

# Whitehaven Coal

Assessing its Claims About its Long-Term Outlook

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## Key Findings

**Coal imports to Whitehaven's three largest export destinations (Japan, Taiwan and South Korea) are going into decline, according to the Australian government.**

**Emerging economies such as India and Vietnam don't import the high-calorific value coal Whitehaven produces, and likely never will.**

**No nation is relying on a switch to high-calorific value coal to reduce its carbon emissions.**

**The long-term outlook for metallurgical coal is starting to change now that the steel technology transition is accelerating.**





## Executive Summary

Despite increasing acceptance within Australia that the outlook for the seaborne thermal coal market is one of declining demand and dwindling volumes in the long term, Whitehaven Coal continues to maintain that future demand for its product is strong.

This report examines what Whitehaven has stated about its outlook in its recent disclosures – its 2023 Annual Report and Sustainability Report, its recent FY23 Full-Year Results presentation and 2022 AGM. We consider that certain statements made by the company about the demand outlook for its product are at risk of not being fulfilled given what is happening with the Asian seaborne coal market.

### Shipments to Japan, Taiwan, South Korea made up 87% of Whitehaven's total exports in FY23

“ Thermal coal imports (and broader use within Japan) are expected to fall more rapidly after 2024, with further acceleration over the 2030s.



“ Taiwan's thermal coal imports are expected to fall about 12% (to 53 million tonnes) by 2028, with more rapid declines likely to follow.



“ South Korea's Ministry of Trade, Industry and Energy has announced a proposal to cut coal-fired power generation by around half (from 42% to 22%) between 2018 and 2030.



Source: Department of Industry, Science and Resources, Resources and Energy Quarterly, March 2023

IEEFA

## Demand for Thermal Coal

Whitehaven Coal claims that the outlook for thermal coal demand is positive for the company:

**“... global demand for high-CV coal is forecast to grow by 28% to 2040.” – Sustainability Report 2023, Page 23**

Such statements may not fully acknowledge that the long-term outlook for seaborne thermal coal in Asia is declining at an accelerating rate. In its March Resources and Energy Quarterly report, the Australian government’s Department of Industry, Science and Resources forecast that total Asian imports would peak in 2026. Similarly, it forecast that Australian thermal coal exports would peak in 2026 and then go into decline.

Demand for high-calorific value (high-CV) coal of the type Whitehaven Coal produces is concentrated in just a few importing nations, and emerging economies in Asia such as India and Vietnam import cheaper, lower-CV coal. Whitehaven Coal’s sales are dominated by Japan, South Korea and Taiwan – particularly Japan. These are the three key importers of high-calorific value (high-CV) thermal coal the company produces. The Australian government forecasts that imports of thermal coal into all three of these countries have already peaked.

## Coal Quality and Carbon Emissions Claims

Whitehaven Coal says its high-CV coal gives it an advantage over other coal miners in that it will gain market share even as overall demand for seaborne thermal coal declines.

**“As the world decarbonises, Whitehaven’s high-quality, high-CV thermal coal will be the last to leave the market.” – Sustainability Report 2023, Page 23**

IEEFA holds some concerns as to whether Whitehaven will be able to gain market share due to the high energy content of its coal. Developing nations around Asia that could provide alternative destinations to Japan, South Korea and Taiwan do not import the high-energy grades of thermal coal Whitehaven produces, and likely never will in significant quantities. The plentiful supply of lower-energy thermal coal from the likes of Indonesia makes it cheaper than the more restricted supply of high-energy coal from Australia. Coal cost is the key influence on coal-sourcing decisions, and developing nations that could potentially replace the declining markets of Japan, South Korea and Taiwan tend to be more cost-sensitive.

China and India do import Australian thermal coal but this is lower-energy 5,500 kilo calories per kilogram (kcal/kg) coal. Other developing Asian nations import cheaper, lower-energy (< 5,000 kcal/kg) Indonesian coal e.g., Bangladesh. According to the Australian government’s Office of the Chief Economist, in Vietnam, “Many recently built coal plants have been designed to use Indonesian

coal, and it is expected that imports of Indonesian coal will rise as coal plants currently under construction are completed.”

Whitehaven says its high-energy coal helps its customers decarbonise, and as such will remain in demand going forward:

**“Our thermal coal, which offers more energy efficient and lower emissions outcomes than other coal products, is helping our customers to responsibly meet their decarbonisation goals.” – Annual Report 2023, Page 1**

Given the relatively small emissions impact of burning higher-energy coal compared with lower-energy coal, no nation can credibly plan to reduce power system emissions by merely switching from one grade of coal to another. No nation has announced such a move as part of any power system decarbonisation plan. Where a change in emphasis in coal sourcing is planned, it is a shift away from thermal coal imports towards increased reliance on domestic coal, such as in China, India and Pakistan, for the purpose of increased energy security and lower cost.

As well as suggesting that thermal coal buyers will switch to higher-energy coal to reduce emissions, Whitehaven also maintains that a switch from older coal power station technology to newer technology will contribute to decarbonisation.

**“To reduce emissions and meet the Paris Agreement goals, many coal-reliant countries have committed to retire old and inefficient coal-fired plants and move to newer, lower emissions, more energy- efficient generation technologies.” – Sustainability Report 2023, Page 24**

This arguably doesn’t fully reflect what is happening across Asia. Although Japan and South Korea have a few remaining coal power projects under construction, the clear trend is one of declining coal power capacity as plants are closed. The remaining plants under construction in these countries will be the last they ever build. As a result, it is clear that as older coal power plants close, they will not be replaced with new coal plants – given the renewable energy targets of Japan and South Korea it is clear they will be replaced with wind and solar and possibly some nuclear power.

Taiwan has no coal-fired power plants under construction and no plants in the project pipeline. Coal power development in Taiwan is already over. In Vietnam, the coal plants in the development pipeline will be the last ever built there given its declining coal power capacity targets and the difficulty it faces in attracting coal power finance.

The only nations that have significant capacities of coal-fired power in the latter stages of development with any likelihood of proceeding are China, India and Indonesia, which are all major coal producers that will fuel any new plants with domestic coal – an energy security priority that has only become more important after record seaborne coal prices in 2022.

## Demand for Metallurgical Coal

Metallurgical coal made up only 6% Whitehaven's coal sales in the 2023 financial year but the company plans to increase production, and it highlights strong demand growth going forward based on Wood Mackenzie forecasts:

**“Asian demand for metallurgical coal forecast to grow by 33% over the next three decades due to Indian industrialisation.” – Full Year Results FY23 presentation, Page 49**

Whitehaven plans to expand its metallurgical coal production via the Winchester South mine project in Queensland, and is bidding for the Daunia and Blackwater metallurgical coal mines put up for sale by BHP.

Until recently, it has been widely accepted that metallurgical coal has a stronger demand outlook than thermal coal as it is less immediately challenged by alternative technology. However, the outlook for met. coal is now starting to change. The steel technology transition has started to accelerate and looks likely to happen faster than expected as has already been seen with the ongoing transition away from coal-fired power towards renewable energy. Mark Vassella, chief executive of BlueScope Steel, admitted in August 2023 that the steel technology transition was moving faster than he predicted just two years ago, stating, “The technology is moving faster than we might have expected.”

The International Energy Agency (IEA) has noted this acceleration. Fatih Birol, executive director of the IEA, stated in April 2023 that, “The project pipeline for producing steel with hydrogen rather than coal is expanding rapidly. If currently announced projects come to fruition, we could already have more than half of what we need in 2030 for the IEA's net zero pathway.”

The accelerating steel technology transition will impact financing too. Commonwealth Bank of Australia's new lending rules for corporate finance, trade finance and bond facilitation require any existing customers who derive more than 15% of their revenue from the sale of oil, gas or metallurgical coal to have transition plans from 2025 that cover their Scope 1, 2 and 3 greenhouse gas (GHG) emissions. This is the first time the bank has specified that Scope 3 emissions – that result from customers using a company's products or from suppliers making products that a company uses – must be covered. Whitehaven makes clear that it is focused on Scope 1 and 2 emissions only, and has no focus on Scope 3 emissions.

## Introduction

Despite increasing acceptance within Australia<sup>1</sup> that the outlook for the seaborne thermal coal market is one of declining demand and dwindling volumes in the long term, Whitehaven Coal continues to maintain that future demand for its product is strong.

This report examines what Whitehaven has stated about its outlook in its recent disclosures – its 2023 Annual Report<sup>2</sup> and Sustainability Report,<sup>3</sup> its recent FY23 Full-Year Results presentation<sup>4</sup> and 2022 AGM.<sup>5</sup> IEEFA considers that certain of the statements made by the company about the demand outlook for its product are at risk of not being fulfilled given what is happening with the Asian seaborne coal market.

## Demand for Thermal Coal

Whitehaven Coal claims that the outlook for thermal coal demand is positive for the company:

**“Demand for thermal and metallurgical coal is expected to remain strong in the short and long term.”** – Sustainability Report 2023, Page 23

**“... global demand for high-CV coal is forecast to grow by 28% to 2040.”**  
– Sustainability Report 2023, Page 23

Such statements may not fully acknowledge that the long-term outlook for seaborne thermal coal in Asia is declining at an accelerating rate. In its March Resources and Energy Quarterly report, the Australian government’s Department of Industry, Science and Resources forecast that total Asian imports will peak in 2026. Similarly, it forecast that Australian thermal coal exports will peak in 2026 and then go into decline.<sup>6</sup>

Demand for high-calorific value (high-CV) coal of the type Whitehaven Coal produces is concentrated in just a few importing nations, and emerging economies in Asia such as India and Vietnam import cheaper, lower-CV coal. Whitehaven Coal’s sales are dominated by Japan, South Korea and Taiwan – particularly Japan ([Figure 1](#)). These are the three key importers of high-calorific value (high-CV) thermal coal that the company produces. The Australian government forecasts that imports of thermal coal into all three of these countries have already peaked.<sup>7</sup>

<sup>1</sup> Reneweconomy. [NSW accepts thermal coal is set for major decline, now it needs to act](#). 13 June 2021.

<sup>2</sup> Whitehaven Coal. [Annual Report 2023](#).

