Coking coal is entering long-term terminal decline with finance beginning to shift to enable it

Nishtha Aggarwal, Financed Emissions Analyst, Tim Buckley, Director, Climate Energy Finance
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As the global economy transforms to mitigate the climate crisis, decarbonising the A$2.6Trn global iron and steel industry, and the inevitable transition away from coking coal, is on the horizon with global finance beginning to enable this.

Australia is the world's largest exporter of both iron ore and metallurgical coal (met coal). We provide 57% of the world's iron ore (A$124bn FY23 revenue) and 52% of global metallurgical coal (A$61bn FY23 revenue) and are therefore massively trade exposed as the world belatedly moves to limit global warming to 1.5°C and low carbon steel making becomes a reality.

The most carbon intensive part of traditional steel making is the reduction of iron ore into iron, which requires met coal heated to super high temperatures to create coke, which is then combined with iron ore in a blast furnace, again at extremely high temperatures while generating significant greenhouse gas (GHG) emissions. This process is responsible for the majority of the ~8% of global emissions generated from global steel making, spurring green innovation alongside global investors and steel companies who are pivoting from using blast furnaces to electric arc furnaces (EAF) that are powered by firmed renewable electricity and can use recycled scrap steel – both of which significantly reduce the emissions generated in the production of steel.

As solutions are commercialised and then deployed globally, coking coal is potentially set to enter terminal decline and global financial institutions who have aligned with the global climate science and pledged to invest in alignment with a 1.5°C world are recognising this. To reduce our massive trade exposure, Australia should be investing now in commercialising onshore green iron production powered by our world-leading and abundant renewable energy power, moving us from a dig-and-ship economy and into the 21st century.

When the money moves, get out of the way

Global financial markets are showing momentum in restricting finance for met coal mine projects, in recognition of the industry's structural transformation driven by the global transition away from all fossil fuels and the physical risks of climate change.

ING is the latest globally significant financial institution to establish increasingly credible lending restrictions on the iron and steel sector. The bank will no longer provide project finance for new coking coal mines or the expansion of existing mines, and the same goes for unabated blast furnaces.

It follows other major leading banks such as BNP Paribas, Société Générale, and HSBC who have also established exclusions on met coal mine projects – a sign that banks are moving to operationalise their Net Zero Banking Alliance commitments to reduce financed emissions in alignment with the climate science.

In Australia, Westpac is no longer providing project finance for new met coal projects. It is a sign that met coal is starting to follow the trajectory of thermal coal production which is set to be completely phased out of credible developed world lenders portfolios' by 2030.

On steel production, all five major Australian banks (CBA, NAB, Westpac, ANZ, Macquarie) are moving to establish globally aligned 2030 emissions reductions targets and indicating their support in helping their steel customers reduce emissions, which indicates an eventual reduction in the use of coking coal.

The impact extends beyond banking into the US$100tn assets committed to net zero goals under the Glasgow Financial Alliance (GFANZ) for Net Zero. Investors such as BlackRock, Amundi and the Norwegian Sovereign Wealth Fund have major ownership stakes in globally significant banks and are committed to the transition away from fossil fuels.

Led by the likes of AXA and Zurich Insurance in EU, the insurance sector is also critically aligning with global net zero ambitions, recognising the insurance implications in a 2°C warmed world are vastly more significant and unaffordable than a 1.5°C warmed world. Insurers, equity investors, and lenders are all moving in one direction – towards the only outcome that can deliver a sustainable economy.

Technology readiness

Low emissions iron and steel technology innovation and readiness is starting to move in the right direction, with momentum picking up in finding commercially scalable solutions.

H2 Green Steel

Swedish company, H2 Green Steel, is rapidly proving commercial scale green steel production and helping the country reduce emissions in its top emitting sector. As a clear sign of global financial market support, H2 Green Steel raised €5.5bn in debt and equity in September 2023 to finance the construction of an integrated new steel plant that will deliver steel with up to 95% less CO_2 emissions compared to steel produced with traditional blast furnace technology. This leverages Sweden's world competitive firmed renewable energy resources, its high quality iron ore resources, a favourable country / EU steel decarbonisation policy, and a high regulated price on CO_2 emissions.

Global supplier to the automotive industry, KIRCHHOFF Automotive, this week signed a 7-year agreement with H2 Green Steel for the delivery of near zero emissions steel that will decarbonise its supply chain. The order from KIRCHHOFF Automotive will see deliveries of green steel from H2 Green Steel's Boden plant starting 2027, with plans to implement a

circularity initiative which would send at least 30% of the steel scrap volumes back to H2 Green Steel's EAFs in Boden for recycling, further feeding near zero emissions steel making.

