

# Divestment vs Sterilisation

## *What to Do With BHP's Stranded Coal Assets*

### Executive Summary

Despite BHP's departure from the World Coal Association lobby group in April 2018 signalling its intention to exit coal, BHP still retains two huge thermal coal exposures:

- the 100% owned 16-19 million tonnes per annum (Mtpa) Mt Arthur mine in New South Wales (NSW), Australia, and
- a 33.3% equity stake in the 25-30Mtpa Cerrejón mine in Columbia.

There is growing financial market pressure for BHP to deal with its thermal coal exposures in light of the growing stranded asset risk of high carbon emission assets, as well as financial institutions such as BlackRock pressing companies to act and find solutions for the increasingly pressing issue of a warming climate.

In the last few months, BHP has been exploring options to exit thermal coal by divestment.

Having sounded out the market, initial reports suggest BHP received indicative bids for its Mt Arthur mine from Yancoal and Adani Australia, however they were both well below BHP's expectations.

In this report, we examine the recent financial performance of BHP's two remaining thermal coal assets, noting that the halving of coal prices over the last two years has meant both units are now losing money with every tonne of coal they sell.

Both thermal coal assets have seen a serious erosion of viability and are on track to deliver an operating loss in 2019/20. If coal prices stay weak and operating losses continue or deteriorate further, the market will struggle to see any value in Mt Arthur, particularly net of unfunded rehabilitation liabilities.

We also examine the growing issue of open-cut coal mine site rehabilitation, required for both Mt Arthur and Cerrejón, and note the lack of transparency of this unfunded and growing financial liability that could possibly exceed the operating value of the assets, if honoured in full.

Further, we scrutinise the question of divestment, retention or sterilisation. Should BHP divest these businesses, retain and sterilise the assets and accept the responsibility of progressively managing the decline and clean-up over the coming two decades, or sterilise its exposure by spinning it off to existing shareholders (with a few unique twists as safeguards)?

**We would suggest the two mines together would attract, at best, a net value of US\$1-2bn gross of the progressive rehabilitation liability, US\$0-1bn net.**

Divestment does not deal with the underlying problem of carbon emissions, nor is it likely to honour the rehabilitation commitments BHP has made to its stakeholders. And as per early indications, the price is likely to be well below the BHP Board's current pain threshold given the failure to act early on this growing issue of stranded assets.

A potentially positive outcome would be for BHP to sell to Adani, in return for Adani agreeing to cease its near-decade long delayed Carmichael HALE<sup>1</sup> thermal coal mine proposal in the Galilee Basin in Queensland. This could be a win for BHP (exiting a problem asset), a win for Adani (securing a long term high quality thermal coal supply for its Indian import coal-fired power plants), and a win for the planet (by *not* opening up the Galilee and subsequent carbon emissions avoided). But financial assurance will be a major roadblock.

Retention of problem assets is not the norm in BHP's history.

Absent a strong trade sale price, IEEFA suggests BHP explore a listed spin-off of Mt Arthur and Cerrejón combined, where BHP retains a controlling minority stake. Establishing a sinking fund fully funded for the net present value (NPV) of provisions would make visible the massive investor "unknown known" of mine rehabilitation. And instituting the right governance and reward structure could best ensure the least worst outcome for all stakeholders.

---

<sup>1</sup> HALE = high ash, low energy.

## Table of Contents

|  |    |
|--|----|
| Executive Summary .....                                | 1  |
| 1. Introduction.....                                   | 4  |
| 2. To Spin-off, Divest or Retain Thermal Coal .....    | 5  |
| 3. Thermal Coal Follows Oil and Gas Down in 2020 ..... | 12 |
| 4. Global Finance's Coal Divestment Accelerates.....   | 17 |
| 5. BHP's Thermal Coal Exposure .....                   | 18 |
| 6. A Review of Site Rehabilitation at Mt Arthur.....   | 22 |
| 7. Learning from Coal Divestment Debacles.....         | 26 |
| Appendix: Share Performance of Coal Stocks.....        | 32 |
| About the Author .....                                 | 33 |

## 1. Introduction

BHP is exploring options to exit thermal coal by divestment.

Its thermal coal assets have seen a serious erosion of viability and are on track to deliver an operating loss in 2019/20.

Having sounded out the market, initial reports suggest BHP received indicative bids from Yancoal and Adani Australia well below BHP's expectations.<sup>2</sup>

The 25-30% decline in Newcastle benchmark thermal coal prices over the last year, and more than halving in the last two years (refer Section 3), makes any near term divestment problematic, to say the least.

Equity market values of pureplay coal companies have been decimated over the last two years, including in both thermal coal firms like Peabody Energy (down 93%) and coking coal entities like Coronado Global Resources (down 72%) (Refer Appendix A).

However, the growing momentum whereby financial institutions are increasingly exiting the thermal coal sector in the face of a belated acknowledgement of the 2015 Paris Agreement, and coupled with ongoing double digit annual solar cost deflation strongly suggests this may represent more of a structural headwind than a normal cyclical commodity nature. This is reinforced by the Australian Treasury assuming prices stay at US\$54/t in the medium term (refer Section 4).

This report examines the recent profitability trends of BHP's two thermal coal exposures, the 100% owned 16-19Mtpa Mt Arthur mine in New South Wales (NSW), Australia and the 33.3% equity stake in the 25-30Mtpa Cerrejón mine in Columbia. These two mines are the largest thermal coal mines operating in their respective countries, and both have already been operating for decades, with BHP modelling the remaining mine lives of some 20 and 14 years respectively (refer Section 5).

We also examine a key issue for divestment, being the unfunded open-cut coal mine rehabilitation liabilities. While BHP has done some progressive mine rehabilitation in the last two decades, to-date BHP is yet to finalise and relinquish even a single hectare of the huge Mt Arthur mine site. Financial disclosure and operational planning for this (most-likely) unfunded liability could well have a \$1bn cost<sup>3</sup> although there is very limited investor transparency (refer Section 6).

---

<sup>2</sup> Yahoo Finance. [Stuck With Coal Pits the World Needs, But Few Want](#). 18 July 2020.

<sup>3</sup> As per BHP reports, all currency references in this report are US\$ unless otherwise noted.

---

## 2. To Spin-off, Divest or Retain Thermal Coal

Investors like the Norwegian Sovereign Wealth Fund are increasingly pressuring BHP to “deal” with this key business risk, given its global significance with respect to scope 3 emissions and growing climate change pressures including more frequent, more extreme weather events.

Should BHP divest this business, sterilise its exposure by spinning it off to existing shareholders (with a few unique twists as safeguards) or retain and sterilise the assets and accept the responsibility of progressively managing the decline and clean-up over the coming two decades?

In this report we review the unintended consequences of several divestment strategies in coal by Rio Tinto, South32, firstly by BHP and then by South32 for its South African coal division, and Vattenfall of Sweden. We also review the end-of-life of Rio Tinto's uranium mining listed subsidiary, Energy Resources of Australia (ERA), as a (largely) positive case study of sterilisation.

A common theme in the divestment strategies we examine is that each has involved strategic and/or financial errors of judgement that has resulted in massive hundreds of millions or billions of dollars of capital write-offs.

Absent a buyer for either Mt Arthur or Cerrejón, BHP has a dilemma:

1. Retain and manage the currently loss-making businesses as best they can to maximise net cashflow (minimise outflows) after funding the ongoing stay-in-business capital expenditure (capex) needed to keep the mines efficient and safe and to fund the massive rehabilitation effort ahead, or
2. Spin-off the assets via an in-specie distribution to existing shareholders, ideally retaining a residual controlling interest to allow something of a sterilisation of the exposure without facilitating a tax haven-based vulture fund making a difficult situation far worse by plundering the remaining cashflow, leaving nothing to cover the growing rehabilitation liabilities. Ideally the listed entity should have a board and management team committed to this sterilisation mandate. Further, IEEFA would advocate that a sinking fund be set up to legally quarantine and invest the capital needed for rehabilitation.

### *Norges Bank Put BHP on Notice in May 2020*

In May 2020, Norges Bank<sup>4</sup> announced further Norwegian Sovereign Wealth Fund divestments on coal mining and oil & gas exploration firms globally that were not adopting business strategies aligned with the Paris Agreement. New exclusions were announced on “Sasol Ltd, RWE AG, Glencore, AGL Energy and Anglo American after an assessment against the product-based coal criteria”.

---

<sup>4</sup> Norges Bank. [Exclusion and observation of coal companies](#). 13 May 2020.

Critically for the world's largest owners of thermal coal mines, the Sovereign Wealth Fund also determined an absolute production limit, which for now is set at 20Mtpa.

With the combined equity share of capacity of Mt Arthur and its one third ownership of Cerrejón, BHP sits at some 26Mtpa. Norges reports: "The Executive Board has also decided to place the companies BHP Group Ltd/BHP Group Plc, Vistra Energy Corp, Enel SpA and Uniper SE on an observation list."

With BHP's Mt Arthur reporting a 12% year-on-year decline in production to 16Mtpa in 2019/20, and Cerrejón -23% year-on-year to 7Mtpa, a high-grading / downsizing might get BHP below the required 20Mtpa by 2020/21! But as we detail here, divestment has unintended, negative consequences.

