

Indonesian coal mining - where is the funding coming from?

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Thermal coal is the dirtiest form of energy. Asia Pacific still relies heavily on thermal coal to produce electricity, mostly imported from Indonesia, which has about 60-65 years of reserves left in the ground.[1] The country itself is using this coal to support electricity generation by its domestic utilities, with coal representing 61% of the country's energy mix in 2021.[2] Despite some talks underway to phase out coal, greater focus is needed on engaging with coal mining if Asia Pacific's growing greenhouse gas emissions are to be reduced.[3]

Many investors have enacted restrictions on funding thermal coal in Indonesia. Yet, coal mining continues. The sector recorded huge revenues in 2022. This year again, the volume of coal sold to Asian utilities is expected to increase, despite some positive news about the rise of renewable energy.[4] The trends remain worrying. Indonesia burned 33% more coal in 2022 than the year before, increasing the country's carbon emissions from fossil fuels by 20%.[5]

In this report, we assess whether funding remains available to coal mining firms, despite the public commitments of major banks to end their support to the sector. We analyse whether these restrictions on funding coal activities have had an impact on carbon emissions, and how they will continue to impact the expansion of Indonesian coal miners.

We find that:

- **The restriction on capital by international lenders has resulted in what appears to be a plateauing of implied carbon emissions for Indonesian coal miners.**
- **Regional and domestic banks are still lending and need to be engaged to close the few open channels that remain.**
- **For a few more years, Indonesian coal mining companies can rely on cash earned in times of high coal prices, but they will ultimately have to cut their investments.**

[1] "Indonesia's coal reserves estimated to last about 65 years", Tempo, 27 Jul 2021.
[2] "Indonesia's coal dependence and the new JETP", Energy Tracker, 27 Jan 2023.
[3] "Achieving a swift reduction in global coal emissions is the central challenge for reaching international climate targets", International Energy Agency, 15 Nov 2022.
[4] "Asia Pacific energy outlook: surging power or lacking charge", Wood MacKenzie, 5 Jul 2023.
[5] "Indonesia's coal burning hits record high – and 'green' nickel is largely why", Mongabay, 3 Jul 2023.

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Introduction

Asia Pacific remains dependent on coal for the production of its electricity. As the region continues to grow, with a burgeoning middle class, carbon intensive energy generation is on a collision course with the need to cut greenhouse gas emissions.[6] Indonesia stands out as one of the major coal-producing countries in the region. A handful of coal mining firms are responsible for most of the coal that is burnt by public utilities throughout the region.[7]

Table 1. Largest coal mining companies in Indonesia. Source: AFII, annual reports.

Rank	Revenues ($, '000s)	FY 2022
1	PT Adaro Energy Indonesia Tbk (ADRO.JK)	8,102,399
2	Golden Energy and Resources Limited (AUE.SI)	5,616,803
3	PT Bayan Resources Tbk. (BYAN.JK)	4,703,622
4	PT Indika Energy Tbk (INDY.JK)	4,334,911
5	PT Indo Tambangraya Megah Tbk (ITMG.JK)	3,636,213
6	PT Bukit Asam Tbk (PTBA.JK)	2,861,073
7	PT Bumi Resources Tbk (BUMI.JK)	1,830,080
8	PT ABM Investama (ABMM.JK)	1,445,527
9	PT Harum Energy Tbk (HRUM.JK)	904,438
10	Geo Energy Resources Limited (RE4.SI)	733,475
11	PT TBS Energi Utama Tbk (TOBA.JK)	635,790

The 11 companies in our sample that we have selected on the basis of their production volumes sell directly to many utilities in Asia. Only three of them sell more than 25% but less than 50%, of their production domestically (Bumi Resources, Adaro and Indika). All the others are exporting throughout the region, with a tilt towards specific countries: India (TBS, GEAR), China (Harum, TBS, Indika, GEO, ITMG), and the Philippines (Bayan). Their links to other big markets are therefore crucial to understand the regional energy mix.

Table 2. Top 3 markets of Indonesian coal mining companies. Source: AFII, companies' annual report.

Top market	#1	#2	#3
PT Bumi Resources	Indonesia (43%)	China (24%)	Japan (9%)
PT Bayan Resources	Philippines (29%)	China (16%)	South Korea (15%)
PT Adaro Energy	Indonesia (25%)	Malaysia (11%)	India (10%)
PT TBS Energi Utama	China (32%)	India (32%)	Taiwan (15%)
PT Harum Energy	East Asia* (77%)	Indonesia (12%)	India (7%)
PT Indika Energy	China (36%)	Indonesia (28%)	India (10%)
PT Indo Tambangraya Mega	China (30%)	Indonesia (22%)	Japan (15%)
Geo Energy Resources Ltd	China (55%)	Indonesia (20%)	India (14%)
Golden Energy and Resources Ltd	China (24%)	India (20%)	Japan (18%)