<sup>3</sup> Whitehaven Coal. [Sustainability Report 2023](#).

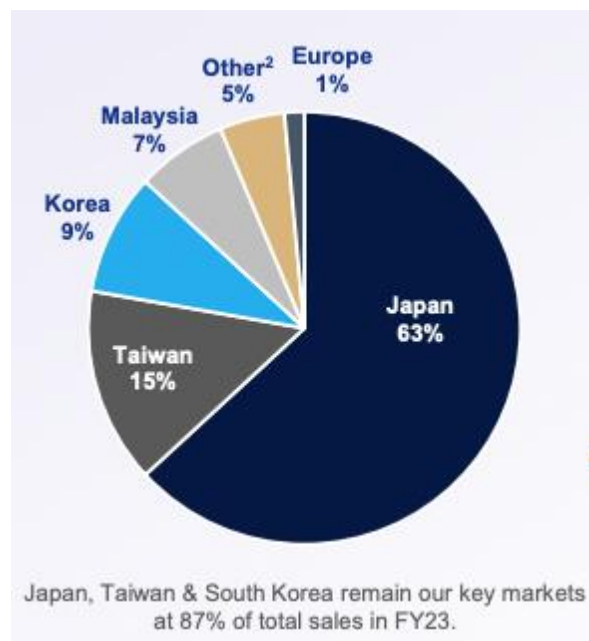
<sup>4</sup> Whitehaven Coal. [Full Year Results FY23](#). 24 August 2023.

<sup>5</sup> Whitehaven Coal. [2022 Annual General Meeting – Addresses and Managing Director and CEO Presentation](#). 26 October 2022.

<sup>6</sup> Department of Industry, Science and Resources. [Resources and Energy Quarterly](#), March 2023.

<sup>7</sup> Department of Industry, Science and Resources. [Resources and Energy Quarterly](#). March 2023.



**Figure 1: Whitehaven Coal Sales Destinations FY2023**

Source: Whitehaven Coal Full Year Results FY2023 Presentation. Note 1: Other coal sales destinations include Indonesia, New Caledonia Vietnam and Chile.

Japan, South Korea and Taiwan have all committed to reach net zero GHG emissions by 2050. However, when using International Energy Agency (IEA) scenarios to back up its claims on the outlook for thermal coal, Whitehaven arguably doesn't fully account for the IEA's net zero emissions (NZE) scenario, and focuses on the IEA's Stated Policies Scenario.

**“Under the IEA’s Stated Policies Scenario, which is a trajectory based on today’s enacted global policy settings, coal demand in Asia Pacific (excluding China) is expected to grow by 13% to 2030, and 7% to 2050 from 2021.” – Sustainability Report 2023, Page 23**

**“Our key customer countries of Japan, Korea, Taiwan and Malaysia, which represented 94% of our managed sales volumes in FY23, all have net zero by 2050 targets.” – Sustainability Report 2023, Page 23**

The fact that its key export destinations have all committed to reach net zero emissions by 2050 means that Whitehaven should have at least as much focus on the IEA's NZE scenario as on the Stated Policies Scenario in key documents such as its Sustainability Reports (Whitehaven does acknowledge the existence the IEA's Net Zero Emissions by 2050 scenario in its 2023 Sustainability Report). IEEFA queries whether it is prudent for Whitehaven to simply assume that its key customers, which made up 94% of its sales in FY2023, will fail to achieve its stated net zero emissions targets.

According to the IEA's initial NZE scenario released in 2021, no new coal mines or mine extensions are required to meet declining demand going forward, and, "the precipitous decline in coal use projected in the NZE would have major implications for the future of mining companies and countries with large existing production capacities".<sup>8</sup>

The IEA highlighted that, under the NZE scenario, "Even with increasing deployment of carbon capture, utilisation and storage (CCUS), coal use in 2050 is 90% lower than in 2020." However, despite being a technology that has been around for decades, CCUS has not made any significant contribution to decarbonising any sectors, and has a long history of underperformance and failure.<sup>9</sup>

The IEA notes that the best opportunities that are likely to exist for retrofitting coal-fired power plants with carbon capture technology are in China,<sup>10</sup> a country that does not import the high-CV coal Whitehaven produces, and is rapidly increasing domestic coal production to reduce reliance on imports for energy security reasons.

In its updated NZE scenario released as part of its World Energy Outlook 2022 report, the IEA sees global coal demand dropping 45% by 2030 and 90% by 2050 with global coal trade – relevant for an exporter like Whitehaven – dropping by similar levels. In this scenario, the share of unabated coal-fired power in global electricity generation "falls rapidly from 36% in 2021 to 12% in 2030, and to zero percent by 2040 and beyond. Low-emissions sources of generation grow so rapidly that no new unabated coal plants beyond those already under construction are built in the NZE Scenario."<sup>11</sup>

In a glimpse into the contents of the IEA's 2023 World Energy outlook report due to be published in October, IEA executive director Fatih Birol wrote in the *Financial Times* that coal, oil and gas would all enter decline this decade, stating, "Based only on today's policy settings by governments worldwide – even without any new climate policies – demand for each of the three fossil fuels is set to hit a peak in the coming years. This is the first time that a peak in demand is visible for each fuel this decade – earlier than many people anticipated."<sup>12</sup>

Whitehaven also highlights new coal-fired power stations under construction in two of its largest export destinations:

**"Japan and Korea are commissioning 7 new USC units (totalling 5,970MW) (2022-24)." – Full Year Results FY23 presentation, Page 8**

<sup>8</sup> IEA. [Net Zero by 2050: A Roadmap for the Global Energy Sector](#). October 2021.

<sup>9</sup> IEEFA. [Carbon capture: a decarbonisation pipe dream](#). 1 September 2022.

<sup>10</sup> IEA. [Net Zero by 2050: A Roadmap for the Global Energy Sector](#). October 2021.

<sup>11</sup> IEA. [World Energy Outlook 2022](#). November 2022.

<sup>12</sup> Financial Times. [Peak fossil fuel demand will happen this decade](#). 12 September 2023.

**“Consistent with Japan’s Strategic Energy Plan to close subcritical power stations by 2030, replacement ultrasupercritical (USC) plants that are coming on line represent new demand for Whitehaven Coal. In fact, Japan has five new USC units coming on line between 2022 and 2024, and Korea will commission two new units in 2023. Collectively these lines will produce close to 6000 MW of electricity and will need to be fuelled by high-CV coal.”**

– 2022 AGM: Addresses and Managing Director and CEO Presentation, Page 6

It is IEEFA's view that these statements don't properly reflect the outlook for thermal coal demand in Japan and South Korea. Whitehaven emphasises the few remaining coal-fired power plants to be built in its key markets, and not on the larger capacities that are due for closure. The Australian government has noted that the Japanese government “has released plans to close 100 coal plants over the next seven years”, and that despite some final coal capacity additions in South Korea in the short term, “actual coal burning is not likely to change noticeably”. The South Korean government has announced a proposal to almost halve coal-fired power generation by 2030 compared with 2018 levels.<sup>13</sup>

The status of coal-fired power in Japan – and Whitehaven's two other key markets – within the context of their evolving power systems and targets is outlined below.

## Japan

At the April 2021 Earth Day climate summit hosted by the U.S., Japan increased its 2030 emissions reduction target from 26% to at least 46%<sup>14</sup> – a move that will necessitate a further acceleration in Japan's shift away from coal-fired power. This target was adopted by Japan's cabinet in October 2021.

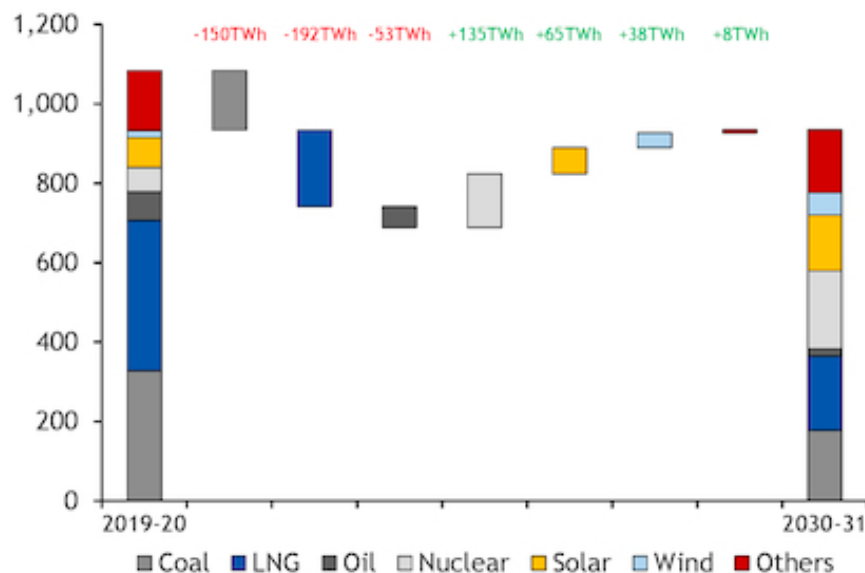
The age profile of its operating coal power fleet means Japan was on track for a significant reduction in coal-fired power capacity in the long term even before it committed to net zero carbon emissions by 2050. This has now been confirmed by Japan's latest power plan, which increases the focus on renewables and will reduce reliance on coal- and gas-fired power significantly.

Japan's power plan will see coal power's share of the generation mix drop from 32% in 2019-20 to 19% in 2030 (Figure 2). This suggests Japan's consumption of coal will fall by almost 54 million tonnes a year (mtpa) by 2030, according to calculations by Argus Media, a drop of 46%. To fill the gap, renewable energy will make up 36-38% of the power mix by 2030, up from 18% in 2019-20.<sup>15</sup>

<sup>13</sup> Department of Industry, Science and Resources, [Resources and Energy Quarterly](#). March 2023.

<sup>14</sup> Reuters. [Key takeaways from the Biden Earth Day summit](#). 23 April 2021.

<sup>15</sup> Argus Media. [Japan cuts 2030 coal/gas power share targets](#). 21 July 2021.

