Aussie Mine 2023

Critical choices

pwc

Executive summary

In Aussie Mine 2022 we urged Australia to think differently and act now. It’s 2023 - it’s become more critical.

Welcome to the 18th edition of Aussie Mine: Critical choices.

Aussie Mine provides industry and financial analysis on Australia’s mid-tier 50 mining companies (MT50), highlighting the opportunities and challenges ahead. The list of companies in this year’s MT50 is on page 25 and 26.

Critical choices: Australia’s critical minerals opportunity

Australia has the chance to generate more than $170bn in gross domestic product (GDP) and create almost 330,000 jobs by 2040 if we capitalise on our first-class endowment of critical minerals and other energy transition minerals.[1] But we’ll only get this benefit if we make some **critical choices** around critical minerals – and fast. In Aussie Mine 2022 we urged Australia to think differently and act now. It’s 2023 - it’s become more critical.

First and foremost, we need to get moving to meet global decarbonisation goals. Low emissions technologies are mineral intensive, and so demand for electric vehicles (EVs), wind turbines, solar panels, batteries, hydrogen electrolysers and electricity transmission will dramatically increase demand for critical minerals.

The good news is that Australia has large deposits of critical minerals (or ‘magic dirt’). The resources sector already provides significant funding to Australian governments, and now we’ve identified the potential to add $50bn in government revenue from critical minerals if we make the right choices in policy and support. Which poses the question: How much, and where, should governments invest to achieve a return of this magnitude?

To this end, our analysis on page 6 is based on PwC modelling that looks at four alternative futures for Australia’s critical minerals sector. Importantly, we also explore a range of policy choices to help us maximise the size of the prize on offer.

A year ago, we expressed an ambition for Australia to substantially increase the exploration, discovery and development of critical minerals projects, as well as a need to invest in value-adding downstream processing. We note some progress in government policy and actions. However, that progress is limited and insufficient, and we’re falling behind other countries. There’s much to do.

Fortunately, Australia’s mining companies are in the right shape financially to play their role in developing new projects. As this year’s Aussie Mine report shows, earnings have reached a new record level, while existing financing and supportive markets will also help fund the needed investment.

Mixed short-term signals

Short-term economic uncertainty continues, as do geopolitical risks, and both present some mixed signals on prices. Beyond the short term, however, the outlook is clearer. Demand for critical minerals will continue to rise significantly, and it will be very challenging for supply to keep pace.

Right now, the share prices of mining companies are fluctuating significantly as the market weighs the balance between short and longer-term horizons. Deal activity for lithium companies is escalating and acquirers are very focused on the size of longer-term opportunities.

We all have critical choices to make

Governments, communities, companies and individuals all have critical choices to make as we transition to a lower carbon economy. It’s a complex time and the challenges are significant. However, it’s important for us to change the way we’ve looked at things. It’s time to think differently and act now.

1 www.industry.gov.au/sites/default/files/2023-06/economic-potential-of-australias-critical-minerals-and-energy-transition-minerals.pdf

Highlights

MT50 overview

56% — Number of producers

44% — Number of non-producers

Market capitalisation

$156bn

26% higher

Critical minerals companies

Number: 22

Value: 57%

Earnings

$30bn EBITDA

30% higher

Shareholder cash returns

$6.2bn

51% higher

Revenue

$60.8bn Total

$27.7bn Coal

14% higher

Operating cash flows

$25bn Total

$11bn Coal

29% higher

Capex

$11bn

33% higher

Deals

50% Critical minerals deals

Value up by 19%

Cash

$21bn Cash

$11bn Debt

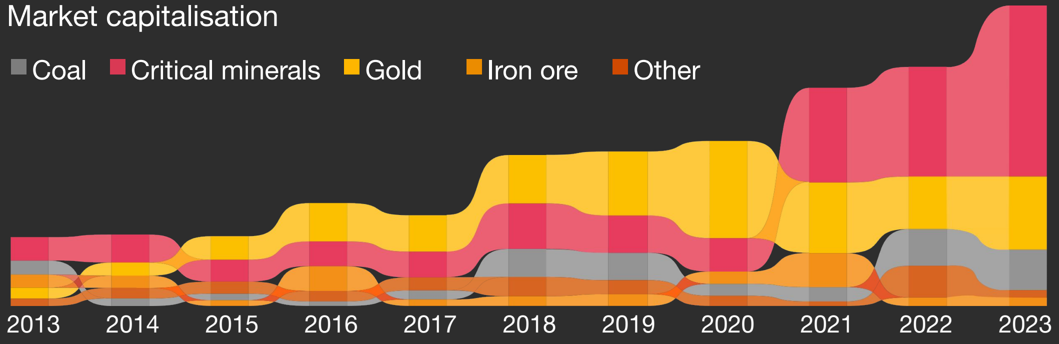
Net cash $10bn

Return on equity

21%

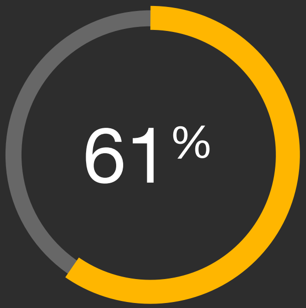
2x 10 year average

Market capitalisation

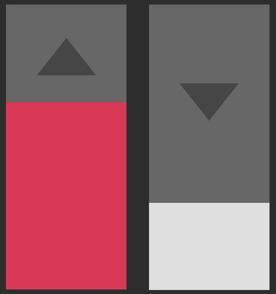


Market value

Top 10



Changes in market value

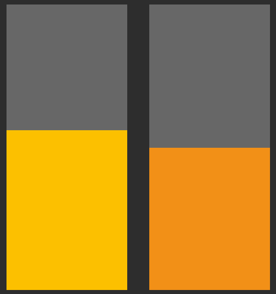


38
Increased

12
Decreased

Out of 48

New funding



$3.8bn
Debt

$3.0bn
Equity

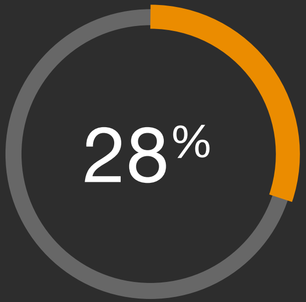
Out of $6.8bn

Lithium revenue

9x FY21 level

EBITA

Critical minerals

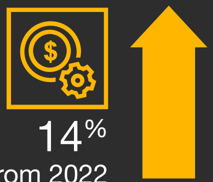


Coal companies breaking records

Record prices

$$

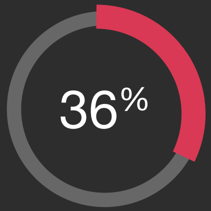
$11.4bn



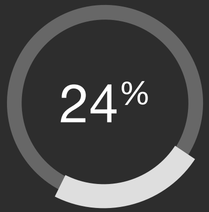
14%
Increase from 2022

The next four charts show how the cash from operations for the coal companies has been allocated

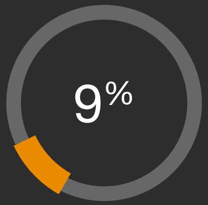
Government
Tax and royalties



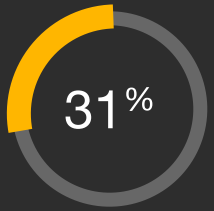
Shareholders
Dividends and buybacks



Capex



Balance sheet
Debt and cash



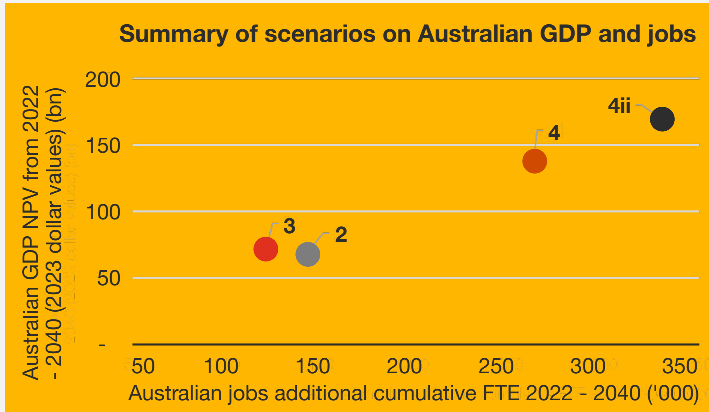
Critical choices

A $171bn opportunity for Australia, but we need to earn it

Right now, we face a range of critical choices. How we address these choices will inform our role in the path to net zero, as well as the extent to which our communities benefit from the global energy transition.

Australia has the chance to generate more than $170bn in GDP and create almost 330,000 jobs by 2040 if we capitalise on our first-class endowment of critical minerals and other energy transition minerals. That's the size of the prize according to recent modelling, which explores four alternative futures for Australia's critical minerals sector. From developing downstream capabilities to shaping international markets, we've estimated what could be unlocked if governments, industry, and stakeholders take bold, coordinated action on critical minerals. Moreover, drastic action (see Scenario 4 outlined below) is needed to both maximise Australia's economic potential and reach net zero emissions in a timely manner. In short, we'll only get this prize if we are bold enough to think differently and act now.

In June 2023, the Department of Industry, Science and Resources commissioned PwC to model a range of scenarios that estimated the potential benefit for the Australian economy based on opportunities in the energy transition and critical minerals sector. These scenarios range from Australia maintaining our current market share, to more aspirational scenarios that require true step changes if they are to be realised.



Scenario 1: Maintaining market position
Under this scenario, Australia increases production in line with global demand but remains primarily an exporter of raw materials (i.e. no real development of downstream capabilities).

Scenario 2: Value adding
Australia moves beyond a 'dig and ship' mentality to capture more of the downstream processing supply chain. Government policy leads to increased investment in onshore processing and manufacturing. (For example, materials purification and refinement, or component manufacturing for EV batteries).

