

Asian Insights SparX

Indonesia Energy Sector

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DBS Group Research . Equity

20 Nov 2022

Biden's US\$20bn deals boost green initiatives

- Indonesia energy companies will need to look at different ways to decarbonise their businesses
- Impactful green investments to drive share price
- Biden's US\$20bn climate bill is the tipping point of Indonesia's decarbonisation journey
- We pick [ADRO](#), [ITMG](#), and [MEDC](#) as decarbonization pioneers with concrete plans in place

Biden's US\$20bn deals set to boost green investments in Indonesia. On top of the cash accumulation in the 2021-2022 commodities super cycle, the recent Joe Biden's US\$20bn climate finance deal signed at G20 meeting could accelerate diversification beyond the legacy fossil fuels business.

Indonesia EV battery supply chain hub could transform Indonesia's energy sector and new opportunities. The push factors against fossil fuels are getting imminent and next year, Indonesia will impose progressive royalties for coal mining exports. Meanwhile Indonesia's ambition to become a global electric vehicle (EV) battery supply chain hub will open new opportunities in metal ore processing business, renewable energy, and industrial parks to support the programme.

Adaro Energy (ADRO), Medco Energy (MEDC), and Indo Tambang (ITMG) are top pick for Indonesia decarbonisation theme. Companies with solid diversification plans have more room for further performance on valuation re-rating beyond fossil fuel universe, as well as earnings contribution from non-coal assets.

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Analyst

William Simadiputra +62 2130034939
williamsima@dbs.com

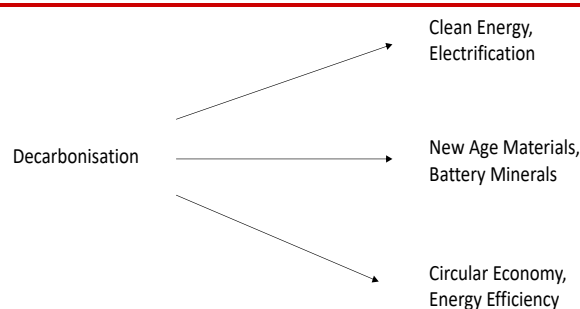
STOCKS

	Price Rp	Mkt Cap US\$m	12-mth Target Price Rp	Performance % 3 mth 12 mth	Rating
Coal mining					
Adaro Energy	3,590	7,331	4,600	10.5 122.3	BUY
Indo Tambangraya Megah	38,025	2,743	60,000	3.3 99.1	BUY
Tambang Batubara Bukit Asam	3,550	2,611	3,900	(14.0) 41.4	HOLD
Utilities, E&P					
AKR Corporindo	1,350	1,730	1,700	16.4 53.4	BUY
Perusahaan Gas Negara	1,800	2,786	2,300	9.8 20.0	BUY
Medco Energi Internasional TBK	1,130	1,813	1,300	82.3 101.8	BUY

Source: DBSVI, Bloomberg Finance L.P.

Closing price as of 17 Nov 2022

There are three key diversification themes among Indonesia's energy companies



Source: DBSVI

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Indonesia's commitment to net zero by 2060

Despite Indonesia net zero emission target by 2060 seems ambitious considering its exposure to coal fired power plant, a joint study between International Energy Agency (IEA) and Indonesia's Ministry of Energy and Mineral Resources (MEMR) indicated that Indonesia can achieve it via deployment of renewable energy resources, energy efficiency electrification and grid interconnection.

The net zero initiatives will not only focus on how to shift the coal fired power plant to renewable energy investments, but Indonesia needs to accelerate the adoption of electric vehicles (EVs) and the early retirement of coal fired power plants amid current overcapacity in Java-Bali.

Indonesia has a concrete decarbonization plan under the new Electricity Business Plan (RUPTL) 2021-2030 called the greenest RUPTL to date. Under this plan, renewable energy will account for 21GW of the total power addition. Indonesia is still committed to deliver the ambitious 35GW power plant project with some additional tweaks such as renewable energy mix target of 23% by 2025 and early retirement plan for coal fired power plant. The new RUPTL is aligned with Indonesia's net zero emission plan by 2060.

Indonesia renewable energy has huge potential

MW	Potential	Installed capacity	Utilization
Geothermal	29,544	1,438	4.9%
Hydro Power	75,091	4,826	6.4%
Mini-micro			
Hydro	19,385	197	1.0%
Bioenergy	32,654	1,671	5.1%
Solar	207,898	79	0.038%
Wind	60,647	3	0.005%

Source: Company, RUPTL 2021-2030, DBSVI estimates

Biden's G20 summit US\$20bn climate bill is the tipping point

US President, Joe Biden signed US\$20bn renewable energy bill in G20 Summit and it is by far the largest single climate finance deal to help Indonesia pivot away from coal. We believe the climate deal will be the tipping point to accelerate Indonesia's plan to diversify its energy mix beyond thermal coal.

More challenges await if coal price remain elevated

Indonesia will impose progressive royalties for the coal mining industry if the coal price stays above US\$100 per

tonne next year, with a potential to double royalty charges up to 28% vs. the current level of 13.5%. The calculation will be based on Indonesia's coal price benchmark or HBA, which may put lower CV coal mining companies in an unfavourable position.

Going forward, the Indonesian government may impose stricter measures such as carbon taxes and any other decarbonisation-related measures to coal mining companies as part of the decarbonization plan.

Progressive coal export royalties commenced in 2023

	Tariff export	Tariff DMO
HBA < US\$70	14%	14%
US\$70 < HBA < US\$79	17%	14%
US\$80 < HBA < US\$89	23%	14%
US\$90 < HBA < US\$100	25%	14%
HBA > US\$100	27%	14%

Source: Company, MEMR, DBSVI

Ore export ban leads to global EV battery supply chain ambition

The Indonesian government only allows ore / raw material export for metal mining companies if they can show the tangible progression over the smelters. Otherwise, the mining license may be at risk. The ore export ban commenced in 2014 and was reintroduced in 2019 to enforce miners to process ore in Indonesia. The enforcement is clearly seen on PT Freeport Indonesia (PTFI) smelter commitment in JIPE east Java, which is currently under construction.

Indonesia's ambition to become the Electric Vehicle (EV) battery cell plant hub was initiated in 2021. The plant is set to capture the global transition to EV cars, as well as Indonesia's strategy to add value of its commodities ore reserves. The implication for this plan will transform many aspects of the Indonesian economy, such as boosting downstream ore processing facilities, expansion to cleaner energy sources, as well as EV car components and materials – such as wind shield and green aluminium manufacturer.

Indonesia has been focusing on unlocking values of its natural resources by encouraging downstream/processing investments and opening new diversification opportunities for energy companies. One of the major downstream processing opportunities lies on the potential development of EV and the critical components in particular the battery value chain. The battery cell plant will also attract more

investments in smelters and processing plants, thus adding value to Indonesia's nickel reserves.

The plan allows fossil fuel companies that can reap the benefit from the latest commodities boom to shift the capital and business away from fossil-related energy business.

Nickel downstream processing has been on the sweet spot

Nickel for Electric Vehicle (EV) is the key nickel demand driver going forward. Indonesia holds 24% of global nickel reserves and is set to leverage the potential by creating the battery supply chain. Indonesia's first battery cell plant is under construction – a project by LG and Hyundai Motor Group, South Korea.

To meet with EV companies' class 1 nickel products qualities while Indonesia reserves which are generally eligible for class 2 nickel products, the process requires technologies called the Mixed Hydroxide Precipitate (MHP) process. One of them is High Pressure Acid Leaching (HPAL).

Indonesia's nickel supply chain also requires cleaner energy to ensure a clear carbon footprint and such a trend would deliberately accelerate coal-fired power plant retirement if this programme runs successfully. Major battery users – mainly EV car manufacturers – demand clean energy to power the battery production process instead of the conventional coal-fired power plant.

Beside coal mining companies even the gold and copper companies such as Merdeka also entered nickel mine project and nickel smelters called the Surya Cahaya Mineral (SCM)

project. SCM is world largest undeveloped nickel resource set to commence production in late 2022. Further investment in nickel, cobalt and copper expected to be developed with new strategic partnership with Brunp CATL, world largest electric battery vehicle supplier.

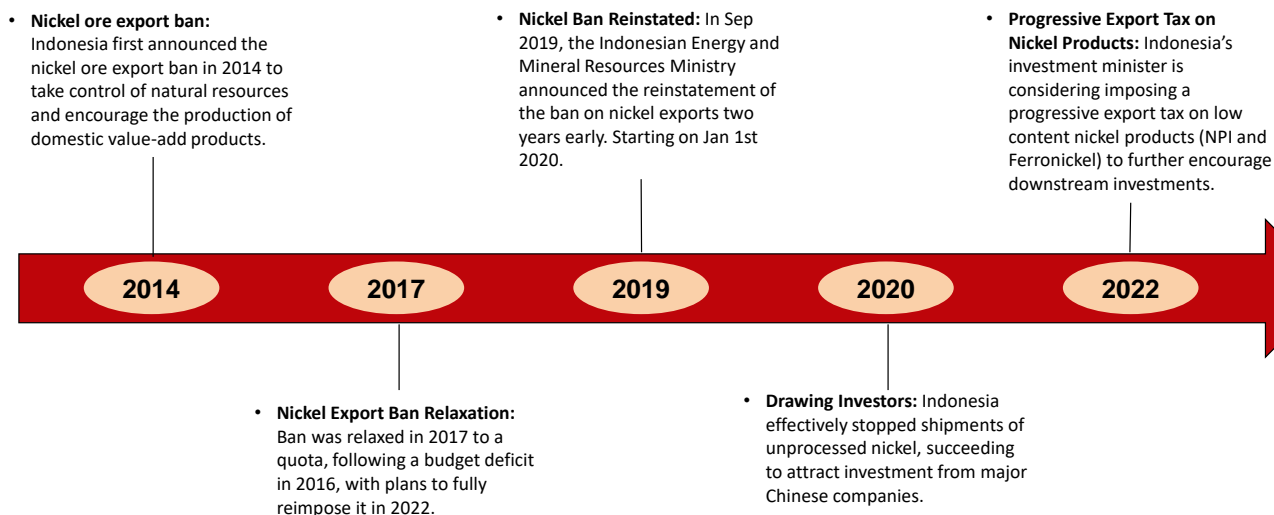
EV value chain hub and net zero emission initiative open up new investment opportunities

Since nickel is one of the key components for EV battery and Indonesia is among the top nickel producer in the world, the opportunities do not stop at the nickel ore smelting/ processing level since the EV ecosystem initiatives also require clean energies to support the processing plants.

The supporting infrastructure such as industrial parks and ports also needs the energy supply too. Furthermore, there is an opportunity for carbon capture and storage from existing coal fired power plants as part of the net zero emission plan.