**Figure 2: Changing Power Mix in Japan's New Power Plan (terawatt-hour)**

Source: Argus Media

With Japanese power demand expected to fall by 2030-31,<sup>16</sup> coal-fired power in Japan will face increased competition from other sources. Japan is planning a hugely ambitious scale-up of renewable energy to help meet its 2050 zero carbon emissions goal. It has ramped up its 2030 solar installation target to 108 gigawatts (GW),<sup>17</sup> and is aiming for 10GW of offshore wind by the same date,<sup>18</sup> and 45GW by 2040. Japan's first offshore wind firm started commercial operations in January 2023.<sup>19</sup> It is now preparing to roll out battery storage to support greater renewable energy capacity.<sup>20</sup>

Following the global energy crisis after Russia's invasion of Ukraine, coal-fired power in Japan may also face increased competition from nuclear power. The Japanese government is considering an enhanced role for nuclear as a way to improve energy security and further reduce exposure to expensive fossil fuel prices, and it intends to bring more nuclear power units back online following their shutdown after the Fukushima disaster.<sup>21</sup> The government will also explore the development of new reactors to reduce reliance on fossil fuel imports.<sup>22</sup>

<sup>16</sup> Argus Media. [Japan's power demand forecast to fall towards 2031-32](#). 21 January 2022.

<sup>17</sup> Bloomberg. [Every Roof in Japan Could Have Solar Panels in the Future](#). 6 July 2021.

<sup>18</sup> Bloomberg. [Japan's Tepco Honing Offshore Wind Bid as Competition Heats Up](#). 22 April 2022.

<sup>19</sup> Reuters. [Japan's Marubeni starts commercial operation at Akita offshore wind farm](#). 31 January 2023.

<sup>20</sup> Argus Media. [Japan looks to storage batteries to boost renewables](#). 7 September 2022.

<sup>21</sup> The Japan Times. [Kishida eyes nuclear plant restart in green transformation push](#). 28 July 2022.

<sup>22</sup> The Japan Times. [Threats of Blackouts Drive Japan to Embrace Nuclear Again](#). 24 August 2022.

The high cost of coal and gas has led to a significant increase in household electricity prices in Japan of up to 42%, adding further pressure on the nation to reduce reliance on fossil fuel imports.<sup>23</sup>

## Taiwan

In March 2022, Taiwan's National Development Council (NDC) – the government's planning body – revealed its 2050 net zero emissions roadmap. Taiwan plans to fully decarbonise its power sector by 2050, with renewable energy providing 60–70% of power generation. The government and state-owned companies plan to invest US\$32 billion on renewables, energy storage and grid infrastructure between 2022 and 2030.<sup>24</sup>

The Australian government highlighted in its March 2023 Resources and Energy Quarterly report that, "Taiwan's plans to expand its coal fleet have been shelved, and the government is now pushing ahead with plans to replace existing coal capacity with gas" as it noted that the nation's thermal coal imports were past their peak. Taiwan is targeting a reduction in coal's share of power generation from 40% in 2020 to 30% by 2025.<sup>25</sup>

## South Korea

In October 2021, the government approved two roadmaps to reach carbon neutrality by 2050.<sup>26</sup> Under both options, coal-fired power is completely phased out by 2050 ([Figure 3](#)). At the same time, South Korea's new 2030 emissions reduction target was approved by the government, which will reduce total GHG emissions by 40% compared with 2018 levels. This compares with the previous 2030 emissions reduction target of 26%.<sup>27</sup>

Following the raised global energy security concerns after the Russian invasion of Ukraine and the subsequent spikes in fossil fuel prices, in July 2022 the South Korean government revealed plans to further reduce reliance on fossil fuel imports.<sup>28</sup>

Under South Korea's 2022–2036 Basic Plan for Power Supply, the share of coal in the power mix will drop to 19.7% in 2030 and 14.4% in 2036, down from 34.3% in 2021 and 41.9% in 2018. Three proposed coal power plants will be scrapped and 17 retired. Twenty-eight coal power plants will be converted to gas by 2036. Despite this, the share of gas in the mix will be slashed to 9.3% by 2036, down from 29.2% in 2021, as gas-fired power is increasingly used as peaking power to support more renewables.

<sup>23</sup> The Japan Times. [Japan approves up to 42% increase in household electricity prices](#). 16 May 2023.

<sup>24</sup> Bloomberg. [Taiwan Vows \\$32 Billion Clean Energy Spree as it Lags on Targets](#). 30 March 2022.

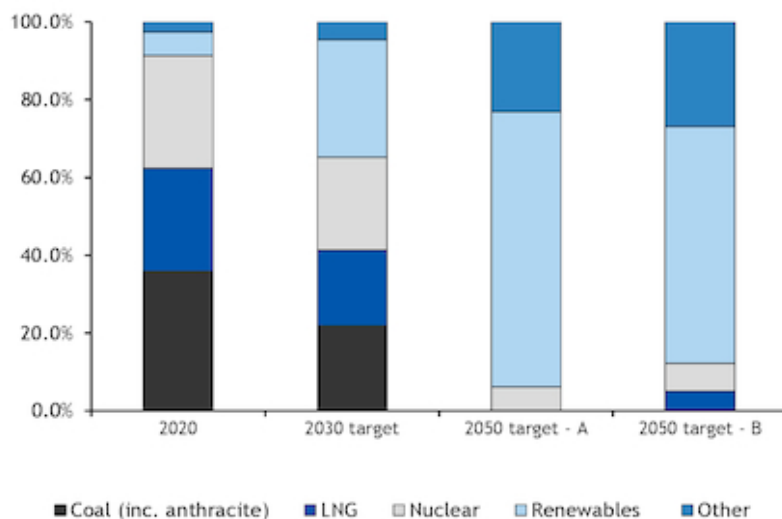
<sup>25</sup> Department of Industry, Science and Resources. [Resources and Energy Quarterly](#), March 2023.

<sup>26</sup> Argus Media. [South Korea approves coal phase-out by 2050](#). 27 October 2021.

<sup>27</sup> AP News. [South Korea aims to cut carbon emissions by 40% in 2030](#). 19 October 2021.

<sup>28</sup> S&P Global. [South Korean president unveils energy plan focussed on cutting fossil fuel reliance](#). 5 July 2022.



**Figure 3: South Korean 2020 Power Generation vs Targets (%)**

Source: Argus Media

In their place, nuclear power's share in the power mix will rise to 34.6% by 2036, up from 27.4% in 2021, and renewable's share is planned to reach 30.6% in 2036, up from 7.5% in 2021. Renewable energy capacity is planned to reach 108.3GW in 2036, up from 29.2GW in 2022.<sup>29</sup>

The South Korean government's latest proposals, released in March 2023, target renewable energy, accounting for 22% of power production by 2030, up from 7.5%.<sup>30</sup>

## Rest of Asia

Whitehaven Coal is very dependent on Japan, South Korea and Taiwan but as imports by these three key markets enter permanent decline, the opportunity to shift export volumes to alternative markets is rapidly closing as these nations reduce emphasis on thermal coal imports.

## China

The end of China's unofficial ban on Australian coal is unlikely to alter the outlook for Australian thermal coal exports. The bigger threat to these exports comes from China's move to become self-reliant for thermal coal in the medium term. The move threatens the balance of the entire Asian seaborne thermal coal market, given China is the world's largest coal importer. The Australian government stated in its March 2023 Resources and Energy Quarterly report that thermal coal

<sup>29</sup> S&P Global. [South Korea to cut LNG in power mix to 9.3% in 2036, sharply raises role of nuclear energy](#). 12 January 2023.

<sup>30</sup> Reuters. [South Korea cuts 2030 emissions reductions targets for industry](#). 21 March 2023.

imports into China had entered structural decline.<sup>31</sup> The Australian thermal coal industry will be heavily impacted even if it is not exporting to China – a significant drop in China’s thermal coal imports would mean a lot of Indonesian coal would be seeking other destinations, in competition with Australian coal.

The Chinese government surprised many in September 2020 when it announced it was targeting net zero GHG emissions by 2060.<sup>32</sup> At the April 2021 climate summit hosted by the U.S., President Xi Jinping announced that China would “strictly control coal-fired power generation projects”,<sup>33</sup> and that China’s coal consumption would peak in 2025 and decline thereafter.<sup>34</sup>

Significantly, 93% of thermal coal consumed in China is mined domestically, with imports making up only a small percentage of total consumption. Improvements to domestic coal-mining efficiency and output, coal rail logistics and power transmission infrastructure are underway to increase reliance on domestic coal, and reduce imports. China produced a record 4.5 billion tonnes of coal domestically in 2022, up 9% on the previous year. Production is expected to increase again in 2023 as China targets energy security. A further 260 million tonnes of new mining capacity was approved during 2022.<sup>35</sup>

China’s 2022 coal imports totalled 293 million tonnes.<sup>36</sup>

A 2022 study on Chinese coal demand found that its seaborne thermal coal imports were likely to fall substantially over the coming decade, and are on course to drop 26% on 2019 levels by as early as 2025.<sup>37</sup> This decline is driven in part by coal transport infrastructure development, which is enabling greater reliance on domestic coal, as well as China’s strategies to accelerate decarbonisation.

Increased emphasis on renewable energy will also squeeze out thermal coal imports. China is aiming for more than 80% of energy consumption to be non-fossil-fuel based by 2060.<sup>38</sup> By 2025, the aim is for non-fossil fuels to contribute 39% of total electricity supply, up from 29% currently.<sup>39</sup> Coal’s share of the electricity mix in China fell from 64% in 2020 to 61% in 2022.

That was another record year for Chinese renewable energy installation with additions of 125GW of solar and wind power, a 20% year-on-year increase.<sup>40</sup> Standard & Poor’s has forecast that renewables could account for 36% of electricity consumption by 2025, ahead of China’s 14th Five-year Plan target of 33%.<sup>41</sup> Goldman Sachs believes China will install 3,300GW of wind and solar

<sup>31</sup> Department of Industry, Science and Resources, [Resources and Energy Quarterly](#), March 2023.

<sup>32</sup> S&P Platts, [China’s long march to zero carbon](#), 10 December 2020.

<sup>33</sup> Reuters, [Key takeaways from the Biden Earth Day summit](#), 23 April 2021.