JFE Steel Corporation

Japan's second largest steel producer, JFE Steel, announced plans to replace an ageing blast furnace when it is due for refurbishments in 2027 with one of the world's largest EAFs that will accelerate decarbonisation of its operations and the country.

The Japanese government is moving to mobilise domestic green steel production with the announcement of tax credits that would allow companies producing green steel to claim a tax deduction of 20,000 yen (~A$200) per tonne of production and sales, capped at 40% of corporate tax liability.

This is a clear signal from the Japanese government that it sees an enormous economic imperative to be a frontrunner in the energy transition, and has massive implications for Australian exports of metallurgical coal, and our relatively low grade iron ore.

Rio Tinto

Australia's largest iron ore producer, Rio Tinto, is investing ~US$6.2bn capex to develop the Simandou iron ore project in Guinea, Africa. It will be Rio's biggest capex spend over the next three years with Macquarie Group giving the deal a tick of approval.

Often referred to as the "Pilbara-killer", the project is the world's largest untapped high-grade iron ore deposit, which is far better suited to conversion into green iron than Australia's lower grade haematite ores.

China Baowu Group and Rio Tinto in June 2023 signed a memorandum of understanding covering a series of decarbonisation projects, as well as flagging the prospect of a big investment in WA to produce green iron. Rio Tinto in October 2023 flagged it was also talking with POSCO of Korea about a similar initiative.

Despite challenges in establishing the more than 600km of new multi-use rail and port facilities required to access the resources, first production from the mine is expected in 2025. The investment will strengthen Rio Tinto's portfolio mix, and we note Rio divested its last coal mine back in 2018. Rio Tinto has also committed to a global 50% scope 1&2 emissions reduction target by 2030.

Element Zero

Former Fortescue senior staff create a metals processing start-up that is turning iron ore into pure iron at laboratory scale. Element Zero's patented method of "electro-reduction" is one of a number of possible technology breakthroughs (in a race with the far longer established Boston Metal, and Japan's Kobe Steel Midrex) which could underpin the commercialisation of lower

emissions or even green iron, key to reducing emissions and mitigating Australia's trade exposure in met coal.

Sector pathways

With commercial deployment of new technology breakthroughs in green iron and near zero emissions steel, comes the growing long term threat of a terminal trajectory in coking coal demand - and global finance is starting to move to prepare for this economic transformation in line with the climate science.

Iron and steel is one of the largest global sectors with the least visible pathway and technological solution (along with cement, aviation and shipping), and we applaud the government's appetite to understand global trends and economic implications for Australia by developing nationally consistent sector pathways that will drive coordinated investments into delivering emissions reduction. The first iteration of sector pathways is due on the Climate Change Minister's desk by 1 August 2024, with Australia's sustainable finance taxonomy codifying an initial set of eligibility criteria for minerals, mining and metals by this year's end.

However, ignoring scope 3 emissions in favour of legal borders that cover only Australia's scope 1 and 2 emissions is a fool's errand. Australia's enormous scope 3 exported emissions (i.e. from reducing iron ore into iron using met coal) are a measure of Australia's exposure to transition risk brought about by a decarbonising iron and steel sector. Our trade partners are moving to fulfil their own climate targets in alignment with global momentum activated by the Paris Agreement, Science-Based Targets Initiative (SBTi), GFANZ, and others like the First Movers Coalition in Green Steel which has the support of the World Economic Forum.

Australia must resist caving in to luddite boards like that of BlueScope Steel, whose recent $1bn decision to invest in relining its blast furnace 6 locks the company for decades into coal-based steelmaking in Australia even as it greens its operations globally. The Australian federal government should rather be incentivising domestic demand "pull", encouraging steel firms to pivot from outdated coal-powered blast furnaces to EAF technologies, such as GFG in Whyalla.

It is beholden on the Australian government, mining industry, and financial institutions to understand there is only one planet, denialism won't stop the world moving forward. It will just leave two of Australia's key commodity exports exposed to structural decline over the next one, two or three decades, as this global transformation is undertaken. Far better Australia take a leadership role and lean into this, and in doing so reposition our key export sector exposures to take advantage of the enormous opportunities, rather than wait for other countries to take our key export markets whilst we debate the costs and risks of leading.

The International Energy Agency has repeatedly said energy security is feasible without opening new fossil fuel extraction projects, and that firmly includes metallurgical coal. Steel doesn't have a climate problem. Iron has a coal problem, and Australia has an enormous opportunity to capitalise on this transformation, or be steamrollered while we procrastinate.