Scenario 3: Shaping international markets
Australia shapes international markets by influencing standards, attracting a green price premium for being an ethical supplier. We also progress government-to-government and business-to-business partnerships to secure greater market share.

Scenario 4: Building capabilities and international market share (i.e. combining scenarios 1-3)
Simultaneously adopting a deliberate policy focus on downstream processing capabilities (Scenario 2) and securing greater international trade and investment (Scenario 3), while increasing production (Scenario 1). Scenario 4ii also incorporates faster project development times.

Decarbonisation of the global economy is progressing with increasing momentum. Governments, institutions and businesses around the globe are focusing on, adjusting to, and investing towards a net zero carbon future. Exactly when we'll reach net zero is still up for debate. The path to achieving the Paris Agreement ambition (i.e. to reach net zero by 2050 and limit global temperature rises to 1.5°C) is shrouded in uncertainty. However, as political, social and financial capital flies towards net zero initiatives, it's increasingly clear that we are on the path to net zero. The key question has become when – not if – this will be achieved.

As our reliance on coal and hydrocarbons for energy decreases, mineral intensity increases. And Australia has the right 'magic dirt' needed for this. Critical minerals are core components to electricity grid infrastructure, solar, battery and wind turbine technologies, and EVs – that is, the building blocks of the energy transition.

Australia is well placed, with large critical minerals deposits including lithium, cobalt, copper, alumina/aluminium, manganese, nickel, rare earth elements and vanadium.

It’s a race

The size of the prize depends on whether Australia maximises its critical minerals opportunity. Total additional GDP ranges from $71bn–$171bn (present value), while there’s a chance to add 115,100–329,000 jobs. Using the latest available tax revenue-to-GDP ratio, this means up to $50bn in additional tax revenue to the governments of Australia.[2]

A year ago, we outlined three key ambitions Australia must achieve to maximise our critical minerals opportunity:[3]

1. attract more investment into critical minerals projects and infrastructure
2. create a policy environment to incentivise growth
3. balance social and environmental outcomes (i.e. go about it the right way).

Since then, Australia has made positive, but limited, progress. Meanwhile, some international jurisdictions have made more significant strides in the development of their critical minerals industries. The benefits reduce if we don’t move swiftly. Established supply chains very easily become barriers to entry.

Australia’s progress includes:

- Publishing an updated Critical Minerals Strategy 2023–2030. Notably, one of the focus areas of this strategy is attracting investment and building international partnerships, which aligns with the two measures announced for critical minerals in the 2023 federal Budget.
- Promising $57m over four years from FY24 to undertake international engagement to promote Australian critical minerals projects and build diverse and resilient supply chains with key international partners.
- Investing $23m over four years from FY24 for critical minerals policy development and project facilitation, including activities to showcase Australia’s environmental, social and governance credentials to international markets.

From the Critical Minerals Strategy and budgetary measures, we can see an intention from the Australian Government to tap into foreign investment, rather than compete with it.

To this end, in October 2022 the Government announced the establishment of the $15bn National Reconstruction Fund (NRF), which includes $1bn earmarked for value-adding in resources. The NRF Bill was passed in March 2023. However, it wasn’t until September 2023 that the NRF Board met and, even then, this meeting was only to establish the National Reconstruction Fund Corporation.

In other words, the pace of action with the NRF is insufficient. At the time of writing, none of the proposed $15bn has been deployed, despite the acknowledgement that ‘competition is fierce [and] the international investment landscape is shifting rapidly as governments around the world race to incentivise investment in diversifying and expanding critical minerals supply chains.’[4]

At the same time, other nations are innovating and changing their approach to critical minerals. International developments include:

- **New resource deposits**: New hard rock lithium (spodumene) deposits have continued to emerge, most prominently in Nevada (including McDermitt, Thacker Pass and Bonnie Claire) and Quebec (James Bay, Cyr-Kapiwak and Sirmac East). Notably, governments in both jurisdictions have provided significant support to the industry.
- **Emergence of new technologies**: For example, direct lithium extraction technology (DLE) technologies have the potential to significantly increase the lithium supply from brine projects, almost doubling production on higher recoveries.[5] DLE has been applied in producing projects in China and South America and could increasingly challenge Australia’s dominant supplier position.
- **Ecosystem development**: Governments are moving fast to develop ecosystems which provide strategic infrastructure, promoting related industries, attracting partners and encouraging innovation. For example, Quebec has a burgeoning lithium-ion battery industry supported by i) a national battery strategy; ii) several stable incentive programs (including research and development, tax, and electricity rebates); iii) close proximity to ‘Auto Alley’ rail links, and; iv) North America’s lowest electricity rates powered by 99% renewable energy.

2 Estimated using latest available ‘taxation revenue for all levels of government as a percentage of GDP’ of 29.6% in FY22. www.abs.gov.au/statistics/economy/government/taxation-revenue-australia/latest-release
3 www.pwc.com.au/mining/critical-minerals/accelerating-australias-critical-minerals-opportunity.html
4 www.industry.gov.au/publications/critical-minerals-strategy-2023-2030#:~:text=The%20Critical%20Minerals%20Strategy%202023.expertise%20at%20extracting%20minerals
5 www.goldmansachs.com/intelligence/pages/gs-research/direct-lithium-extraction/report.pdf

Australia faces critical choices about the role it will play in the global energy transition

The window of opportunity is narrowing for Australia to determine its role in the global energy transition. If the potential return to governments is $50bn, then how much should they invest to realise this amount? Ten billion dollars? Twenty billion? More?

We've started to promote Australia's role in global secure supply chains with strong ESG credentials. Australia's mining sector has been successful over past decades playing a key role in global supply chains. Globalisation is rapidly evolving, and a new type of multilateralism is emerging. We need to think differently about our role in the decades ahead.

Specifically, Australia faces critical choices around:

1 **Funding and incentives** to significantly increase exploration activity

Critical choices over how and which opportunities to support:

- Department of Industry, Science and Resources initiatives supporting exploration activity include the NRF, the Major Project Facilitation Agency, and the Research and Development Tax Incentive.
- Initiatives from other federal government agencies include the Clean Energy Finance Corporation, Export Finance Australia , Northern Australia Infrastructure Facility and the Junior Minerals Exploration Incentive, which encourages investment in greenfields minerals exploration companies.
- These initiatives are at varying stages and have been delivered with varying impacts. What's apparent is that the speed and scale of developments in Australia is not keeping pace with international competitors so change is required.
- Picking winners (that is, providing government support for particular industries to promote economic development) is littered with historical missteps, and caution should be exercised. However, in a world where the destination (net zero) is set in stone, the government may have to get comfortable with picking winners (whether specific mines or commodities) to support Australia's net zero contribution.

2 **Infrastructure** to support and incentivise critical minerals investments

Critical choices over the role of shared infrastructure to support investment:

- Critical minerals projects require a broad range of supporting infrastructure including sufficient water resources, reliable and affordable clean energy (e.g. renewables, battery storage), logistics (such as road, rail and ports), and social and community infrastructure (including housing).
- Shared infrastructure can:
  - reduce risks to individual projects by sharing the capex load across multiple projects, improving investment cases
  - reduce single commodity/company risks to infrastructure investors by accepting feedstock from multiple suppliers
  - allow investors access to a new asset class without direct commodity risk exposure.
- We're already seeing catalytic government support for critical minerals hubs, with the first hub in Central West New South Wales. In Queensland, the government has committed at least $10m to the vanadium Common User Facility in Townsville, with the goal of becoming a leading producer and exporter of new economy minerals. The CopperString 2032 transmission project could also help connect potential projects to the national grid.

Direct market interventions to address potential market failures

Critical choices regarding if and how governments should directly intervene in markets:

- It's challenging for markets to always get it right. Particularly for newer sectors. There's therefore a role for governments to play in supporting emerging minerals.
- Commodity market intervention is not new in Australia, at both a federal and state level. Examples include supporting the LNG industry in its infancy, and the recent price caps for domestic gas and thermal coal.
- Potential market interventions into the critical minerals sector could include:
  - Support for creating environmental, social and corporate governance (ESG) branding or a 'green pricing premium' for Australian mineral exports, reflecting the higher ESG standards of Australian mining
  - Developing a domestic critical minerals strategic reserve to i) support early-stage project development, ii) guarantee supplies of Australian minerals to domestic value-add refiners/manufactures, and iii) meet supply promises to allied countries.

Collaboration across both industry and geographies

Critical choices over how we balance operating as one nation versus operating as individual states/territories:

- Queensland and New South Wales have each announced a critical minerals strategy for their state, in addition to the federal strategy. However, these strategies are disparate and there are no measures to collaborate or to complement the funding or measures of one another. There's also risk in states competing against each other. Without cross-government collaboration, support will be piecemeal and potentially duplicitous. A 'master planning' approach to critical minerals strategy development could lead to innovative developments such as multistate mineral processing facilities or supporting infrastructure.
- There's also potential for matchmaking between junior and major mining companies, leveraging the mineral deposits of juniors and the processing capacity of majors. For instance, junior miners may benefit from a tolling agreement with major miners, to speed up project development and increase critical mineral supply.
- There are positive signs of commercial collaboration in some areas. However, much more could be done together to progress the opportunities and challenges ahead.

Untangling regulation to accelerate critical minerals supply

Critical choices on the role of regulation in enabling responsible critical minerals activity:

- It's important to remember that we need to optimise our critical minerals supply in the right way and regulation will always be an important part of the sector. In particular, we need regulation that supports ESG outcomes while facilitating investment in critical minerals to support a net zero world.
- Removing red (and green) tape and duplication, to reduce bureaucracy without changing ESG outcomes, would be a win for both government and industry by reducing effort on both sides.
- Areas where regulations could be improved include:
  - speeding up and combining approvals
  - additional submissions processes and data support
  - bolstering pre-approvals to enable earlier progress on funding
  - aligning state/federal requirements to eliminate duplications
  - modernising regulation - e.g. enabling re-mining of tailings and dealing with trailing liabilities.