**Divestment has  
unintended, potentially  
negative consequences.**

### *BHP Has Set a Precedent With the Spin-off of Newcrest Mining, BlueScope, Arrium and South32*

In the last two decades BHP has previously spun-off BlueScope Steel (2000), Arrium (formerly OneSteel, spun-off in 2001) and most recently South32 (2015) as Australian Stock Exchange (ASX) listed entities, as well as Newcrest Australia (formerly BHP Gold) a decade earlier, providing the precedent for such a transaction. South32 involved a net write-off of US\$2.15bn of assets.

Additionally, BHP sold its U.S. shale gas for US\$10.6bn to BP in July 2018, taking another asset write-off of US\$2.94bn in the process.<sup>5</sup>

### *What Is the Value of Mt Arthur?*

The press reported in July 2020 that Credit Suisse had suggested a \$1bn valuation for Mt Arthur<sup>6</sup>, roughly consistent with the last financial accounts' net attributable assets book value of \$901m.

For IEEFA, there are three absolutely key issues for any consideration of the value of Mt Arthur. There is considerable uncertainty over:

1. How long will it take for the seaborne thermal coal market to reach a terminal outcome, reflecting the growing technology driven economic obsolescence of high carbon emissions coal-fired power generation;
2. What will the traded price of thermal coal be, and the associated A\$/US\$ currency average, given at current prices and currency rates Mt Arthur (and

<sup>5</sup> Australian Financial Review. [Why shale pain is still shaping BHP's future](#). 27 July 2020.

<sup>6</sup> Yahoo Finance. [BHP Is Said to Rebuff Early Bids Under Plan to Quit Thermal Coal](#). 16 July 2020.

Cerrejón) loses money with every tonne of coal sold; and

3. What will the eventual clean-up costs be for the rehabilitation of a (currently) 4,266 hectare hole in the ground, with another 6 billion tonnes of overburden likely to be removed over the coming two decades on the current mine plan, plus the costs of rehabilitation for the existing mine over the last six decades. And given the plan to leave three enormous final voids in perpetuity, what will the cost of toxic water treatment in perpetuity be?

A non-fire-sale valuation of Mt Arthur might get to \$0.7-1.4bn or 0.75-1.5x of book value (using a 2-4x the average annual earnings before interest, taxes, depreciation, and amortization (EBITDA) of the past three years, including BHP's equity stake in Newcastle Coal Infrastructure Group (NCIG)). However, from this, one would need to deduct the net present value (NPV) of rehabilitation liabilities, which could leave the net value close to nil (refer Section 5).

When Rio Tinto sold its 50.1% stake in its 12Mtpa Clermont thermal coal mine in Queensland, Australia, it received \$1.01bn.<sup>7</sup> Using this value per tonne of capacity would suggest the Mt Arthur price is closer to US\$3bn, but that was in 2014, when values were a lot higher.

## **Global Miners Are Exiting Thermal Coal**

Rio Tinto and South32 have both moved to exit thermal coal mining globally (South32 retains a small exposure via its Illawarra coking coal division in NSW). BHP committed to no further expansion in thermal coal mining in 2019 and has tried to offload both Mt Arthur and Cerrejón during 2020.

**Most Japanese trading houses have divested all of their thermal coal mine exposures.**

We note this is becoming something of a global trend.

Most Japanese trading houses have divested all of their thermal coal mine exposures over the last two years, the latest of which was Mitsubishi Materials divesting their 11% equity holding in New Hope Corporation in February 2020<sup>8</sup> and Sojitz selling their 10% equity stake in the Moolarben Coal Mine in March 2020.<sup>9</sup> This followed thermal coal divestments by Mitsui & Co<sup>10</sup> and Mitsubishi Corporation<sup>11</sup> in 2018.

Anglo American in August 2020 confirmed that a spin-off is the preferred option for their thermal coal mines,<sup>12</sup> having earlier stated: "We are therefore working

<sup>7</sup> World Coal. [Sale of interest in Clermont mine completed](#). 2 June 2014.

<sup>8</sup> Reuters. [Mitsubishi Materials sells down stake in coal miner New Hope](#). 21 February 2020.

<sup>9</sup> Sojitz. [Sojitz to Divest Interest in Moolarben Coal Mine, Australia](#). 27 March 2020.

<sup>10</sup> Reuters. [Japan's Mitsui may sell stake in Australia thermal coal mine](#). 31 October 2018.

<sup>11</sup> Reuters. [Mitsubishi exits thermal coal sector, sells stakes in Australia mines](#). 18 Dec 2018.

<sup>12</sup> Australian Mining. [Anglo American flags thermal coal exit](#). 4 August 2020.

---

towards a possible demerger of our thermal coal operations in South Africa as our likely preferred exit option, expected in the next two to three years, with a primary listing on the Johannesburg Stock Exchange for the demerged business. We will continue to consider other exit options as we engage with stakeholders as part of our commitment to a responsible transition.”<sup>13</sup>

There was also a veiled warning about the likely net proceeds to shareholders as well as the need to exit in a socially responsible way, with CEO Mark Cutifani stating: “How we exit is more important to me, in terms of stakeholders and reputation, than getting an absolute number on the bottom line.”

### **Divestment vs Spin-off of ‘BHP Thermal Coal’**

An outright sale of the Mt Arthur mine and its 33% equity stake in Cerrejón would most likely free BHP of legacy exposures.

This assumes BHP can find an investor willing to stump up an acceptable price while factoring in both the failure of the world to successfully and necessarily deal with carbon emissions as per the Paris Agreement, and also that a massive deployment of yet-to-be-commercially proven carbon capture and storage (CCS) for coal-fired power plants can be viably achieved to allow thermal coal to remain cost effective against ever-cheaper renewable energy.

Absent this, a spin-off to existing shareholders would allow BHP to economically quarantine the assets, liabilities and cashflow in a separate entity. Retaining a controlling stake below 50% would allow deconsolidation while avoiding abrogating BHP's legal fiduciary and economic, social and governance (ESG) responsibility to rehabilitate the sites as agreed to when mining was first approved. Any eventual rehabilitation cost shortfall could then be underwritten by BHP, similar in some respects to how Rio Tinto managed it with its listed subsidiary Energy Resources of Australia (refer Section 7 below).

A listed entity spin-off could free BHP to move forward without shirking its stakeholder responsibilities - a good corporate governance outcome, which is likely far better than a divestment to a tax-haven-based private enterprise free of public or investor oversight.

It is worth reflecting on the experience of Rio Tinto at this point. Having demonstrated its positive environmental credentials at the Ranger Uranium Mine in the Northern Territory, Australia, Rio Tinto quickly learnt that a failure to adhere to ESG principles with respect to the 46,000 year old heritage site at Juukan Gorge would be a lasting black mark<sup>14</sup>, severely damaging the group's corporate standing and making future dealings with the region's Traditional Owners more difficult.

Instead, BHP could institute a separate governance structure with suitable union, scientific, engineering, community and financial oversight tasked with progressive

---

<sup>13</sup> Anglo American. [2020 AGM: Anglo American response to shareholder questions](#). 5 May 2020.

<sup>14</sup> ABC. [Juukan Gorge won't be the last priceless record of human history to be legally destroyed by mining](#). 11 June 2020.



rehabilitation and solving the tail-end mess of a 40-year mining legacy, including fair treatment of the mining employees involved.

As part of the economic separation, a sinking fund could be established by BHP to cover the expected rehabilitation costs, and free operating cashflow could be split between funding a dividend and topping up the sinking fund progressively as the end of mine life approaches, with the capital conservatively invested to maximise risk-adjusted returns. Shareholders would be rewarded by the dividend and eventually with the residual value of the sinking fund in the post clean up funding.

**Any spin-off of BHP  
thermal coal should  
include a sinking fund.**

Finally, a separate listing would allow the market to assess the value of the dividends and sinking fund vs rehabilitation costs with full transparency, and the focussed management team would be rewarded for optimising this sunset industry to the best of their ability.

IEEFA notes implementing this strategy could set a globally important precedent for the best way to address stranded assets in the fossil fuel industry as decarbonisation accelerates.

The flaw in our proposal is the current loss-making status of Mt Arthur and Cerrejón combined. If coal prices stay weak and operating losses continue or deteriorate further, the market will struggle to see any value in Mt Arthur, particularly net of unfunded rehabilitation liabilities.

With global capital markets increasingly fleeing coal (refer Section 3), a spin-off to existing shareholders would have to be zero debt leveraged, given the tail risk uncertainty of the huge and growing rehabilitation liabilities. Like ERA, the entity could likely find the rehabilitation provision was entirely inadequate down the track, leaving shareholders and NSW taxpayers ultimately responsible (as is the current case with all mines). Given BHP and its shareholders enjoyed the fruits of the mine's long history of profitable operation, retaining a controlling stake means they also ensure the business covers its clean-up costs.

We note that ERA actually had an exceptionally well prepared balance sheet, with residual net cash of A\$425m in June 2019. However, the Board and management had gambled away several hundred million on failed exploration in the previous few years, vainly seeking growth even as the uranium market stayed in a decade long bear market. So, while A\$425m is a huge war-chest, it is less than half the A\$925m of rehabilitation liabilities still to be funded.

Any spin-off of BHP thermal coal should learn this hard lesson.