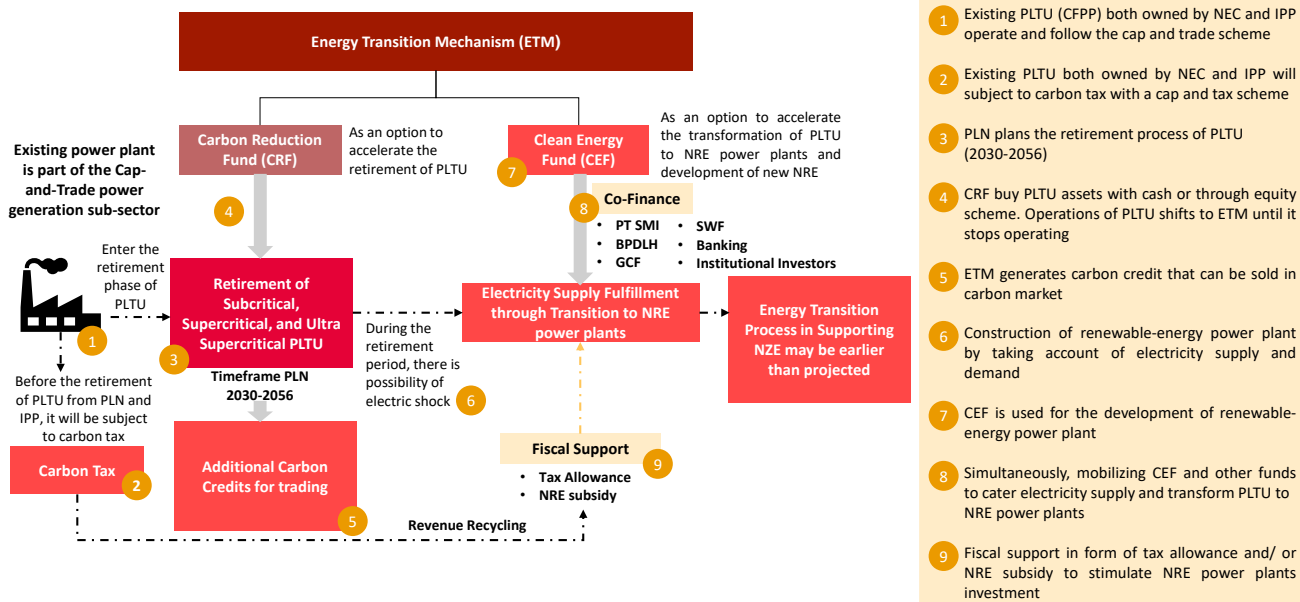
Some coal mining companies are focusing on developing the non-thermal coal power plant including renewables, too. However, execution and government commitment are crucial since historically, renewable energy development has never been successful in the large scale due to limited access to financing, electricity transmission, and location.

Indonesia has spent significant effort boosting itself as an EV global supply chain hub



Source: Company, DBSVI

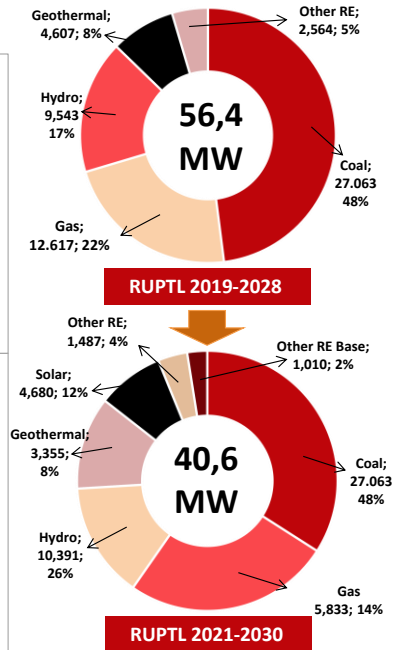
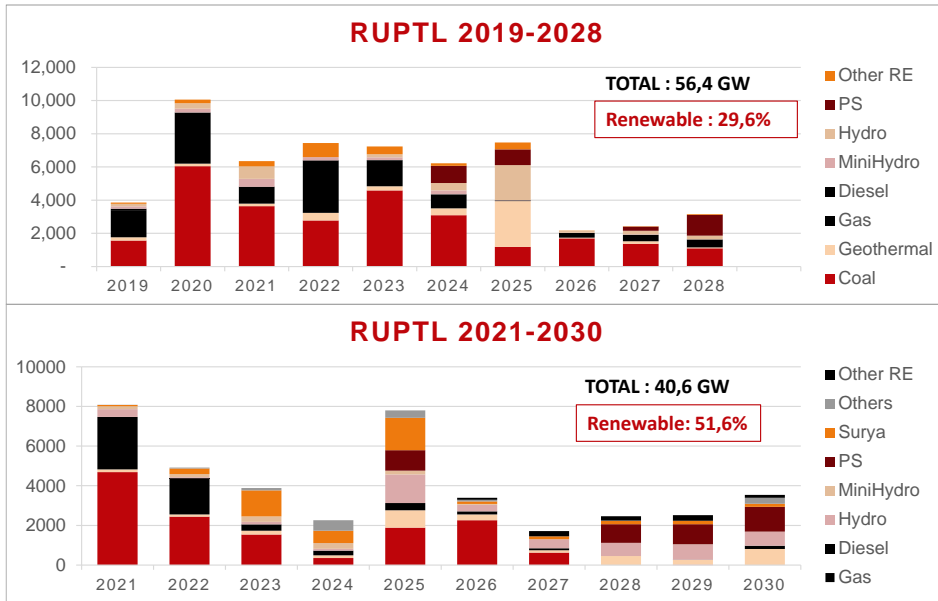
Indonesia's proposed coal fired power plant early retirement scheme



- Existing PLTU (CFPP) both owned by NEC and IPP operate and follow the cap and trade scheme
- Existing PLTU both owned by NEC and IPP will subject to carbon tax with a cap and tax scheme
- PLN plans the retirement process of PLTU (2030-2056)
- CRF buy PLTU assets with cash or through equity scheme. Operations of PLTU shifts to ETM until it stops operating
- ETM generates carbon credit that can be sold in carbon market
- Construction of renewable-energy power plant by taking account of electricity supply and demand
- CEF is used for the development of renewable-energy power plant
- Simultaneously, mobilizing CEF and other funds to cater electricity supply and transform PLTU to NRE power plants
- Fiscal support in form of tax allowance and/ or NRE subsidy to stimulate NRE power plants investment

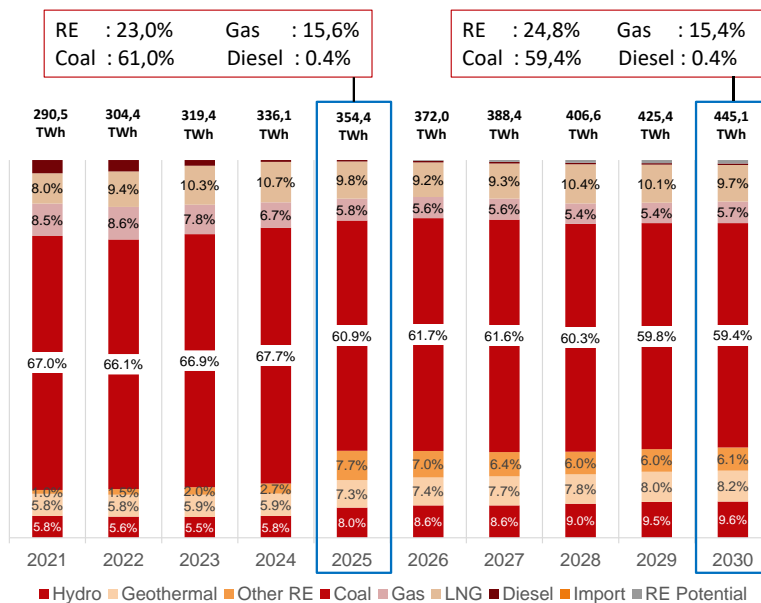
Source: Company, DBSVI

Indonesia energy road map revised in 2021 with more renewable energy project in the pipeline



Source: Company,, RUPTL 2021-2030, DBSVI

Renewable energy mixes will reach 23% in 2025 before further up to 24.8% by 2030



The strategy undertaken to achieve a 23% RE mix starting in 2025 is as follows:

1. Increasing the success of COD Geothermal (1.4 GW) & Hydro/MiniHydro (4.2 GW) by accelerating permits, exploration and land acquisition.
2. The diesel fired power plant conversion program expansion from 588 MW into 1.2 GWp Solar PV and Batteries.
3. Construction of 4.7 GW Solar PV and 0.6 GW wind power to achieve a 23% RE mix in 2025
4. Implementation of co-firing of biomass at PLN's coal fired power plant in Java-Bali with 20% for outside Java-Bali, with a CF of 70%, a total capacity of 2.7 GW (up to 13.7 million tons/year of biomass), energy mix 6%
5. Base load generators after 2025 which were previously designed to use coal-fired power plants. Dogamti with renewable energy of 1 GW
6. Retirement of 1.1 GW PLTU sub-Critical in Muarakarang, Priok, Tambaklorok and Gresik in 2030.

Source: Company, RUPTL 2021-2030, DBSVI

Roadmap toward net zero emission

2021: Presidential Regulation (Perpres) on New Renewable Energy (NRE), Presidential Regulation on Retirement Coal, co-firing PLTU, CCT, Conversion of diesel-fueled power plants (PLTD) to gas & NRE

2022: Renewable Energy Act, electric stove 2 million RT/y

2024: Interconnection, smart grid & smart meter

2025: NRE 23% dominated by solar power plants (PLTS)

- Electrification ratio 100%
- Electricity 1,217 kWh/ capita

2021-2025

2026-2030

2031-2035

2036-2040

2041-2050

2051-2060

2031: Retirement of subcritical coal plants phase 1, COD of interconnection between islands

2035: NRE 57% dominated by PLTS, hydro, geothermal

- Electricity 2,085 kWh/ capita

2045: First PLTN (Nuclear) to start COD

2050: NRE 87% dominated by Biomass and PLTS

- Stop selling conventional cars
- Electricity 4,299 kWh/ capita

2027: Stop LPG import

2030: NRE 42% dominated by PLTS

- No new fossil-based plant post-2030 period
- EV 2 million cars and 13 million motorcycles
- BBG 300,000
- Gas network for 10 million households
- DME utilization
- Electricity 1,548k kWh/ capita

2037: Retirement of subcritical, critical, and partial of super critical coal plants phase 2

2040: NRE 71% dominated by PLTS and biomass

- Stop selling conventional motorcycles
- No more PLTD
- LED lamps 70%
- Electricity 2,487 kWh/ capita

2054: Last retirement of PLTGU

2055: Last retirement of PLTU

2060: NRE 100%, dominated by PLTS, hydro

- All motorcycles will be electric-powered
- Electric stove 52 million neighborhood unit (RT)
- Gas network for 23 million households
- Electricity 5,308 kWh/ capita

Source: Company, DBSVI

Coal mining companies are on record-high earnings

Rising earnings alongside energy prices

After multiple years of low price trend, energy companies could finally enjoy a brighter day on the high commodities price trend since 2021 with record-high earnings achievements. The windfall over supply crunch from limited financing, concern on pandemic and war, have led to the high energy price trend.

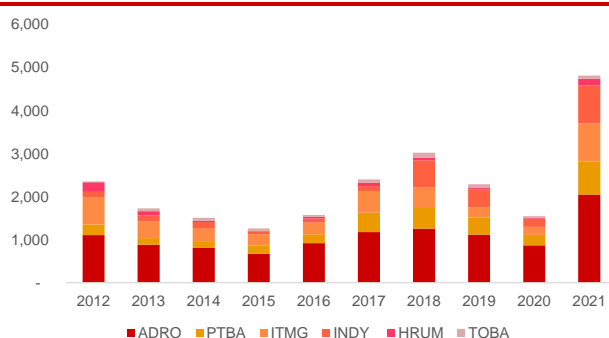
Although earnings trend is likely to taper in 2023 due to lower coal price outlook, it is still much better than 2010-2020 earnings trend level. Amid the rising earnings trend, coal mining companies' free cash flows also flourished since the coal mining business require relatively low capital investment. Cash based business model and rising selling price could be reflected on earnings and operating cash flows simultaneously.