Access to talent and skills to deliver critical minerals projects

Critical choices to create the talent pipeline required to deliver critical minerals projects:

- As competition for talent heats up globally, Australia must consider how it will attract and retain skilled workers. We could import talent from overseas, however, this would be a short-term fix.
- The Australian Government has demonstrated support for STEM degrees including geology, metallurgy and mining engineering degrees. Continued support would help Australia build out domestic skilled labour capacity.
- Innovative solutions to increase mining-related STEM degree uptake include: HECS-HELP debt reductions in exchange for rural or remote work post-graduation; or requirements for rural secondments/practical experience with junior mining companies.
- Ultimately, without sufficient skilled labour, Australia's critical minerals supply will not meet global demand, putting our role in the global energy transition at risk.

There are many critical choices to be made around the complex, evolving nature of the critical minerals sector globally. We recognise that optimising critical minerals supply isn't easy to achieve. Governments, industry and communities face critical choices, and we must think differently and act now to ensure we make the most of our environmental and economic opportunities.

Critical choices beyond compliance

Australia's mining companies also have some critical choices to make on a range of ESG matters

Climate-related reporting: Moving from regulatory compliance to strategic value creation

Executives and directors have a critical choice to make on climate-related regulation. Companies can choose a path of compliance. Or they can choose to go deeper to embed sustainability within their strategy, driving value creation so they thrive during the transition to net zero. For MT50 companies, there's an unmissable opportunity to unlock value by putting sustainability at the heart of organisational strategy. PwC's Global Investor Survey 2022 found that sustainability is a major consideration for investors. In fact, three of the top five priorities for investors relate to sustainability (namely: data security and privacy (51%), effective corporate governance (49%) and reducing greenhouse gas emissions (44%)).

How, then, do mining organisations embrace sustainability in practice?

Three opportunities for Australia's mining organisations to create value from sustainability

1 Decarbonisation transition strategy

This starts with understanding the organisation's energy consumption. Organisations must have i) an acute appreciation of the energy and emissions demand profile of their operations, as well as ii) a clear picture of the transition activities needed to reach a net zero future.

Of course, energy is only one lever and so your decarbonisation program should include other considerations such as emissions intensity. When reviewing emissions generated from Scope 2 energy activities, for instance, consider both emissions reductions and energy cost reduction opportunities, especially given the ongoing volatility in the national energy supply. Business leaders should consider:

- What activities can we undertake behind the meter? Are there opportunities to leverage renewable energy and storage solutions to mitigate rising energy costs and reduce emissions?
- Is there scope to negotiate future energy contracts to support electrification? (e.g. Contracts involving green firming energy commodity and optimisation services).
- If connected to the grid, is there an option to play ancillary markets with storage and controllable loads?

2 Carbon strategy

Organisations, whether they're covered by the Clean Energy Regulator's Safeguard Mechanism reforms or not, should consider a carbon strategy that complements their decarbonisation programs. This means identifying how to create value from carbon at the same time you pursue decarbonisation.

From fostering carbon market expertise to play in carbon markets, through to developing Australia Carbon Credit Units (to cash in at an opportune time), there's several steps you can take to set yourself up for carbon strategy success.

Ask yourself:

- Do we understand our role in the carbon market? Are we a credit creator? Or a buyer, seller or retirer of credits?
- What constraints do we face? (e.g. Compliance obligations, commitments to stakeholders or capital availability.)
- Are we valuing carbon credits correctly? How are we defining 'fair value' for a carbon credit?
- Is our internal carbon price increasing over time as our abatement opportunities are addressed and as the market matures?

3 Nature as an asset

Finally, hand in hand with your carbon and decarbonisation strategies, is the concept of nature (or natural capital) as an asset class. This requires something of a mindset shift. No longer is nature viewed solely as a cost; it's also an opportunity.

Recent research by PwC found that a biodiversity market could unlock $137bn in financial flows to advance Australian biodiversity outcomes by 2050, with more than half of this activity ($78bn) to be driven by biodiversity, conservation, and natural capital-themed bonds, loans, debt and equity.

MT50 companies are particularly well versed in biodiversity thanks to their exploration, development, restoration, and operational activities. Biodiversity forms part of their license to operate from both a social (community and First Nations) perspective, and a regulatory perspective.

Now, however, mining organisations need to see nature as an asset, and incorporate this thinking into their climate strategy, embracing the chance to preserve nature and use nature itself to offset carbon.

A critical choice

Overall, there's an enormous opportunity to unlock value by placing sustainability at the core of organisational strategy. It all comes down to how we approach climate and ESG regulation and, on that front, organisations face a critical choice.

The positive duty: An opportunity to go beyond compliance

From December 2023, Australian businesses will have a legal responsibility to demonstrate proactive and meaningful action to prevent sexual harassment and sex-based discrimination in the workplace. This change, known as the positive duty, may pose challenges. It's also an opportunity to move beyond mere compliance to enact genuine and long-lasting change, and there's myriad reasons to do so.

Our research indicates that 22% of employees value support of their wellbeing above all other factors. The positive duty is an opportunity for mining companies to demonstrate real commitment to employees' wellbeing and create safer, more inclusive workplaces by driving down sexual harassment rates and promoting physical and psychological safety. This is also good news for both current employees and potential employees. Embracing the positive duty is an effective way for mining organisations to position themselves as employers of choice and to attract a pipeline of talent in an industry where it's notoriously hard to get staff.

There's a clear correlation between value creation and robust ESG practices. More importantly, it's fundamentally the right thing to do as an employer.

The critical choice to create safe, respectful and inclusive work environments for all employees is further explored in this article.

Critical minerals dominate deal activity

This time last year, PwC predicted an increase in M&A activity. This was certainly the case for the size of transactions in 2023, even as the number of completed transactions decreased. Unsurprisingly, critical minerals were the main feature. BHP's $11bn acquisition of OZ Minerals dominated the list of 2023 completed deals. Meanwhile, three significant pending MT50 lithium transactions mean that 2024 is expected to be even bigger for deals.

Miners face an intensely competitive environment for critical minerals assets, as the sector attracts new buyers from other sectors such as industrial companies. The Allkem and Livent merger encapsulates what we expect to see more of. Namely, combining traditional mining companies with chemicals companies to unlock value from downstream activities.

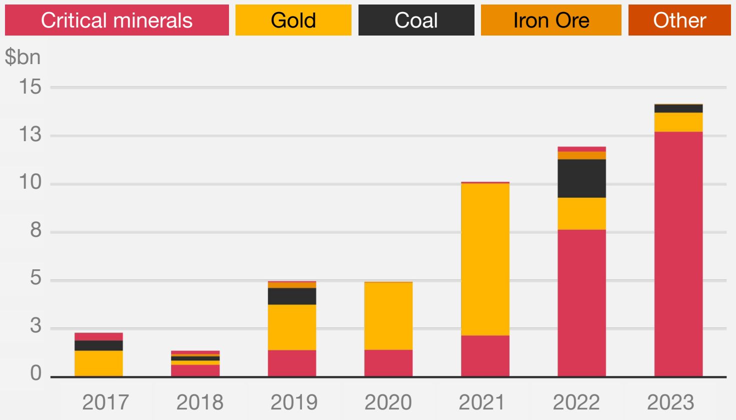
Gold transactions during 2023 were much lower than in recent years. (Note: Newmont's acquisition of Newcrest sits outside of the MT50.) We expect continued consolidation in the gold sector as business leaders focus on unlocking scale and synergies through M&A.

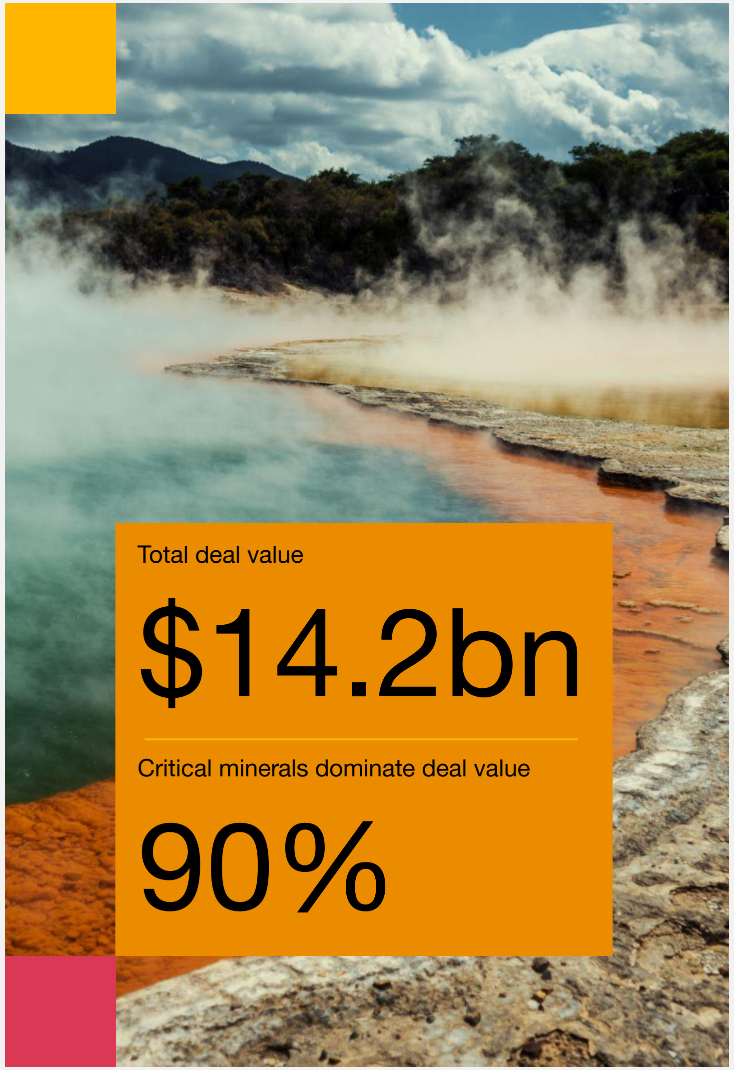
MT50 coal companies have taken advantage of the opportunities arising from majors realigning their portfolios to reduce coal exposure. Stanmore acquired the BHP Mitsui assets (including the $380m deal to acquire the remaining 20% stake this year). Whitehaven Coal has also recently picked up BHP's Blackwater and Daunia metallurgical coal mines in Queensland.