## **A Sinking Fund to Cover the Net Present Value of Rehabilitation To-date**

The whole issue of coal mine rehabilitation has been examined extensively over recent years by the NSW and Queensland governments, with NSW receiving a failed Auditor General report.<sup>15</sup>

Queensland has moved a long way to address this.<sup>16</sup> But with financial institutions increasingly unwilling to underwrite thermal coal risks, financial assurance is becoming more costly, and less available.

IEEFA would advocate that any spin-off of BHP thermal coal include a sinking fund, with the NPV of the rehabilitation liability to be fully funded and put aside in an externally managed investment trust with a long term, medium risk mandate reflective of the 20-30 year timeframe, suitably constrained to ensure future management cannot apply creative arguments to dip into this trust (refer to the TerraCom example of 2020 examined in Section 7.2).

## **Why Not Just Leave Thermal Coal Within BHP?**

A listed corporate structure highly rewards its limited tenure CEO, management and board for generating sustainable profit growth and progressively investing to grow the business.

Absent the right incentive, there is little historic precedent to suggest that the same corporate structure is equipped to maximise long term rehabilitation while successfully managing the end-of-life business and progressive staff exit.

Kicking the can down the road for the next CEO to deal with this is an unfortunate but regular outcome of a financial assurance system that sees private economic value maximised by the indefinite deferral of rehabilitation costs. The negative net present value is minimised by deferral, avoidance and delay. That after two decades BHP is yet to free a single hectare of mine land as fully rehabilitated at Mt Arthur is proof of this assertion (refer Section 5).

A spin-off with an adequately funded sinking fund and a Board committed to learn from the ERA lessons and manage the 1-2 decade terminal decline trajectory of thermal coal would best accommodate all stakeholders (NSW taxpayers, Mt Arthur's workforce, the local community and investors).

---

<sup>15</sup> Audit Office of NSW. [Mining Rehabilitation Security Deposits](#). 11 May 2017.

<sup>16</sup> Queensland Government. [Achieving improved rehabilitation outcomes for Queensland mines](#). 28 November 2018.

---

## **BHP's Operational Review of 2019/20: Unexpected Volume Declines**

In July 2020, BHP reported its operational review of 2019/20.<sup>17</sup> Thermal coal bore the brunt of adverse volume, price, currency and even diesel moves.

BHP's Mt Arthur reported a 12% year-on-year decline in production to 16Mtpa in 2019/20, and Cerrejón -23% year-on-year to 7Mtpa.

BHP reported: "The energy coal market is in a difficult state. The globalCOAL NEWC (GCNewc) 6000kcal price recently fell below the levels reached during the 2015/16 downturn. Wood Mackenzie has estimated that at late June 2020 spot prices around two-thirds of seaborne supply was likely to be earning negative margins. Short term increases in producer currencies and diesel prices have amplified cost challenges. An uplift in power demand across developed Asia as re-starts progress could help to stabilise the market. China's policy in respect of energy coal imports remains a key uncertainty."

---

<sup>17</sup> BHP. Operational Review for the Year Ended 30 June 2020. 21 July 2020.

### 3. Thermal Coal Follows Oil and Gas Down in 2020

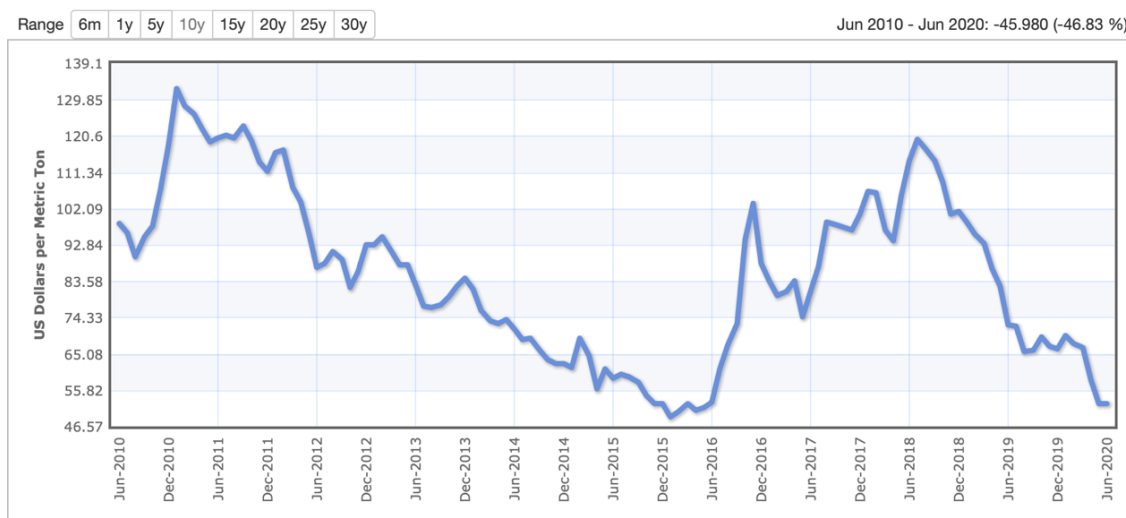
As per Figure 3.1, the thermal coal export price for 6,300kcal GAR benchmark coal was close to a decade low of US\$53/t as of June 2020. This reflects the combination of dramatic declines in oil and liquid natural gas (LNG) prices as a result of the Saudi-Russian price war and demand destruction globally with COVID-19. The three largest thermal coal import markets globally are reporting major reductions in demand.

In May 2020, Chinese coal imports declined 20% year-on-year, reversing the trend of increasing imports earlier this year.<sup>18</sup>

In July 2020, the Chinese Energy Minister announced China will build 85 gigawatts (GW) of renewable energy in 2020, a close to record high, as part of China's ongoing commitment to drive the global energy transition and decarbonisation.<sup>19</sup>

Indian coal imports also declined 47% year-on-year as of June 2020.<sup>20</sup> This is a direct result of record high domestic coal mine and power plant coal stockpiles due to electricity demand declining 25% year-on-year during the lockdown. Coal-fired power generation has worn 100% of the demand loss due to its high marginal cost position. The Coal Minister Pralhad Joshi has repeatedly called for India to cease all discretionary thermal coal imports by 2023/24.<sup>21</sup>

**Figure 3.1: Newcastle Thermal Coal Export Price (US\$/t)**



**Description:** Coal (Australia), thermal GAR, f.o.b. piers, Newcastle/Port Kembla from 2002 onwards , 6,300 kcal/kg (11,340 btu/lb), less than 0.8% sulfur 13% ash; previously 6,667 kcal/kg (12,000 btu/lb), less than 1.0% sulfur, 14% ash

Source: [Indexmundi.com](http://indexmundi.com).

<sup>18</sup> Reuters. [China's coal imports fall nearly 20% in May even as demand rises](#). 7 June 2020.

<sup>19</sup> IEA. [Energy Transition Summit](#). July 2020.

<sup>20</sup> SXCoal. [India Jun thermal coal imports plunge 47.5% as virus stifles demand](#). 24 July 2020.

<sup>21</sup> EnergyWorld. [Need to consume domestic coal instead of imported fuel to cut forex costs: Coal India tells NRS](#). 3 June 2020.

And Japan in July 2020 proposed it would close 100 of the 140 coal-fired power units in the country by 2030 as part of its commitment to move away from coal and align with the Paris Agreement.<sup>22</sup>

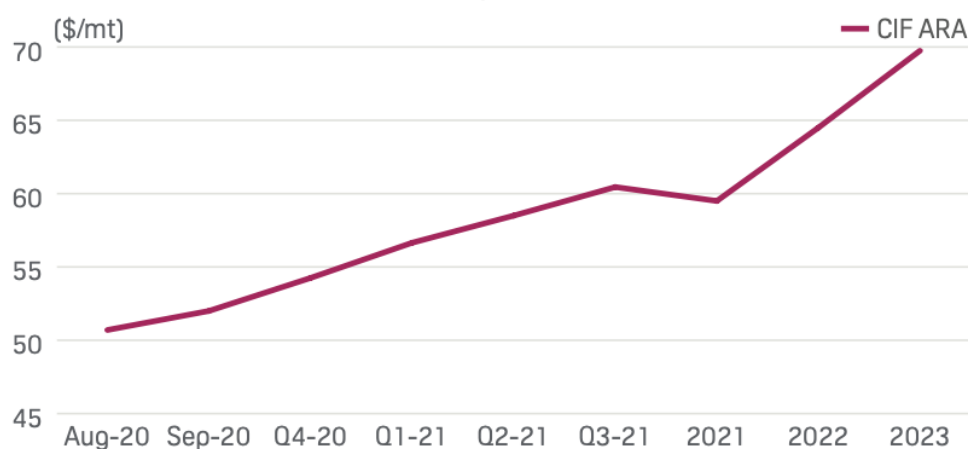
Coal lobbyists have tried to distract attention from the terminal trajectory of seaborne thermal coal over the coming two decades, first looking to China, then India, and more recently the ASEAN region to save this highly subsidised, carbon intensive, highly polluting and increasingly obsolete product. Vietnam is the largest and fastest growing ASEAN economy.

In July 2020, the Vietnamese Ministry of Industry and Trade continued to develop the Power Development Plan (PDP8) to accelerate the deployment of domestic renewable energy as a way of curbing the energy security and economic risks of continuing to grow reliance on imported thermal coal.<sup>23</sup> This involves a dramatic reduction in previous plans for unbridled growth in expensive new import coal-fired power plants underwritten by subsidised Japanese and South Korean government state capital.

