

Green steel initiatives around the world: A snapshot

Numbers denote top steel producers in 2020 by volume (million tonnes)

COP26

The UN Climate Change Conference takes place in Glasgow in November 2021, bringing together heads of state, climate experts and campaigners to agree upon coordinated action to tackle climate change. Emissions from steel manufacturing will be on the agenda, and it will therefore be an opportunity to achieve international agreement on coping with the emissions from the continuing use of metallurgical coal, and showcasing the need for significant state support to successfully roll out the development of green steel.

United Kingdom

Launched in August 2019, the UK government's £250 million Clean Steel Fund signals its long-term support to the steel sector and its decarbonisation efforts. In December 2020, the UK government published the responses it received from a range of stakeholders in response to the plan, including UK Steel, Greensteel Council, Liberty Steel and Tata Steel, as well as several academics. The main issues raised fell into three categories: energy prices and other barriers, timing of the Fund, and decarbonisation technology options. The government is currently developing the detailed design of the Fund, incorporating this feedback and assessing the opportunities to be gained in overcoming these. The UK Clean Steel Fund won't begin to allocate its £250 million (US\$3470 million) in funding until 2023. A May 2021 report issued by the Energy and Climate Intelligence Unit (ECIU) found that UK clean steel development is lagging significantly behind the EU.

European Union

Launched in December 2019, The European Union's Green Deal has set a goal of becoming climate neutral by 2050. A May 2021 report from the Energy and Climate Intelligence unit said 23 hydrogen steel projects are either planned or under way across Europe, including plans to produce hundreds of thousands of tonnes of green steel by as early as 2022. The region's steel industry has said it aims to reduce its emissions by 30 per cent by 2030 and by as much as 95 per cent by 2050. Industry lobby groups argue that while this is possible on a technical level, significant support will be required. Central to this would be safeguarding the industry from imports that aren't held to the same requirements and the provision of affordable power. The 'carbon border adjustment mechanism' would impose a CO₂ charge on certain goods entering the bloc in order to prevent cheap foreign products, including steel, that have a negative carbon impact and which in turn stymie investment in green tech.

Russia

In June 2021, Russian steelmakers have embarked on their green journey, with major companies Evraz and Severstal among those to have signed several agreements to implement green steelmaking at the 24th St Petersburg International Economic Forum.

China

China—the world's biggest steelmaker producing about 50 per cent of global supply—has committed to becoming carbon neutral by 2060. The country's steel industry accounts for about 15 per cent of its carbon emissions. China's Ministry of Information and Technology is readying a five-year plan for all domestic steelmakers to lower emissions by switching to electric arc furnaces and recycling more scrap. China's largest steel producer, state-owned Baowu, has committed to achieving carbon neutrality by 2050, and peak emissions in 2023.

South Korea

In early 2021, South Korea's Ministry of Trade, Industry and Energy launched the Green Steel Committee to gear up the domestic steel industry for carbon neutrality by 2050. Posco aims to harness hydrogen for steelmaking and become a major producer and supplier of hydrogen, making five million mt of green hydrogen by 2050.

South Korea

Japan

Japan

In February 2021, the Japan Iron and Steel Federation published the Basic Policy of the Japanese Steel Industry for Japan's 2050 Carbon Neutral. The Japanese steel industry is embracing the challenge, with leading producers Nippon Steel Corp shifting focus to reusing and recycling steel, and Kobe Steel pioneering a new technique for creating steel in natural gas blast furnaces that use less coke.

Australia

In January 2021, Fortescue Metals Group chairman, Andrew Forrest, has revealed his ambitions to build Australia's first green steel pilot plant this year. Given its abundance of wind and solar, the country is well placed to produce the hydrogen a green steel industry needs, a point emphasised in last year's Grattan Institute report, which argued that a renewables-based steel industry could deliver strong action on global warming while also generating significant employment opportunities.

United States

The Biden administration's climate plan has put infrastructure at its heart, which ultimately puts steel centre stage. So far there has been limited detail on the country's plans for steel, but the White House has said implementing green hydrogen to forge the metal is key to meeting its 2030 targets. One significant advantage the US has is its existing dependence on recycled steel. Scrap accounts for about 70 per cent of the raw metal input into American steel production today, a far higher ratio than most major producers. Recycling is significantly less carbon-intensive than making primary steel.

Brazil

Progress in South America is slower—perhaps due to the political incumbents in key nations—but the opportunity has been noted. Research from the World Resources Institute suggests that shifting to a low-carbon economy could boost Brazil's economic growth substantially while reducing carbon emissions by up to 33 per cent, helping reverse damage to Brazil's environmental reputation, and improving access to international capital markets.

Turkey

According to Turkey's Steel Exporters' Association, the country exported some US\$3 billion of hot-rolled steel to the EU in 2020. Turkish mills are investing in green steel in preparation for the implementation to EU's carbon border adjustment mechanism (CBAM) by the beginning of 2023.

India

In June 2021, the India H2 Alliance (IH2A)—an industry coalition of global and Indian companies committed to the creation of a hydrogen value chain and economy—has expanded its membership to include JSW Steel that will work closely with the Indian government to build a hydrogen economy and supply chain. The inclusion of India's leading steel player, JSW Steel, is a significant step forwards, as steel and cement are a priority industrial sector for decarbonisation, where hydrogen could be adopted early on. Also, with its planned launch of the green hydrogen energy mission in 2021–2022, India is moving towards decarbonisation of its domestic steel industry, opening up new opportunities for green steel.

