20 August 2024

Utilities | Power

Power

Overweight (Maintained)

Data To Power Growth; Keep OVERWEIGHT

Stocks Covered	7
Rating (Buy/Neutral/Sell):	5 / 1 / 1
Last 12m Earnings Revision Trend:	Neutral

- **Keep OVERWEIGHT, Top Picks: Tenaga Nasional (TNB), YTL Power, and Samaiden Group.** A year after the launch of the National Energy Transition Roadmap (NETR), we remain positive on the utilities sector. This is premised on: i) The mushrooming number of data centre (DC) developments, which will ramp up the growth in electricity consumption; ii) continuous power grid upgrades, which will increase regulated net returns; iii) experienced independent power producers (IPPs) bridging the supply gap; iv) domestic renewable energy (RE) capacity additions anchoring contractors' job flow.
- **Decent progress seen a year after NETR launch.** There is solid progress for the key initiatives mentioned under the NETR. The recent introduction of the Corporate Renewable Energy Supply Scheme (CRESS) is crucial for pushing the third-party access (TPA) mechanism through, in order for it take effect. The establishment of Energy Exchange Malaysia (ENEGEM) is also important to facilitate energy exports to Singapore. Multiple solar power programmes continue to be rolled out and executed while feasibility studies on biomass clustering, co-firing of ammonia and hydrogen are ongoing.
- **The DC fiesta.** West Malaysia's electricity consumption growth over the next decade is expected to surpass the 10-year average of 2.4%, led largely by the continuous expansion of DCs. We see DCs' energy consumption alone having a CAGR of 1.6-2.6% between 2023-2035, if 3-5GW of DCs are to be fully operational by 2035. The Government has projected the reserve margin at 28-36% for 2024-2030. To accommodate such strong demand, we understand that there are on-going 1+1-year short-term power purchase agreement (PPA) bids for the near term. We do not discount the possibility of PPAs being extended for gas-fired plants, and believe IPPs that are experienced in running gas-fired power plants – such as TNB and Malakoff Corp – should benefit from additional gas capacity expansions in the long run (to replace coal).
- **Regulatory Period (RP) 4 expectations.** Pending the RP4 outcome – which is expected to be known by the year-end – we may see some restructuring in tariffs to account for new initiatives such as energy exports, as well as wheeling charges collection under the TPA mechanism. We estimate average regulated capex to increase by 25-40% vs RP2 levels, to MYR8.6-9.6bn pa with higher annual demand growth of 3-4% and an unchanged WACC of 7.3%. Based on our sensitivity analysis, regulatory net returns should increase by1.34% for every MYR1bn hike in average capex pa.
- **Solar play remains.** Ongoing government policies and initiatives, coupled with declining panel prices, should sustain growth in the solar power segment – evidenced by the rapid progress of large-scale solar (LSS) projects after a stagnant four quarters. With the Corporate Green Power Programme (CGPP) EPCC awards coming up, followed by the shortlisting of bidders for LSS 5 and the rollout of the CRESS and ENEGEM, there is significant potential for solar EPCC players' earnings to continue growing. Downside risks: Lower-than-expected new RE capacity rollout, major regulatory changes, and higher-than expected operating costs.

Top Picks	Target Price
Tenaga Nasional (TNB MK) – BUY	MYR16.70
YTL Power (YTLP MK) – BUY	MYR6.68
Samaiden Group (SAMAIDEN MK) – BUY	MYR1.58

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ESG scores for stocks under our coverage

Company	ESG scores
Samaiden	3.3
Ranhill	3.1
Petronas Gas	2.7
YTL Power	2.7
Tenaga Nasional	2.7
Malakoff	2.5

Source: Company data, RHB

Company Name	Rating	Target (MYR)	% Upside (Downside)	P/E (x) Dec-25F	P/B (x) Dec-25F	ROAE (%) Dec-25F	Yield (%) Dec-25F
Malakoff Corp	Buy	1.11	16.0	13.3	1.0	7.8	5.3
Petronas Gas	Neutral	17.47	(3.8)	19.1	2.5	13.4	4.4
Ranhill Utilities	Sell	1.10	(22.7)	39.0	2.2	5.8	1.0
Samaiden Group	Buy	1.58	35.1	14.7	2.7	20.1	-
Tenaga Nasional	Buy	16.70	20.1	16.7	1.3	7.8	3.9
YTL Power	Buy	6.68	59.0	11.5	1.5	14.0	2.6