Notable pending deals

1. Arcadium Lithium (Allkem - Livent merger)
2. Whitehaven Coal's acquisition of Blackwater and Daunia from BHP
3. SQM acquisition of Azure Minerals
4. Mineral Resources' acquisition of Bald Hill

Deal value by commodity





Total deal value

$14.2bn

Critical minerals dominate deal value

90%

MT50 transactions ($m)

Commodity group	2017	2018	2019	2020	2021	2022	2023
Critical minerals	72	645	1,401	1,423	2,161	7,641	12,717
Gold	1,297	208	2,364	3,458	7,850	1,668	986
Iron Ore	0	105	281	70	32	400	29
Coal	540	230	860	0	0	1,983	435
Other	393	184	72	0	84	260	0
Total	2,302	1,372	4,978	4,951	10,127	11,952	14,167

Original equipment manufacturers switching to direct deals with miners to secure supply

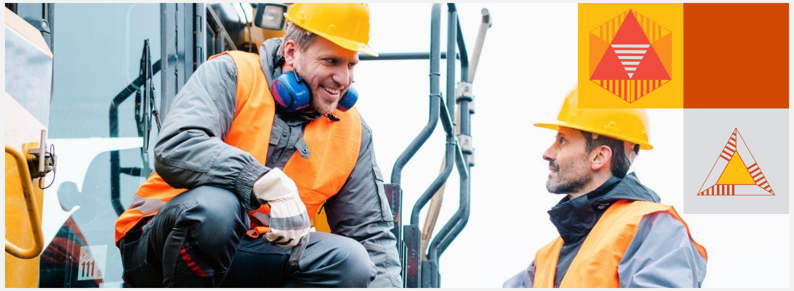
Bottlenecks in sourcing critical minerals are prompting original equipment manufacturers (OEMs) to bypass traditional supply chains.

Challenges in sourcing required critical minerals has led to a shift in attitudes by OEMs towards the mining sector, and a realisation that they can no longer approach the sourcing of critical minerals in traditional ways.

As a result, we're seeing an increase in OEMs dealing directly with mining companies via offtake and lending agreements. This includes pre contracting supply (through memorandums of understanding and non-binding offtake arrangements), often during early project stages, prior to financial investment decisions being made.

We expect this to continue. In fact, it may extend to include more early-stage direct equity interests in projects. Lithium is a good example. To meet the forecast increase in demand for EVs, the lithium industry is relying on early-stage mining companies (often with unproven technologies) to deliver the supply promised.

We'll need this if we're going to meaningfully close the supply gaps ahead. Plus, there are more opportunities with early-stage projects, particularly as customers face intense competition for supply from advanced projects.



Critical contributions

Tax and royalties

Governments are increasingly benefiting from the mining sector. Higher royalties in Western Australia and Queensland have helped those states enjoy strong surpluses. In 2023, the Australian government unveiled a surprise record surplus the back of critical contributions from the resources sector.

The MT50 companies are making significant and increasing contributions to government funding at both state and federal levels. Income tax payments for the FY23 tax year were a record $5.4bn, up by 59% compared to FY22. Coal was again the dominant contributor in FY23, with $3.3bn in income taxes paid.

Government royalties and income tax paid by coal companies

$6.4bn

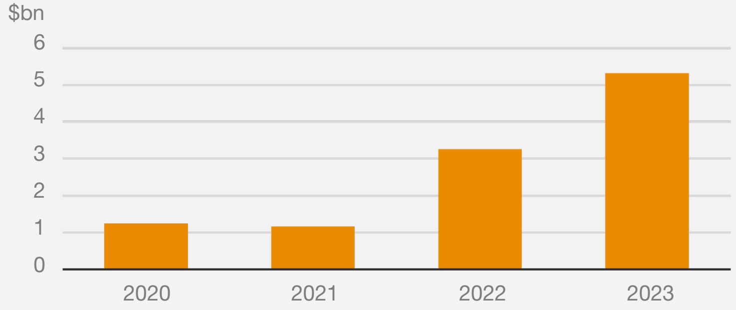
65% increase compared to FY22

Critical support, with a strong expected financial return

The MT50 is also demonstrating a clear win-win for governments in critical minerals projects. The earnings of critical minerals companies increased in FY23, while income taxes paid rose to $2.3bn. Royalties were also substantially higher, increasing by 112% to $0.8bn.

Strong returns are available to governments if they make the right choices to support growth in critical minerals projects. Remember, the expected financial returns for governments is $50bn if we get this right.

Income tax paid by tax year



Income tax payments

5X compared to FY21

Financial analysis

MT50

Market capitalisation

$155.9bn

+$42.2bn 37%

Operating cash flows

$24.6bn

+$5.6bn 29%

Revenue

$60.9bn

+$13.7bn 29%

Dividends paid

$4.8bn

+$1.5bn 45%

EBITDA

$30.4bn

+$7.0bn 30%

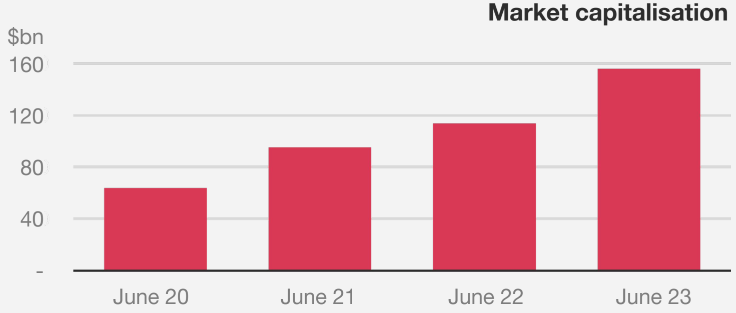
Capex

$11.7bn

+$4.8bn 70%

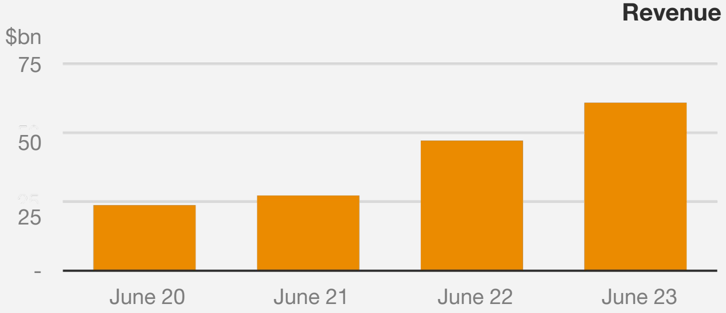
Market capitalisation

The overall values for the MT50 companies increased 37% to a record $155.9bn at the end of June 2023, dominated by values for critical minerals miners.



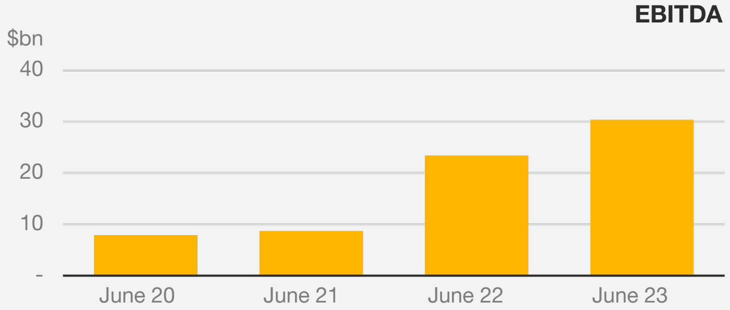
Strong commodity prices and production

Revenues were higher in 2023 thanks to continued strong commodity prices and higher production.



Earnings and profitability continue to break records

The MT50 generated record earnings and profitability in 2023. Revenue and EBITDA increased by 29% to $60.9bn and $27.7bn respectively. Returns for coal and lithium miners were the standout performers, consistent with 2022, with coal miners generating $13.9bn in earnings (approximately 50% of total MT50 EBITDA), and lithium miners generating $6.2bn (approximately 22% of total MT50 EBITDA).



Financial analysis

MT50

	2021	2022	2023
Earnings	$bn	$bn	$bn
Revenue	29.4	47.2	60.9
EBITDA	8.7	23.4	30.4
Net profit	4.2	11.3	13.7
Adjusted net profit	3.1	12.1	15.4
	2021	2022	2023
Financial position	$bn	$bn	$bn
Assets	73.8	107.0	118.0
Liabilities	26.3	41.2	40.1
Equity	47.5	65.8	77.9
Cash	9.5	19.1	21.0
Borrowings	10.2	14.9	11.4
Net cash	1.9	4.2	9.5
Gearing	22%	23%	15%
	2021	2022	2023
Profitability measures			
EBITDA margin	32%	49%	48%
Return on equity	8%	21%	21%
Return on capital employed	6%	18%	18%

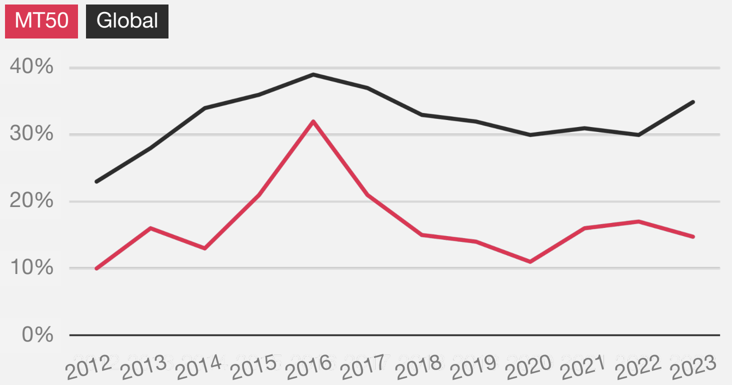
Critical minerals miners set for growth; coal miners repay debt

Cash balances for the overall MT50 continued to grow. Cash balances for critical minerals miners increased 15% to $10.5bn as strong results in FY23 provided important growth funding. Cash held by coal companies, however, declined 14% as they settled 2022 tax liabilities, retired debt and paid dividends.