<sup>34</sup> S&P Platts, [China to curb coal demand growth in economic plans as part of climate targets](#), 23 April 2021.

<sup>35</sup> Reuters, [China coal output slips in Dec on COVID: rises to record in 2022](#), 17 January 2023.

<sup>36</sup> Reuters, [China Dec coal imports slip as COVID spike dampens industrial activity](#), 13 January 2023.

<sup>37</sup> The Conversation, [China’s demand for coal is set to drop fast. Australia should take note](#), 21 April 2022.

<sup>38</sup> Bloomberg, [China Targets More Than 80% Non-Fossil Energy Use by 2060](#), 24 October 2021.

<sup>39</sup> S&P Global, [China to raise share of non-fossil fuels in electricity supply to 39% by 2025](#), 23 March 2022.

<sup>40</sup> PV Magazine, [China added 87.41 GW of solar in 2022](#), 18 January 2023.

<sup>41</sup> S&P Global, [China could exceed renewables generation target of 33% by 2025](#), 23 September 2022.

by 2030, almost three times its target of 1,200GW, driving the world's largest fossil-fuel importer towards energy self-sufficiency.<sup>42</sup>

## India

India is the world's second-largest thermal coal importer but, until recently, was not a major destination for Australian thermal coal. Indonesia and South Africa are India's principal sources of thermal coal imports. However, the Chinese ban on Australian coal imports saw more Australian thermal coal exported to India in 2020, 2021 and 2022.

Like China, thermal coal imports make up only a fraction of India's total consumption with far more thermal coal mined domestically by state-owned Coal India – the world's largest coal miner by volume. India has long had an ambition to become self-reliant for thermal coal amid its rapid renewable energy roll-out. In October 2022, the Indian government again stated its aim to end thermal coal imports by March 2025.<sup>43</sup> Following this, India's Coal Minister Pralhad Joshi stated in March 2023 that the nation was seeking to end substitutable thermal coal imports of 90mtpa by 2025-26.<sup>44</sup> Domestic coal production has increased significantly in recent years.<sup>45</sup> Coal India Limited has signalled an intention to open 52 new coal mine projects in a bid to reach a production target of 1 billion tonnes a year.

The Australian government has forecast that imports of thermal coal into India will increase significantly this decade but any success by the Indian government in reducing imports risks substantially derailing this forecast.<sup>46</sup> Following this, a key moment in India's energy transition occurred when it was revealed that it was intending to halt further development of coal-fired power, beyond what is already in the project pipeline.<sup>47</sup>

The increased energy security concerns following the invasion of Ukraine and the resultant high cost of fossil-fuel imports are likely to see increased efforts to substitute imported coal with domestic product. Moody's Investor Services expects that "large coal-importing countries such as China and India will also seek to ramp up domestic coal production to enhance energy security and reduce reliance on coal imports".<sup>48</sup> Indian Minister of Power and New and Renewable Energy R. K. Singh has made it clear he believes the energy crisis will hasten the energy transition from fossil fuels to renewable energy.<sup>49</sup>

<sup>42</sup> Bloomberg. [Goldman Sees China Nearly Tripling Its Target for Wind and Solar](#). 14 March 2023.

<sup>43</sup> Argus Media. [India seeks to stop thermal coal imports by 2025](#). October 2022.

<sup>44</sup> ET Energyworld. [India to start coal export by 2025-26: Coal Minister Pralhad Joshi](#). 29 March 2023.

<sup>45</sup> ET Energyworld. [Coal production increased in 'big way' during FY22-FY23: supply improved: Icra](#). 6 July 2023.

<sup>46</sup> IEEFA. [Australian government forecasts peak thermal coal exports in three years but further downside risks for Asian seaborne market remain](#). 24 April 2023.

<sup>47</sup> Reuters. Exclusive: [India amends power policy draft to halt new coal-fired capacity - sources](#). 5 May 2023.

<sup>48</sup> Moody's Investor Services. Metals and Mining – Global: Outlook stable as prices and EBITDA retreat from peaks but remain elevated. 6 June 2022.

<sup>49</sup> Bloomberg. [Energy Crisis is Hastening End of Fossil Fuel Era, India Says](#). 13 July 2022.

Any significant decline in Indian imports would have major repercussions for the Asian seaborne thermal coal market, particularly for South Africa and Indonesia, but also for Australia as both Indonesia and South Africa would need to compete with Australia in other markets.

Meanwhile, the major Indian renewable energy rollout continues. The plummeting cost of wind and solar is bringing forward the date of peak thermal coal consumption in India, as it is around the world. India added 15GW of wind and solar in the 2023 fiscal year,<sup>50</sup> and has a target of having 500GW of non-fossil fuel-based power by 2030. Non-fossil-fuel-based power generation is targeted to make up half of total capacity by that date.<sup>51</sup>

## Vietnam

Vietnam has been cited as a key growth market for Australian coal exports; however, while volumes have recently been increasing, the potential for Vietnam to replace export volumes lost to the four biggest markets as they transition away from coal imports is starting to look increasingly limited.

Most of the coal-fired power projects in Vietnam's project pipeline have not reached financial close, and the government has found it increasingly difficult to secure finance for coal-fired power projects as banks abandon coal lending.<sup>52</sup> The Vietnamese government expects coal imports to peak by 2035 before declining to zero by 2050.<sup>53</sup> However, given funding issues and policy shifts away from coal, the Australian government notes there is a risk that Vietnam's coal imports may peak as early as 2025 or 2026.<sup>54</sup>

In the meantime, the rapid deployment of solar and wind power in the country since 2019 has further put into full context the endemic delays and overall role of coal-fired power in the country's future energy mix.

Vietnam added more than 4GW of solar power within a 12-month period to the end of June 2019.<sup>55</sup> The nation followed up this extraordinary growth in solar development with an even more astonishing figure, adding 9GW of rooftop solar during 2020.<sup>56</sup> Vietnam is also developing wind energy, and the government is targeting 16GW of onshore wind and 7GW of offshore wind development by 2030.<sup>57</sup>

Vietnam surprised many at the United Nations Climate Change Conference (COP26) in Glasgow in 2021 when it pledged to reach zero carbon emissions by 2050 and committed to stop building

<sup>50</sup> Livemint. ['India likely to have added over 15GW of renewable energy capacity in FY23'](#). 11 April 2023.

<sup>51</sup> Times of India. [India gets closer to meeting 2030 renewable energy targets with new transition plan](#). 9 April 2023.

<sup>52</sup> Bloomberg. [Banks Shunning Coal Financing Bodes Badly for New Plants in Asia](#). 25 February 2020.

<sup>53</sup> Argus Media. [Vietnam sees coal imports peaking at 85mn t in 2035](#). 7 August 2023.

<sup>54</sup> Department of Industry, Science and Resources. [Resources and Energy Quarterly](#), March 2023.

<sup>55</sup> Rystad Energy. [Vietnam overtakes Australia in commissioned utility PV](#). 4 July 2019.

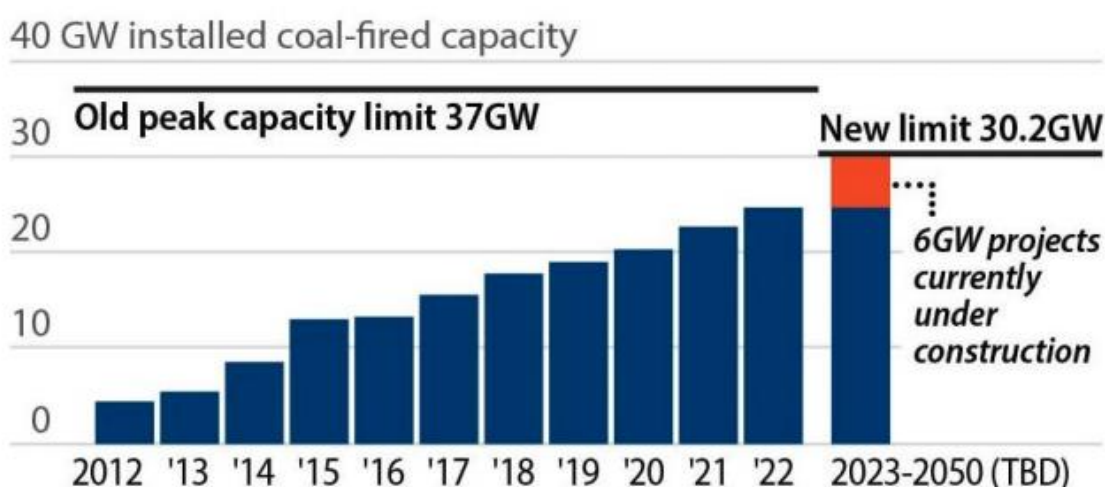
<sup>56</sup> IEEFA. [Vietnam's extraordinary rooftop solar success deals another blow to the remaining coal pipeline](#). 12 January 2021.

<sup>57</sup> REVE. [Vietnam looks to offshore wind power in transition to renewable energy](#). 17 March 2023.

new coal plants.<sup>58</sup> Vietnam's coal-fired power pipeline – which was already looking increasingly unlikely to reach construction given a lack of financing – now looks even more uncertain.

In December 2022, Vietnam and the International Partners Group (including the European Union, United Kingdom, United States, France, Germany, Italy, Canada, Japan, Norway and Denmark) announced a Just Energy Transition Partnership (JETP). The JETP will mobilise an initial US\$15.5 billion of public and private finance over the next three to five years to support Vietnam's green transition.<sup>59</sup>

**Figure 4: Vietnam Coal Plant Capacity and the New JETP Deal Limit**



Source: Global Energy Monitor, IEEFA calculations

The JETP aims to bring forward Vietnam's peak emissions target from 2035 to 2030, reduce annual power sector peak emissions from 240 metric tons of carbon dioxide equivalent emissions (mtCO<sub>2</sub>e) to 170mtCO<sub>2</sub>e and increase the power mix contribution from renewables to 47% by 2030, up from the current plan of 36%. It also targets a reduced peak coal-fired power capacity of 30.2GW, down from 37.0GW (Figure 4).