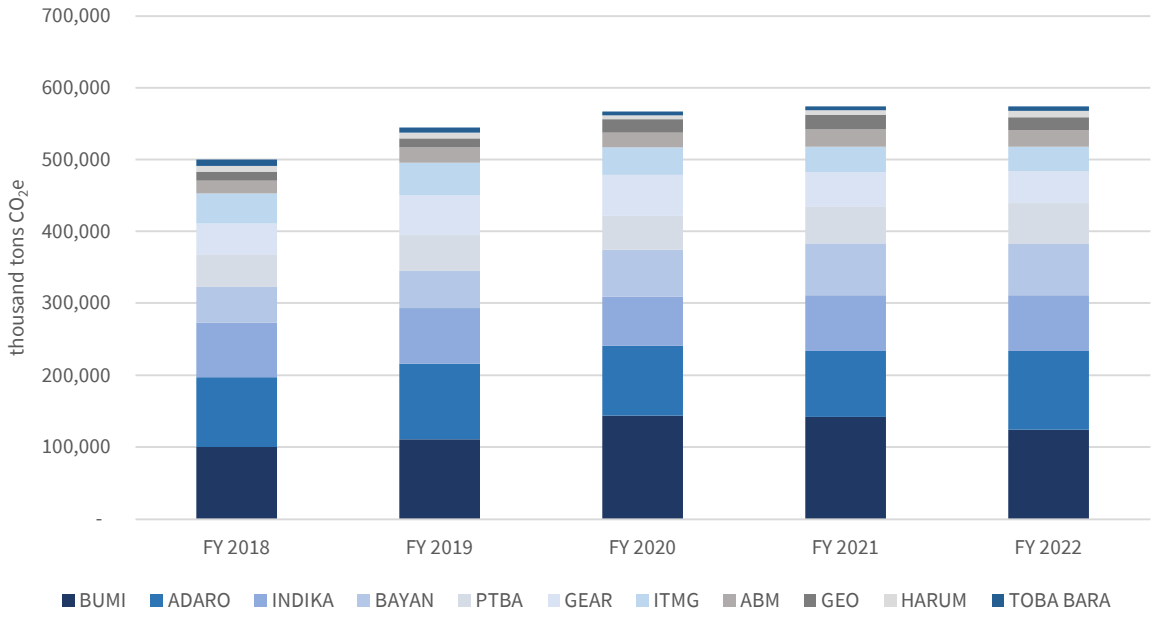
*Note: East Asia = China, South Korea, Japan & Taiwan

All these companies are publicly listed either in Indonesia or in Singapore, meaning that investors have access to a lot of public information and the means to directly engage with their management. Most of them have received funding from international investors in the form of bonds, loans and equity investments over the years. Recently however, these sources of capital have fallen drastically, as investors have adopted explicit restrictions on funding coal.

[6] "Asia-Pacific remains stuck on coal for half its power needs", Financial Times, 2 Jul 2022.
[7] "Unearthing Indonesia's 10 biggest coal oligarchs", Project Multatuli, 13 Feb 2022.

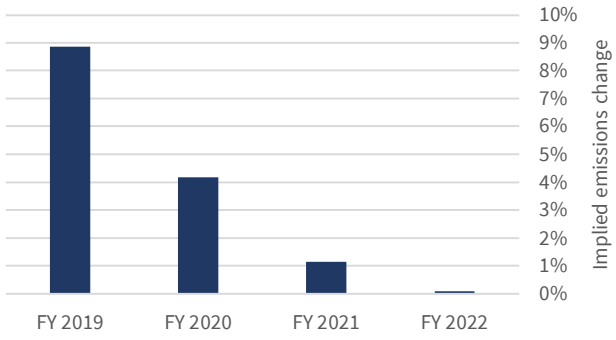
Indonesian coal mining companies have sold record volumes in 2022 and have plans to increase their production in 2023, in order to satisfy the demand from large utilities based in the Asia Pacific region. Article 2 (c) of the Paris Agreement states that the fight against global warming can be achieved by "making finance flows consistent with a pathway towards low greenhouse gas emissions".[8] According to this objective, restricting funding will lead to a reduction in economic activities associated with high carbon emissions. The goal is to enable the shift to a low-carbon future through a change in the financing conditions of polluting activities. **So far in Indonesia, this is working to reduce the rate of increase of coal production, with 2022 numbers showing no change from 2021 (Figure 2). More is needed to turn this into a reduction.**

Figure 1. Implied carbon emissions from the thermal coal sold by the largest Indonesian coal mining companies. Source: AFII, EPA, companies' annual reports.



Methodology: we computed the annual volumes of each company's thermal coal sales and applied a conversion factor from the United States Environment Protection Agency (EPA).[9]

Figure 2. Year-on-year increase in implied carbon emissions. Source: AFII, EPA, companies' annual reports.