Followed by growing free cash flows

The high operating cash flows were followed by stronger free cash flows. Despite the high commodities price trend, coal companies do not boost investment in existing fossil fuel-related business since the positive price windfall may not last forever and the pressure over decarbonisation is unavoidable.

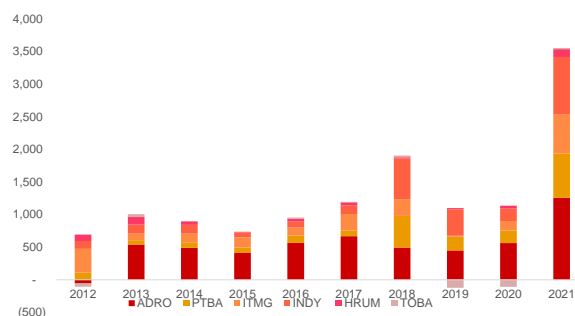
This helps the companies to generate record cash and achieve strong balance sheet with most of them are immediately turning into almost net cash position. Energy companies are also aware that the long-term diversification plan beyond the current fossil energy business should be ongoing.

EBITDA trend jump alongside the coal price (US\$m)



Source: Bloomberg Finance L.P., DBSVI estimate

Followed by record high free cash flows

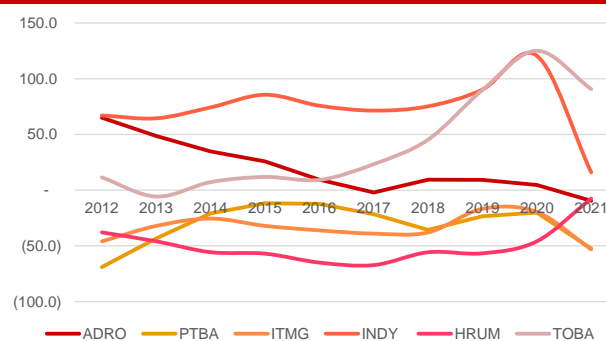


Source: Bloomberg Finance L.P., DBSVI estimate

Gearing level generally trending down

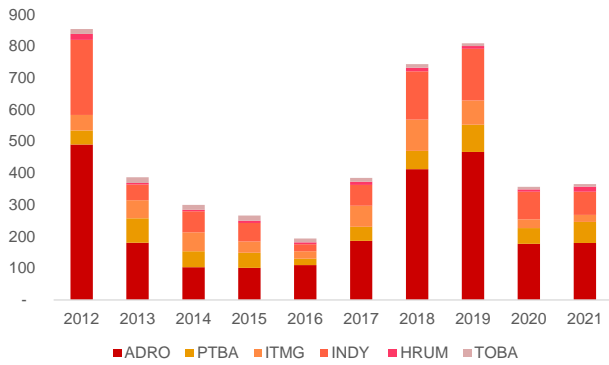
Unless the company is committed to invest in non-thermal coal mining business, we see the trend of lower gearing level going forward. Furthermore, investors and creditors only could grant funds/loans for non-thermal coal units as of present. In an extreme case, a coal company, Harum Energy (HRUM), decided to repay all its remaining loan outstanding since June 22.

Gearing level trending down as cash accumulation is ongoing



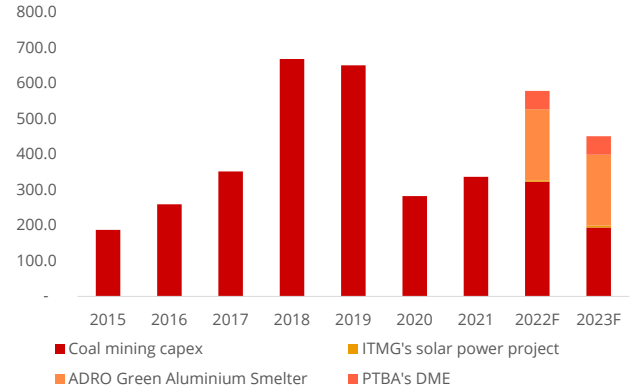
Source: Bloomberg Finance L.P., DBSVI estimate

Capex may return to 2012 high following coal price trend (US\$m)



Source: Bloomberg Finance L.P., DBSVI estimate

But 30% of capex allocation for non-thermal coal units (US\$m)



Source: Bloomberg Finance L.P., DBSVI estimate

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Allocating capital to fossil fuel seems to be less rewarding

Allocating capital to fossil fuel is also deemed to be less rewarding and more challenging today as the potential earnings per share churned from lifting or mining activities are less appreciated by the market or investors, which is reflected on the single digit PE multiple among energy companies in Indonesia.

Another factor that affects the valuation is investors' view that the current record-high energy prices itself is largely supported by the unusual event such as the how long the war will last and how long the demand can hold if the price stays too high for too long.

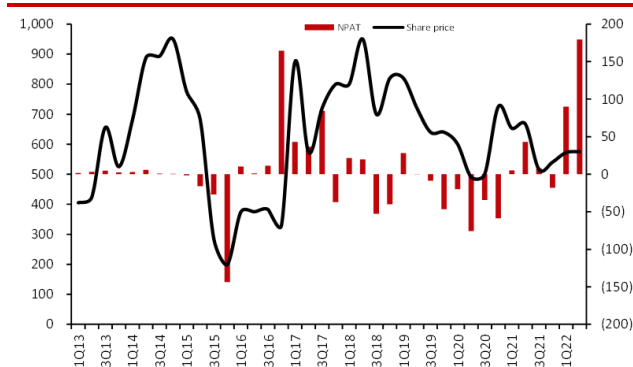
On the other hand, raising financing to expand coal mining project isn't easy today as financial institutions and investors are committed to deploy more credit and capital to non-fossil fuel. Global banks aren't adding coal sector to their credit portfolio meanwhile bond investors impose strict ESG criteria for coal mining companies.

Adaro Energy (ADRO) has a US\$750m global bond that was raised in 2019 and only rated Ba1 from Moodys in March 2022 and BBB- from Fitch Rating in September 2022. Indika has US\$1.3bn global bonds which consist of US\$575m and US\$675m bonds that are due 2024 and 2025, raised in 2017 and 2020, respectively.

Corridor boosted earnings, but share price hardly broke the 2019 level

Medco Energi (MEDC) acquired Corridor block from Conocophillips at US\$1.3bn in 2021. The acquisition looks impressive from a valuation point of view at an EV/EBITDA of 3x and it instantly boosted MEDC's oil and gas lifting and earnings performance, thanks to Corridor's profitable underlying oil and gas assets.

MEDC turned into net profit (RHS) after Corridor acquisition but share price (LHS) only recovered to 2017-2019 level



Source: Bloomberg Finance L.P., Company, DBSVI estimate

The share price reacted positively on the earnings performance. However, MEDC is currently trading only at an FY23 PE of 5.0x, and the share price has not returned to pre-pandemic despite strong earnings boost from acquisition.

Share price and valuation do not priced in record high commodities' prices

The tumbling share price and commodities price trend in 2018-2020 pushed companies to rethink about themselves. Historically, the share price highly correlates to the commodities price trend. However, when the long-awaited price recovery happened in 2021, the share price remained relatively lagging the rising commodities price trend.

We understand that the current high commodities' price may be driven by the lingering Ukraine-Russia tensions, as well as logistics disruptions since COVID-19. However, the double-digit dividend yield performance means that the current valuation hasn't priced in the recent super cycle price level, as energy transition, decarbonisation, and green investing remain key themes in the next decade.

Share price didn't follow rising commodities price trend



Source: Bloomberg Finance L.P., DBSVI estimate

Even with the recent share price rally, ITMG and ADRO only delivered a 7%-8% total return since their IPO in USD terms, with the assumption of all dividends reinvested back. The rising commodities price trend in 2021 and 2022 does not result in a record-high share price performance despite the record-high earnings trend and probably dividend.

Structural valuation de-rating, even when stretched to a 10-year horizon

Taking a longer time horizon, the share price valuation reflected material de-rating from a 15x-20x PE decade ago, to multiple of 3x-4x in recent years. We understand that the current low PE multiple may reflect the current record-high earnings trend. However, looking forward to FY23, where the consensus – and us – are expecting earnings to taper, valuation still looks cheap compared to historical PE multiple level.

The share price remained low even as companies started paying record high dividend. Although the low share price offers a high yield dividend for investors in a situation reminiscent of the junk bond era in 1980, the interests on the sector are muted vs. the previous peak commodity cycle.

ITMG 10-year PE band



Source: Bloomberg Finance L.P., DBSVI estimate

ADRO 10-year PE band



Source: Bloomberg Finance L.P., DBSVI estimate

Enhancing shareholder value via green investments

We think the share price performance and valuation de-rating over the past decade reflected investors shifting away their focus to ESG and green investments such as electric vehicles (EV), EV battery, and renewable energy, and left the fossil fuel universe underinvested in the past few years. With more institutional investors valuing the green investment better than the fossil fuel we think the sense of urgency to invest in those universes are more important than ever.

With the high earnings and the billions of cash accumulated in the balance sheet now, energy companies could accelerate the diversification plan beyond the fossil fuel. The green investment initiatives have been the talking point since 2019 and it accelerated during the 2020 pandemic and we see, concurrently, the uprising trend of investment in non-fossil fuel.

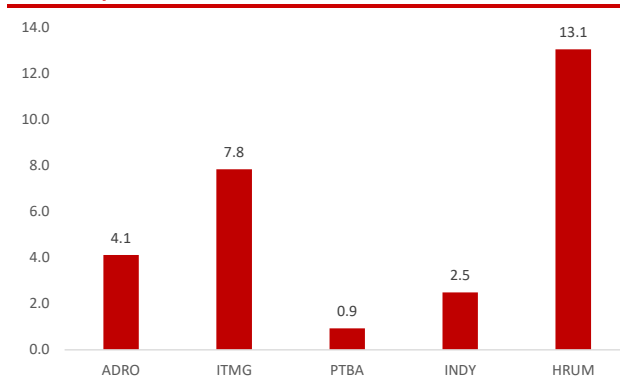
We believe investor focus is directed to innovation and green energy, rising copper prices, as well as non-coal mining assets valuation. One of the key examples is HRUM's EV/reserves is now at premium to its peers showing the expectation and valuable part are beyond their thermal coal reserves. Historically Indonesia's EV/coal reserves around US\$4-5 per tonne respectively.

Another example is ADMR's ADRO subsidiary, with the current market cap reaching $\frac{3}{4}$ of ADRO's as the green aluminium smelter project announced since last year.

Besides unlocking ADMR's valuation, the IPO also helps ADRO's valuation, reflected on its EV/reserves of US\$4.1 per ton vs. its historical average US\$2-3 per ton.

Meanwhile more interesting case is ITMG, as the EV/reserves is now half of HRUM's, the second largest among the peers thanks to its record high dividend per share. Despite the positive share price performance and slightly lower pay-out ratio, ITMG's latest interim dividend offer attractive dividend yield of 10% to investors.

EV/reserves comparison: HRUM EV/reserves are higher than its peers



Source: Bloomberg Finance L.P., Company, DBSVI estimate

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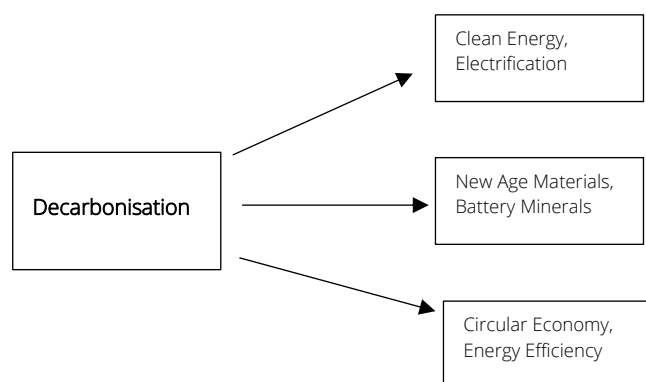
Case study: Amid high energy prices, a billion dollars on the move to green energy investments

Some energy companies started earlier than others on green investments, and the investments in the past two years accelerated, accounting for 15%-30% companies capex in 2022-2024. Rather than accelerating the machineries replacement cycle or pursuing inorganic growth, coal mining companies in Indonesia acquired non-coal mining assets, and energy companies have started to invest in new businesses pillars to as part of the diversification and decarbonisation journey in the next five years.