In May 2023, Vietnam approved its long-awaited Power Development Plan 8, which aims to reduce coal's share of the power mix to zero by 2050.<sup>60</sup> The plan made clear that the targeted coal-fired power plant capacity had been reduced again and that no more coal plants would be built after 2030.<sup>61</sup> This reduces the outlook for Australian thermal coal exports to Vietnam even further.

<sup>58</sup> Bloomberg. [Vietnam Spurns Coal as Southeast Asia Aims to Kick Dirty Habit](#). 5 November 2021.

<sup>59</sup> European Commission. [Political Declaration on establishing the Just Energy Transition Partnership with Viet Nam](#). 14 December 2022.

<sup>60</sup> Bloomberg. [Vietnam Has \\$135 Billion Plan to Slash Coal-Fired Power by 2030](#). 16 May 2023.

<sup>61</sup> Australian Financial Review. [Vietnam curbs enthusiasm for Australian coal](#). 2 June 2023.



## Malaysia

Malaysia has eight coal-fired power plants with a total capacity of 13GW and none under development. Malaysia was Whitehaven's fourth-largest export destination in FY23.

In March 2021, Malaysia launched a new long-term power plan to close more than half (7GW) of the country's existing coal-fired power plants by 2039.<sup>62</sup> According to the plan, 1.4GW of new coal-fired power plants will be added in both 2031 and 2037. Given the significant trend of banks and other financial institutions moving away from funding coal, this objective seems highly unlikely to be achieved. To replace shrinking reliance on coal-fired power, the plan increased Malaysia's renewable energy target from 20% of capacity to 31% by 2025.

Then in August 2022, state-owned power utility TNB – Malaysia's largest power provider – announced plans to accelerate the closure of some of its coal-fired power plants to speed up its transition towards renewable energy.<sup>63</sup> TNB is targeting a 50% reduction in coal-fired power capacity by 2035 and zero carbon emissions by 2050, by which time it plans to install more than 14GW of renewable energy. The first plant to be closed early is the 1.4GW Kapar Energy Ventures coal-fired power station in 2028–29, one year prior to the expiration of its power purchase agreement.

In August 2023, Malaysia launched its detailed national energy transition roadmap, which lays out how it intends to achieve net zero emissions by 2050. Under the plan, no new coal-fired power plants will be developed, and coal power generation will drop from 26% to zero by 2050. Malaysia is targeting 70% renewable energy capacity by 2050.<sup>64</sup>

## Philippines

In October 2020, the Philippines Department of Energy (DoE) called a moratorium on further coal-fired power development.<sup>65</sup> This followed the DoE's earlier caution against an overreliance on inflexible technologies such as coal that cause grid instability.<sup>66</sup> The new Ferdinand Marcos jnr-led government has stated that it will keep the moratorium on new coal plants.<sup>67</sup> The Australian government has noted that proposed coal power stations in the planning stages have now largely been abandoned, adding, "On balance, it is expected that thermal coal imports will grow by about one-fifth (to 37 million tonnes) by 2028. Risks are tilted to the downside given uncertainties over the coal plant construction timetable."<sup>68</sup>

<sup>62</sup> Argus Media. [Malaysia to reduce coal capacity by 4.2GW by 2039](#). 24 March 2021.

<sup>63</sup> PV Magazine Australia. [Malaysia energy major targets early closure of coal plants](#). 4 August 2022.

<sup>64</sup> Argus Media. [Malaysia unveils details of energy transition roadmap](#). 30 August 2023.

<sup>65</sup> Department of Energy. [DoE Sec. Cusi declares moratorium on endorsements for greenfield coal power plants](#). 27 October 2020.

<sup>66</sup> IEEFA. [The Philippines considers a power sector future without new coal](#). 9 June 2020.

<sup>67</sup> Argus Media. [Marcos govt keeps ban on new Philippine coal plants](#). 17 August 2022.

<sup>68</sup> Department of Industry, Science and Resources, [Resources and Energy Quarterly](#), March 2023.

In his first State of the Nation Address, President Marcos emphasised that the further development of renewable energy would be a top priority.<sup>69</sup> The DoE is now encouraging the development of offshore wind projects in the Philippines.<sup>70</sup>

The country plans to add 18GW of solar and 8GW of wind power by 2030.<sup>71</sup> Finance to make this happen is already arriving from China – nine Chinese companies have committed a collective US\$14 billion in renewable energy development in the Philippines. The country is targeting 35% renewable energy by 2030 and 50% by 2040.<sup>72</sup> Renewables accounted for 23% of power generation in 2022. Coal's share of power generation was 46% in 2022.

A run of coal-fired power project cancellations in recent years has limited the Philippines as a seaborne thermal coal growth market while opening up the opportunity for renewable energy. In September 2022, Macquarie Capital announced its involvement in a \$1.2 billion investment in a 1.3GW floating solar farm in the Philippines, which will be the largest in Asia.<sup>73</sup>

Following the DoE's moratorium announcement, the nation's banks have also been distancing themselves from coal. In December 2020, Eugene Acevedo, chief executive of Rizal Commercial Banking Corporation, stated: "No more coal, no more coal. I'll say that slowly – NO MORE COAL."<sup>74</sup> In September 2022, the Philippines' largest lender announced it would halve its coal exposure by 2033.<sup>75</sup>

## Bangladesh

There has been growing realisation in Bangladesh that its plan to expand power generation through imported coal-fired power plants is setting it on course for significant overcapacity, financially unsustainable capacity payments and increased cost of power generation. Bangladesh already has more power capacity than it needs, with up to two-thirds of total power capacity lying idle at a time.<sup>76</sup> Overall utilisation of the nation's total power generation capacity was just 42% in fiscal year 2020-21, and is set to drop even lower as more capacity is added in excess of power demand growth.<sup>77</sup>

Prompted by the increasing difficulty in getting finance for coal-fired power as more banks withdraw lending for coal, Bangladesh's Power Minister Nasrul Hamid revealed in late June 2020 that the government was reassessing its plans for coal-fired power development. Even China – which has increasingly looked like the last lender to coal projects globally – has stated it will no longer consider

<sup>69</sup> Philippine News Agency. [Renewable energy tops Marcos admin's climate change agenda](#). 25 July 2022.

<sup>70</sup> Manila Standard. [DOE issues 40 offshore wind service contracts](#). 20 October 2022.

<sup>71</sup> Reuters. [Column: Philippines set to go from renewable laggard to leader in SE Asia](#). 14 March 2023.

<sup>72</sup> PV Tech. [Chinese companies commit US\\$13.7 billion for renewables in Philippines](#). 9 January 2023.

<sup>73</sup> Manila Standard. [Macquarie, Sun Energy investing \\$1.2b in Laguna solar project](#). 13 September 2022.

<sup>74</sup> Manila Bulletin. [RCBC to stop funding coal power projects](#). 10 December 2020.

<sup>75</sup> Manila Standard. [BDO commits to reduce coal liability to 50%](#). 8 September 2022.

<sup>76</sup> IEEFA. [Bangladesh's power system headed for financial disaster due to overcapacity in coal, LNG power](#). 18 May 2020.

<sup>77</sup> IEEFA. [Bangladesh Power Development Board Financial Results FY2020-21](#). February 2022.

financing coal proposals in Bangladesh.<sup>78</sup> In June 2021, it was confirmed that the government had decided to cancel 10 proposed coal-fired power projects.<sup>79</sup>

With Bangladesh's 8th five-year plan (2020–2025) acknowledging that increased dependence on imported coal and gas would increase the cost of power generation and worsen the financial position of the power system,<sup>80</sup> renewable energy is also expected to become a higher priority for Bangladesh. The plan acknowledges that subsidies for fossil fuels have held back the development of solar and wind power in Bangladesh, and that such subsidies will need to be wound back to facilitate an increase in renewable energy ambition.

In 2022, Bangladesh's coal-fired power pipeline shrank even further. In March that year, Japan's Sumitomo Corporation withdrew from the Matarbari 2 coal-fired power plant project as part of its global shift away from coal.<sup>81</sup> Following this, the Japan International Cooperation Agency (JICA) withdrew finance for the Matarbari 2 project.<sup>82</sup> JICA has already provided finance for the under-construction Matarbari 1 project, which is running significantly over budget and behind schedule.<sup>83</sup>

It has now become clear that beyond the handful of coal-fired power projects already under construction in Bangladesh, no more will be built. The first new project to be completed was the Payra coal-fired power plant, which is fuelled by Indonesian coal.<sup>84</sup>

Bangladesh, along with Pakistan and Vietnam, has been earmarked by thermal coal exporters as a growth market that could replace declining demand in traditional export markets. The end of Bangladesh's coal-fired power project pipeline will disappoint exporters across the Asian seaborne thermal coal market.

## Pakistan

Like Bangladesh, Pakistan is similarly burdened by overcapacity and capacity payments within its power system.<sup>85</sup> Capacity payments to power generators are on course to reach Rs1.5 trillion (US\$6.4 billion) a year by 2023. The expense of overcapacity is making the build-up of debt within Pakistan's power system (known as circular debt) even worse. The inevitable consequence of expensive power generation and unsustainable debt is a rise in consumer power tariffs.

The unaffordable nature of surplus coal-fired power built under the China-Pakistan Economic Corridor program has also led the Pakistan government to seek debt relief from China. The request

<sup>78</sup> Daily Star. [\\$3.6b Chinese loan uncertain after Dhaka drops projects from agreed list](#). 4 March 2021.

<sup>79</sup> Daily Sun. [Govt scraps 10 coal power projects](#). 23 June 2021.

<sup>80</sup> Bangladesh Planning Commission. [8th Five-year Plan](#) (English). December 2020.

<sup>81</sup> Argus Media. [Sumitomo exits Bangladesh coal plant expansion plan](#). 3 March 2022.

<sup>82</sup> The Business Standard. [Japan cancels financing Matarbari coal project phase 2](#). 22 June 2022.

<sup>83</sup> The Financial Express. [Matarbari fast-track power project in need of more fund and more time](#). 22 April 2021.

<sup>84</sup> The Daily Star. [Indonesian firm to supply coal to Payra power plant](#). 19 June 2019.