Coal in particular ranks high on the scale of carbon emitting activities. In Indonesia, the fourth largest coal producing country in the world[10], less capital is available for coal mining from international investors. Many financial institutions, mostly global ones, have exited coal.[11] As a result, the sector is increasingly reliant on domestic and regional banking relationships.

[8] "Adoption of the Paris Agreement", UNFCCC, accessed on 13 Jul 2023.
[9] "Greenhouse gases equivalencies calculator – calculations and references", EPA, accessed on 13 Jul 2023.
[10] "Profiling the six largest coal-producing countries around the world", NS Energy, 4 Jan 2021.
[11] "Over 100 global financial institutions are exiting coal, with more to come", IEEFA, 27 Feb 2019.

The cost of financing coal is rising fast, but banking relationships remain in place.

"... the investor base that would be able to invest in the securities of Sembcorp Industries would decrease, as a significant proportion of institutional funds exclude investments in companies that have coal-related exposure. This would likely result in lower liquidity and thereby an increase in cost of capital..."

Sembcorp's letter to shareholders[12]

The cost of financing coal activities has increased significantly across the world, and Southeast Asia is starting to be impacted, although less so than other regions. The hurdle rate of return for completed projects is the highest for coal projects, which has risen much more than for other fossil fuel projects, reaching 40%, compared to 14% for LNG, 15% for US shale oil, 18% US deepwater oil and 21% EM oil mega-project.[13] Researchers at Oxford University have found that loan spreads for coal mining have increased by +54% from the 2007-10 to the 2017-20 periods. They also found that the average loan spread for coal mining rose much more quickly between the 2000-10 and the 2011-20 periods in Europe and Australia, rising by +134%, +80% and +71%, but much less in Southeast Asia, up by +12%, showing that the cost of financing coal projects has increased.[14]

The risk perception is also reported to be critical, several investors have committed to not financing coal. One driver of the sale of a coal plant in India by Singapore-based Sembcorp was the difficulty in finding a buyer. Sembcorp had to provide financing for the private buyer to realize the purchase to overcome the otherwise excessive costs that investors would have asked for such financing.[15] BHP also found it impossible to find a buyer for an Australian coal project, forcing it to close it down instead.[16] AIA, the first major Asian insurer, has taken a major step in ending coal exposure ahead of schedule.[17]

Table 3. Yearly change in implied carbon emissions for the largest Indonesian coal mining companies. Source: AFII,

	FY 2022	FY 2021	FY 2020	FY 2019	Funding conditions
BUMI	-13%	-1%	30%	11%	little access to debt funding
ADARO	19%	-5%	-9%	9%	maintains access to debt funding
INDIKA	1%	12%	-10%	1%	maintains access to debt funding
BAYAN	-1%	11%	24%	3%	little access to debt funding
PTBA	12%	9%	-6%	13%	little access to debt funding
GEAR	-6%	-17%	4%	27%	Restructuring
ITMG	-6%	-5%	-16%	8%	little access to debt funding
ABM	-6%	16%	-1%	18%	maintains access to debt funding
GEO	-11%	7%	45%	4%	little access to debt funding
HARUM	45%	26%	-32%	-11%	little access to debt funding
TOBA BARA	25%	-13%	-24%	-14%	
Total	0%	1%	4%	9%	

[12] "Sembcorp sends wrong signals with SLB", Global Capital, 15 Nov 2022.
[13] "Energy transition, uncertainty and the implications of change in the risk preferences of fossil fuels investors", The Oxford Institute for energy studies, 31 Jan 2019.
[14] "The energy transition and changing financing costs", X. Zhou, C. Wilson & B. Caldecott, Sustainable Finance Program, Oxford, 19 Apr 2021.
[15] "Critics pan Sembcorp's coal sale", IFR, 11 Nov 2022.
[16] "BHP fails to find buyer for Australian coal project, to retain and close", Reuters, 16 Jun 2022.
[17] "7 years ahead of schedule, AIA becomes the first major Asian insurer to end coal exposure", Fortune, 7 Dec 2021.

The Indonesian coal mining sector has access to less capital today. The scarcity of funding has resulted in a shift from international investors to domestic and regional banks, which are now the last link to cut funding to the sector entirely. The falling availability of capital has caused a change in financing patterns. Several companies in the region have already looked to sell their coal assets to avoid write-downs.[18] Coal mining firms are able to continue increasing their sales volumes and their implied Scope 3 (downstream) emissions, but only at a much decreasing rate. Looking at our sample of 11 coal mining companies, it is apparent that emissions have plateaued (Figure 2), and that only a few producers continue to maintain access to funding that allows an increase production (PTBA and HARM) (Table 3).