The impact toward the share price is generally positive as companies can show the growth potential amid the energy transition trend toward renewable energy and capture the next manufacturing and electric vehicle theme via investment in nickel processing facilities and green aluminium processors.

Net zero is considered the benchmark standard for decarbonisation, and most Indonesian companies aim for net zero in 2050, with an interim period of 2025/2030 as the interim period of measurement. Net zero do not means divesting or stopping its existing mining or drilling activities due to its cash flow and profitability factor, but it means not adding a new emission to the atmosphere. We categorise the decarbonisation case study into 1) clean energy and electrification, 2) new age materials, and 3) circular economy and energy efficiencies.

There are three key diversification themes among Indonesia's energy companies



Source: DBSVI

Case study 1: Harum Energy (HRUM IJ, not rated) US\$300m nickel ventures

HRUM's reserves life is the thinnest compared to coal mining companies under our coverage. However, the successful transition into nickel mining companies allow the company to churn profits and achieve an EV/tonne of coal reserves valuation of US\$13/tonne, vs. coal mining companies' valuation of US\$4/tonne. HRUM aims for the nickel business to contribute more than 50% of its revenue in the next five years.

Despite depleting coal reserves, the company has been preserving cash since 2015 and has decided not to ramp up production in the 2017-2019 coal price boom. In the 2021 Annual Report, HRUM clearly stated that nickel mining and processing (smelting) will be their key diversification efforts to achieve sustainable business growth. Even in 2022, HRUM divested one of its subsidiaries – PT Tambang Batu Bara Harum (PT TBH) – as part of its portfolio alignment initiatives, albeit the transaction size being insignificant.

The strategy has proven to be successful as it diverts their capital to the nickel mine business ahead of its peers. The key intention of HRUM for diversification was because it was hard to obtain good coal mining assets, along with uncertainties over China's coal import policies.

HRUM – via its subsidiary Tanito Harum Nickel (THN) – started to invest in nickel assets in 2020 by acquiring a 4.7% stake of Nickel Mines valued US\$53.5m before resumed it series capital allocation to nickel mining assets. HRUM increased their stake to 6.7% in May 2021 by adding US\$45m worth of investment in NIC. HRUM's entry point is considered a good one at AS\$0.6/share on average vs. the current share price A\$0.8. As per 9M22, HRUM's effective on NIC is at 6.4% due to dilution effect on NIC new shares issuance.

Nickel smelter investment

THN also owns a 49% stake of PT Infei Metal Industry (IMI), a company engaging with nickel processing and refining (smelter) with a capacity of 20k MT nickel metal via three different transactions. HRUM's transactions in 2021 valued IMI at US\$280m. The transaction was deemed to be undervalued considering IMI's annualised FY22 EBITDA could reach US\$90-100m, which implied a transaction EV/EBITDA of 2.0x.

The nickel investments start to churn a positive earnings contribution to the company this year. HRUM booked US\$6.4m profit from NIC equity investments, and its 49%

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stake of IMI has generated net profit of US\$22m (IMI 9M22 earnings is US\$46m) vs. consolidated earnings of US\$237n in 9M22. Going forward, with at least 44k tons of Nickel Pig Iron (NPI) and 6.5k MT of Nickel Metal, IMI could generate US\$60m revenue per annum at US\$16,000 per ton nickel price.

IMI is profitable smelter with cash cost per ton of US\$14,900 per ton

IMI (100% basis)		1Q2022*	2Q2022	3Q2022	9M2022
NPI Production	(tonne)	27,876	40,126	43,630	111,632
Nickel Metal Production	(tonne)	4,065	6,456	6,480	17,001
Nickel Sales Revenues	(USD million)	88.3	116.5	107.3	312.0
ASP Nickel	(USD/tonne)	17,493	19,588	16,099	17,672
Cash Cost	(USD/tonne)	13,755	14,858	14,937	14,573
EBITDA	(USD million)	18.9	28.1	7.7	54.7
Net Profit After Tax	(USD million)	16.2	25.3	4.2	45.8

* 1Q2022 data is shown for information purposes but it is not comparable due to the low utilization rate during trial production. Commercial production started in April 2022

Source: Company, DBSVI

Nickel mining investment

THN purchased a nickel mining concession owned by Aquila Nickel Pte Ltd. for a 51% stake of PT Position (POS) at a purchase price of US\$80.3m. POS continue to process various required permitting approval, which is required prior to construction of mining infrastructure and other operating activities.

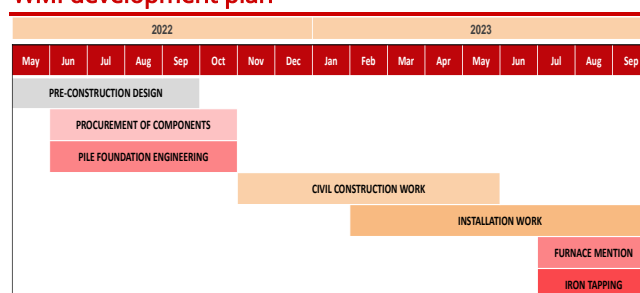
POS development plan

	2022		2023			
	Q3	Q4	Q1	Q2	Q3	Q4
Permit Application & Mine Study						
Hauling Road Survey						
Drilling						
Infrastructure Construction						
Mining Commencement						

Source: Company, DBSVI

The most recent acquisition is a 20% stake of PT Westrong Metal Industry (WMI) for US\$75m. WMI is building a RKEF (Rotary Kiln Electric Furnace) Nickel smelter in Indonesia Weda Bay industrial Park (IWIP) with annual production of 56k MT of nickel metal, approximately twice IMI's capacity. The completion is expected in 4Q23.

WMI development plan

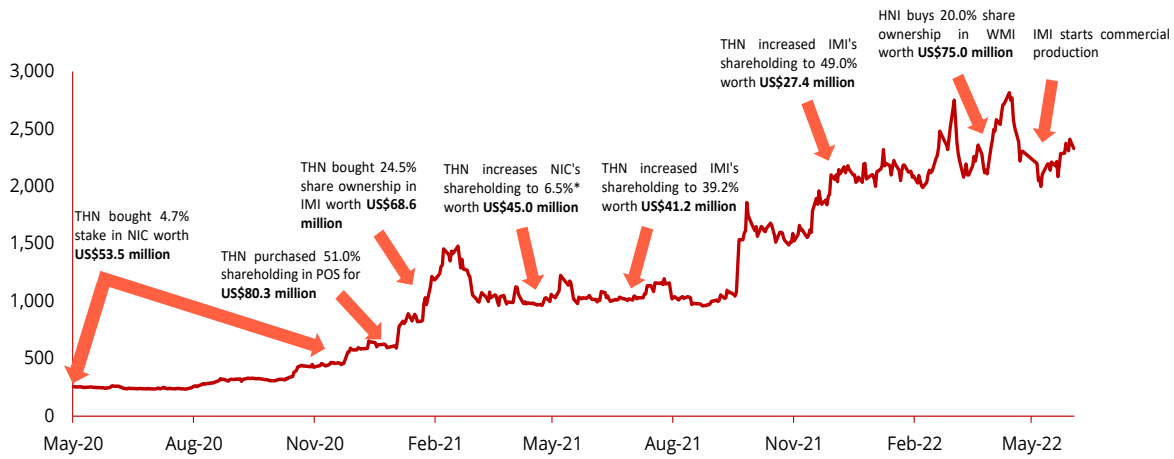


Source: Company, DBSVI

The reason behind HRUM's nickel ventures was the belief that coal has a finite prospect and the nickel will be part of future fuel in the form of EV batteries component. Meanwhile, Indonesia's regulation has been supportive on nickel.

This has resulted in HRUM's positive share price performance. Currently HRUM is trading at an EV/tonne reserve of US\$13 per tonne, vs. its coal mining peers' of US\$3-5 per tonne. While PE multiple may not be the best representative in general for mining companies now due to strong share price performance, HRUM trades at a 5x FY22 PE, higher than peers annualised FY22F PE of 3x.

Harum Energy nickel assets transaction



Source : Bloomberg Finance L.P, DBSVI

Indonesia Energy Sector

Case study 2: Adaro Energy (ADRO IJ, BUY, TP Rp4,600)- Unlocking its non-thermal coal assets; US\$1bn diversification commitment

Adaro's Energy share price hasn't reached its record-high level yet, despite the rising thermal coal price trend. Meanwhile, in the past few years the share price has been struggling to perform on low coal price trend, and there has been capital outflow from the fossil fuel sector as institutional investors limit their exposure to fossil fuel space – including coal mining.

ADMR's IPO is one of the strategies to unlock the ADRO's valuation since it could reflect the fair market price of its non-thermal coal subsidiary. With an 82% ownership on ADMR now worth about half of ADRO's market capitalisation, thermal coal assets are now only valued at 3x PE only.

Adaro Energy share price was also driven by its non-coal asset IPO as coal mining business PE stuck at 3x

Coal est market cap	Mkt Cap	Ownership	
ADRO market cap (US\$m)			7,966
ADMR market cap (US\$m)	4,737	84%	3,979
Non-ADMR market cap (US\$m)			3,987
Coal est core earnings	FY23F		Coal NPATMI
Coal earnings (assume 80% 2023 earnings, US\$m)	1,582	80%	1,266
Coal business earnings multiple			3.2

Source: Bloomberg Finance L.P., DBSVI estimate

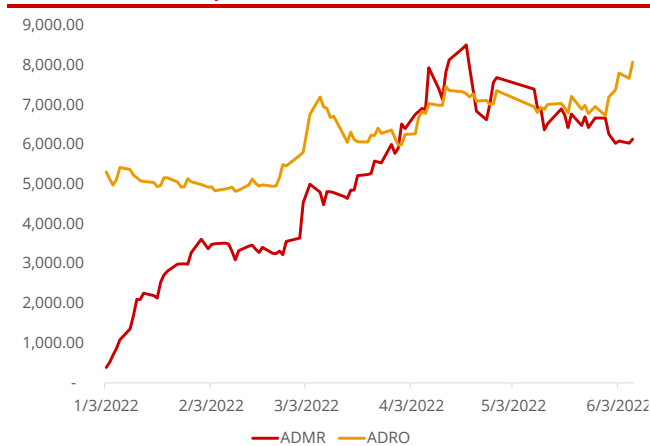
On top of ADMR IPO, ADRO actively repurchased back its shares with a Rp4tr budget as start to support share price performance amid rising earnings outlook. It raised investor confidence as Adaro also thinks the shares are undervalued. However, the share price repurchase programme may not sustain the share price, since the current rising share price is largely linked to ADRO's earnings performance.

Adaro has had a long passion over hard coking coal. Adaro Energy acquired US\$335m for a 25% stake of AMC, valued at US\$1.3bn; however, amid the coking coal price turmoil BHP, Billiton decided to sell 75% of its stake at US\$120m which valued the asset at US\$160m valuation only.