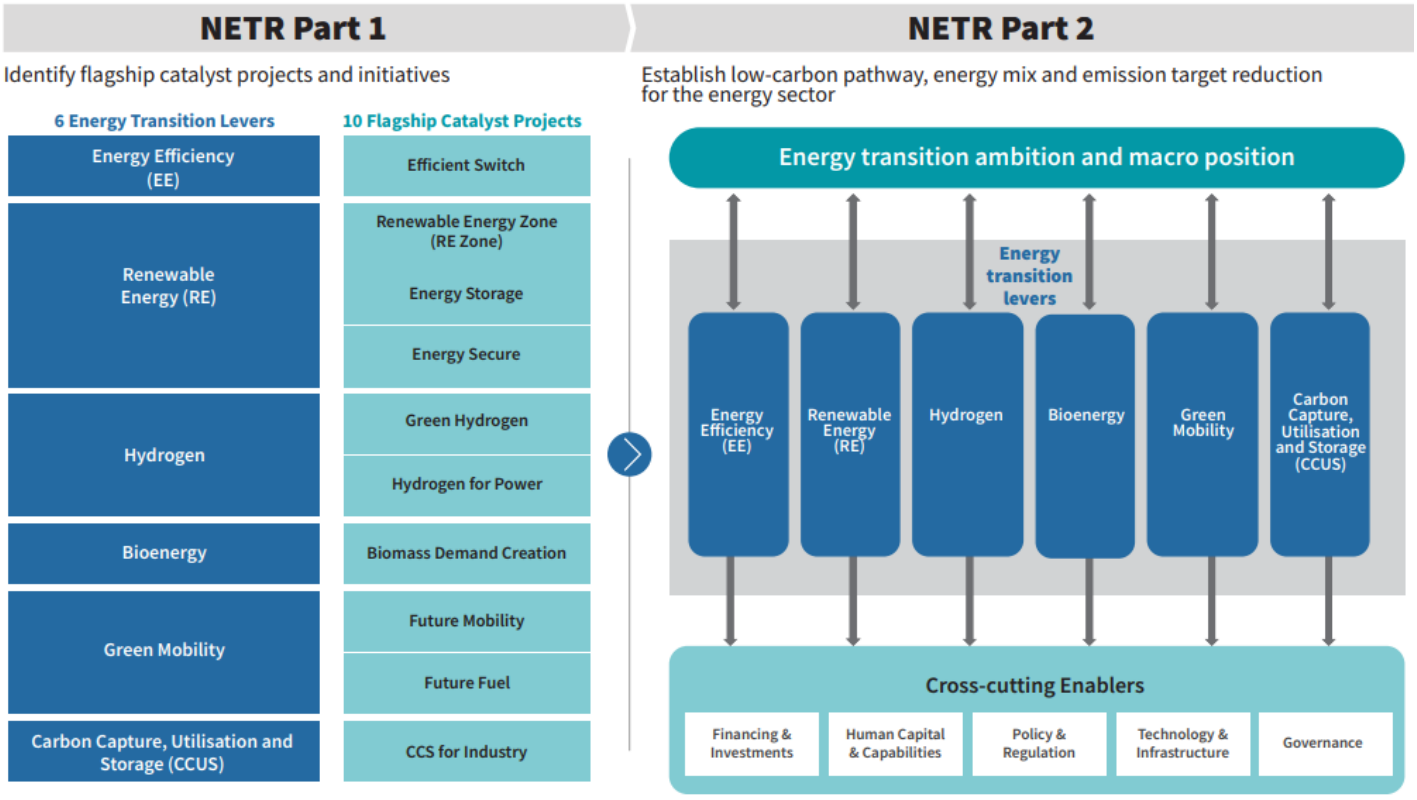
Source: Company data, RHB

The NETR Report Card

Brief overview one year after the launch of NETR Phase 1

The first and second phases of the NETR were launched in July and August last year. It has been about one full year after the launch of NETR Phase 1, and we are taking a closer look at the development of this roadmap in the past 365 days. The NETR is divided into two parts. The first part outlines the 10 flagship catalyst projects and impact initiatives based on six energy transition levers, namely energy efficiency, RE, hydrogen, bioenergy, green mobility and carbon capture, usage and storage (CCUS). The details of the second part pointed to the full roadmap, outlining 50 initiatives under the six energy transition levers and five enablers. The first phase is expected to attract investments amounting to MYR25bn, create approximately 23k high-quality jobs, and achieve greenhouse gas (GHG) reductions of more than 10,000 gigagrams (Gg) of CO2e pa.