Borrowings reduced by 23%, mainly driven by coal companies who have continued to repay debt from strong cash flows.

The overall MT50 gearing ratio decreased marginally to 15%, mainly driven by coal. The overall MT50 gearing level continues to be significantly lower than the large-cap global miners.

MT50: Gearing ratio (average)



Financial analysis

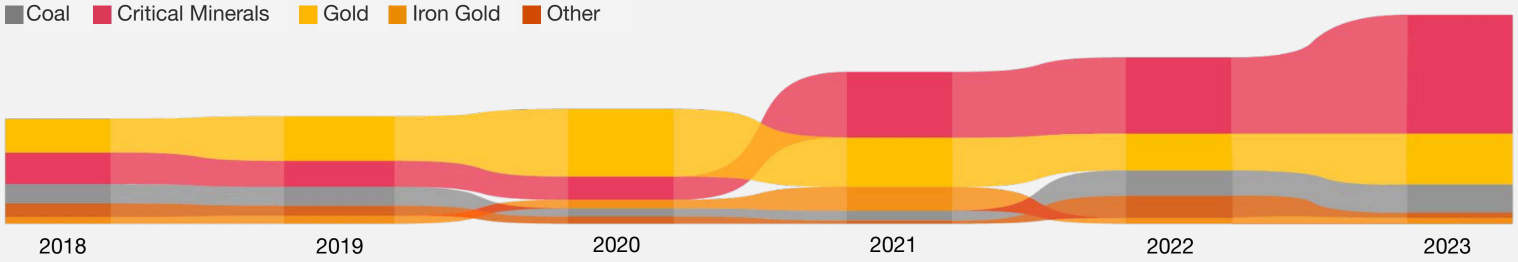
MT50

Record cash from operations

Higher earnings translated into record operating cash flows of $24.6bn (an increase of $5.6bn or 29%). The increase was mainly driven by critical minerals miners on the back of strong results in FY23, with an increase of $4.3bn or 119%. Coal continued to generate nearly half of the cash from operations ($11.4bn).

	2021	2022	2023
Cash flows	$bn	$bn	$bn
Operating cash flows	**8.0**	**19.0**	**24.6**
Capital expenditure	(5.9)	(6.8)	(11.7)
Cash acquisitions	(2.3)	(7.0)	(1.0)
Net investing cash flows	**(7.9)**	**(12.9)**	**(13.4)**
Net debt (repaid) / issued	(0.2)	2.5	(5.2)
Cash from share issues	4.4	5.3	2.9
Dividends and share buybacks	(1.4)	(3.8)	(6.2)
Net financing cash flows	**2.3**	**3.9**	**(9.9)**

Capital expenditure by commodity group



Continued investment in growth

Cash investment spending continued to grow and is now 1.7 times 2022 levels. The MT50 increased its capital expenditure spend by a sizable $4.8bn (70%), showing large investment in its existing projects. The growth activity continued to be largely concentrated in critical minerals ($4.5bn) and gold ($3.9bn), with critical minerals now dominating the total capex spend across the MT50. Growth funding was sourced from new debt and equity raises, along with cash generated from existing operations and cash reserves.

Coal continued to repay a significant amount of debt ($5.3bn) and dividends ($6.3bn paid and payable) during the year after generating record cash from its operations ($11.3bn).

We saw debt and equity markets continue their strong support for growth projects of critical minerals miners and gold companies, with critical minerals miners raising $2.3bn in debt and $1.5bn in equity, while gold miners raised $1.4bn in debt and $1.1bn in equity.

Financial analysis

Critical minerals

Market capitalisation

$89.3bn

+$27.2bn 45%

Revenue

$15.0bn

+$6.1bn 68%

EBITDA

$10.5bn

+$4.2bn 67%

Operating cash flows

$8.0bn

+$3.0bn 73%

Dividends paid

$1.4bn

+$0.3bn 23%

Capex

$4.5bn

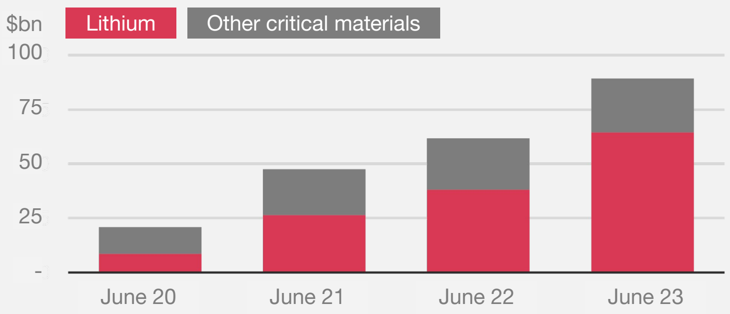
+$2.9bn 173%

Market capitalisation

The critical minerals companies continue to cement their place as the dominant commodity group within the MT50. They make up 44% in number, but represent 57% of the MT50 market capitalisation.

The market capitalisation of the group increased $27.2bn, or 45% from June 2022. Almost all of this increase is attributable to the lithium producers.

Market capitalisation

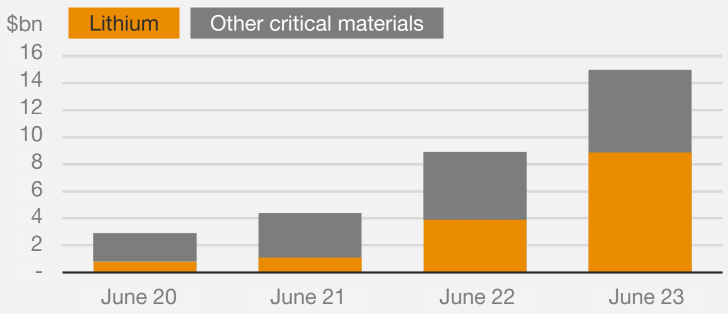


Record revenues and profits

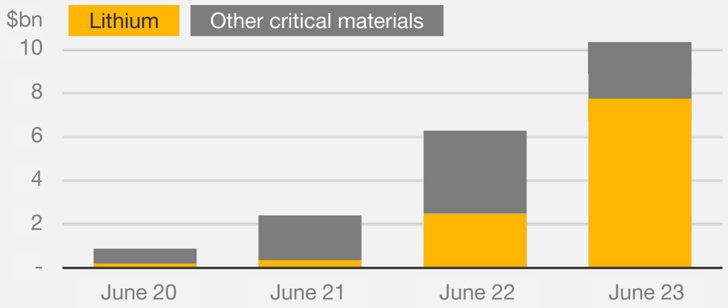
Growth in production and sales translated into a significant increase in revenues, earnings and cash balances among the critical minerals companies of the MT50.

The four lithium producers (Pilbara Minerals, Mineral Resources, Allkem and IGO) each reported high margins and EBITDA earnings over $1bn.

Revenue



EBITDA



Financial analysis

Critical minerals

Lithium is fast charging the MT50

The four large lithium producers generated EBITDA over $8bn in 2023, demonstrating the significant value from investment in lithium projects. A combined market capitalisation of $50bn, plus $7bn in cash and a strong pipeline of growth projects completes the picture.

Record spot prices during part of the year helped earnings. While spot prices have since moderated, this should prove temporary.

Supply still set to fall short of demand

MT50 companies are taking advantage of the opportunities in lithium with many growth projects underway, including expansions, new projects, and downstream chemical projects. And yet this current pipeline of projects will not meet expected demand. Long lead times and expected delays in bringing large projects into production will impact market balance and pricing.

Lithium M&A frenzy

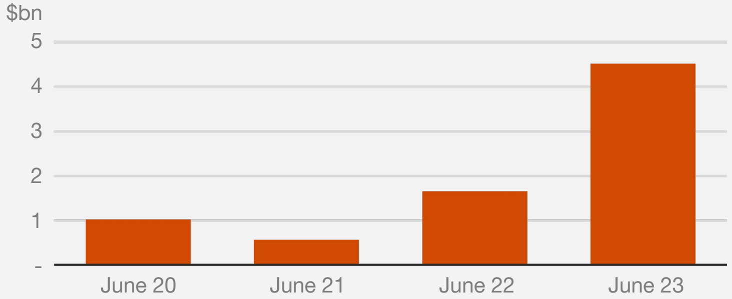
M&A activity in lithium is heating up. Pending deals include the Allkem-Livent merger, SQM's acquisition of Azure Minerals, and Mineral Resources acquisition of Bald Hill. Albermarle's conditional offer to acquire Liontown for $6.6bn did not complete, and was replaced with a debt/equity raise to complete Kathleen Valley funding.

Ambitious growth plans

The critical minerals companies within the MT50 cohort are keenly focused on growth. Capital expenditure in 2023 represents almost three times that of 2022 levels and almost eight times that of 2021 levels. The total capital expenditure was dominated by Allkem, Lynas, Mineral Resources and Sandfire Resources, representing approximately half of the total capital spend by the critical minerals miners. The spend appears to be paying off, with record production and earnings in 2023.

Strong cash flows and keen interest from debt and equity markets will keep the growth spend coming for the critical minerals cohort. In October 2023 Mineral Resources announced the completion of its US$1.1bn notes offering, with the funds to be directed towards growth spend. Also in October 2023, Liontown raised $1.1bn in debt and equity to fund development of Kathleen Valley.