It also acquired 48% of Kestrel back in 2018, alongside EMR Capital, a private equity firm that focuses on resources

investments. Kestrel acquisition didn't provide a major boost on share price, probably because the coking coal assets earnings volatility also links to the metallurgical coking coal prices.

ADMR's market cap is 80% ADRO's



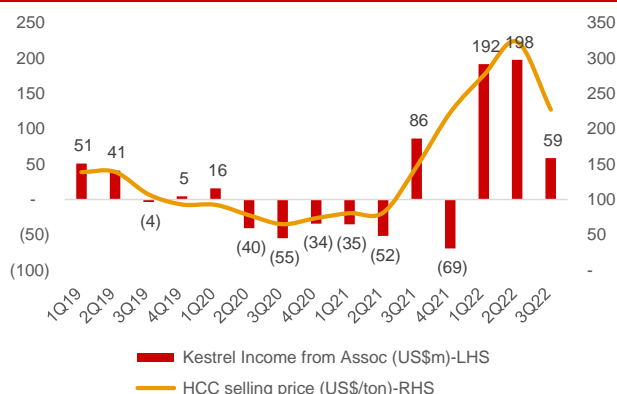
Source: Bloomberg Finance L.P., DBSVI estimate

Green investment. Fast forward, the coking coal asset was transformed into the green smelter aluminium project and listed in early 2022 with a US\$728m investment and an estimated valuation of US\$3bn. Given the strong interest among investors, ADMR's market cap is now almost at par with Adaro Energy.

ADMR's key interest lies its green aluminium smelter project, where it is set to capture the demand of green/less pollutant processed aluminium. The non-ferrous metal has experiences strong growth in the past decades – mainly due to strong demand from China – and going forward the aluminium demand is set to benefit from rising EV car sales as aluminium's lightweight characteristic is on demand to offset the battery weight and support a better car dynamic and efficiencies.

The green aluminium will start from a 500k-tonne production capacity, which is expected to commence by 2025 before further ramping up to 1m tonnes and 1.5m tonnes estimated by 2030 and 2040 respectively. The expansion seems ambitious, but considering the plan for EV manufacturing hub in Indonesia, the project has the potential.

Kestrel turned positive earnings when coking coal selling price reached US\$200 per ton

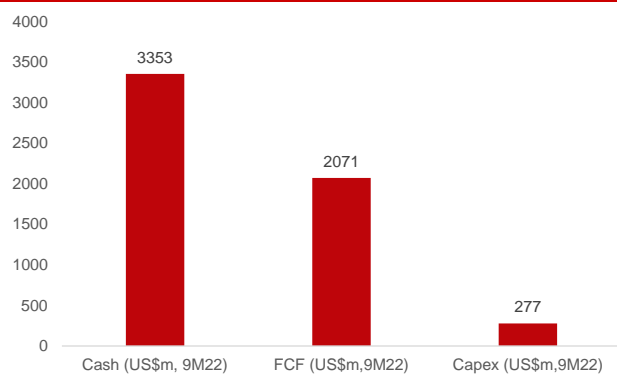


Source: Bloomberg Finance L.P., DBSVI estimate

To complete its aluminium smelter project, ADRO bought a 3.7% stake on Cita Mineral Investindo (CITA, not rated) valued at Rp358bn/ Rp2,400/share. CITA is Indonesia's largest bauxite mining company and through its 30% ownership on its subsidiary PT Well Harvest Winning Alumina Refinery (WHW), CITA invests in alumina refining operations.

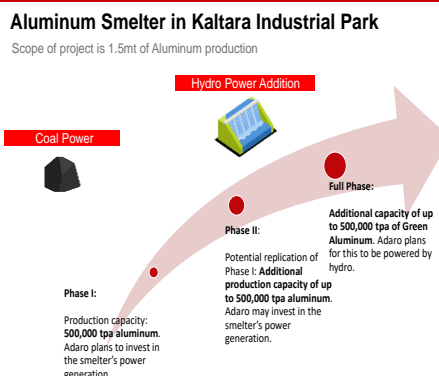
The stake may not be significant, but it may open up future potential JV projects with Adaro's green aluminium smelter project in North Kalimantan due to CITA expertise in the field. Another potential is the joint venture with Chinese aluminium companies that are looking to diversify their presence beyond China. Expanding in Indonesia would provide benefits to the growing aluminium demand in the country due to the current under supply situation amid queries over aluminium materials for auto sector.

Strong financial position to capture growth opportunities across the energy ecosystem



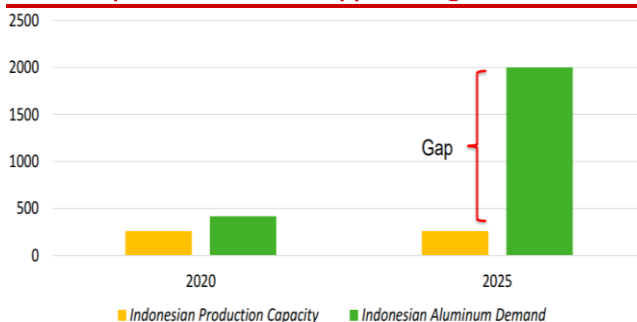
Source: Bloomberg Finance L.P., DBSVI estimate

Demand potential and low supplies on green aluminium



Source: Company, DBSVI estimate

Demand potential and low supplies on green aluminium



Source: Company, DBSVI estimate

Hydro power. Potential investments going forward will be the hydro power plant to supply electricity for the smelter. The hydro power plant is an ambitious project since the smelter itself requires around 200MW of electricity (to be supplied by the hydro power project). We believe the hydro power investment is another key component to complete the green smelter investments.

ADRO needs at least 1,000MW of power for its North Kalimantan industrial park where the aluminium smelter will be constructed. We think Adaro needs to find the right partners on hydro power plants since Adaro Power expertise is at the coal-fired power plant.

Currently, we have several listed hydro power experts with strong execution track records such as Kencana Energy (KEEN IJ, Not Rated) as the company is currently running at a 50MW hydro power project. However, given its execution track record and delivery, as well as recent partnership with Tokyo Electric Power Company (Tepco), we think KEEN is a key potential partner that needs to be considered.

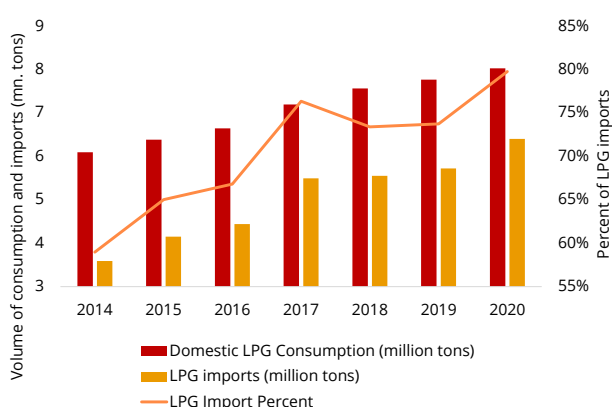
Case study 3: Tambang Batubara Bukit Asam (PTBA IJ, HOLD TP Rp3,900) - Coal fired power plant investments raised concerns among investors

PTBA, on the other hand, takes the diversification stance as it needs to support the government to solve several issues including dependencies on energy imports, decarbonization and renewable energy projects. However, PTBA's recent commitment to absorb National Electricity Company's (NEC) coal-fired power plant project may derail its decarbonisation plan as well as reduce its cash flows.

The situation was shown when NEC announced the 350x3 MW Pelabuhan Ratu. PTBA share price plunged 12% vs. the preannouncement level despite limited details on the structure, timeline, and financing yet. The coal-fired power plant was considered as a high pollutant, and it became one of the examples of coal-fired power plant early retirement scheme, as the operational term shortened from 23 years left to only 15 years.

Furthermore, PTBA's PE multiple is similar to its coal mining peers, despite PTBA's 'Permit to Operate' or called IUP mining license demands lower royalties and tax of 5.5% and 25% respectively, lower than its peers Coal Mining Contract of Work (CCOW) that demands 13.5% and 45% royalties and taxes.

Indonesia imports 80% of its LPG consumption

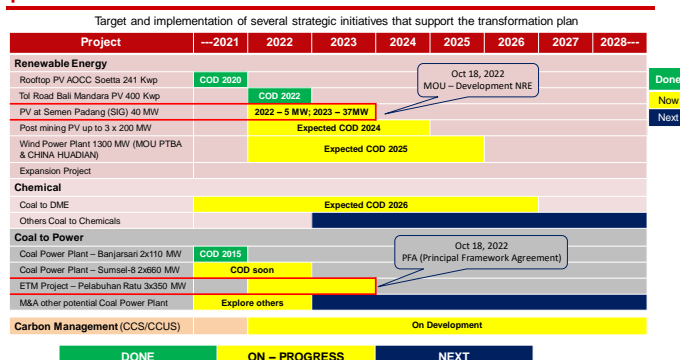


Source: DBSVI estimate

Despite PTBA being awarded with cost plus margin, take or pay scheme electricity power purchase agreement (PPA) with NEC as the main electricity purchaser, the market seems displeased with the transaction as the asset to be acquired is coal fired power plant.

We can't confirm the revenue stream potential yet since currently the power plant is under NEC, instead of its Independent Power Plant (IPP) status. Hence, we could not determine how much the potential revenue from these power plants are. This is not to mention of potential coal supplies of 4.5m tonnes per annum If PTBA acts as the major coal supplier to the power plant.

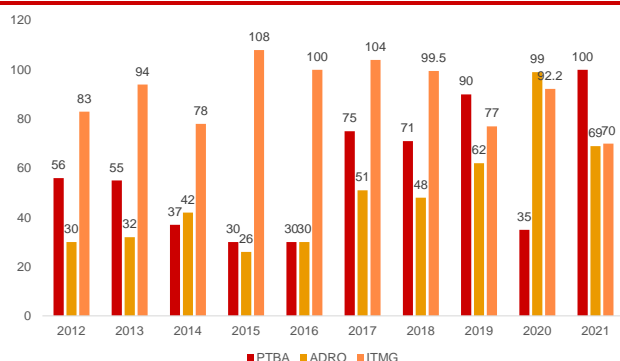
Pelabuhan Ratu raise PTBA exposure to coal fired power plant



Source: Company, DBSVI estimate

PTBA will set aside US\$5bn-US\$7bn for this transaction. The amount is equal to 50%-70% of PTBA's FY22 projected earnings and potentially hurt its dividend pay-out ratio as PTBA holds US\$900m cash as of 1H22. Meanwhile, it needs to serve a regular annual capex of US\$150m-US\$200m per annum.

Historical dividend pay out ratio



Source: Bloomberg Finance L.P., DBSVI estimate

PTBA's strong cash build up maybe used to support its sister SOE companies per government's request. PTBA absorbed Rp300bn worth of Medium-Term Notes (MTN) issued by its sister SOE company PT Timah Tbk (TINS IJ). We do not see it as a total wrong as current time deposit offers a lower rate generally since the MTN offers a 7% coupon. However, it just seems uncommon in our view, as PTBA can set aside the fund for dividend or funding the power plant acquisition.

Furthermore, this a strong sign that PTBA probably will be asked for more unrelated coal projects, but we do not see this as a diversification strategy initiative and more as an effort to support government agenda or its struggling sister companies. As the consequence, PTBA's share price only traded around its peers despite superior dividend pay-out ratio and ROE performance.

What do others energy companies do?

