEDIA RELEASE

NEW REPORT: GLOBAL GREEN IRON & STEEL PROGRESS SPORADIC & MISALIGNED WITH CLIMATE SCIENCE, REQUIRING POLICY STEPCHANGE

China leads the way while MENA region emerging as new production corridor

A new report by independent think tank Climate Energy Finance tracking policy, investment and technology trends in the global green iron and steel industry finds decarbonisation and electrification of the industry is undergoing structural recalibration, from speculative optimism and green hydrogen hype to incremental, halting and sporadic progress at a pace misaligned with the climate science. Steel production accounts for 7-9% of global emissions.

Green iron and steel requires a structural shift from coal-based blast furnaces (BF) and basic oxygen furnaces (BOF), to direct reduced iron (DRI) production, ideally leveraging green hydrogen, for use in electric arc furnaces (EAF). High upfront capital costs, low returns on capital, higher operating costs for electricity and renewable hydrogen, global steel overcapacity, limited consumer appetite for green premiums, a lack of regulatory pricing in of carbon pollution as well as insufficient market intervention to surmount low-emissions energy and infrastructure challenges create a "bankability gap" in the business case for green iron and steel.

For every step forward, the report tracks a project delay, cancellation or restructure, with US policy backsliding undermining global capital momentum.

Electrolyser cost deflation outside **China** lags the pace anticipated, with global investment calibrating toward EAFs. EAF capacity under construction is 164% of the new BOF capacity pipeline – a positive directional shift, even as the pace is to-date insufficient to achieve climate targets.

Demand for DRI is expected to grow by 50% by 2035 and capacity under construction exceeds new coal-based BF capacity for the first time. However, without a significant stepchange in enabling policy and underlying energy dynamics, the vast majority of this new capacity will be fossil fuel-powered.

- In the **EU**, despite billions in state aid funded by carbon pricing, and supply- and demand-side market forming mechanisms, the investment pipeline has contracted significantly. EU electricity prices remain 2-3x that of the US and domestic methane gas costs are 4-5x that of the US, and a similar order of magnitude higher than in the Middle East and North Africa (MENA).
- **MENA** is emerging as a strategically important DRI production corridor, with significant methane-based DRI capacity, and the largest development pipeline of new gas-based capacity. MENA's competitive advantages include some of the world's best renewable energy resources, low costs of capital, less stringent regulations and approvals than the EU, and proximity to Europe. MENA is the most credible near-term supplier of lower-emission iron to the EU.
- Despite 90% of **China**'s steel production deriving from BF-BOF pathways, it is the world's largest EAF operator by installed capacity. China is systematically building a few commercial-scale DRI and green ammonia demonstrations, expanding its emissions trading scheme (ETS) to cover steel

in 2026, and positioning to scale green hydrogen and electrolyser manufacturing at a fraction of the costs of Western equivalents.

Report author Matt Pollard, CEF net zero transformation analyst said:

“The global iron and steel decarbonisation landscape is undergoing a systematic reorientation away from transformational investments into hydrogen-based green iron and into a measured, phased, and evolutionary decarbonisation trajectory. The hydrogen hype that defined the early part of this decade has collided with the economic realities of electrolyser cost curves that have failed to deflate outside of China, sustained energy cost pressures in Europe, and persistent margin compression across the industry.

“This report showcases aspects of the energy transition that are moving in the right direction, however the pace remains deeply insufficient relative to what the climate science demands. The growth of electrified secondary steelmaking, that offers a pathway to lower-emissions steel with far lower capital intensities and energy requirements points to the industry shift towards incremental decarbonisation rather than transformational change. The EAF construction pipeline globally is now 164% larger than the new BOF capacity set to come online.

“Global acceleration of green iron and steel investment will depend on policymakers’s ability to synchronise technological, fiscal, and diplomatic levers across markets and borders to shift decarbonisation from a perceived cost into a central pillar of sovereign industrial strategy.

Report co-author Tim Buckley, CEF director and a former MD of global investment bank Citigroup, said:

“It is critical that Australia engage in Green Energy Statecraft to build bilateral, public plus private support with our key trading partners like POSCO, JFE Steel and China Baowu. Australia needs to get 1-3 First-of-a-kind (FOAK) demonstration plants at commercial scale beyond a final investment decision and into construction. Long term demand offtake at a price that recognises the embodied decarbonisation of DRI and green iron is key. Green premiums are not going to emerge - we need formal recognition of the value of a price on carbon pollution and embedded decarbonisation for Australia to work constructively to enable our key trade partners’ decarbonisation and energy security goals.

“The US war on Iran has yet again highlighted Australia as a key stable strategic partner of choice with low sovereign risk able to ensure international supply chain integrity. Australia in return needs to value the supply chains of our key trade partners, particularly China’s world leading technology at scale and low cost in each of electrified mining equipment, solar, wind and batteries that are sorely needed to decarbonise Australia’s world leading mining sector, whose two largest firms - BHP and Rio Tinto - are currently both decarbonisation laggards, being shown up by Fortescue’s vision. Follow the money.”

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