The international banks maintaining a banking relationship with Indonesian coal mining companies do so mostly for cash management purposes or interest rate hedging. Only a few of these banks still offer lending, among which SMBC (Bayan, Adaro), MUFG (PTBA) and Standard Chartered (Indika). SMBC, for example, has committed to phase out corporate and project finance exposure to coal mining only by 2040.[19] The relationships are much closer with the regional banks, such as Singapore-based DBS Bank, OCBC Bank and UOB Bank, or Malaysian banks CIMB and Maybank.

Table 4. Banks' coal commitments. Source: AFII, banks' sustainability reports.

Rank	Bank	Country	No lending to coal commitment	Reference/Caveat
1	PT Bank Mandiri	Indonesia	Yes	Exclusion policy
2	PT Bank Negara	Indonesia	No	
3	UOB	Singapore	Yes, by 2039	2050 Net Zero targets
4	DBS	Singapore	Yes, by 2039	Approach to thermal coal
5	PT Bank Permata	Indonesia	No	
6	PT Bank Rakyat	Indonesia	Yes	May 2022 announcement
7	CIMB	Malaysia	Yes, by 2040	First Bank in SE Asia (2020)
8	Standard Chartered	UK	No	Stop financing for expansion
9	Citibank	USA	Yes, by 2030	2023 announcement
10	OCBC	Singapore	Yes	Only for coal fired powered plants
11	QNB	Qatar	Yes	Only for coal fired powered plants
12	SMBC	Japan	Yes, by 2040	February 2023 announcement
13	MUFG	Japan	Yes, for new projects	MUFG E&S Policy Framework

Even if bonds and loans become increasingly scarce in the list of instruments used by banks, there remain exposures in the form of trade financing, working capital facilities, term loans, time deposits and cash accounts, interest rate swaps and other construction loans that support the coal miners. The large international banks, which have stopped providing term financing, are still offering cash account and term deposits to the Indonesian coal mining sector.

These banks have USD-denominated bonds outstanding, offering an opportunity for international investors to engage with them directly, or divest. The closest relationships exist with the domestic

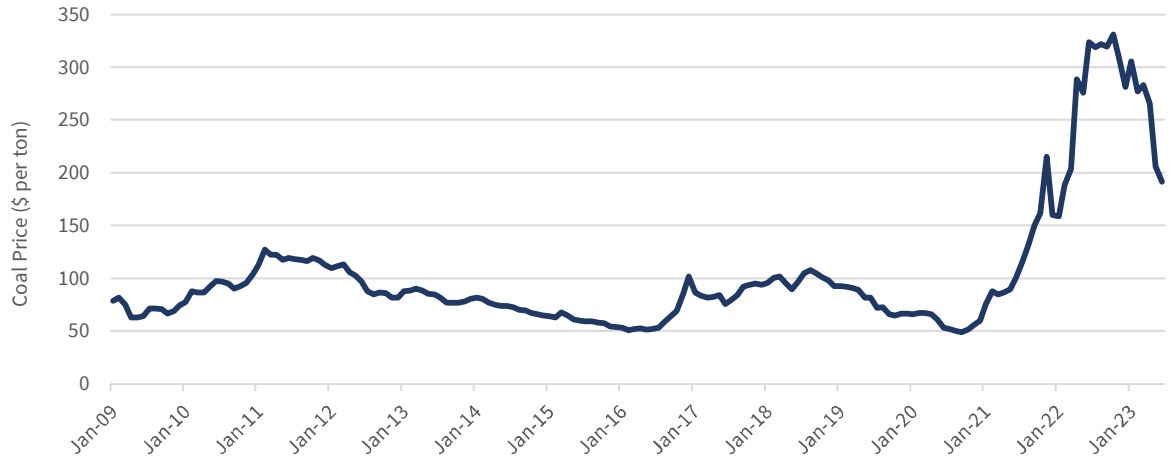
[18] "APAC coal divestments: debt investors hold the key", Anthropocene Fixed Income Institute, 6 Jun 2023
[19] "SMBC to end corporate finance for coal mining by 2040, but trade finance remains", The Japan Times, 10 Feb 2023

banks, among which Bank Mandiri, Bank Negara, Bank Permata and Bank Rakyat are the most active. These banks also have a few USD-denominated bonds outstanding, such as BMRIIJ 5.5% Apr-20026 (ISIN: XS2577785921), BBNIIJ 3.75% Mar-2026 (ISIN: XS2314514477) or BBRIIJ 3.95% Mar-2024 (ISIN: XS1963534968). Some of them even have issued green or sustainability bonds, such as local bonds BBNIIJ 6.85% Jun-2027 (ISIN: IDA0001244B3) or BBRIIJ 5.75% Jul-2025 (ISIN: IDA0001259B1). In particular for these thematic bonds, investors ought to verify that they do not have exposure to these thematic bonds and, at the same time, exclude the financing of coal in their portfolio, as they would otherwise be subject to some form of "greenwashing".