The forward curve for thermal coal is cast as decidedly positive (Figure 3.2). However, we note liquidity in the forward market is limited, just a fraction of 5-10 years ago, making this an unreliable forecast.

In contrast, the Australian Federal Treasury uses current spot prices of US\$54/t as the best perspective of future prices,<sup>24</sup> given the historic unreliability of forecasts in light of extreme commodity price volatility.

**Figure 3.2: Thermal Coal Forward Price (CIF ARA 6,000kcal US\$/t<sup>25</sup>)**



Source: S&P Global Platts, Coal Trader, 24 July 2020.

<sup>22</sup> Bloomberg. [After Coal Battle, Koizumi Aims to Raise Japan's Emission Goals](#). 15 July 2020.

<sup>23</sup> Vietnamese Ministry of Industry and Trade. Report in PDP8 Workshop. July 2020.

<sup>24</sup> Australian Government. [Economic and Fiscal Update](#). Page 31 note (i). July 2020.

<sup>25</sup> Platts CIF ARA 6,000 NAR is a daily 15-60 day forward price assessment for seaborne thermal coal shipped to the European trading hub of Amsterdam. The term '6,000 NAR' refers to the net calorific value (heating value) of the coal in kilocalories per kilogram.

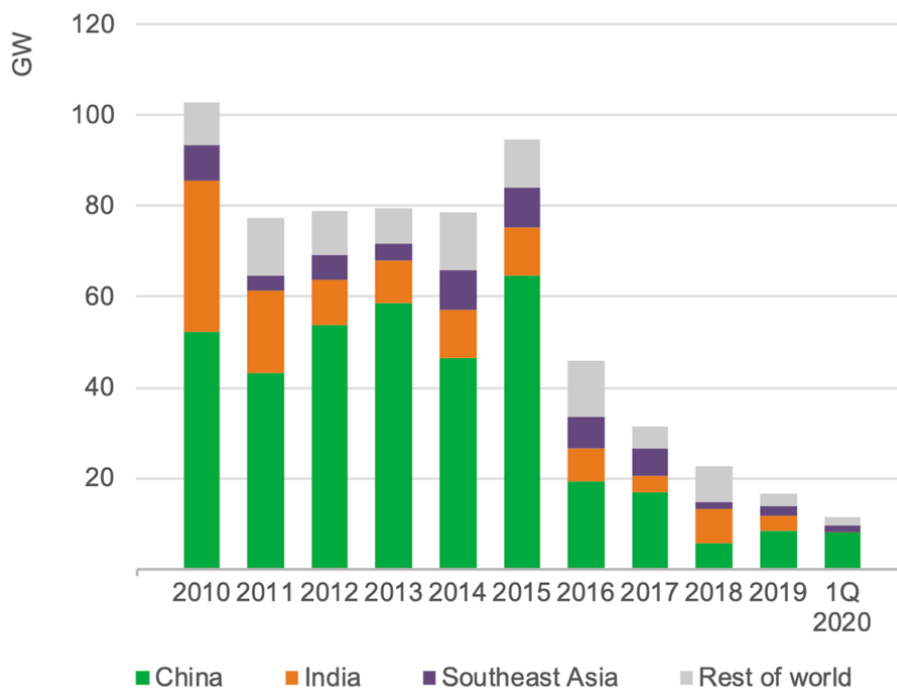
## Final Investment Decisions for Coal Hit a Decade Low

The International Energy Agency's (IEA's) World Energy Investment 2020 report highlights final investment decisions for new coal-fired power plants globally hit a decade low of 18GW in 2019, down more than 75% from the level of new commitments evident in the first half of the decade.

With coal plant closures globally averaging 35GW annually over 2015-2019, and global coal-fired power plant utilisation rates hitting a decade low in 2019, global coal use in the power sector could well have peaked back in 2018.<sup>26</sup>

**Investment decisions  
for new coal-fired  
power plants globally  
hit a decade low  
of 18GW in 2019.**

**Figure 3.3: Coal-fired Power Plant Final Investment Decisions**



Source: IEA World Energy Investment 2020.

<sup>26</sup> Ember. 2020 Global Electricity Review. April 2020.

---

## **As Listed Global Majors Progressively Exit, What is to Come?**

With all of the global mining majors progressively exiting thermal coal mining, global financial markets remain the arbitrators of what happens to huge end-of-life mine sites.

In the U.S., a regularly repeating string of Chapter 7 bankruptcies over 2015-2020 has entirely failed to address this key legal issue, whereby a major industry sector is now a financially distressed group of unloved minnows. Peabody Energy went into Chapter 7 in 2016 and looks to be headed there again (refer Appendix 1).

Australia has already seen its share of financial market failures. July 2020 has seen headlines of Japanese majors Sumitomo and Kansai Electric unwilling to refinance the financially distressed Bluewaters Power Plant in Collie, Western Australia, given an inability to source coal.<sup>27</sup> This continues a string of collapses stemming back to the bankruptcy of Ric Stowe's empire in 2010 and the subsequent return to bankruptcy of Griffin Coal in 2015, along with its Indian parent, Lanco Infratech after a totally failed A\$740m buyout.

Further, ASX listed minnow TerraCom has been a decade-long financial disaster for shareholders (refer Section 7.2) and remains in the financial press for all the wrong reasons as allegations of fraud are investigated.<sup>28</sup>

Another minnow, Wollongong Coal was ASX listed until July 2020 despite a decade of losses, no revenue, and no ability to repay liabilities approaching a billion dollars, with rehabilitation liabilities only covered at 5 cents in the dollar.<sup>29</sup>

The ASX has seen a range of coal mine bankruptcies in the last decade, including Bandanna Energy (2016) and Cockatoo Coal (2015, and again in 2017), both to ANZ Banking Group's cost.<sup>30</sup> The rolling A\$4bn financial disaster of the Wiggins Island Coal Export Terminal (WICET) in Queensland has been a coal industry wealth hazard for most of this decade, smashing New Hope Corporation, Wesfarmers, Bandanna Energy and even Japanese bank Mitsubishi UFJ Financial Group (MUFG)<sup>31</sup> over the years.

---

<sup>27</sup> Australian Financial Review. [WA coal in crisis as Griffin accused of contract breaches](#). 21 July 2020.

<sup>28</sup> Newcastle Herald. [Fraud squad police execute search warrant on Sydney-based auditing firm to seize ALS Newcastle lab documents in international fake coal testing investigation](#). 17 June 2020.

<sup>29</sup> Lock the Gate. [Woeful Wollongong Coal can't pay basic ASX fees, so shouldn't be allowed to put Sydney water at risk](#). 16 July 2020.

<sup>30</sup> Australian Financial Review. [ANZ Banking Group to coal miners: Clean up your act](#). 5 November 2017.

<sup>31</sup> Australian Financial Review. [Coal play WICET back in focus as lender bails](#). 18 March 2020.

**Figure 3.4: Adani Mining Pty Ltd Summary Balance Sheet (A\$m)**

| A\$m                       | 30-Mar-20    | 31-Mar-19    | 31-Mar-18    |
|----------------------------|--------------|--------------|--------------|
| Tangible Assets            | 76           | 97           | 98.8         |
| Total Liabilities          | 2,303        | 1,979        | 1,768        |
| Incl. Net Debt             | 2,103        | 1,806        | 1,606        |
| <b>Total Equity (A\$m)</b> | <b>(786)</b> | <b>(507)</b> | <b>(234)</b> |

Source: ASIC Report, 25 May 2020, IEEFA calculations.

And for all the enormous capital value held by the Adani Group in India, Adani Mining Pty Ltd, the Australian subsidiary trying to develop the Carmichael coal mine in Queensland's Galilee Basin is running with shareholders' funds of negative A\$786m and total liabilities of A\$2.3 billion, hardly a prudent structure when looking to spend billions on a remote new HALE thermal coal export mine.

The Australian and/or NSW Government should develop and implement a long term transition plan to avoid repeating the 200 year precedents of constantly abandoned, unrehabilitated mine sites being left as a burden for taxpayers and our environment (refer Section 6) due to bankruptcies, energy transitions, and wilful neglect.

For the world to deliver on the Paris Agreement, the slow but terminal decline of thermal coal will have economic, employment and community impacts way beyond the focus of a single company like BHP.



## 4. Global Finance's Coal Divestment Accelerates

Despite or maybe in acknowledgement of the lessons learnt during the global pandemic, there has been significant global capital momentum away from thermal coal and coal-fired power generation in 2020. This is a reflection of the rapidly diminishing economic merits of thermal coal and the growing understanding that an alignment with the Paris Agreement invariably leaves many coal projects as stranded assets, unable to deliver a viable return over their proposed design life.<sup>32</sup>

Indeed, the trend of finance exiting coal has accelerated in 2020, with the number of new or improved policies running at 60% more than the run-rate of 2019.

Since May 2020, 13 globally significant financial institutions have introduced or tightened coal exclusion, divestment or restriction policies, including Westpac<sup>33</sup>, HESTA and First State Super<sup>34</sup> of Australia, Credit Suisse<sup>35</sup> of Switzerland, *Societe Generale*, BNP Paribas<sup>36</sup> and Natixis<sup>37</sup> of France, Toho Bank<sup>38</sup> of Japan, CDC Group<sup>39</sup> of the UK, Intesa Sanpaolo<sup>40</sup> of Italy, Norges Bank<sup>41</sup> of Norway, DB of Germany and MetLife<sup>42</sup> of the U.S.