<sup>85</sup> Bloomberg. [Nation Plagued by Power Shortages Suddenly Has Too Much Electricity](#). 27 January 2021.

is likely to take the form of longer loan repayment terms in order to reduce capacity payments to the coal power generators.

Pakistan has long since moved away from further reliance on imported thermal coal, and has cancelled several plants that were intended to have been fuelled by imports.<sup>86, 87</sup> Other coal-fired power proposals have had their plans changed to use domestic rather than imported coal.

This planned shift away from thermal coal imports has received new impetus from the global energy crisis that followed the 2022 Russian invasion of Ukraine. High seaborne coal prices have been too expensive for Pakistan,<sup>88</sup> leading to a drop in coal imports and the imposition of power cuts.<sup>89</sup> In June 2022, the cost of fossil fuel imports surged almost 150% compared with the same month in 2021, and made up about half of the nation's total imports of US\$7.9 billion.

Coal-fired power generation based on imported coal fell to a five-year low in November 2022 on the back of high prices. Total 2022 coal imports were expected to drop below 10mt, down from 16mt in 2021. High coal prices have led to a significant increase in the proportion of cheaper Indonesian coal being imported and a reduction in South African volumes.<sup>90</sup>

As a result, energy security and replacement of fossil fuels imports are now an even higher necessity for Pakistan than before the invasion of Ukraine. The government is prioritising domestic coal over expensive imports of seaborne coal and gas,<sup>91</sup> and is seeking to press ahead with the conversion of the existing 4GW of operational power plants fuelled by imported coal to domestic coal.<sup>92</sup> A new rail line has been approved to transport domestic coal to power stations on the coast that are currently using imported coal, mainly from South Africa.<sup>93</sup>

Far from being a seaborne thermal coal growth market, Pakistan's imports may soon begin to start falling.

## Global Fossil Fuel Crisis Will Accelerate the Transition Away from Coal

Whitehaven Coal has correctly noted that energy security has become even more of a concern for nations as a result of the fossil fuel crisis that followed the Russian invasion of Ukraine:

<sup>86</sup> Dawn. [Govt puts major CPEC power project on hold](#). 14 January 2019.

<sup>87</sup> Express Tribune. [PTI government abandons K-Electric's coal project](#). 25 June 2020.

<sup>88</sup> S&P Global. [Pakistan's coal crisis prompts industries to shut plants, reduce capacities](#). 23 May 2022.

<sup>89</sup> Bloomberg. [Cash-Strapped Pakistan Cuts Power to Households on Fuel Shortage](#). 18 April 2022.

<sup>90</sup> Argus Media. [Pakistan's imported coal generation at five-year low](#). 21 December 2022.

<sup>91</sup> Reuters. [Exclusive: Pakistan plans to quadruple domestic coal-fired power, move away from gas](#). 14 February 2023.

<sup>92</sup> Dawn. [Thar coal projects to prove 'game-changer' with \\$6bn savings in fuel imports: PM Shehbaz](#). 10 October 2022.

<sup>93</sup> Dawn. [Sindh cabinet approves railway line project for coal transportation](#). 10 August 2023.

**“Energy security remains paramount for governments globally as trade flows, sanctions and the lagging impact of La Niña weather events disrupt thermal coal supply in the near term.” – Annual report 2023, Page 26**

A key energy security concern for nations that import fossil fuels is affordability. Developing nations that Whitehaven sees as the future locations of thermal coal demand are particularly sensitive to coal price. The high coal prices of 2022 were unaffordable for Pakistan, which stopped running coal power units fuelled by imported coal. As a result, power generation based on imported coal dropped to a five-year low,<sup>94</sup> and households were hit with power cuts.<sup>95</sup> In Bangladesh, the Rampal coal-fired power plant had to be shut down for a month due to the high cost of coal made worse by the Bangladesh Taka weakening against the dollar.<sup>96</sup>

At this stage of the global energy transition, high coal prices are a double-edged sword for coal miners such as Whitehaven. They result in high profits and cash generation but will erode long-term demand for thermal coal even faster as the energy security implications of being reliant on expensive coal imports become even starker. Nations can be expected to accelerate their transition to renewable energy even faster given its energy security benefits.

In April 2022, Moody’s Investor Services warned that a prolonged period of high coal prices would make renewable energy an even cheaper option and accelerate the decline of thermal coal demand.<sup>97</sup>

BlackRock – the world’s largest investor with US\$10 trillion of assets under management – has made it clear that recent high fossil fuel prices will only accelerate the energy transition. In highlighting the fragile status of oil, gas and coal amid heightened energy security concerns, BlackRock Investment Institute’s chief regional strategist stated in March 2022 that, “it’s not only a green issue, but also a broader supply issue now. We would see this as an accelerant to the transition towards energy sources of the future because the energy sources of the past have shown to be fraught with challenges in the last few weeks.”<sup>98</sup>

In July 2022, former Governor of the Bank of England Mark Carney called on Australia to accept that there is no future in coal.<sup>99</sup>

Chief executive of the Port of Newcastle Craig Carmody – the world’s largest coal export port – stated in November 2022 that the shift away from fossil fuels was happening faster than expected.

<sup>94</sup> Argus Media. [Pakistan’s imported coal generation at five-year low](#). 21 December 2022.

<sup>95</sup> Bloomberg. [Cash-Strapped Pakistan Cuts Power to Households on Fuel Shortage](#). 18 April 2022.

<sup>96</sup> The Daily Star. [Rampal electricity cost nearly doubles due to rise in coal price, dollar rate](#). 18 February 2023.

<sup>97</sup> Ibid.

<sup>98</sup> Australian Financial Review. [BlackRock: soaring energy prices underline the need for transition](#). 2 March 2022.

<sup>99</sup> Bloomberg. [Australia Needs More Realism on Coal’s Future, Carney Warns](#). 28 July 2022.



The port plans to build a container terminal as soon as possible to diversify away from reliance on coal.<sup>100</sup>

A November 2022 survey of almost 2,000 senior executives across 20 major economies by the British law firm Ashurst found more than 75% of them believed the Ukraine crisis would speed up the energy transition away from fossil fuels.<sup>101</sup>

In February 2023, a report by S&P Global noted, “Last year, the growing role of clean energies in the global power mix accelerated as countries sought cheaper forms of domestic energy at a time of upheavals in global fossil fuel markets.”<sup>102</sup>

S&P’s research found that in South-East Asia – supposedly a key seat of future seaborne thermal coal demand – wind and solar made up more than half of all power projects under development in the fourth quarter of 2022, up from 35% in a year earlier. Over the same period, the share of coal-fired power projects in the pipeline declined from 20% to 14% as more coal projects were cancelled. The share of gas-fired plants in the pipeline also declined. S&P further stated, “This fact means that in 2023 and beyond, capacity additions will tilt further away from coal and gas and toward renewables in the fast-growing region of Asia. A year after the Russian invasion of Ukraine, investors seem to be doubling down on renewables and retreating further from fossil fuel generation.”

S&P concluded: “In the power sector, the overarching drivers seem to point to an unstoppable rise in renewable energy.”<sup>103</sup>

## Coal Quality and Carbon Emissions Claims

Whitehaven Coal says its high-CV coal gives it an advantage over other coal miners in that it will gain market share even as overall demand for seaborne thermal coal declines.

**“As the world decarbonises, Whitehaven’s high-quality, high-CV thermal coal will be the last to leave the market.” – Sustainability Report 2023, Page 23**

In FY23, 80% of Whitehaven’s exports were high-energy (>5,850 kcal/kg) coal and a further 14% were 5,600-5,850 kcal/kg coal ([Figure 5](#)).

We hold some concerns as to whether Whitehaven will be able to gain market share due to the high energy content of its coal. Developing nations around Asia that could provide alternative destinations to Japan, South Korea and Taiwan do not import the high-energy grades of thermal coal Whitehaven produces and likely never will in significant quantities. The plentiful supply of lower-energy thermal

<sup>100</sup> Australian Financial Review. ‘Coal is declining’: Newcastle port gets closer to containers. 8 November 2022.

<sup>101</sup> Reuters. [Global executives see Ukraine conflict accelerating energy transition](#). 23 November 2022.

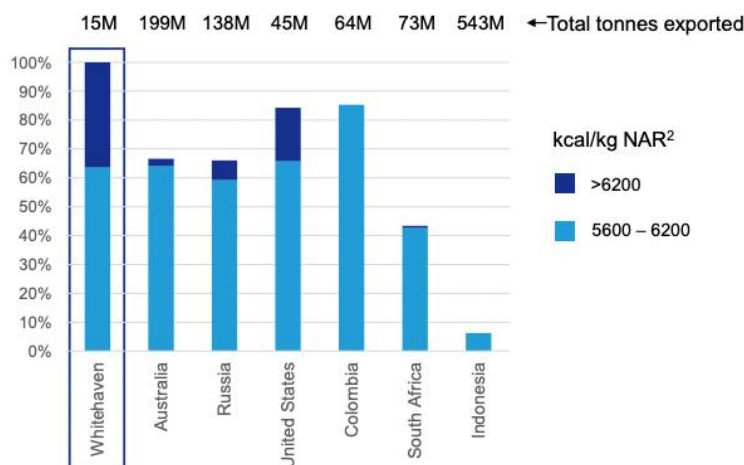
<sup>102</sup> S&P Global. A year like no other. How 2022 supercharged the energy transition in the global power sector. 28 February 2023.

<sup>103</sup> Ibid.

coal from the likes of Indonesia makes it cheaper than the more restricted supply of high-energy coal from Australia. Cost is the key influence on coal-sourcing decisions, and developing nations that could potentially replace the declining markets of Japan, South Korea and Taiwan tend to be more cost-sensitive.