Coal exclusions from international banking institutions have resulted in almost non-existent lending relationships with the coal mining sector in Indonesia, which is now mostly serviced by regional banks from Singapore and Malaysia and domestic institutions in Indonesia. Yet, coal mining companies have continued to operate and improve their credit ratios. The same banks are still offering cash account and term deposit services to the sector, however. **Investors in Indonesian, regional and some global banks may be exposed to funding coal mining.**

High coal prices and subsidies keep these companies afloat.

Figure 3. Historical coal price for Indonesia. Source: AFII, Bloomberg.



The Indonesian coal mining companies appear not have been impacted yet by falling levels of funding, despite the shift of capital that has already played out for most of them. A conjunction of positive factors has allowed them to carry on. High international pricing is one. The continuation of subsidies at major Asian utilities and domestic politics are others. High coal prices have enabled Indonesian coal mining companies to sustain and even grow their production levels despite the dearth of capital available to them, as a windfall from elevated prices resulted in large gains to the bottom line.[20] Even as prices started to drop, new demand from major buyers of utilities across Asia will continue to support their business.[21]

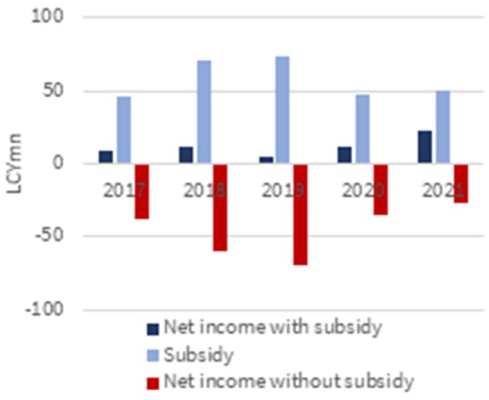
[20] "Soaring coal prices fuel shares of Indonesian coal company, mints new billionaire", Forbes, 17 Nov 2022.
[21] "Thermal coal imports pick up in most Asian buyers as prices moderate", Reuters, 30 Mar 2023.

The reality of the coal supply chain is that high prices are passed on to the state budget through the program of subsidies that is prevalent throughout Asia. East Asia & the Pacific are paying out $3trn of annual subsidies, equivalent to 10% of GDP.[22] For example, state-owned PT PLN, the integrated utility company in Indonesia, would not be profitable, if it was not for the subsidies paid by the state each year, as seen on Figure 4. This is a difficult thing to change.[23]

The Indonesia government of President Joko Widodo is filled with high-ranking ministers with tight links to the coal mining industry.[24] New laws have been issued to grant some of them an exemption from paying royalties and absolve them from criminal and financial sanctions. One of the top ministers in charge of the talks on Indonesia's decarbonization has direct business interests in some of the top coal mining companies.[25] Indonesia is heading for the polls in February 2024 and, given that the incumbent President cannot run for office again, there is a high degree of uncertainty on the future path of public policy.[26]

When investors purchase green sukuk instruments issued by Indonesia, they believe that they will deliver a transition to a lower carbon future.[27] Investors are generally very interested in the issuance of green bonds from Indonesia, as the latest green bond issuance from BNI and Pertamina Geothermal shows, which were 4.0x and 8.25x oversubscribed, respectively.[28,29] The green global sukuk issued by the Republic of Indonesia in May 2022 also received a final order size of $10.8bn, or 3.3x the amount on offer.[30] **The existence of a large and increasing subsidy program to support the expansion of coal mining is inconsistent with a credible decarbonization strategy.**

Figure 4. PLN's net income and subsidies. Source: AFII, PLN's annual report.