BlackRock also completed its divestment of thermal coal miners in May 2020<sup>43</sup>. And put KEPCO on notice for continuing to invest in new coal power plants.<sup>44</sup>

In total, IEEFA has tracked 139 globally significant banks, insurers, and asset managers / asset owners that have implemented substantial formal coal policies since 2013. This year has seen 48 new or updated policy statements (Figure 4.1).

**Figure 4.1: Global Coal Policy Exits (2018-2020 to-date)**

| Total announcements in | 2018 | 2019 | 2020 |
|------------------------|------|------|------|
| Announcements          | 31   | 46   | 48   |
| Weeks                  | 52   | 51   | 30   |
| Announcements per week | 0.6  | 0.9  | 1.6  |

Source: Financial Institutions' websites, IEEFA calculations.

<sup>32</sup> The Age. Bob Carr. [While the world looked the other way, corporate giants abandoned coal](#). 15 May 2020.

<sup>33</sup> Westpac. [Climate Change Position Statement and 2023 Action Plan](#). May 2020.

<sup>34</sup> Sydney Morning Herald. [Top super fund dumps coal miners as emissions cuts intensify](#). 9 July 2020.

<sup>35</sup> Edie.net. [Credit Suisse cuts fossil fuel lending as part of a 250bn green finance promise](#). July 2020

<sup>36</sup> BNP Paribas. [BNP Paribas is accelerating its complete coal exit](#). 11 May 2020.

<sup>37</sup> Natixis Beyond Banking. [Natixis announces withdrawal from shale oil and gas and accelerates its complete exit from the coal industry](#). 18 May 2020.

<sup>38</sup> Environment Business Online. [Toho Bank announces investment and loan policy: "No new coal-fired thermal power generation principle"](#), 20 May 2020.

<sup>39</sup> Devex. [CDC quits oil and coal as part of new climate strategy](#). 3 July 2020.

<sup>40</sup> Intesa Sanpaolo. [RULES FOR LENDING OPERATIONS IN THE COAL SECTOR](#). May 2020.

<sup>41</sup> Norges Bank. [Exclusion and observation of coal companies](#). 13 May 2020.

<sup>42</sup> Emerg-in. [Met Life Coal Investment Pledge "Doesn't go far Enough"](#). July 2020.

<sup>43</sup> BlackRock. [Helping our clients invest sustainably](#). May 2020.

<sup>44</sup> Bloomberg. [BlackRock Warns Korea's Power Giant on Overseas Coal Plant Push](#). 28 May 2020.

## 5. BHP's Thermal Coal Exposure

Like Rio Tinto, BHP was one of the world's largest coal mining companies prior to 2015.

In order to shrug-off the many legacy assets acquired through the entirely questionable merits of the Billiton "merger" of 2001, BHP completed the restructuring and spin-off of South32 in 2015, thereby removing its yet-to-be fully stranded South African thermal coal division, plus the Illawarra NSW coal mining assets (a combination of thermal and coking coal mines).<sup>45</sup>

BHP was left with Mt Arthur and a one third ownership of Cerrejón, plus its Queensland coking coal division (owned via BHP Mitsubishi Alliance (BMA) and BHP Mitsui Coal (BMC)) with nine coking coal mines in the Bowen Basin.<sup>46</sup>

### *Mt Arthur Thermal Coal, Hunter Valley*

BHP owns the 16-19Mtpa Mt Arthur thermal open-cut coal mine 5 kilometres south of Muswellbrook in the Upper Hunter Valley, New South Wales (NSW), including the Coal Handling and Preparation Plant (CHPP) and rail loop.

Figure 5.1 details the summary production and profitability figures reported by BHP since financial year (FY) 2018.

**Figure 5.1: Mt Arthur Thermal Coal Mine Financials**

| Year ended 30 June                | FY2018  | FY2019  | 1HFY2020 |
|-----------------------------------|---------|---------|----------|
| Newcastle Export Price (US\$/t)   | \$86.94 | \$77.90 | 58.55    |
| Mt Arthur realised price (US\$/t) | \$83.30 | \$74.51 | \$57.28  |
| A\$/US\$                          | 0.78    | 0.72    | 0.68     |
| Total production (Mt)             | 18.5    | 18.3    | n.a.     |
| Total Sales (Mt)                  | 18.0    | 19.1    | 7.6      |
| Mine Revenue (US\$m)              | 1,501.0 | 1,421.0 | 435.0    |
| Gross costs                       | 932.0   | 1,068.0 | 485.0    |
| Underlying EBITDA (US\$m)         | 569.0   | 353.0   | -50.0    |
| Equity profit from NCIG (US\$m)   | 83.0    | 78.0    | 30.0     |
| Reported Equity EBITDA * (US\$m)  | 652.0   | 431.0   | -20.0    |
| Reported Equity EBIT (US\$m)      | 503.0   | 265.0   | -94.0    |
| Gross cash costs (US\$/t)         | \$51.72 | \$56.00 | \$63.87  |
| Coal Mine EBITDA margin           | 38%     | 25%     | -11%     |
| Net Assets (US\$m) *              | 994     | 920     | 901      |

\* Including NCIG (Newcastle Coal Infrastructure Group (coal port))

Source: BHP Financial Results, FY2019, 1HFY2020, IEEFA calculations.

<sup>45</sup> ABC. [BHP Billiton's South32 spin off: will it pay off?](#) 5 May 2015.

<sup>46</sup> BHP. [Queensland Coal](#). Accessed July 2020.

The collapse in thermal coal prices over FY2020 has pushed the mine into significant losses, with 2H FY2020 set to be materially worse than 1H FY2020's earnings before interest and tax (EBIT) loss of \$94m.

In October 2018, BHP awarded Thiess a mining services contract to complete end-to-end mining services in the Ayredale and Roxburgh pits (referred to as Mt Arthur South) over five years. Thiess was identified as the preferred contractor, with expertise in existing operations at the southern area of the main pit and terrace mining techniques demonstrated at nearby operations. Under the new contract, Thiess was appointed statutory mine operator of Mt Arthur South, with scope including vegetation clearing, mine planning, drill and blast, overburden and coal mining. BHP remains the mine and lease holder of Mt Arthur South and Mt Arthur North, and the mine operator of Mt Arthur North.<sup>47</sup>

Mt Arthur had a recent run-of-mine (ROM) production of 24-25Mtpa, with an average yield of 73% giving product coal of 17-19Mtpa<sup>48</sup>, although BHP expects this to drop to 16-17Mtpa in 2019/20. This assumes a 77% yield over the remaining life of the mine.

## **A 20-Year Mine Life Assumption for Mt Arthur**

BHP's FY2019 annual report puts the proven and probable marketable reserve life of Mt Arthur at 21 years (20 years by July 2020), predicated on their non-disclosed long term Newcastle benchmark price and currency assumptions.

While this lack of reserve life disclosure is entirely the market norm, it implicitly suggests that coal remains economically viable, despite double digit annual deflation evident in solar costs over the last decade, and which IEEFA considers likely over the coming two decades. The price assumption also assumes end customer nations do not adequately incorporate a carbon emissions price aligned with the IEA's global guidelines by 2030 and 2040 such that carbon emission externalities remain unpriced, meaning the product remains viable against zero emission alternatives, both now and over the coming two decades. Global investors are now increasingly concerned these assumptions are not without real risk.

**Global investors are  
now increasingly  
concerned these  
assumptions are  
not without real risk.**

BHP's FY2019 resource statement put the total marketable reserves at 453Mt, with

<sup>47</sup> BHP. [New South Wales Energy Coal](#). Accessed July 2020.

<sup>48</sup> BHP. [Mt Arthur Annual Review FY19](#). 26 September 2019.

an ash content average of 15.3% and an energy content of 6,050kcal.<sup>49</sup>

## **Value of Mt Arthur**

BHP's Mt Arthur mine and the associated equity stake in the Newcastle Coal Infrastructure Group (NCIG, part of the Newcastle coal export port) is held on the books with a net asset value of US\$901m as of 31 December 2019. But as per Figure 4.1, the mine in FY2020 is gross cashflow negative even before funding sustaining capex, and before the full impact of the 25% decline in thermal coal prices to-date in 2020 is revealed in the full year results in August 2020.

Optimistic valuations of say four times gross cash profits in a peak year like FY2018 would have suggested a price tag over \$2bn.

Today, the market could be well under \$1bn, even if a strategic buyer with a strong Australian balance sheet can be located. Any buyer would need to be of the view that thermal coal prices are close to a cyclical low. This would appear to be a likely bet, given they are at a decade low and Asian markets will be using coal for several decades to come, notwithstanding the inevitable, unstoppable rise of lower cost renewable energy in the medium term, even in South and South East Asia.

---

<sup>49</sup> Mt Arthur's energy content is not clearly disclosed, so it is unclear if this is net or gross as received (GAR).

## *Cerrejón Thermal Coal Mine, La Guajira, Colombia*

In February 2002 BHP Billiton, Anglo American plc and Glencore International AG ("the Consortium") acquired International Colombia Resources Corporation from Exxon Mobil Corporation. Combined with the acquisition of a 50% mine stake from the Colombian government, this gave each corporation a 33.3% equity stake in the Cerrejón coal mine in La Guajira, Colombia.