**Figure 5: Whitehaven Coal Thermal Coal Energy Content**

Percentage of thermal coal exports by quality – FY23



**FY23 quality outcomes<sup>1</sup>**

- In FY23, 80% of Whitehaven's total exports were high-CV (HCV) (>5850 kcal) and 14% were mid-CV (MCV) (5600 – 5850 kcal) thermal coal
- This is a result of our ability to wash hard and switch SSCC products into the thermal market when price realisations are more compelling
- The remaining 6% of FY23 sales were metallurgical coal sales

Source: Whitehaven Coal Full Year Results FY2023 Presentation

Japan, South Korea and Taiwan are the only Asian nations that import top-grade (~6,000 kcal/kg net as received) thermal coal in large quantities. This is why they account for the great majority of Whitehaven's exports. Elsewhere, lower-energy thermal coals are imported. China and India do import Australian thermal coal but this is lower-energy 5,500 kcal/kg coal.<sup>104</sup> Other developing Asian nations import cheaper, lower-energy (< 5,000 kcal/kg) Indonesian coal, e.g., Bangladesh.<sup>105</sup>

Coal-fired power plants are configured to particular grades of coal; in developing Asia this generally means cheaper Indonesian coal or lower-energy Australian coal. Some blending of coals from different sources can be done to maintain the desired coal characteristics that meet the design needs of the power plant. According to the Australian Government's Office of the Chief Economist, in Vietnam, "Many recently built coal plants have been designed to use Indonesian coal, and it is expected that imports of Indonesian coal will rise as coal plants currently under construction are completed."<sup>106</sup>

Whitehaven's claim that higher-quality (higher-energy) coal will exit the market last depends on its coal gaining market share in developing Asia as imports by its key markets of Japan, South Korea and Taiwan decline. However, not only is there no evidence that price-sensitive importers such

<sup>104</sup> Reuters. [Column: India, China demand boost low-rank thermal coal prices in Asia](#). 27 February 2023.

<sup>105</sup> Financial Express. [First cargo of coal to reach Payra Sept 18](#). 13 September 2019.

<sup>106</sup> Office of the Chief Economist. [Resources and Energy Quarterly](#). December 2022.

as India<sup>107</sup> will switch to higher-energy coal, there are technical barriers to them doing so given their coal power plants are configured for lower-energy coal.

As such, the high energy content of Whitehaven's coal could even prove to be a disadvantage as the only nations that import this grade of thermal coal (Japan, South Korea, Taiwan) have all committed to reach net zero emissions by 2050, and have all made clear that coal-fired power will now be significantly scaled down in pursuit of that target.

## Carbon Emissions Claims

Whitehaven says that its high energy coal helps its customers decarbonise, and as such will remain in demand:

**“Our thermal coal, which offers more energy efficient and lower emissions outcomes than other coal products, is helping our customers to responsibly meet their decarbonisation goals.”** – Annual Report 2023, Page 1

**“Our high-quality, high-CV thermal coal is helping meet decarbonisation goals.”** – Sustainability Report 2023, Page 24

**“Demand for high-quality, high-CV, low-ash coal is increasing in an effort to reduce CO<sub>2</sub>-e emissions.”** – Full Year Results FY23 presentation, Page 8

Given the relatively small emissions impact of burning higher-energy coal compared with lower-energy coal, no nation can credibly plan to reduce power system emissions by merely switching from one grade of coal to another. Technical barriers would also limit the ability to switch to coal with a higher energy content. No nation has announced such a move as part of any power system decarbonisation plan. Where a change in emphasis in coal sourcing is planned, it is a shift away from thermal coal imports towards increased reliance on domestic coal, such as in China<sup>108</sup>, India<sup>109</sup> and Pakistan,<sup>110</sup> for the purpose of increased energy security and lower cost.

As outlined in the Demand for Thermal Coal section above, nations across Asia are planning major expansions in renewable energy to meet their decarbonisation targets. This transition towards renewable energy is well established, and will accelerate as wind, solar and batteries continue to decline in cost, and energy security concerns mount on the back of high fossil-fuel price volatility.

<sup>107</sup> Reuters. [Column: India's coal imports are shifting, thermal more than coking](#). 21 April 2022.

<sup>108</sup> The Conversation. [China's demand for coal is set to drop fast. Australia should take note](#). 21 April 2022.

<sup>109</sup> ET Energyworld. [India to start coal export by 2025-26: Coal Minister Pralhad Joshi](#). 29 March 2023.

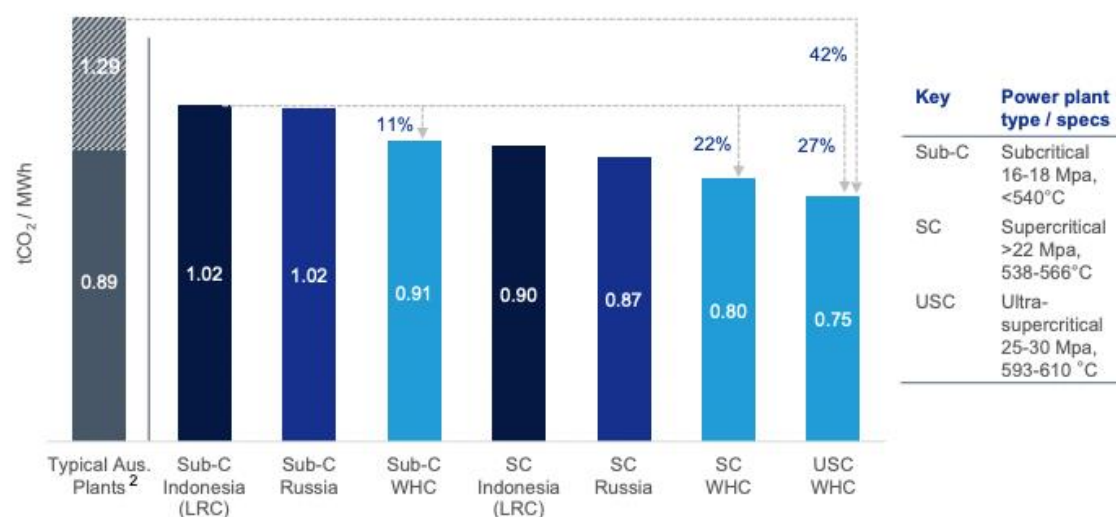
<sup>110</sup> Reuters. [Exclusive: Pakistan plans to quadruple domestic coal-fired power, move away from gas](#). 14 February 2023.

## Comparing New Coal Technology to Old Technology, Not Renewables

As well as suggesting that thermal coal buyers will switch to higher-energy coal to reduce emissions, Whitehaven also maintains that a switch from older coal power station technology to newer technology will contribute to decarbonisation ([Figure 6](#)).

**Figure 6: Whitehaven Compares Modern Coal Power Technology to Old Coal Power Technology, Not Renewables**

### Coal-fired power plants – GHG emissions per MWh sent out<sup>1</sup>



Source: Whitehaven Coal FY23 Full Year Results presentation

<sup>1</sup> Typical Aus plants based on company data. All others sourced from Commodity Insights.

<sup>2</sup> Typical Australian plants include: 1.29 for Sub-C lignite at Loy Yang (Vic), 0.95 for Sub-C black coal at Bayswater (NSW) and 0.89 for SC black coal at Millmerran (Qld).

**“To reduce emissions and meet the Paris Agreement goals, many coal-reliant countries have committed to retire old and inefficient coal-fired plants and move to newer, lower emissions, more energy-efficient generation technologies.” – Sustainability Report 2023, Page 24**

This arguably doesn't fully reflect what is happening across Asia. Although Japan and South Korea have a few remaining coal power projects under construction, the clear trend is one of declining coal power capacity as plants are closed. The remaining plants under construction in these countries will be the last they ever build. As a result, it is clear that as older coal power plants close, they will not

be replaced with new coal plants – given the renewable energy targets of Japan and South Korea it is clear they will be replaced with wind and solar, and possibly some nuclear power.

Taiwan has no coal-fired power plants under construction and no plants in the project pipeline. Coal power development in Taiwan is already over.<sup>111</sup>

In South-East Asia, wind and solar power projects make up more than half of all power projects under development. Coal power projects make up 14%, a share that is declining as more projects are cancelled.<sup>112</sup> In Vietnam, the coal plants in the development pipeline will be the last ever built there given its declining coal-power capacity targets and the difficulty it faces in attracting coal-power finance. These remaining projects are being configured for Indonesian, not Australian, coal.<sup>113</sup>

The only nations that have significant capacities of coal-fired power in the latter stages of development with any likelihood of proceeding are China, India and Indonesia,<sup>114</sup> which are all major coal producers that will fuel any new plants with domestic coal – an energy security priority that has only become more important after record seaborne coal prices in 2022.

Whitehaven also continues to rely on the notion of baseload power – the outdated idea that power plants (like coal-fired power plants) that run continuously are needed for a reliable power system:

**“HCV coal in high demand for baseload supply through energy transition.”**

**– Full Year Results FY23 presentation, Page 13**

The global transition towards renewable energy is in fact ending the role of traditional baseload power generators such as coal-fired power plants. The high levels of renewable energy that will be installed over the next couple of decades are incompatible with baseload coal-fired power. Global consultancy McKinsey & Company stated last year that, “Renewables are expected to become the new baseload, accounting for 50% of the power mix by 2030 and 85% by 2050.”<sup>115</sup>

Australia’s Origin Energy made clear that the transition towards renewable energy is “increasingly not well suited to traditional baseload power stations and challenging their viability” as it announced an accelerated exit from coal-fired power generation in 2022.<sup>116</sup>

Australia’s power sector is clearly shifting away from baseload coal- and gas-fired power stations towards renewable energy backed up by batteries, pumped hydro storage and peaking gas-fired power plants. This is confirmed by the Australian Energy Market Operator’s (AEMO) latest Integrated System Plan.<sup>117</sup> This shift is occurring globally. Gas-peaking plants are much more flexible than coal-

<sup>111</sup> Global Energy Monitor. [Coal-fired Power Capacity by Country \(MW\)](#). January 2023.

<sup>112</sup> Ibid.

<sup>113</sup> Office of the Chief Economist. [Resources and Energy Quarterly](#). December 2022.

<sup>114</sup> Global Energy Monitor. [Coal-fired Power Capacity by Country \(MW\)](#). January 2023.

<sup>115</sup> McKinsey & Company. [Global Energy Perspective 2022](#). April 2022.

<sup>116</sup> Origin Energy. [Origin proposes to accelerate exit from coal-fired power generation](#). 17 February 2022.