Indo Tambangraya (ITMG IJ , BUY, TP Rp60,000) - Capital reinvestment to green energy via Banpu NEXT

Banpu holds 78% of Indo Tambangraya Megah (ITMG) and the investments are proven to be successful as ITMG has had steady dividend and delivered stellar return since its listing back in 2008. ITMG has historically kept the dividend pay-out ratio 70%-100% to supply the cashflow to its parent company Banpu.

Having said that, ITMG's limited reserves exploration and acquisition concerned investors since 2015 with depleting coal reserves. ITMG hasn't made any meaningful coal concession acquisition since then, but it prefers to distribute its cash dividend to investors.

We think ITMG's careful and conservative coal concession acquisition today is more rewarding compared to acquiring another coal mining company since acquiring high CV coal

concessions in Indonesia isn't easy due to limited concession and demanding prices. Amid raising concern over ESG factors, we think ITMG and Banpu could reap the benefit via reinvesting their coal dividend into green energy and at this point mostly made on Banpu level.

For ITMG, the green initiatives is driven by its major shareholders, Banpu. Banpu has been actively investing in green energy and aiming that by 2025, 50% of its EBITDA will be generated from green energy and technology. Banpu generated US\$1.7bn EBITDA in 2021. Led by Greener & Smarter strategy, Banpu NEXT operates by focusing on building partnerships with energy technology companies and new-generation start-ups with potential complements its all-in-one energy solutions through financing and collaborations.

Banpu NEXT's strategy philosophy is Smart Energy Solutions for Sustainability, creating a new S-curve for its five core businesses, spanning from renewable energy, energy storage, energy trading, e-mobility, to smart energy. Banpu ambitiously invested in green energy but, the ticket size is relatively small at this point.

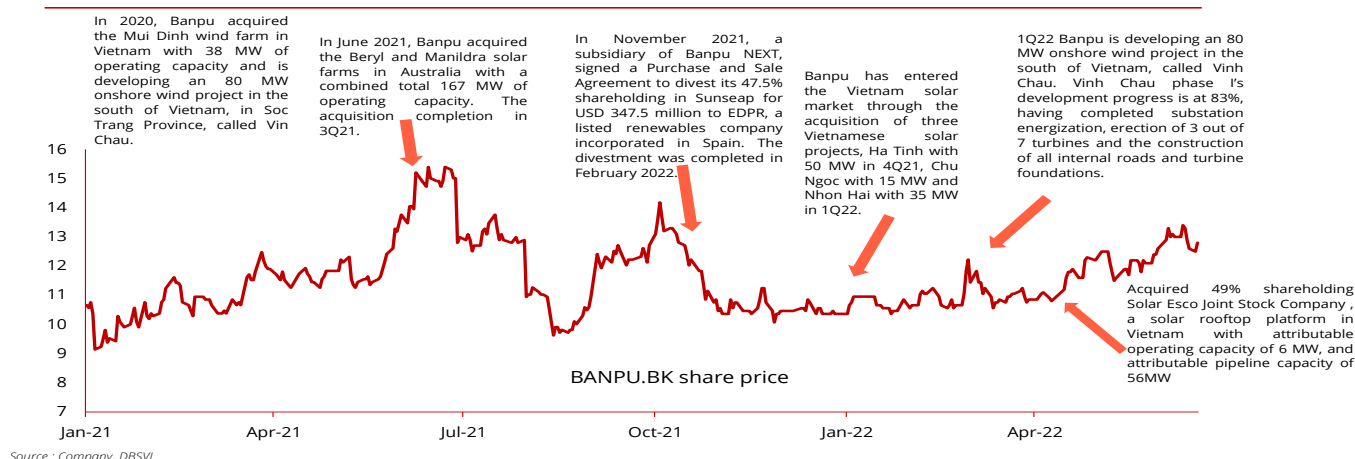
Banpu has aligned its strategy with United Nations Sustainable Development Goals (SDGs), as well as the recent COP26 pledges. Banpu put a hard target of 50% EBITDA from green energy by 2025. Its 3D strategy – Digitalisation, Decentralisation, and Decarbonisation – is to establish a clean energy portfolio in Asia-Pacific comprising renewable energy, solar rooftop solutions, energy storage systems, and electricity trading.

Banpu NEXT by 2025. The growth target includes 0.5 GW of solar rooftop capacity, 3.0 GWh per annum energy storage system – servicing 430k passengers daily with over 5,500 EVs, 2,000 EV chargers installed, 100 e-ferries sold, 30 smart infrastructure and energy managements projects – as well as 1,000 GWh per annum of electricity trading.

Banpu valuation is not reflecting its green investments effort yet. Banpu's share price dropped by 15% between 2017-2021, underperforming its coal mining subsidiary that climbed 75% in the same period. Banpu is trading around a 3.0x FY22 PE or around the coal mining company PE multiple.

We believe the execution is the key; Banpu's renewable energy investment initiatives result in higher multiple for Banpu Power. We think the share price re-rating is only possible if Banpu delivers the Greener & Smarter initiatives, which has been mentioned since 2017. Banpu's renewable energy development is concentrated in Banpu Power, which is now trading at higher PE multiple of 8x.

Banpu green investment journey since 2020



Source: Company, Bloomberg Finance L.P., DBSVI

Medco Energy: Green investment via Medco Power

The story of Medco Energy is different. After a relatively slow integration and earnings delivery of Ophir assets into Medco share price performance, investors were turning into Medco gold and copper assets earnings contribution and its potential IPO.

Current MEDC share price performance reflected the better earnings performance post-Corridor assets' successful integration and high crude oil price trend. However, we think the gold and copper assets will be one of the key earnings growth drivers in 2021 amid the stagnating oil and gas lifting volume before Corridor acquisition contribution this year.

MEDC's AMNT stake now valued US\$1bn vs. MEDC's current market cap US\$1.5bn

MEDC's SOTP Analysis (US\$m)	
MEDC's current mkt cap	1,534
AMNT 23% ownership	922
Corridor (100% stake under CIHL)	2,000
Ophir SEA assets	400
SNSB 40% Ownership	350
Medco Power Indonesia (MPI) Book value	241
MEDC's SOP equity valuation	3,912
Minority interest (1H22)	(200.0)
Holding discount assumption	-5%
Discount to est. equity value	-61%
Bull case equity value	3,906.57
Shares out (m shares)	25,136
Rp/share	2,254

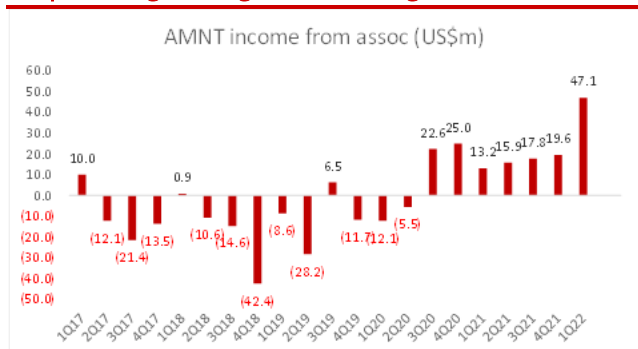
Source: Company, DBSVI estimate

MEDC currently holds a 23% stake of Amman Mineral Nusa Tenggara (AMNT) and has been gradually divesting the assets

from its initial investment of 49%. Previously, MEDC divested its AMNT ownership of around US\$2bn valuation only before the phase 7 development completion. However, further ownership monetisation on its gold and copper assets previously caused share price underperformance on top of AMNT IPO delay.

We estimate a value of US\$4bn-8bn at this point for Amman Mineral and its entering phase 8 concession which may extend AMNT's gold and copper operation to 2032. The phase 8 development package also includes a 900k MT per annum smelter.

AMNT still accounted 50% of MEDC earnings in 1H22, despite rising earnings from E&P segment



Source: Company, DBSVI estimate

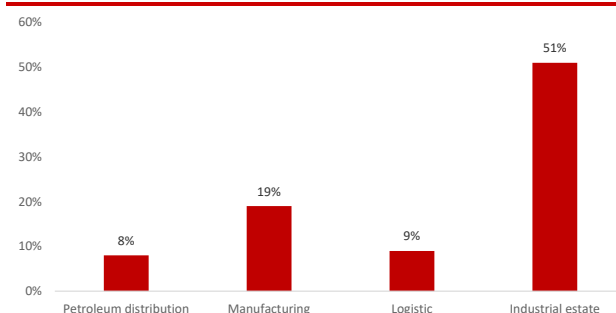
While investors are more familiar with gold and copper asset, Medco Power Indonesia (MPI) is the least exposed assets within the group and actually reflects the company's commitment toward green energy. Medco Power has created a joint venture with Kansai Electric on the feasibility study on power plant decarbonisation via carbon capture and storage (CCS) and carbon capture utilisation and storage (CCUS).

AKRJIPE: Green Industrial Park, right anchor tenants are crucial to boost sales

AKRA invested US\$300m on developing the Java Integrated Industrial Park and Port Estate (JIPE). AKRA struggled to sell the land due to competition from many industrial lands in West and East Java. Historically, Indonesia industrial park was linked to automotive manufacturing and general manufacturing.

Given PTFI confirmation on smelter construction in JIPE and recurring rental revenue of Rp200bn, AKRA share price re-rates back to its historical PE level of around 13-14x. Historically, AKRA share price touched 25x PE when PTFI announced its intention to purchase land on JIPE. However, the plan changed to lease. During uncertainties, AKRA's shares were only valued at 10x-12x PE in 2019-2020 despite the positive earnings achievement.

Industrial estate GPM is way higher than AKRA's petroleum trading business



Source: Company, DBSVI estimate

AKRA differentiated itself to capture the Indonesia gold and copper smelter from PT Freeport Indonesia (PTFI) as PTFI required smelter construction commitment as part of its mining license agreement extension. The application was not only for PTFI but all metal miners that we discussed previously on nickel processing smelter development.

PTFI had decided to lease the land from AKRA and the gold and copper smelter is under construction. With PTFI as the key tenant, it is pushing AKRA to the boundaries on supporting facilities development mainly deep sea port and power grid. Simultaneously, we believe it also will attract potential high-quality tenants that are looking for green energy industrial park.

PTFI as key anchor tenant attracted Xinyi glass which signed the sales purchase agreement of 40ha land sales in 3Q22. In order to cope with Xinyi ambitious 15 months construction timeline, AKRA should now deliver the long awaited 200 MW gas-fired power plant to light up JIPE. The budget is expected to be around US\$200-250m. Previously, after PTFI decided to build its smelter on JIPE, AKRA could utilize the excess NEC's electricity capacity in East Java hence it can delayed the power plant development for almost two years.

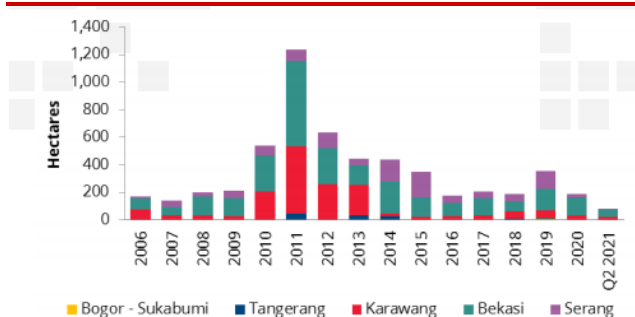
AKRA could fund the power plant development and construction via its own internal capital. However, by allocating 100% equity to the project we think AKRA should consider developing the power plant with potential joint partners since the gas-fired power plant requires good integration from main stakeholders such as Perusahaan Gas Negara (PGAS) gas supplies infrastructure.

The industrial parks are flourishing across Indonesia as part of the special economic zone (SEZ) designation to or captive

Indonesia Energy Sector

usages such as PTFI in JIPE or Morowali industrial park in Sulawesi, with the key tenant being nickel processing plants.