Capital expenditure

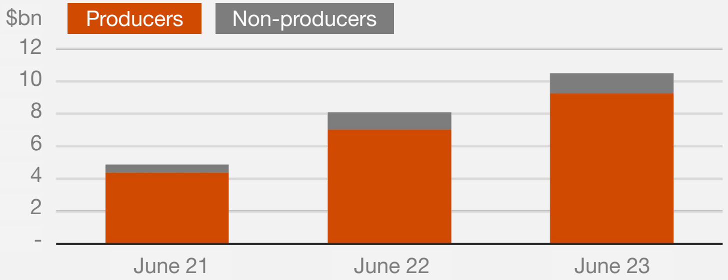


5 number of lithium producers in the MT50

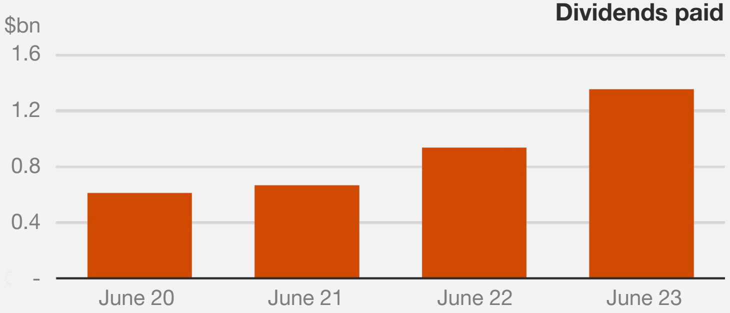
Record cash balances

Critical minerals companies held more than half of the MT50's cash in 2023. The aggregate cash position at June 2023 was over $10bn, more than 30% higher than June 2022 and a staggering 115% compared to June 2021. This has been built up from operating cash flows, along with debt and equity raised for growth projects. This cash will be critical to fund continued growth plans for critical minerals companies.

Cash balances



Dividends paid



Mineral demand for use in EVs and battery storage is a major force, and is set to grow at least 30 times to 2040. Lithium sees the fastest growth, with demand growing by over 40 times in this period.'[7]

7. Source: IEA: www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions/executive-summary

Financial analysis

Gold

Market capitalisation

$37.9bn

+$12.7bn 51%

Revenue

$14.4bn

+$1.5bn 12%

EBITDA

$5.4bn

+$0.9bn 19%

Operating cash flows

$4.6bn

+$0bn 0%

Dividends paid

0.4bn

+$0bn 0%

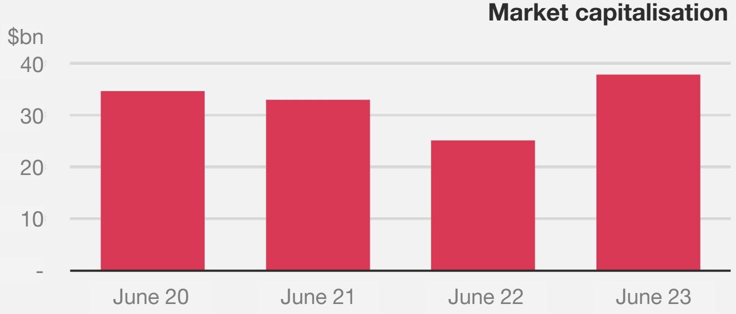
Capex

$3.9bn

+$0.5bn 15%

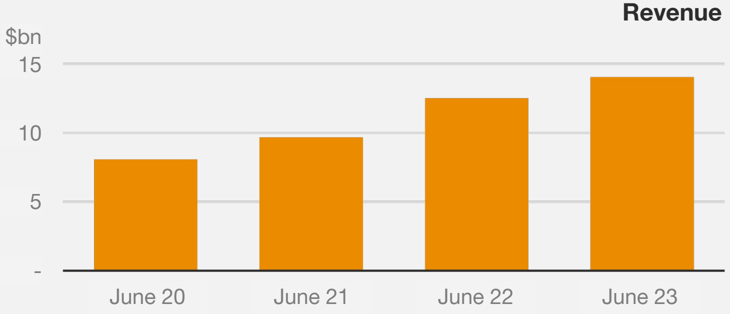
Golden recovery

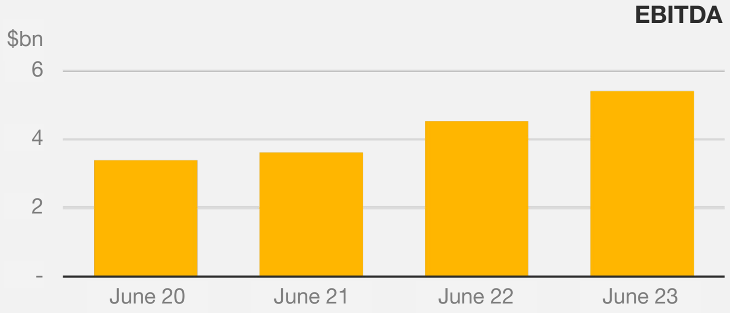
The market capitalisation of the group increased $12.7bn in the past year – a 51% increase from 2022. The improvement in value reflects the gold price holding up in Australian dollar terms, as well as cost pressures moderating, and the expectation of future returns from ongoing growth. Higher interest rates, aimed at tackling inflation, has led to a very strong US dollar, which has dampened the gold market.



Costs outpace revenue growth

The revenue of gold companies increased 12% in 2023 on the back of higher prices (particularly in the second half of the year) and higher production. However, margins continue to be under pressure with most gold producers reporting an increase in all-in sustaining costs (AISC). This is driven by factors such as a continuing tight labour market, higher energy costs, the stronger US dollar, and persistent global supply chain issues. This translated into constrained earnings and operating cash flows in 2023.





Financial analysis

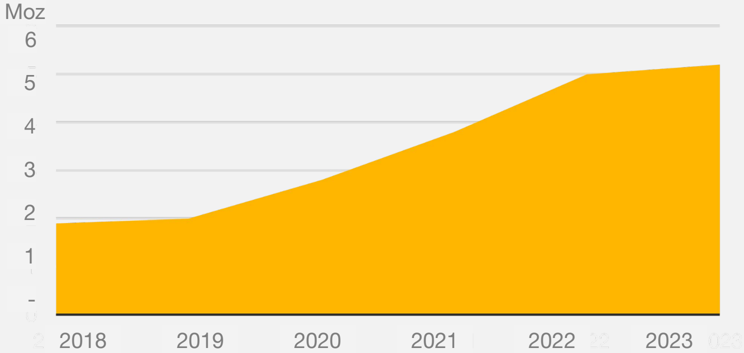
Gold

Production continues to increase

The producing gold companies have continued to increase production of gold to a total of 5.2Moz in 2023, up from 5Moz in 2022, which represents a 4% increase in production. Four companies (Northern Star, Evolution Mining, Perseus and Ramelius) make up approximately 61% of the total production of the gold companies included in the MT50.

Gold production across the MT50 has increased significantly in the period from 2020–2022 as gold miners pursued growth through acquisitions. Notable deals include Northern Star's acquisition of 50% of the Super Pit and subsequent merger with Saracen; Evolution Mining's acquisition of Red Lake gold mine and Ernest Henry mine; and Regis Resources' acquisition of a 30% stake in the Tropicana gold project.

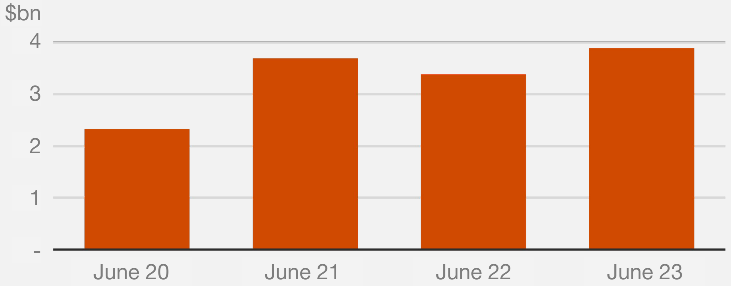
Gold production



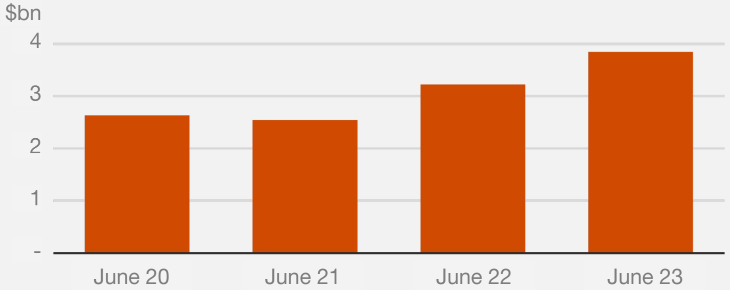
Growth spending continues

Acquisition activity among the gold companies of the MT50 has continued to taper from the highs recorded in 2021. However, the MT50 gold cohort remains focused on growth, pursuing organic growth opportunities to optimise and expand their mining assets to lift production. This is reflected in the increase in capital expenditure in 2023, up 14% from 2022. Rising cash balances (up 19% on 2022), and refinanced borrowings mean the group is well positioned to execute on their growth strategies in the near term.