<sup>117</sup> AEMO. [2022 Integrated System Plan](#). June 2022.



fired power plants and far better suited to go on and offline as required to complement the generation profile of wind and solar. As a result, as the world transitions to more and more renewable energy, coal will become more and more ill-suited to a modern power system. Around Asia, earlier than expected coal power plant closures can be anticipated as renewable energy capacity continues to expand, as is occurring in Australia.

## Demand for Metallurgical Coal

Metallurgical coal made up only 6% Whitehaven's FY23 coal sales<sup>118</sup> but the company plans to increase production, and it highlights strong demand growth based on Wood Mackenzie forecasts:

**“Asian demand for metallurgical coal forecast to grow by 33% over the next three decades due to Indian industrialisation.” – Full Year Results FY23 presentation, Page 49**

Whitehaven plans to expand its metallurgical coal production via the Winchester South mine project in Queensland, and is bidding for the Daunia and Blackwater metallurgical coal mines put up for sale by BHP.<sup>119</sup>

Until recently, it had been widely accepted that metallurgical coal has a stronger demand outlook than thermal coal as it is less immediately challenged by alternative technology. However, the outlook for met. coal is changing. The steel technology transition has started to accelerate, and looks likely to happen faster than expected as has already been seen with the ongoing transition away from coal-fired power towards renewable energy. Mark Vassella, chief executive of BlueScope Steel, admitted in August 2023 that the steel technology transition was moving faster than he predicted just two years ago, stating, “The technology is moving faster than we might have expected.”<sup>120</sup>

Direct reduced iron-(DRI) based steelmaking – that does not use coal and can instead be based on green hydrogen – has been gaining momentum. In the second half of 2022, European steelmakers moved from DRI pilot projects and announcements towards investment decisions and finance at industrial scale,<sup>121</sup> albeit supported by decarbonisation policies not yet available globally. The IEA has noted this acceleration, executive director Fatih Birol stated in April 2023, “The project pipeline for producing steel with hydrogen rather than coal is expanding rapidly. If currently announced projects come to fruition, we could already have more than half of what we need in 2030 for the IEA's net zero pathway.”<sup>122</sup>

<sup>118</sup> Whitehaven Coal. [Full Year Results FY23](#). 24 August 2023.

<sup>119</sup> Australian Financial Review. [Whitehaven confirms interest in two massive Queensland coal mines](#). 18 September 2023.

<sup>120</sup> Australian Financial Review. [BlueScope to spend \\$1.15b on old-school steelmaking](#). 21 August 2023.

<sup>121</sup> IEEFA. [Green finance has begun to flow into green steel funding](#). 11 November 2022.

<sup>122</sup> Financial Times. [Clean energy is moving faster than you think](#). 14 April 2023.

Iron ore major Vale forecasts that DRI production will increase 55% to 200mt by 2030.<sup>123</sup> Steelmakers in developed nations will lead this transition but, as was seen with the proliferation of renewable energy technology, other regions including Asia are likely to follow this lead faster than expected.

Growing momentum in DRI-based steelmaking is starting to leave carbon capture technology behind in the steel sector,<sup>124</sup> as has already occurred in other sectors such as power and gas.<sup>125</sup> Iron ore major BHP noted in 2022 that, “there are no full scale operational CCUS facilities in blast furnace steelmaking operations at present, with only a limited number of small capacity carbon capture or utilisation pilots underway or in the planning phases globally”. International steel major ArcelorMittal’s “flagship” carbon capture project will capture only a tiny percentage of its Belgian operations emissions.<sup>126</sup>

The lack of significant progress in carbon capture for steelmaking, and the growing momentum behind DRI, will steer the global steel industry away from metallurgical coal as demand for low-carbon steel rises.<sup>127</sup> McKinsey expects that demand for low-carbon steel will grow tenfold to reach 200mt by 2030.<sup>128</sup>

In its 2022 annual report, BHP – Australia’s largest metallurgical coal exporter – disclosed that it had increased its metallurgical coal mine rehabilitation provision by US\$750m, having recognised that the end of its metallurgical coal-mine operations “may be earlier than previously anticipated”, citing the long-term outlook for metallurgical coal and changes to Queensland coal royalty rates.<sup>129</sup> BHP is now developing DRI-based steelmaking technology that doesn’t require any of its metallurgical coal.<sup>130</sup>

BHP’s latest annual report states, “Our exposure to transition risks increased over FY2023 due to greater societal expectations for accelerated decarbonisation by companies and significant regulatory developments across the globe...”, citing the EU Carbon Border Adjustment Mechanism (CBAM), the U.S. Inflation Reduction Act and Australia’s updated Safeguard Mechanism.<sup>131</sup>

South32 has ceased metallurgical coal mine development, and stated an intention to wind down its coal-mining business as existing mines are depleted.<sup>132</sup> Chief executive Graham Kerr stated that the transition from met. coal to hydrogen would occur within a couple of decades. However, Anglo

<sup>123</sup> Vale. [Iron solutions webinar: Decarbonisation of steel and impacts in iron ore supply](#). 14 April 2023.

<sup>124</sup> Agora Industry. [15 Insights on the Global Steel Transformation](#). June 2023.

<sup>125</sup> IEEFA. [Carbon capture: a decarbonisation pipe dream](#). 1 September 2022.

<sup>126</sup> IEEFA. [“Hard-to-abate” must not become code for delaying steel decarbonisation](#). 24 January 2023.

<sup>127</sup> IEEFA. [No, metallurgical coal is not a critical material...and carbon capture won't save it](#). 3 July 2023.

<sup>128</sup> McKinsey & Company. [The resilience of steel: Navigating the crossroads](#). April 2023.

<sup>129</sup> BHP. [Annual Report 2022](#).

<sup>130</sup> BHP. [BHP and Hatch commence study for an electric smelting furnace pilot](#). 23 March 2023.

<sup>131</sup> BHP [Annual Report 2023](#).

<sup>132</sup> Bloomberg. [Hydrogen Could replace Coking Coal in Two Decades, South32 Says](#). 25 August 2022.

American, which mines metallurgical coal in Queensland, stated in an April 2023 update that the steel transition would take only 10 to 15 years.<sup>133</sup>

In its March 2023 Resources and Energy Quarterly report, the Australian government's Department of Industry, Science and Resources' medium-term forecast sees both world trade in metallurgical coal and Australian metallurgical coal exports reach 317mt in 2026 before declining out to 2028.<sup>134</sup> India's demand over the period and beyond is forecast to increase as steel demand rises significantly but, in the Department's medium-term forecast, this is outweighed by declines elsewhere by 2027.

China – the world's largest steel manufacturer by far – will see a significant decline in metallurgical coal imports as its economy continues to mature and steel demand drops markedly. On top of this, China is attempting to become more self-sufficient for coal in the shorter term, and will also increase imports from Mongolia, which it considers a more energy-secure source. China is also aiming to recycle more scrap steel, which will further depress met. coal imports.

China Baowu – the world's largest steelmaker – plans to exit Australian metallurgical coal, and has paid A\$300m to settle obligations for take-or-pay port and rail that it has never used.<sup>135</sup> China Baowu is considering a major green steel investment (that would not use coal) in Western Australia,<sup>136</sup> and has signed agreements with Rio Tinto<sup>137</sup> and Fortescue<sup>138</sup> to explore non-coal-based steelmaking options using Pilbara iron ore.

The expected decline of Chinese primary steel demand will leave the future long-term met. coal demand in the hands of India, depending on which steel technology route it focuses on. India already has a significant energy security issue due to its reliance on fossil fuel imports, and is eyeing green hydrogen developments to improve this situation.<sup>139</sup> IEEFA India and JMK Research and Analytics see green hydrogen starting to replace coal in Indian steelmaking by 2030 and then progressively accounting for more steel production before becoming the primary steelmaking route by 2050.<sup>140</sup>

The accelerating steel technology transition will impact financing too. Whitehaven has recently faced refinancing challenges due to banks' unwillingness to be exposed to thermal coal.<sup>141</sup> This reticence will increasingly apply to metallurgical coal as non-coal-based steelmaking alternatives become ever more apparent. HSBC Bank has already unveiled an updated energy policy, which means it will no longer provide finance for new metallurgical coal mines.<sup>142</sup>

<sup>133</sup> Anglo American. [Sustainability Performance Update](#). April 2023.

<sup>134</sup> Department of Industry, Science and Resources. [Resources and Energy Quarterly](#), March 2023.

<sup>135</sup> Australian Financial Review. [Chinese steel giant wants out of Queensland after \\$300m settlement](#). 13 September 2023.

<sup>136</sup> Australian Financial Review. [World's biggest steel maker looks to WA for massive green investment](#). 12 May 2023.

<sup>137</sup> Rio Tinto. [China Baowu and Rio Tinto extend climate partnership to decarbonise the steel value chain](#). 12 June 2023.

<sup>138</sup> Fortescue. [Fortescue partners with world's largest steel maker to reduce emissions across iron and steelmaking](#). 14 June 2023.

<sup>139</sup> RMI. [India Aims to Become a Green Hydrogen Leader](#). 4 April 2023.

<sup>140</sup> IEEFA. [Steel decarbonisation in India](#). 14 September 2023.

<sup>141</sup> Australian Financial Review. [Whitehaven's \\$2.65b cash pile can't soothe carbon-conscious lenders](#). 17 July 2023.

<sup>142</sup> IEEFA. [HSBC joins major miners in turning away from further metallurgical coal mine development](#). 30 January 2023.

Commonwealth Bank of Australia's new lending rules for corporate finance, trade finance and bond facilitation require any existing customers who derive more than 15% of their revenue from the sale of oil, gas or metallurgical coal to have transition plans from 2025 that cover their Scope 1, 2 and 3 emissions.<sup>143</sup> This is the first time the bank has specified that Scope 3 emissions – that result from customers using a company's products or from suppliers making products that a company uses – must be covered. Whitehaven makes clear that it is focused on Scope 1 and 2 emissions only, and has no focus on Scope 3 emissions.<sup>144</sup>

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<sup>143</sup> Commonwealth Bank of Australia. [2023 Climate Report](#).

<sup>144</sup> Whitehaven Coal. [Full Year Results FY23](#), 24 August 2023.

## About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. [www.ieefa.org](http://www.ieefa.org)

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