Smelter development drive industrial land demand to eastern Indonesia, meanwhile demand in West Java region peaked in 2011



Source: Colliers, DBSVI estimate

Indika Energy (Not Rated): Ambitious diversification plan

Indika Energy (INDY) is the master of timing over coal price cycle. It acquired the remaining stake on Kideco in 2017 from its partner at US\$517m valued Kideco concession at US\$1bn previously. Today the consolidation has been proven to help INDY secure good earnings performance amid rising coal price trend. This year, it divested its 70% ownership on Petrosea to PT Caraka Reksa Optima valued US\$147m, or Rp3,110/share. The PTRO divestment is the best timing in our view since it aligns with INDY commitment to reduce its exposure to coal business and reduce its carbon footprint to net zero emission by 2050.

The previous Kideco acquisition was purely as strategic investment to consolidate its ownership proven to be successful to generate good earnings amid the rising coal price in 2022. However, Kideco is now a cash machine that generates 80% of INDY's revenue and even more on EBITDA and earnings level.

Indika aims to achieve net zero emissions by 2050 and 50% non-coal revenue in 2025. In order to achieve the target, Indika has been diversifying away from its profitable Kideco

concession. Indika also one of the few companies that closely monitor the non-coal revenue, which achieved 25% in 1H22. Despite the record-high coal price trend, the non-coal revenue only dropped slightly from 25% in 1H21. Beside utilities-related investments such as port and logistics services – namely Interport, which includes fuel storage, and power plant Cirebon Power – INDY has been diversifying beyond its thermal coal business by investing in non-coal, gold, and copper assets.

The gold and copper in Indonesia is supported by the battery supply chain hub ambition. Indika invested in Nusantara Resources Limited and Nusantara own 100% of PT Masmindo Dwi Area, which has the sole right to exploit Awak Mas Gold Project. INDY spent US\$58m for a 72% stake on the project after previously owning 28% of it. Awak Mas project expected to commence by 2025. The expected gold output could reach 100k ounces (3,110kg) within the next 15 years.

Venturing into EV universe

INDY also tap into e-bike, electric two-wheeler to support the demand on clean transporter which could potentially fulfil demand from ride-hailing companies in Indonesia. Electric 2-W in our view is ahead of Japanese top motorcycle brand expansion, which is currently on testing stage since the key hurdle on the e-2W is the travelling range, as well as the recharge infrastructure. With potential battery changes and replacements, we believe INDY's 2-W popularity will be at the tipping point if the supporting factors such as financing scheme with multi-finance company as well as incentives from government materialised.

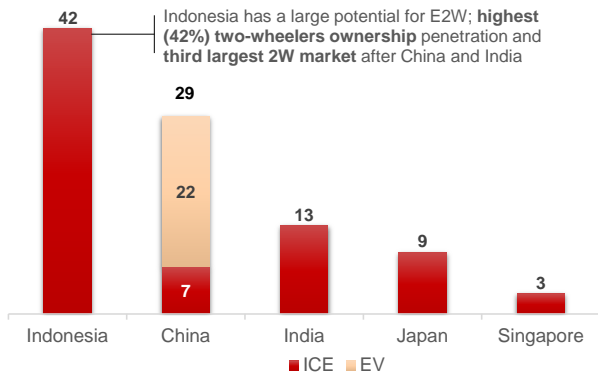
Indonesia sells 5m units of 2-W per annum and current 2-W population is 280m units across Indonesia. Indonesia 2-W ride hailing members were reported to be around 4m riders and this segment could potentially become the strongest market potential for the electric 2-W. The government aims to achieve 600k EV cars and 2.5m EV bikes by 2030. Some of the incentives may include import duty holiday for Completely Knock Down (CKD) and Incompletely Knock Down (IKD) for EV, incentives for R&D, other component imports, and human resource certification.

Indonesia Energy Sector

Indonesia has spent significant effort boosting itself as an EV global supply chain hub

Diversification Investments – Green Businesses
Electric 2W – Indonesia is the 3rd Largest Market for 2W in the World

2W ownership penetration, by country, 2019-20
 # owned per 100 population

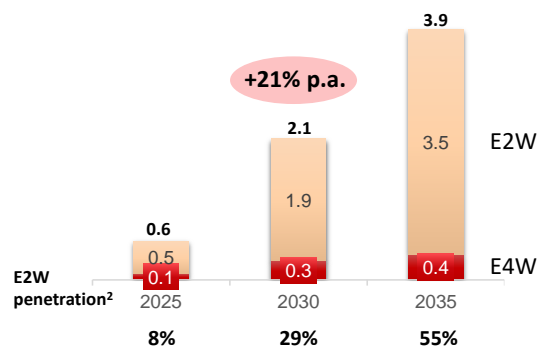


Yearly sales (Mn vehicles)



Indonesia EV vehicle sales¹,
 Million vehicle

Total Addressable Market ~US\$ 7 Bn in 2035



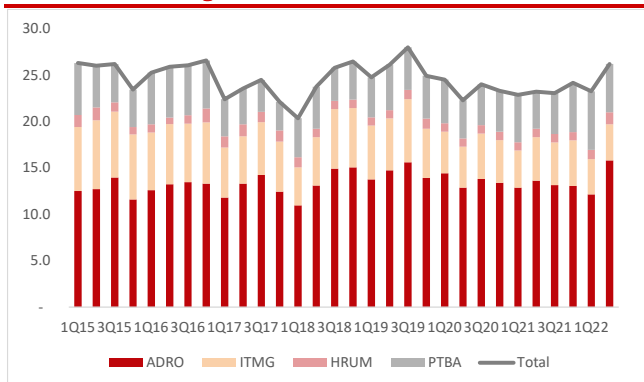
1. Includes BEV
2. Total parc. EV/ (Total EV + ICE)

Source: Company, Mckinsey, DBSVI

Unwanted implication: Upside risk to fossil fuel price?

If our thesis fully played out, this left the investment in fossil fuel left behind, and may cause a structural high coal price trend in 2023 onward if the situation happens. The additional supplies to normalise the price may disappear. Meanwhile the demand may not disappear as fast as the supplies and current war situation clearly shows the stickiness over fossil fuel.

Coal production trend among coal mining companies under our coverage



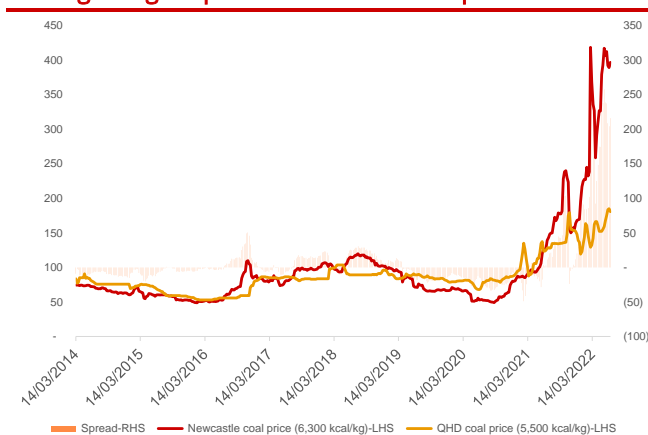
Source: Company, DBSVI estimate

The fossil fuel demand disappearance may not be as fast as the supplies. Currently, coal is still accounted for 50% of China's energy mixes, and conventional Internal Combustion Engine (ICE) seems likely to remain a crucial private and business transportation vehicle in the next decade. However,

the supplies consolidation is happening as stakeholders, especially the investors and creditors, adapt toward stricter ESG measures and caused evaporating financing option to raise production.

A similar situation also might happen on oil drilling activities. With limited financing and interest in the sector, concerning that oil demand may diminish due to growing EV population. OPEC+ supply rationalisation amid fear of recession successfully kept the price above US\$90 per bbl. Going forward with limited upcoming supplies, crude oil price could enter a new equilibrium amid global energy transition.

China interest to seaborne coal remain strong despite its trading at higher price vs. domestic coal price



Source: Bloomberg Finance L.P., DBSVI estimate

Riding on the decarbonisation momentum

Indonesia energy companies are trading at a single digit PE multiple. We believe investors aren't anticipating any meaningful earnings contribution from the green investment for the next three years. However, we think on other hand it provides investors with attractive entry points at this level as the investment and diversification progress are already seen in 2022.

Despite the earnings contribution from the new investments and diversification strategy not being significant in the next three years, we think companies with a solid diversification plan are well prepared for the long-term risk of the weakening energy price trend as well as tougher operational environment and regulatory pressures, as well as access to financing.

Coal mining operations will be self-funded 2023 onward due to limited access to financing, and this may be considered a risky business as well if the coal price fails to sustain the current record high-level, in addition to a potentially more demanding regulatory environment in Indonesia. We prefer companies that are well prepared to diversify their exposure from fossil fuel as we believe it will benefit shareholder in long term beyond current record high energy prices.

The new business also could drive more interest from broader investors and thus, support share price valuation re-rating going forward. With this theme we prefer companies that have concrete diversification plans going forward or otherwise repay back the capital to shareholders.

Adaro Energy (ADRO IJ, TP Rp4,600)

Adaro Energy is currently valued at an FY23 PE of 6x, with thermal coal units valued at 3x PE only. We believe it offer two values for investors 1) earnings growth 2) capital recycle to green energy via its seven investment pillars. The closest will drive by its green aluminium smelter project. ADRO share price is trading around its five years average mean PE and we believe the diversification progress could drive share price valuation re-rating.

Adar Mineral's (ADMR) successful IPO proved that it can achieve current market capitalisation due to its green aluminium project, but we currently could not ignore ADRO which still owns 82% of ADMR post-listing, is a cheaper and

more liquid proxy to ADMR. Adaro Indonesia (AI) set to recycle the coal profit to fund to ADMR and other green investment initiative across the Group going forward.

ADRO's valuation only reflects its coal mining business



Source: Bloomberg Finance L.P., DBSVI estimate

We estimate that Adaro's exposure to the green aluminium project could add a value of US\$4bn to its market capitalisation to ADRO, an aluminium price forecast of US\$3,000 per tonne, and a production capacity of 500k tons per annum in 2025-2030 before further ramping up to 1m tonnes in 2030-2045.

We prefer ADRO over its listed subsidiary ADMR due to ADRO's undemanding valuation, as well as it is supporting an annual EBITDA of U\$1bn from its low-cost coal mining units. With cash on hand, ADRO could deploy the coal profit as dividend for investors or reinvest the capital to its diversification strategy under eight business pillars.

We believe ADRO's diversification will be well guarded as its main shareholder is a well-known active investment company that showed their capability to enhance their investee company values. ADRO is one of its most successful investments and it contributed around 30% of ADRO's key shareholder NAV (Net Asset Value). Hence, ADRO's positive share price performance will positively impact shareholder NAV too.

We also like Indo Tambangraya (ITMG IJ, BUY, TP Rp60,000)

We like ITMG on its dividend stream. ITMG is set to continue to pay 70%-100% dividend to investors and main shareholder Banpu. Meanwhile Banpu will recycle the fund into its green investment initiatives via Banpu Next as Banpu has an ambitious target of 50% EBITDA contribution from green energy in 2025.

We like ITMG due to its capability to operate without external financing as seen on its net cash balance sheet. ITMG's balance sheet remain solid amid coal price downtrend, and we believe the self-sustaining operational strategy will ensure it can maximise the profit per tonne of coal amid the rising coal price trend.