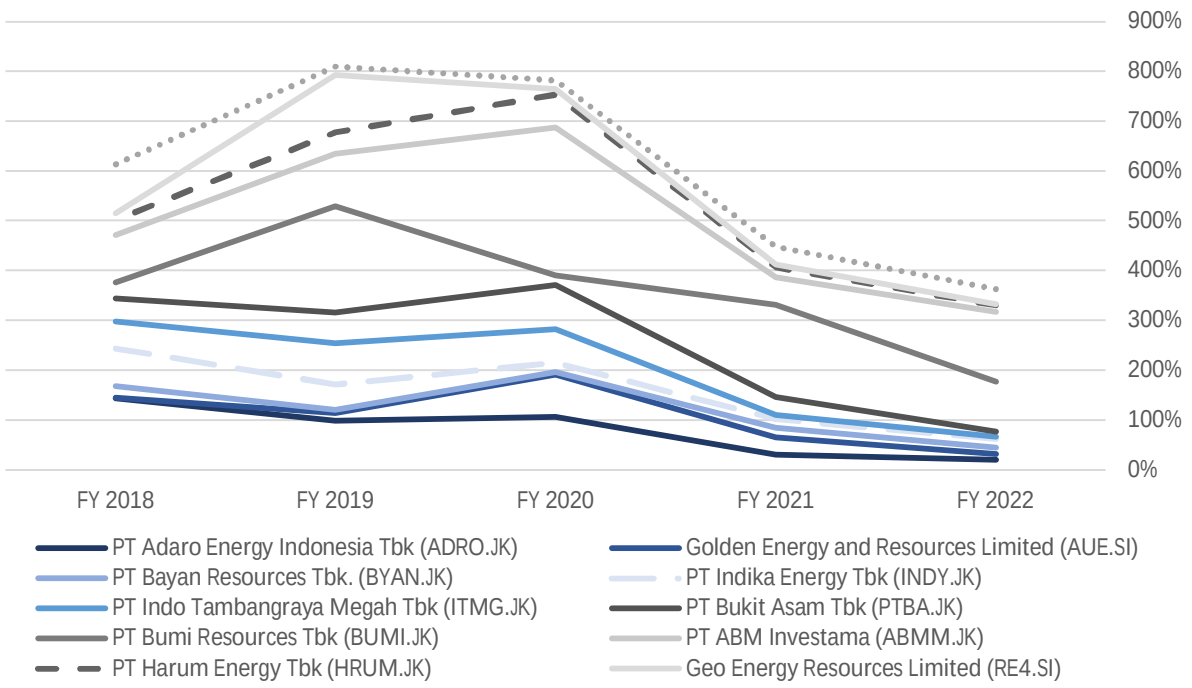
Coal mining companies will shift to a credible decarbonization strategy only when the banks completely stop their relationships with them, when the coal price drops and when their cash reserves run out. The political situation has allowed the reduction of coal-related emissions to drag on. Yet, we see signs that this is working.

Cash levels remain high currently, thanks to the coal price of the last 12 months, and the capital expenditures planned by the sector can be financed for a few more years. Capital expenditures are already

[22] "Fossil fuel subsidies", IMF, accessed 13 Jul 2023.
[23] "Indonesia pumps additional $24bn into energy subsidies", Reuters, 19 May 2022.
[24] "Indonesian officials linked to mining and 'dirty energy' firms benefiting from deregulation law", Mongabay, 26 Oct 2020
[25] "Luhut admits owning 6,000-ha coal mine in East Kalimantan", The Jakarta Post, 27 Feb 2019.
[26] "Will 2024 presidential elections set a new direction for Indonesia?", The Business Times, 19 Jun 2023.
[27] "Indonesia's green bond & green sukuk initiative", Ministry of Finance, Republic of Indonesia, accessed 13 Jul 2023.
[28] "BNI green bonds oversubscribed four times", The Jakarta Post, 15 Jun 2022.
[29] "Pertamina Geothermal completes green bond issuance, raises $400m", Think Geoenergy, 10 May 2023.
[30] "Press Release", Ministry of Finance of the Republic of Indonesia, 24 May 2022.

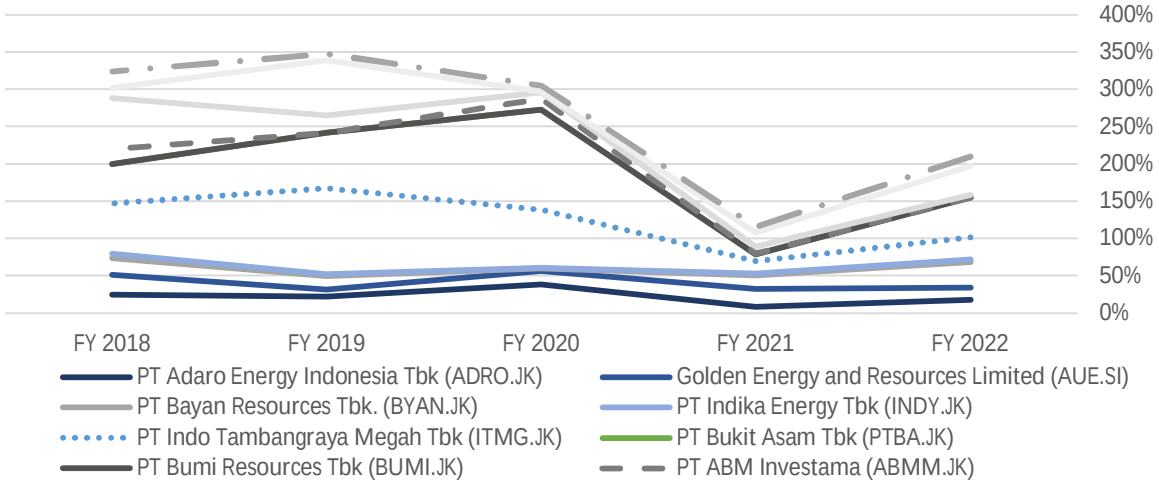
falling though, when measured as a percentage of EBITDA (Figure 5), as funding becomes more difficult to come by.