Capital expenditure



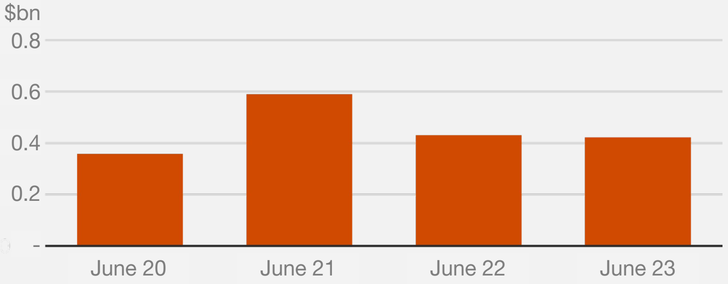
Cash balances

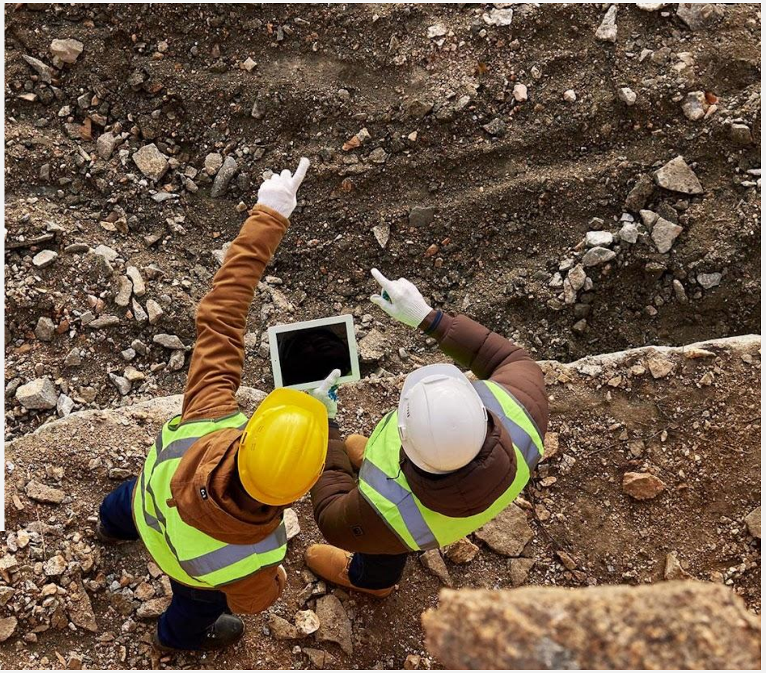


Dividends steady

Dividends totalled $401m, largely in line with 2021 and 2022.

Dividends paid





Financial analysis

Coal

Market capitalisation

$20.7bn

+$1.5bn 8%

Operating cash flows

$11.4bn

+$1.1bn 11%

Revenue

$27.7bn

+$5.5bn 25%

Dividends paid

$2.8bn

+$1.1bn 69%

EBITDA

$13.9bn

+$2.2bn 18%

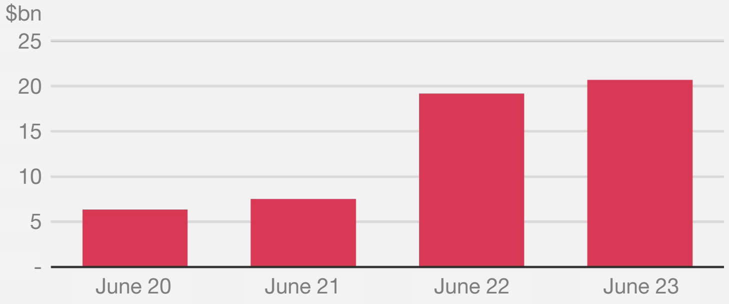
Capex

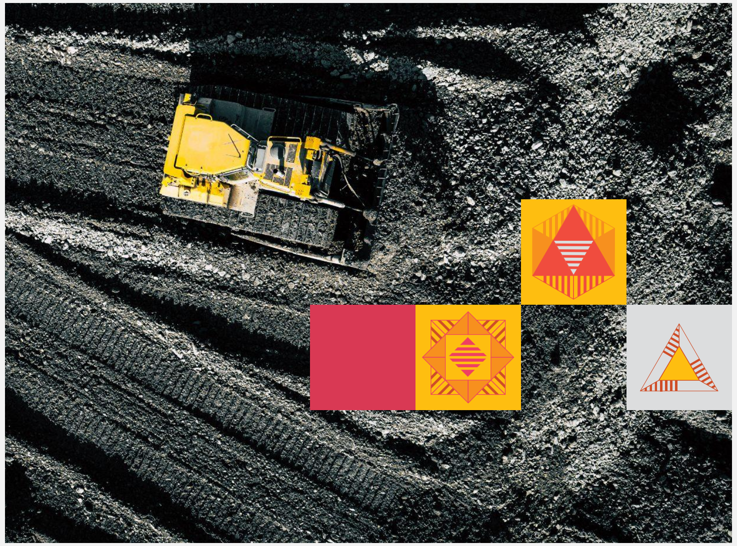
$1.6bn

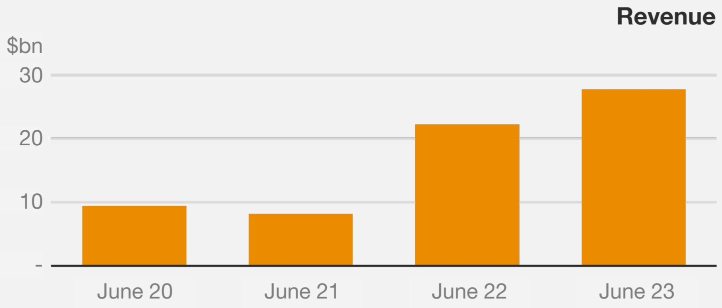
+$0.9bn 118%

Market capitalisation

There are signs that the market is misunderstanding MT50 coal companies. While share prices have increased, the aggregate value of these coal companies at June 2023 was only 1.5 times 2023 EBITDA. The market is effectively expecting further significant price pressure given relatively long reserve lives.





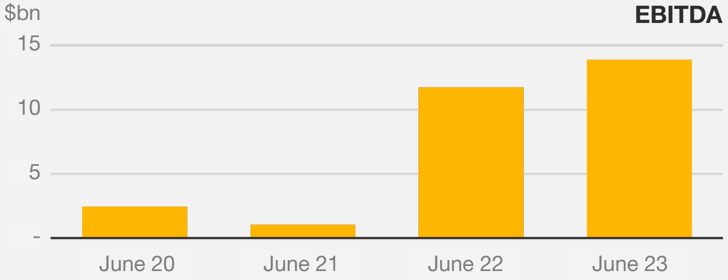


Coal production at record highs

Coal miners capitalised on record coal prices by increasing production. The coal companies saw an overall 8% increase in production (from 79.6Mt in 2022 to 86.4kt in 2023). Coal miners, however, faced production headwinds in Australia. Labour shortages and cost pressures are hampering production and starting to eat into profit margins. In addition, adverse weather, including significant flooding events, have taken some Australian mines and transport infrastructure offline and/or constrained production.

Strong prices and higher production

Companies continued to see the benefits of high coal prices in 2023. When coupled with higher production, these high prices meant the combined revenues from the coal companies rose by $5.5bn to $27.7bn – a 25% increase. This has translated into record earnings, as EBITDA rose by $2.2bn to $13.9bn in 2023.



Financial analysis

Coal

Total government contributions in FY23

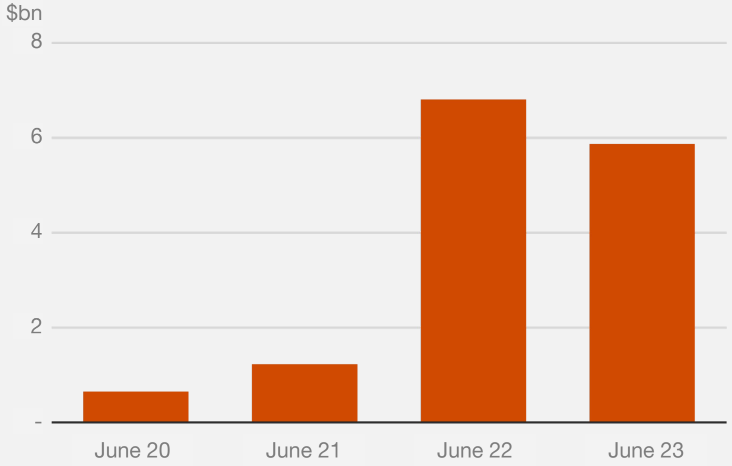
$6.4bn

65% increase compared to FY22

Cashed-up coal miners

Coal companies are holding substantial cash balances of $5.9bn. This comes off the back of two years of record operating cash flows, driven by high coal prices and record production. From the $10bn free cash flow (after capex), $5.3bn has been used to repay debt, with $4bn in dividend payments and buybacks. Further dividend payments of $1.1bn will be paid during the remainder of 2023. The coal companies also have an income tax bill of $1.7bn to pay.

Cash balances



Substantial government contributions

Coal companies continue to be significant contributors to state and federal governments via royalties and tax payments. Royalties paid increased by 77%, predominantly due to the amendments to the progressive coal royalties rates in Queensland which became effective 1 July 2022. The controversial revision led to the Queensland government producing a budget surplus of $12.3bn, which breaks the record for the biggest surplus ever recorded by a state government.

Outlook

As the world shifts its energy supply to renewable sources, it’s clear coal will continue to play a substantial role throughout this transitionary period.

While advanced economies are beginning to see a stagnation of investment and financing towards coal, high-growth economies such as China and India continue to build reliance on thermal coal for power and face increasing energy demand. Coal as an energy source will not be replaced in these economies as quickly as advanced economies.

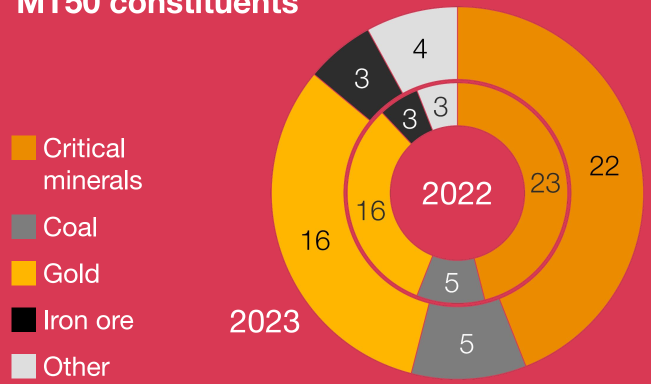
Long-term demand for metallurgical coal is expected to reduce more gradually, and depends on transitioning to ‘green steel’ production - for example, electric arc furnaces using hydrogen as a reducing agent rather than blast furnaces. This will require significant capital investment, innovation, commitment, and time to achieve.