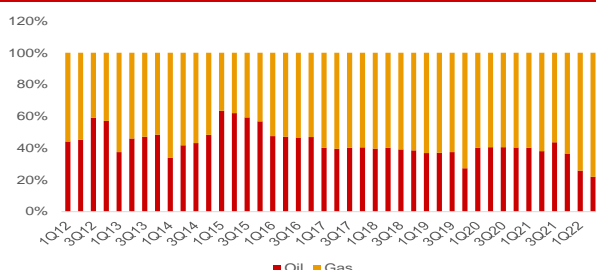
We think ITMG provides both assurance for investors that the hard-earned profit from coal is dividend, and let investors – including Banpu – decide where to invest next. BanpuNEXT is the proxy over green investment pioneer in Southeast Asia, but we think ITMG's dividend, which is also Banpu's cash cow, is too good to be ignored right now.

Medco Energy (MEDC IJ, BUY, TP Rp1,300)

Among the E&P we like Medco Energi. Beside its profitable upstream business post-corridor acquisition, Medco also consistently showed its diversification commitment beyond E&P. MEDC has exposure to 23% gold and copper assets which start to become a profitable investment in 2022 after phase 7 completion.

The basis is MEDC net zero emission with to reduce its scope 1 & 2 emission in 2025 and 2030 before achieving net zero scope emission 1 & 2 in 2050. To achieving this target, we believe MEDC, going forward, will allocate more capital to renewable energy such as geothermal and solar PV. In the meantime, MEDC successfully shifted its lifting away from oil and gas assets M&A such as South Natuna Sea Block (SNSB) in 2017, US\$520m Ophir in 2019, and US\$1.3bn Corridor in 2022. Exposure to gas lighting also prevented MEDC's EBITDA volatility as 60% of the gases sales volume pricing is contracted.

MEDC successfully shifted its lifting to more gases



Source: Bloomberg Finance L.P., DBSVI estimate

AKR Corporindo (AKRA IJ, BUY, TP Rp1,700)

We like AKRA due to its exposure to growing chemical supplies such as caustic soda and sulfuric acid. The caustic soda liquid use for nickel and alumina ore smelting in Indonesia, and CSL's global supply cannot catch up with the growing demand.

Chemical business set to provide cushion for AKRA's profitability if the oil price trend fades since the chemical business line profitability tends to expand during oil price downturn.

Meanwhile AKRA industrial estate Java Integrated Port and Estate (JIPE) are set to become the new economy hub as PTFI copper and gold smelting facility is on the way. Meanwhile, Xinyi Glass is committed to build a glass manufacturing plant with an ambitious completion target of 15 months, which also accelerated AKRA gas-fired power plant and solar PV development with a capacity up to 200MW.

Peers comparison table

Companies	Market cap (US\$m)	Return on Average Equity (ROAE) %					Net Income Margin %					PE (Pre-Ex) Forward (X)					Dividend Yield %				
		20	21	22F	23F	24F	20	21	22F	23F	24F	20	21	22F	23F	24F	20	21	22F	23F	24F
Coal mining companies																					
Adaro Energy (ADRO IJ)	7,675	4.0	23.8	47.7	28.0	13.1	5.8	23.4	27.8	25.1	18.1	42.3	8.2	3.4	4.9	9.4	1.2	6.5	14.6	10.3	5.3
Indo Tambangraya Megah (ITMG IJ)	3,058	4.1	46.1	80.7	50.4	19.4	3.2	22.9	32.9	30.9	18.9	13.4	6.4	2.8	3.6	8.5	2.3	10.9	25.4	19.3	8.2
Tambang Batubara Bukit Asam (PTBA IJ)	3,021	13.6	38.7	40.5	28.8	15.7	13.8	27.0	32.6	31.6	24.0	8.2	5.5	3.8	4.2	6.6	9.1	2.3	7.9	7.2	4.6
Simple average		7.2	36.2	56.3	35.8	16.1	7.6	24.4	31.1	29.2	20.3	21.3	6.7	3.3	4.2	8.2	##	6.6	##	##	6.0
E&P, utilities and trading																					
AKR Corporindo (AKRA IJ)	2,042	10.8	12.3	19.5	17.7	17.1	5.2	4.3	5.8	5.5	5.4	8.2	26.3	15.3	15.3	14.5	1.0	4.0	3.3	3.3	3.4
Medco Energy (MEDC IJ)	1,777	(17.3)	3.6	37.9	29.2	17.5	(17.3)	2.9	19.7	19.4	16.7	0.0	274.8	3.6	3.5	4.8	-	-	2.8	2.9	4.2
Perusahaan Gas (PGAS IJ)	3,017	(11.0)	12.8	17.5	16.4	16.3	(9.2)	10.0	14.2	14.4	15.2	0.0	12.6	6.5	6.3	5.9	1.3	1.7	5.7	8.7	9.0
Simple average		(5.8)	9.6	25.0	21.1	17.0	(7.1)	5.7	13.2	13.1	12.4	2.7	104.6	8.5	8.4	8.4	0.8	1.9	3.9	5.0	5.5

Source: Bloomberg Finance L.P., DBSVI estimate

Coal mining companies EV/reserves comparison

Ticker	Companies	Market Cap (US\$m)	3Q22 balance sheet (US\$m)			EV	production (m tons)	Reserves (m tons)	Reserves life (years)	EV/ton (US\$)	Notes
			Debt	Cash	Net debt						
ADRO IJ PT Adaro Energy Tbk.		7,675	1643	3353	-1710	5,965	60	1448.5	24	4.1	Low-cost structure helps ADRO to maximize current high coal price. ADRO's earnings grow 290% in 2021 on higher production and stable costs
ITMG IJ PT Indo Tambangraya Megah Tbk.		3,058	31	808	-777	2,281	24	291	12	7.8	Thinnest coal reserves life among peers. ITMG's margins, ROE and decent dividends will benefit from its profit per ton of coal maximization strategy in 2022-2023
PTBA IJ PT Bukit Asam Tbk.		3,224	118	384	-266	2,959	30	3180	106	0.9	Railway transportation bottleneck, current operation does not reflect PTBA rich reserves concession. PTBA's EV/ton could improve if DME project deliver positive earnings ahead
INDY IJ PT Indika Energy Tbk. (Not Rated)		1,115	1250	937	313	1,428	37	571.6	15	2.5	Exposed to less profitable low rank coal concession - it needs coal price index to be US\$90-90 per ton to sustain its operations. INDY is venturing to electric bike as diversification strategy in 2022 onward
HRUM IJ PT Harum Energy Tbk. (Not Rated)		1422	55	210	-156	1,267	3	97	30.3125	13.1	Share price jumped due to diversification plan to non coal businesses. HRUM EV/ton coal reserves is 3x premium to its peers.

Source: Bloomberg Finance L.P., DBSVI estimate

Key risk: Monetisation journey

How far before we can see meaningful earnings contribution from green investments?

The diversification initiatives have now resulted in interest from institutional investors as seen in financing availability, better credit rating and stock price valuation. Even with little profit today, companies progressing toward new economy proxies or diversification journey are valued premium to existing profitable fossil fuel businesses.

Execution and delivery are also crucial since the diversification and decarbonisation journey are now become an inevitable part of fossil fuel companies, the questions that companies need to carefully think is how to balance the diversification journey opportunities and challenges such as impact to financial performance. Company should consider whether doing the new venture will be as profitable as the legacy fossil fuel.

Providing timeline and delivering earnings are crucial and investors reward company that can do so as seen on HRUM's case study and valuation. On the other hand, even with ambitious green EBITDA contribution by 2025, Banpu's EBITDA breakdown is currently still US\$1.1bn from the coal mining, US\$500m from gases. In addition, US\$100m from the power plant and the green investments is making a negative EBITDA of US\$8M in 2021.

We think the decarbonisation journey will be worthy amid the energy transition journey and potential phasing out of fossil fuel, but to make sure the smooth transition we believe the journey should starts now. New investments could generate return but can also risky relative to the legacy fossil fuel business. The coal business model is simple and profitable, even amid low coal price trend, Indonesia's coal mining companies could maintain positive EBITDA performance and core net profit.

The energy business, especially coal mining companies, are profitable in Indonesia due to its open pit mining characteristic that operates with relatively low cost vs. underground coal mining concession. Meanwhile Indonesia's operating oil and gas blocks have relatively low lifting cash

cost as seen both in Medco Energi and Saka Energi (SEI), lifting cash cost of around US\$10 per bbl.

Non-thermal coal investments also exposed to commodities price fluctuation

Meanwhile, since the processed nickel pricing is still largely linked to the LME nickel prices and the EV battery accounts for a fraction of global nickel consumption – hence the overall price volatility is still linked to durable goods and infrastructure expansion. EV battery demand should reach a tipping point in Asia to successfully contribute or even replace the conventional nickel main consumption to sustain healthy nickel prices. There is a similar case on copper price, which is currently largely linked to China's economy growth and demand for its infrastructure linked consumption.

However, since the investment scheme is mostly partnership-based with foreign investors, meanwhile Indonesia regulatory framework is generally supportive for downstream ore processing. We do not think the smelter multi-year project has execution risk since the government demand regular smelter progress updates, otherwise it may risk getting its mining operating license revoked, as well as other risk. We do not see the financing also is an issue since the financing will be secured at the early stage.

Commitment from various stakeholders such as NEC

However, we think the key risk is the green energy to power the EV supply chain as the key risk since the power grid in Indonesia are coal-fired and only some of the region such as east java is eligible for gas-fired power plant. A major shift to green / renewable energy needs strong partnership with renewable energy companies and Indonesia NEC's commitment to accommodate the independent power plant (IPP) green energy project.

NEC will transform to a green electricity company, as per demand, via divesting some of its coal-fired power plant project and expanding its renewable and green energy mix. NEC participation is crucial since NEC is Indonesia electricity producers' backbone, which also becoming the key electricity purchaser and distributor across Indonesia.

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BUY (>15% total return over the next 12 months for small caps, >10% for large caps)

HOLD (-10% to +15% total return over the next 12 months for small caps, -10% to +10% for large caps)

FULLY VALUED (negative total return, i.e., > -10% over the next 12 months)

SELL (negative total return of > -20% over the next 3 months, with identifiable share price catalysts within this time frame)

*Share price appreciation + dividends

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DBS Regional Research Offices

HONG KONG

DBS (Hong Kong) Ltd

Contact: Dennis Lam
13th Floor One Island East,
18 Westlands Road,
Quarry Bay, Hong Kong
Tel: 852 3668 4181
Fax: 852 2521 1812
e-mail: dbsvhk@dbs.com

SINGAPORE

DBS Bank Ltd

Contact: Paul Yong
12 Marina Boulevard,
Marina Bay Financial Centre Tower 3
Singapore 018982
Tel: 65 6878 8888
e-mail: groupresearch@dbs.com
Company Regn. No. 196800306E

INDONESIA

PT DBS Vickers Sekuritas (Indonesia)

Contact: Maynard Priajaya Arif
DBS Bank Tower
Ciputra World 1, 32/F
Jl. Prof. Dr. Satrio Kav. 3-5
Jakarta 12940, Indonesia
Tel: 62 21 3003 4900
Fax: 6221 3003 4943
e-mail: indonesiaresearch@dbs.com

THAILAND

DBS Vickers Securities (Thailand) Co Ltd

Contact: Chanpen Sirithanarattanakul
989 Siam Piwat Tower Building,
9th, 14th-15th Floor
Rama 1 Road, Pathumwan,
Bangkok Thailand 10330
Tel. 66 2 857 7831
Fax: 66 2 658 1269
e-mail: research@th.dbs.com
Company Regn. No 0105539127012
Securities and Exchange Commission, Thailand