In 2002 the Cerrejón mine generated 19Mtpa of thermal coal for export. Having already been in operation for more than two decades, the mine still had an expected mine life of 30 years from 2002 (at that rate of production). The mine has a reserve life of 14 years given a lease expiry of 2034.

In 2011 the Consortium undertook a \$1.3 billion expansion with the aim of reaching 40Mtpa of output by 2015,<sup>50</sup> based on the expectation that global seaborne coal markets would see strong ongoing volume growth. With the stagnation of global market ever since, this expansion was a total failure.<sup>51</sup>

**Figure 5.2: Cerrejón Thermal Coal Mine Financials (Equity Share)**

| Year ended 30 June               | FY2018  | FY2019  | 1HFY2020 |
|----------------------------------|---------|---------|----------|
| Newcastle Export Price (US\$/t)  | \$86.94 | \$77.90 | 58.55    |
| Cerrejon realised price (US\$/t) | \$77.05 | \$75.62 | \$54.54  |
| Total production (Mt)            | 10.6    | 9.2     | n.a.     |
| Total Sales (Mt)                 | 10.6    | 9.2     | 4.0      |
| Revenue (US\$m)                  | 818.0   | 698.0   | 219      |
| Reported Equity EBITDA (US\$m)   | 395.0   | 274.0   | 55       |
| Reported Equity EBIT (US\$m)     | 300.0   | 173.0   | -7.0     |
| Gross cash costs (US\$/t)        | \$39.84 | \$45.94 | \$40.85  |
| EBITDA margin                    | 48%     | 39%     | 25%      |
| Net Assets (US\$m)               | 883     | 853     | 828      |

Source: BHP Financial Results, FY2019, 1HFY2020, IEEFA calculations.

In August 2019 BHP suggested that Cerrejón would produce some 27Mt in 2019/20, but the 2019/20 operational review showed production down 23% year-on-year, giving an annualised sale of just 21Mtpa, down 50% on the expected sales forecast a decade earlier (see Figure 5.2).

In hindsight, it would have been a lot easier selling Cerrejón when it was making BHP a \$300m equity share of EBIT (meaning the entire mine's EBIT was \$900m (100% share)), than it will be now the mine is operating at below EBIT breakeven.

BHP's 33.3% share is held in the books with a net asset value of \$828m.

<sup>50</sup> BHP. [Expansion Of Cerrejon Coal](#). 18 August 2011.

<sup>51</sup> Renew Economy. [Did BHP & friends blow \\$1.3bn on a Colombian coal project?](#) June 2015.

## 6. A Review of Site Rehabilitation at Mt Arthur

### *To-date No Rehabilitation Has Been Completed*

Mt Arthur mine has a strip ratio of 7 bank cubic metres (BCM) per tonne of product coal (7BCM:1t), meaning some 15-18 million tonnes of overburden is displaced to generate 1Mt (~16t:1t).

This means mining at Mt Arthur involves shifting almost 300 million tonnes of earth annually for some 40 years, or 11 billion tonnes over the likely mine life. This has daunting consequences for consideration of mine site rehabilitation to limit perpetual desolation of the massive area and toxic water contamination in perpetuity. BHP at some point will need to lodge with a Final Void management plan with the NSW government.<sup>52</sup>

**Mt Arthur coal will require shifting 11 billion tonnes of earth over its estimated mine life.**

As of FY2020 the mine has a “disturbance” footprint of 4,266 hectares, is disturbing another 300-400 hectares annually and has completed precisely zero hectares of rehabilitation despite operating since 2002, making a mockery of the progressive rehabilitation requirements (Figure 6.1).<sup>53</sup>

**Figure 6.1: Mt Arthur has Failed to Complete Any Rehabilitation in Six Decades of Progressive Rehabilitation**

| Mine area type   | Previous reporting period (FY18 actual) | This reporting period (FY19 actual) | Next reporting period (FY20 forecast) |
|--|---|-------------------------------------|---------------------------------------|
| A. Total mine footprint <sup>1</sup>                   | 4,700                                   | 5,171                               | 5,418                                 |
| B. Total active disturbance <sup>2</sup>               | 3,502                                   | 3,871*                              | 4,266                                 |
| C. Land being prepared for rehabilitation <sup>3</sup> | 0                                       | 89                                  | 54                                    |
| D. Land under active rehabilitation <sup>4</sup>       | 1,198                                   | 1,211*                              | 1,120**                               |
| E. Completed rehabilitation <sup>5</sup>               | 0                                       | 0                                   | 0                                     |

Note: All areas calculated using GDA1994 Zone 56 coordinate system

\* Reconciled via survey from FY19

\*\* FY19 actuals, minus FY20 forecast dehab plus FY20 rehabilitation target

1 Total mine footprint includes all areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to mining and associated activities.

2 Total active disturbance includes all areas ultimately requiring rehabilitation.

3 Land being prepared for rehabilitation includes the sum of mine disturbed land that is under the following rehabilitation phases – decommissioning, landform establishment and growing media development (as defined in DRE MOP/Rehabilitation Management Plan Guidelines).

4 Land under active rehabilitation includes areas under rehabilitation and being managed to achieve relinquishment.

5 Completed rehabilitation requires formal signoff by the NSW Resources Regulator that the area has successfully met the rehabilitation land use objectives and completion criteria.

Source: BHP's Mt Arthur Annual Review FY19.

<sup>52</sup> BHP. Rehabilitation Strategy. 26 May 2017.

<sup>53</sup> BHP. Mt Arthur Annual Review FY19. 26 September 2019. Page 70.

## The Cost of Financial Assurance for Unfunded Rehabilitation and Huge Final Voids

BHP would have provided or secured financial assurance with the NSW government over the eventual rehabilitation costs of the 40 year mega-mine operation, including (potentially) the water decontamination costs relating to the final voids in perpetuity.

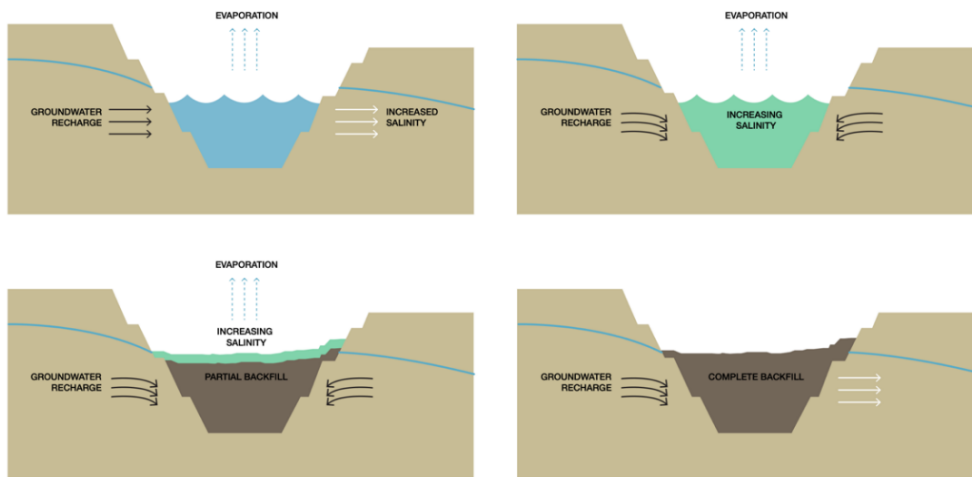
While some progressive rehabilitation has been undertaken, this is behind schedule and largely ahead of BHP.

Any buyer of Mt Arthur would need to secure financial institution support for a similar security for a bond that should cover the entire rehabilitation costs, which could easily exceed US\$1bn if the work is not deferred for many decades, allowing accounting tricks on discounting to reduce this liability to well under half this cost today.

To the best of our knowledge, no open-cut coal mine of this size has actually completed the rehabilitation task in Australia. Quite within the laws as they stand today (coal mine lobby groups are constantly pushing for even further reductions in “red tape”), most Australian coal mines that have ceased production are conveniently left in “care and maintenance” as a way of deferring environmental clean-up costs.

The issue however is that untouched huge final voids become progressively more toxic. Acid mine drainage leaches toxic chemicals from the overburden, which gets progressively more concentrated with evaporation over decades and centuries. Figure 6.2 provides a visual summary of this.

**Figure 6.2: Complete Backfilling vs Final Voids for Coal Mines**



Source: Mccullough C, Marchant G, Unsel J, Robinson M & O'Grady B.<sup>54</sup>

<sup>54</sup> Energy & Resource Insights. [The Hole Truth: The mess coal companies plan to leave in NSW](#). June 2016. Page 9 which references Mccullough C, Marchant G, Unsel J, Robinson M & O'Grady B.



---

The NSW government's approval process for the rehabilitation of coal mine final voids takes no real consideration of the perpetual legacy, nor water contamination and safety risks involved. Rather, the approval follows the logic that the final void is necessary, given the coal mine might not be viable if this huge crater is not allowed to be left for future generations to deal with.

Since European colonialization, more than 60,000 mines in Australia have been left abandoned and unrehabilitated.<sup>55</sup> As of 2017, NSW has seen just one mine closed, rehabilitated and relinquished.<sup>56</sup>

BHP has approval to leave massive final voids at Mt Arthur, and we note the void management plan has *not* being undertaken to-date. The eventual cost of rehabilitation of Mt Arthur, including the impact of these three massive 700 hectare final voids,<sup>57</sup> may never be known.