These transitioning economies, combined with geopolitical events disrupting global energy supply, are likely to result in the continued relevance and contribution of coal during the formative years of a net zero economy. Overall, there’s still positive short to medium-term outlook for the industry.

Who are the MT50?

The MT50 are the 50 largest Australian listed mining companies by value. This excludes Australian-based global mining companies featured in PwC's global mining analysis, 'Mine 2023: The era of reinvention'. While these companies have a significant Australian footprint, their size and global exposure means they don't necessarily reflect trends in the Australian mining environment.

MT50 constituents



2023 Rank	Change in rank	Company name	Producer	Primary commodity	Market capitalisation 30 June 2023 ($bn)	Market capitalisation % Change (2023 to 2022)
1	+5	Pilbara Minerals Limited (ASX:PLS)	✔	Critical minerals	14.66	+115%
2	0	Northern Star Resources Limited (ASX:NST)	✔	Gold	13.89	+74%
3	-2	Mineral Resources Limited (ASX:MIN)	✔	Critical minerals (& Iron ore)	13.79	+52%
4	0	IGO Limited (ASX:IGO)	✔	Critical minerals	11.49	+53%
5	+2	Allkem Limited (ASX:AKE)	✔	Critical minerals	10.21	+55%
6	-3	Lynas Rare Earths Limited (ASX:LYC)	✔	Critical minerals	6.40	-19%
7	+9	Liontown Resources Limited (ASX:LTR)		Critical minerals	6.23	+169%
8	-3	Yancoal Australia Ltd (ASX:YAL)	✔	Coal	6.05	-15%
9	+1	Evolution Mining Limited (ASX:EVN)	✔	Gold	5.91	+35%
10	-1	Whitehaven Coal Limited (ASX:WHC)	✔	Coal	5.62	+21%
11	+1	Iluka Resources Limited (ASX:ILU)	✔	Critical minerals	4.73	+18%
12	+1	New Hope Corporation Limited (ASX:NHC)	✔	Coal	4.11	+43%
13	-2	Alumina Limited (ASX:AWC)	✔	Critical minerals	4.02	-5%
14	+6	Sandfire Resources Limited (ASX:SFR)	✔	Critical minerals	2.70	+48%
15	0	Nickel Industries Limited (ASX:NIC)	✔	Critical minerals	2.68	+1%
16	-2	Coronado Global Resources Inc. (ASX:CRN)	✔	Coal	2.57	-7%
17	0	Deterra Royalties Limited (ASX:DRR)	✔	Iron ore	2.43	+8%
18	+7	Chalice Mining Limited (ASX:CHN)		Critical minerals	2.42	+72%
19	+2	Stanmore Resources Limited (ASX:SMR)	✔	Coal	2.33	+33%
20	-2	Perseus Mining Limited (ASX:PRU)	✔	Gold	2.26	+5%

Key changes

Leaving

- OZ Minerals Limited (Acquired by BHP)
- Mincor Resources NL (Acquired by Wyloo Metals)
- OceanaGold Limited (Delisted from ASX)
- Lake Resources NL
- 29 Metals Limited
- Jervois Global Limited
- St Barbara Limited
- Neometals Limited

New entrants

- Genesis Minerals Limited
- Latin Resources Limited
- Arafura Rare Earths Limited
- Develop Global Limited
- Azure Minerals Limited
- Argosy Minerals Limited

Returning

- Resolute Mining Limited
- Deep Yellow Limited

					Market capitalisation	
2023 Rank	Change in rank	Company name	Producer	Primary commodity	30 June 2023 ($bn)	%Change (2023 to 2022)
21	+1	Paladin Energy Ltd (ASX:PDN)		Other	2.18	+26%
22	+8	De Grey Mining Limited (ASX:DEG)		Gold	2.10	+85%
23	+3	Sayona Mining Limited (ASX:SYA)		Critical minerals	1.76	+42%
24	-1	Core Lithium Ltd (ASX:CXO)	✔	Critical minerals	1.67	+1%
25	+3	Gold Road Resources Limited (ASX:GOR)	✔	Gold	1.60	+33%
26	+3	Capricorn Metals Ltd (ASX:CMM)		Gold	1.52	+30%
27	+16	Bellevue Gold Limited (ASX:BGL)		Gold	1.44	+117%
28	+5	Regis Resources Limited (ASX:RRL)	✔	Gold	1.38	+41%
29	New	Genesis Minerals Limited (ASX:GMD)	✔	Gold	1.34	+321%
30	+12	Leo Lithium Limited (ASX:LLL)		Critical minerals	1.28	+93%
31	+9	Ramelius Resources Limited (ASX:RMS)	✔	Gold	1.25	+66%
32	+13	Emerald Resources NL (ASX:EMR)	✔	Gold	1.22	+87%
33	+13	Boss Energy Limited (ASX:BOE)		Other	1.09	+75%
34	-3	Silver Lake Resources Limited (ASX:SLR)	✔	Gold	0.90	-20%
35	-8	West African Resources Limited (ASX:WAF)	✔	Gold	0.89	-28%
36	Returning	Resolute Mining Limited (ASX:RSG)	✔	Gold	0.83	+234%
37	New	Latin Resources Limited (ASX:LRS)		Critical minerals	0.82	+578%
38	-4	ioneer Ltd (ASX:INR)		Critical minerals	0.71	-17%
39	0	Vulcan Energy Resources Limited (ASX:VUL)		Critical minerals	0.70	-10%
40	+9	Westgold Resources Limited (ASX:WGX)		Gold	0.68	22%
41	0	Energy Resources of Australia Ltd (ASX:ERA)		Other	0.66	-5%
42	+6	Red 5 Limited (ASX:RED)	✔	Gold	0.66	+12%
43	New	Arafura Rare Earths Limited (ASX:ARU)		Critical minerals	0.64	+44%
44	New	Develop Global Limited (ASX:DVP)		Critical minerals	0.63	+95%
45	-21	Grange Resources Limited (ASX:GRR)	✔	Iron ore	0.62	-58%
46	-10	Syrah Resources Limited (ASX:SYR)	✔	Critical minerals	0.61	-26%
47	New	Azure Minerals Limited (ASX:AZS)		Critical minerals	0.59	+950%
48	Returning	Deep Yellow Limited (ASX:DYL)		Other	0.57	+148%
49	New	Argosy Minerals Limited (ASX:AGY)		Critical minerals	0.55	+12%
50	-6	Mount Gibson Iron Limited (ASX:MGX)	✔	Iron ore	0.53	-19%

10-year trend

MT50 $bn	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Market cap	35.4	36.6	36	53.2	46.9	78.4	79.8	85.4	112.8	123.8	155.9
Total revenue	21.3	23.8	28.7	23	16.8	23.5	30.4	30.1	32.8	52.7	60.9
EBITDA	4.7	5	6.7	8.8	6.1	8.7	11.7	10	12	23.4	30.4
Net profit	-3.6	-1.7	-5.4	1.6	1.7	4.8	5.5	3.3	2.6	11	15.4
Operating cashflow	3.9	4.4	4.6	7.3	5.3	7.7	10.4	9.6	10.1	19.4	24.6
Impairment	3.2	1.7	5.4	1	0.9	0.1	0.5	1.6	2.9	1.0	2.3
Net assets	36.9	35.3	35	36.6	29.7	38.5	44.9	47.4	57	64.1	77.9
Dividends paid	0.7	0.6	0.5	0.8	0.6	1.5	2.8	2.3	1.6	3.7	4.8
Average ROE (%)	-1.10	0.03	0.20	7.47	9.29	13.64	14.10	5.84	7.23	20.0	19.82
Average ROCE (%)	6.02	1.93	0.20	2.12	4.59	6.94	7.16	9.37	14.05	16.23	17.88

Glossary

Terms	Definition
Battery minerals	The raw materials used in the production of batteries, including lithium, nickel, cobalt, manganese and graphite.
Capital employed	Property, plant and equipment, mining assets, plus current assets less current liabilities.
Capital expenditure (capex)	Purchases of property, plant and equipment, and mining assets plus exploration expenditure.
Critical minerals	Minerals that are considered essential to the economy which have potential supply risks, including cobalt, copper, lithium, magnesium, manganese, mineral sands (titanium, zirconium), nickel, rare earth elements (REE). This year we have added copper as a critical mineral given its significant role in electrification and potential future supply challenge.
EBIT	Earnings (profit) before interest and tax. Adjusted EBIT excludes the impact of impairments and other non-recurring gains/losses.
EBITDA	Earnings before interest, tax, depreciation, amortisation and impairments.
EBITDA margin	EBITDA divided by revenue.
Gearing ratio	Borrowings (excluding lease liabilities) divided by (borrowings plus equity).
Market capitalisation	The market value of the equity of a company, calculated as the share price multiplied by the number of shares outstanding.
Mid-tier 50 (MT50)	The 50 largest Australian listed mining companies by value. (This excludes the Australian-based global mining companies featured in PwC’s global mining analysis, *Mine 2023: The era of reinvention*. While these companies have a significant Australian footprint, their size and global exposure means they don’t necessarily reflect trends in the Australian mining environment.)
Net borrowings	Total borrowings (excluding lease liabilities) less cash.
Net profit	Net profit after tax. Adjusted net profit excludes the impact of impairment and other non-recurring gains/losses.
Net profit margin	Net profit divided by revenue.
Return on capital employed (ROCE)	Net profit excluding impairment divided by average capital employed.

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