Figure 5. Capital expenditures as a percentage of EBITDA. Source: AFII, annual reports.



Surprisingly, we would have expected the coal mining companies to also reduce the distribution of dividends, to preserve cash and maintain free cash flows. Quite the opposite is happening; dividends remain high, and increased in FY2022, compared to FY2021. It is interesting that these dividends are even allowed to be paid to shareholders, after payment holidays have been consented to in the past for royalties due to the government.[31]

Figure 6. Dividends as a percentage of EBITDA. Source: AFII, annual reports.



Indonesian coal mining companies are reducing their capital expenditures as a percentage of EBITDA and distributing substantial dividends to their owners. This shows that they understand

[31] "Relaxation royalty 0% for coal commodities", ADCO Law, 12 Sep 2021.

that their operations may be curtailed in the future. This confirms that the reduction of funding for the sector is having an impact.

Indonesian coal mining companies have seen a dramatic fall in the funding available to them from international lenders,[32] leaving only the domestic banks available for new financing.[33] There are many examples of this trend:

- Adaro Energy (#1) has struggled to raise a loan,[34] after Standard Chartered cut its ties with its long-term client.[35] In the end, it was able to get a loan from Singapore-based UOB,[36] although for a shorter term than the maturity of its senior notes issued in 2019 - to Oct-24.
- Golden Energy and Resources (#2) exchanged its outstanding notes after announcing that it was looking to exit its coal business.[37]
- PT Bayan Resources (#3) fully repaid in Jun-22 its $75m credit facility with Japanese lender SMBC,[38] tendered its senior notes in May-21 and fully redeemed the remaining balance in Oct-21.[39]
- PT Indika Energy (#4) is the only coal mining issuer with USD-denominated bonds outstanding: the 5.875% Nov-2024 (ISIN: US45569FAA21) and the 8.25% Oct-2025 (ISIN: US45569GAA04), a $150m syndicated facility arranged in 2019 by Bank Mandiri, Citibank and Standard Chartered Bank, and a $22.5m 5-year loan maturing in 2027 from DBS.
- PT ITMG (#5) has only one loan with a Malaysian bank outstanding, CIMB, maturing in Oct-24 and -26.
- PT Bukit Asam (#6) has a very small loan with a domestic lender.
- PT Bumi Resources (#7) had to do a rights issue in both 2021 and 2022.[40,41]Geo Energy Resources (#10) admitted that it needed to rely on its own cash generation to fund growth.[42]

[32] "Coal miners face financing squeeze as more banks pledge to 'go green'", The Jakarta Post, 18 Sep 2022.
[33] "Indonesian banks prop up coal industry increasingly shunned by outside lenders", Mongabay, 11 Oct 2022.
[34] "Indonesia's Adaro struggles to secure funding for $2bn aluminum project", Financial Times, 7 Feb 2023.
[35] "Major UK bank cut ties with Indonesian mega coal producer", Market Forces, 14 Jul 2022.
[36] "UOB loan to Indonesian coal miner's unit raises climate concerns", The Straits Times, 17 Feb 2023.
[37] "Golden Energy and Resources seeks to 'restructure or exit' energy coal business, offers notes exchange", The Business Times, 2 Nov 2022.
[38] "Bayan and SMBC renew $75m revolving credit facility", IDN Financials, 25 Mar 2021.
[39] "Bayan's rating unaffected by bond buyback, consent solicitation", Fitch Ratings, 28 Apr 2021.
[40] "Bumi Resources Minerals seek IDR1.66trn via rights issue", IDN Financials, 16 Aug 2021.
[41] "Bumi Resources Minerals rights issue", LegalOne, 22 Jun 2022.
[42] "Geo Energy says it has enough funds to stay in coal mining, may acquire assets", The Business Times, 21 Nov 2022.

Table 6. Banking relationships existing as of Dec-2022. Source: AFII, companies' annual reports.