## **Cerrejón Rehabilitation**

Given Cerrejón mine has been operating since 1976, and the 14,493 hectares of disturbed area (out of a 69,000 hectares mine concession area), and that it is half the size again of Mt Arthur, the rehabilitation liability of Cerrejón would be of a similar size to Mt Arthur for BHP's 33.3% stake.

Cerrejón's 2018 report states that 3,067 hectares have been revegetated with tree seedlings over 1990-2018, but there is no reporting of the success rate. IEEFA notes this is an area needing significantly improved disclosure in light of the potentially permanent destruction of arable topsoil.<sup>58</sup>

And reports centre on the dramatic negative social externalities of Cerrejón's operations on the poor of Columbia.<sup>59</sup>

---

(2012) Pit lakes as evaporative "terminal" sinks - an approach to best practice mine closure. In International Mine Water Association Annual Conference. pp. 167-174.

<sup>55</sup> ABC. [Mining report finds 60,000 abandoned sites, lack of rehabilitation and unreliable data](#). 15 February 2017.

<sup>56</sup> The Australia Institute. [Dark side of the boom](#). 15 April 2017.

<sup>57</sup> Energy & Resource Insights. [The Hole Truth: The mess coal companies plan to leave in NSW](#). June 2016.

<sup>58</sup> [Cerrejón's Sustainability Report 2018](#).

<sup>59</sup> [Undark.org. In a Fight Over a Colombian Coal Mine, Covid-19 Raises the Stakes](#). 22 July 2020



## **Open Cut Coal Mining Rehabilitation**

BHP's total provision for rehabilitation as 30 June 2019 was \$6,977m. Given this covers the entire breadth of BHP's global operations, coal will only be a fraction of this. However, with a strip ratio of 12-16 tonnes of overburden per tonne of product coal produced from open cut mining, there is no other bulk commodity that comes near to open cut thermal coal mining in terms of the sheer size of disturbance (coking coal is much higher value, and the mines are generally smaller and more underground).

**There is no other bulk commodity that comes near to open cut thermal coal mining in terms of the sheer size of disturbance.**

When also taking into account the water treatment costs in perpetuity, we would guesstimate a rehabilitation liability well in-excess of US\$1bn. Apply an NPV by deferring much of this for 20-30+ years, and then ignoring the final void clean-up costs means much of this will be externalised, but any acquiror would need to take into account the financial risk probability of having to fund some or even all of this.

Hence the rehabilitation liability needs to be offset against a gross value of an 18Mtpa mine for the next ~20 years (at current prices, the gross value would be zero, given the business is currently loss-making before SIB capex).

## 7. Learning from Coal Divestment Debacles

### 7.1 South32's US\$504m South African Coal Debacle

When BHP Group announced the spin-off of South32 in 2015, for many months there was debate about how much thermal coal BHP could offload in one go. Clearly investors in South32 argued for the spin-off to *not* be a coal dumping ground and won the argument.

South32 was left with a strong balance sheet and a South African thermal coal division, plus the more attractive Illawarra NSW coal mining assets (a combination of thermal and coking coal mines).<sup>60</sup> BHP was left with Mt Arthur and a one third ownership of Cerrejón.

With the national disaster of Eskom<sup>61</sup> key to the South African economy being dragged into a decade of stagnation and financial distress, thermal coal mining in South Africa has been an international investors' nightmare, like Mozambique was for Rio Tinto. A total wealth hazard.

**Thermal coal mining  
in South Africa has  
been an international  
investors' nightmare.**

In 2017 South32 announced it would seek an orderly exit of its 21-23Mtpa South African thermal coal mining division (half export, half sold domestically to Eskom).

In November 2019 South32 announced it had reached conditional agreement for the sale of its South African Energy Coal (SAEC) division to Seriti Resources (and a Broad-based Black Economic Empowerment consortium), having taken a US\$504m impairment. The binding sale was announced, netting South32 A\$9.8m (100m Rand).<sup>62 63</sup>

To put this A\$9.8m in context, South32 committed 8,700m Rand (A\$850m) in capex over 2018-2020.<sup>64</sup> South32 was reported to have also received 49% of the free cash flow generated by SAEC to March 2024 with any payments capped at a maximum of 1.5 billion Rand per year. With coal prices down 25% in 2020 and the business shut during the COVID-19 lockdown, free cashflow is likely to be minimal.

### 7.2 Rio Tinto's Coal Debacle of 2011, Turned Good in 2018

Rio Tinto (RIO) was one of the world's largest coal mining firms prior to a deliberate and well-orchestrated extraction; denied and concealed from the market until it was masterfully completed.

<sup>60</sup> ABC. BHP Billiton's South32 spin off: will it pay off? 5 May 2015.

<sup>61</sup> IEEFA update: Eskom's international customers are turning towards solar. 4 December 2019.

<sup>62</sup> South32. Agreement to Divest South Africa Energy Coal. 6 November 2019.

<sup>63</sup> AFR. South32 seals deal to shed South African coal business. 6 November 2019.

<sup>64</sup> South32. Speech by Mike Fraser, Chief Operating Officer, South32. 2 October 2019.

Not all will recall this exit as a triumph, given its conception was instigated in response to one of Rio Tinto's multiple corporate disasters.

RIO infamously paid US\$4bn in 2011 to acquire Riversdale Mining, an ASX listed business with potentially huge coal deposits in Mozambique. RIO failed to properly assess the overstated hype of the promoters plus the financial risks associated with community resentment of global mining firms trying to take the country's wealth for foreign gain. Chief executive Tom Albanese resigned in January 2013 after reporting a US\$13bn combined writedown on Mozambique coal and the \$38bn Alcan Aluminium poison pill debacle he instigated in 2007.<sup>65</sup>

RIO exited Riversdale Mining in 2014 for the princely sum of US\$50m, divesting to International Coal Ventures Private, an associate of Coal India Limited. It is noteworthy that Coal India Limited has in turn failed to make a viable proposition of Mozambique. For many years now, nothing of substance has been reported by Coal India to its shareholders about this non-existent thermal coal mine.<sup>66</sup>

To stack insult on top of a US\$4bn financial loss, the US Securities and Exchange Commission (SEC) charged RIO, and its former chief executive Tom Albanese and chief financial officer Guy Elliott, with fraud, alleging RIO delayed announcing write-downs of its Mozambique coal project.<sup>67</sup> RIO separately reached a settlement with the United Kingdom's Financial Conduct Authority (FCA) for breaching disclosure and transparency rules, paying a fine of £27.4m.

This was followed by RIO's June 2014 sale of 50.1% of the 10Mtpa Clermont, Queensland thermal coal mine to Glencore for US\$1bn,<sup>68</sup> and its exit from coal mining in Mongolia and the U.S. At the time RIO said in a statement said that it remains committed to a long-term future in the Australian coal industry; a good bluff.

In September 2014 Harry Kenyon-Slaney, chief executive of energy at RIO and head of the World Coal Association lobby group, gave a speech referencing the "social and political unravelling" of coal, referencing the climate change challenge and correctly defining it as a sputnik moment.<sup>69</sup>

In March 2015 RIO restructured, downsizing its coal division and putting it under care and maintenance of the copper division.<sup>70</sup> Kenyon-Slaney also exited that year.

RIO sold its last coal exposure in March 2018, breaking up and selling piecemeal its residual Queensland coking coal assets at exceptionally good prices.<sup>71</sup>

---

<sup>65</sup> ABC. [Rio Tinto chief quits after heavy write-downs](#). 17 January 2013.

<sup>66</sup> Financial Times. [Rio Tinto closes dire chapter with \\$50m Mozambique coal sale](#). 30 July 2014.

<sup>67</sup> ABC. [Rio Tinto and former bosses charged with fraud by US regulator over Mozambique coal](#). 18 October 2017.

<sup>68</sup> World Coal. [Sale of interest in Clermont mine completed](#). 2 June 2014.

<sup>69</sup> World Coal. [Kenyon-Slaney defends coal's role in energy mix](#). 9 September 2014.

<sup>70</sup> Renew Economy. [Rio Tinto's restructuring signals global industry move away from coal](#). 5 March 2015.

<sup>71</sup> AFR. [Rio Tinto's coal break-up puts big numbers in play](#). 29 March 2018.

## Rio Tinto's Rehabilitation Problem with Energy Resources of Australia

While not a coal mining example, the financial and legal issues of Rio Tinto and its separately listed 68% owned uranium mining subsidiary, Energy Resources of Australia (ERA), is illustrative of the inadequately planned and unexpectedly high costs of mine site rehabilitation.

However, ERA is also an unusual case study of a global mining major not walking away from its corporate and financial responsibilities.

ERA shares were down 98% in the last decade with the collapse in uranium prices, the failure of exploration activity to prove commercially viable, and growing rehabilitation costs (Figure 7.1).

Figure 7.1: ERA Share Price Over the Last Decade



Source: Yahoo Finance.

ERA completed mining uranium at the Ranger pit 1, a site in Australia's Kakadu National Park, back in 1996. As part of its operations for the two subsequent pits being mined, progressive rehabilitation and water treatment facilities were undertaken over the last decade. Final uranium ore processing will end by January 2021, leaving a listed company focussed on site rehabilitation.