Rank	Bank	Country	Links with Indonesian Coal	Comments
1	**PT Bank Mandiri**	**Indonesia**	**7**	**Lender & cash products**
2	**PT Bank Negara**	**Indonesia**	**6**	**Lender & cash products**
3	**UOB**	**Singapore**	**6**	**Lender & cash products**
4	**DBS**	**Singapore**	**6**	**Lender & cash products**
5	**PT Bank Permata**	**Indonesia**	**5**	**Lender & cash products**
6	**PT Bank Rakyat**	**Indonesia**	**5**	**Lender & cash products**
7	**CIMB**	**Malaysia**	**4**	**Lender & cash products**
8	**Standard Chartered**	**UK**	**4**	**Lender & cash products**
9	PT Bank Central Asia	Indonesia	4	Cash Management only
10	Citibank	USA	4	Cash Management only
11	**OCBC**	**Singapore**	**3**	**Lender & cash products**
12	**QNB**	**Qatar**	**2**	**Lender & cash products**
13	**SMBC**	**Japan**	**2**	**Lender & cash products**
14	**MUFG**	**Japan**	**2**	**Lender & cash products**
15	HSBC	Hong Kong	2	Cash Management only
16	Maybank	Malaysia	2	Cash Management only
17	ANZ	Australia	2	Cash Management only
18	Deutsche Bank	Germany	2	Cash Management only
19	UBS	Switzerland	2	Cash Management only
20	PT Bank Danamon	Indonesia	1	Cash Management only
21	Bank of New York	USA	1	Cash Management only
22	NAB	Australia	1	Cash Management only
23	China Development Bank	China	1	Cash Management only
24	ICBC	China	1	Cash Management only
25	PT Mega bank	Indonesia	1	Cash Management only
26	Mizuho	Japan	1	Cash Management only

Note to Table 5: in bold, we show the banks still have lending relationships with any of the 11 companies we studied in our sample (see Appendix I for details).

The pressure on international lenders to curtail funding to coal mining in Indonesia has resulted in a plateauing of the implied carbon emissions from their increased production. However, there are some banking relationships that endure, in particular with regional (DBS, OCBC, UOB, CIMB) and domestic banks (Bank Mandiri, Bank Negara, Bank Permata), as well as for some cash products. These will need to be stopped to fully impact their ability to increase production in the future.

Conclusions

Carbon emissions implied by the volumes produced by the top coal mining companies in Indonesia have reached a plateau, showing that there is something happening to their ability to produce.

The cost of financing coal activities has increased significantly. There is evidence that there is a link between the reduction of implied emissions and a reduction in the access to funding, which is now provided by regional and domestic banks, as the international ones have cut their support. Investors must be mindful of holding bonds issued by these banks, at the risk of conflicting with their climate objectives, and should use engagement to ensure sustainability objectives are achieved.

High coal prices and government subsidies to power utilities that keep them afloat despite recurring losses have kept coal mining going. Working capital and dividends are staring to fall, as a sign that the reduction of funding is having an impact.

International lenders have mostly curtailed lending, but they still maintain some cash accounts and time deposits for now.

Appendix I: Banking relationships with the 11 coal mining companies of our universe.

Bank	Country	ABM	ADARO	BAYAN	BUMI	HARUM	INDIKA	ITMG	PTBA	TBS
HSBC	HK		CA				CA, TD			
StanChart	UK	GF, CA	CA				FS, IRS, TLF, CA	CA, TD		
Bank of NY	USA				CA					
Citibank	USA	CA					CA, TD	CA, TD		CA
Deutsche	Germany				CA				CA	
UBS	Switzerland						TD	CA, TD		
ANZ	Australia	CA				CA				
NAB	Australia			CA						
CDB	China				CA					
ICBC	China							TD		
SMBC	Japan		GF, CA	RF						
MIZUHO	Japan							TD		
MUFG	Japan							TD	LF	
QNB	Qatar		TD	RF, CA						
DBS	Singapore	CA	RF, CA, TD			CA, TD	CA	CA, TD		CA
OCBC	Singapore	TF, CA	CA, TD			CA, TD				
UOB	Singapore	CA	CPL, TLF, CA	CA		CA, TD	IRS, TD, CA		CA	
CIMB	Malaysia		CA			CA, TD		IRS, TFL, CA, TD		CA
Maybank	Malaysia		CA	CA						
PT Bank Mandiri	Indonesia	WC, SF, TLF, CA, TD	FA, CA	RF, CA	CA	CA	IRS, TLF, TD, CA			SF, IRS, TLF, BG, CA
PT Mega Bank	Indonesia		TD							
PT Bank Central Asia	Indonesia			CA	CA			TD		CA
PT Bank Danamon	Indonesia			CA						
PT Bank Negara Indonesia	Indonesia	WC, SF, TLF, CA, TD	TD	CA	CA, TD		CA,TD			CA
PT Bank Rakyat Indonesia	Indonesia		CA		CA		CA, TD		TF	WC, CPL, CA
PT Bank Permata	Indonesia	ORLF, CA, TD	SF, CA, TD	RF, CA				CA, TD	CA	

Note: CA: cash account, BG: bank guarantee, CPL: commercial property loan, FA: facility agent of syndicated facility, FS: fuel swap, GF: general facility, IRS: interest rate swap, LF: lease finance, ORLF: omnibus revolving loan facility, RF: revolving facility, SF: syndicated facility, TD: time deposit, TF: trade finance, TLF: term loan facility, WC: working capital facility

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