In November 2019 ERA undertook a A\$476m renounceable entitlement offer to existing shareholders at A\$0.15 per share to cover the unplanned shortfall in the assets of the company needed to complete the expected cost of mine rehabilitation by 2026. This was necessitated by a review of the rehabilitation project that included an increased cost assessment for A\$830m in 2018 (~A\$925m on an undiscounted real basis using a 2% pa discount rate) from the previous A\$526m

estimate. ERA had only A\$425m cash available prior to the rights issue. The offer would ensure ERA would remain financially solvent.

RIO took up its entitlement in full, over its 68% shareholding, which was a voluntary if morally correct act given “rehabilitation is not expected to generate any direct financial return for the company.”<sup>72</sup>

### **Rio Tinto Sold Blair Athol for A\$1 (with A\$80m Cash Included)**

The ERA case study above illustrates how a global multinational has honoured its legal commitments to fully complete site rehabilitation at the end of the mine life.

RIO elected to take a more profitable if not less morally sound strategy with respect to fulfilling its commitments for its huge Blair Athol coal mine which it closed in 2012 after decades of profitable operation. RIO would argue it did not shut Blair Athol in 2012, but instead retrenched the workforce and put the mine site into a prolonged state of “care and maintenance”. This of course defers the cost of funding the extensive rehabilitation costs (‘kicking the can down the road’ and deferring / ignoring the problem).

With the unexpected, if short lived, surge in thermal coal prices in 2016/17, RIO was approached by ASX-listed minnow TerraCom with an offer too good to refuse. TerraCom agreed to buy the unrehabilitated Blair Athol site off RIO for A\$1, so long as RIO fully funded the Queensland Government’s cash security deposit for assessed cost of rehabilitation of A\$80m.<sup>73</sup>

TerraCom has since processed the legacy stockpiles and is re-mining the site, delivering for sale 2.0-2.6Mtpa of thermal coal in 2018/19 and 2019/20. While substantial sales have been booked, TerraCom has operated at a net annual loss over the last few years (-A\$11m in 2018/19, -A\$19m in 2017/18).<sup>74</sup> In a related issue, TerraCom is also now being investigated<sup>75</sup> for alleged fraud and invoice tampering,<sup>76</sup> as part of an Australian coal industry-wide scandal confirmed by ASX’ listed ALS.<sup>77</sup>

More tellingly, TerraCom somehow convinced the Queensland Government in January 2020 to refund another \$27m of the A\$80m cash held in trust for site rehabilitation as “surplus to needs”. TerraCom assessed the total rehabilitation costs to be just \$45m, despite the extra mining they completed since acquiring the site

---

<sup>72</sup> ERA press release. [ERA announces \\$476 million renounceable entitlement offer to fund its Ranger Project Area rehabilitation obligations](#). 15 November 2019.

<sup>73</sup> Mining.com. [Rio Tinto sells its Blair Athol coal mine for less than a bus ticket](#). 4 July 2016.

<sup>74</sup> [TerraCom 2019 Annual Report](#).

<sup>75</sup> Newcastle Herald. [Fraud squad police execute search warrant on Sydney-based auditing firm to seize ALS Newcastle lab documents in international fake coal testing investigation](#). 17 June 2020.

<sup>76</sup> Australian Financial Review. [Fraud, bribery claims rock coal mining](#). 24 February 2020.

<sup>77</sup> Australian Financial Review. [ALS refers fake coal analysis claims to police](#). 2 April 2020.

from RIO.<sup>78</sup> Further, TerraCom reported that they planned to pay this refund out (potentially) as a maiden dividend,<sup>79</sup> despite the company operating at a loss.

In the event of any shortfall down the track, this somewhat unprecedented corporate windfall leaves Queensland taxpayers exposed, given the rehabilitation is yet to be done. There has also been zero public transparency on how or why this transaction was approved.

Needless to say, by agreeing to sell to TerraCom, RIO has passed the burden of rehabilitation to a loss-making minnow who is working to reduce the financial liability rather than focussing on the massive clean-up task at hand.

### *7.3. Vattenfall's Lignite Exit, at Germany's Peril*

In April 2016 Vattenfall, a major European utility headquartered in Sweden announced the agreement to "sell" five huge German lignite mines and four associated lignite-fired power plants with a combined capacity of 8GW, as well as transferring 7,500 employees, to Czech company EPH and its financial partner PPF Investments, a private equity firm.<sup>80</sup>

Vattenfall had been trying to offload these stranded assets since 2014. They had been suffering from a 40% decline in wholesale electricity prices in the preceding two years.<sup>81</sup>

Vattenfall applauded the success of this divestment, saying it increased their climate neutral production share from 50% to 75%, stating: "By concluding the deal, Vattenfall's CO2 exposure will be reduced from more than 80 million tonnes to less than 25 million tonnes per year." This statement is correct, even though selling the assets means there was zero benefit to the global climate.

The assets in the entities divested included SEK 15bn in cash, set aside to cover Vattenfall's estimated SEK 18bn of liabilities, including rehabilitation not yet undertaken.

Vattenfall booked a writedown of SEK 23.8bn on the transaction.<sup>82</sup>

The sale to private equity has almost entirely removed these huge lignite mines and power plants from public scrutiny, which should be of concern to the German government.

---

<sup>78</sup> TerraCom Press Release. [\\$27 million cash received](#). 9 January 2020.

<sup>79</sup> TerraCom Press Release. [\\$27 million cash refund](#). 4 October 2019.

<sup>80</sup> Vattenfall. [Vattenfall to sell German lignite operations](#). 18 April 2016.

<sup>81</sup> Reuters. [Vattenfall sells German lignite assets to Czech EPH](#). 18 April 2016.

<sup>82</sup> Vattenfall. [CY2017 results](#).

---

## *7.4. Harworth Group: A UK Case Study in Rehabilitation*

The UK's Harworth Group Plc<sup>83</sup> owns and manages 8,000 hectares on some 100 sites in the North of England and the Midlands. It is one of the UK's leading land and property regeneration companies, creating thousands of jobs and facilitating economic transition.

Harworth manages a portfolio of £232m of income-producing portfolio across the UK as part of its total assessed net asset value of £500m. It has a history of strong sustained wealth creation in both financial and physical terms (delivering a total return of ~13% compound over 2015-2019<sup>84</sup>).

As a master developer, Harworth is in the process of using vacated coal mine, power plant and brownfield industrial lands to build over 24 million square feet of commercial space, 29,000 residential homes and 270 megawatts of renewable energy capacity. The group also manages nature habitat restoration in partnership with Wildlife Trusts.

Given the magnitude of rehabilitation costs of open cut coal mines, Harworth's mandate provides an illustration of the merits of having a special purpose vehicle designed to deal with rehabilitation issues and create valuable investment opportunities.

For BHP Thermal Coal, this could be delivering on valuable reforestation, successful restoration of grazing land with viable topsoil, or acknowledging that soil degradation is long term and hence looking for alternative uses, such as industry or a massive site for renewable energy infrastructure, thereby repurposing the contaminated land for long term sustainable industrial use.

---

<sup>83</sup> [Harworth Group website](#).

<sup>84</sup> Harworth Group. [Annual Report and Financial Statements 2019](#). 4 June 2020.



## Appendix: Share Performance of Coal Stocks

The two charts below detail the two year share price performance of Peabody Energy listed in the U.S. (a predominantly thermal coal mining company), and Coronado Global Resources Inc, listed in Australia ((a predominantly coking coal mining company). Both have coal mines in Australia and the U.S., and both have massively underperformed their respective share market benchmarks.

### Peabody Energy: Two Year Share Performance vs the S&P500 Index



Source: Yahoo Finance.

### Coronado Global: Two Year Share Performance vs the S&P500 Index



Source: Yahoo Finance.



## 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)

## About the Author

### Tim Buckley

Tim Buckley, IEEFA's director of energy finance research, Australasia, has over 30 years of financial market experience covering the Australian, Asian and global equity markets from both a buy and sell side perspective. Tim was a top-rated Equity Research Analyst and has covered most sectors of the Australian economy. Tim was a Managing Director, Head of Equity Research at Citigroup for 17 years, as well as co-Managing Director of Arkx Investment Management P/L, a global listed clean energy investment firm that was jointly owned by management and Westpac Banking Group. [tbuckley@ieefa.org](mailto:tbuckley@ieefa.org)

This report is for information and educational purposes only. The Institute for Energy Economics and Financial Analysis ("IEEFA") does not provide tax, legal, investment, financial product or accounting advice. This report is not intended to provide, and should not be relied on for, tax, legal, investment, financial product or accounting advice. Nothing in this report is intended as investment or financial product advice, as an offer or solicitation of an offer to buy or sell, or as a recommendation, opinion, endorsement, or sponsorship of any financial product, class of financial products, security, company, or fund. IEEFA is not responsible for any investment or other decision made by you. You are responsible for your own investment research and investment decisions. This report is not meant as a general guide to investing, nor as a source of any specific or general recommendation or opinion in relation to any financial products. Unless attributed to others, any opinions expressed are our current opinions only. Certain information presented may have been provided by third-parties. IEEFA believes that such third-party information is reliable, and has checked public records to verify it where possible, but does not guarantee its accuracy, timeliness or completeness; and it is subject to change without notice.