Figure 1: Parts 1 and 2 of the NETR



Source: NETR

...decent progress seen for NETR initiatives

We have compiled the latest update available of the key NETR initiatives and note their decent progress. The recent introduction of CRESS is crucial in pushing the TPA mechanism through. TPA is important to ensure fair competition and a level playing field for all RE producers, and could accelerate domestic RE capacity expansion. The establishment of ENEGEM is also important to facilitate energy exports to Singapore. Multiple solar energy programmes continue to be rolled out and executed, while feasibility studies on biomass clustering, co-firing of ammonia and hydrogen are also in progress. Going forward, we expect more details on these initiatives to be announced in the next 12 months.

Figure 2: Key milestones and updates on key NETR initiatives

Lever 1: Energy Efficiency

Dewan Rakyat passed the Energy Efficiency and Conservation Bill 2023 in Oct 2023, with an amendment made by Dewan Negara under Standing Order 73(1) in Jun 2024.

Lever 2: Renewable Energy (RE)

i. TNB is aiming to achieve financial close for the 5 x 150MWp centralised solar park, with a commercial operation date (COD) scheduled in 2026.
ii. COD of Phase 1 of 276MWp hydro floating solar hybrid (HHFS) is scheduled for 2025.
iii. Introduction of CRESS to allow eligible RE generators and corporate firms to arrange green electricity supply under agreed terms through the existing supply system. Corporate companies can directly source RE from identified generators via third-party access (TPA).
iv. A separate cross-border RE sale scheme from West Malaysia to Singapore or Thailand (the cross-border electricity sales (CBES) RE scheme) to be carried out through a platform, ENEGEM, which acts as the marketplace to sell green electricity through a bidding mechanism operated by a single buyer
v. The Battery Energy Storage System (BESS) pilot project with a capacity of 400MWp is set to commence in 1Q24. This development will be carried out by TNB, operated by the Grid System Operator (GSO), and supervised by the Energy Commission.

Lever 3: Hydrogen

i. TNB is aiming to complete the feasibility study and front-end engineering and design or FEED regulatory review on co-firing of hydrogen and ammonia by this year.
ii. Sarawak H2 Hub, in Bintulu was launched in June, and will be jointly developed by SEDC Energy (SEDCE) and clean energy solutions provider Gentari through a newly formed JV company.

Lever 4: Bioenergy

i. The installation works and testing & commissioning activities of Malakoff's 2% biomass co-firing system were successfully completed on 8 Mar 2024. The biomass co-firing ratio will gradually increase to 3-5% by next year, with a target of reaching at least 15% by 2027.
ii. Sustainable Energy Development Authority (SEDA) has identified 16 potential biomass cluster locations involving 133 palm oil mills. These clusters, each with a capacity of 20-30MW, could generate a combined 444MW of RE. Further studies are required to determine if grid upgrades or the development of new interconnection points will be necessary. These plant clusters are still under evaluation, and need at least two years before they can be commercially operational.

Lever 5: Green Mobility

i. A total of 2,214 EV charging stations were installed as at 20 Mar, and the Ministry of Investment, Trade and Industry (MITI) remains committed to meeting its 10,000 charging points-in-place target by 2025.
ii. Petronas, Eni, and Euglena have reached the final investment decision to develop a biorefinery in Pengerang Integrated Complex. This is targeted to be operational by 2H28.
iii. Malakoff has secured a deal with Railway Assets Corp (RAC) and Keretapi Tanah Melayu (KTMB) to develop and operate carport and rooftop solar systems at railway stations, depots and park and ride terminals in Perak, Penang, Selangor, Johor and Negeri Sembilan
iv. The Ministry of Science, Technology and Innovation (MOSTI) aims to start operating mobile hydrogen refuelling station (MHRS) pilot project in Putrajaya before the end of this year.

Lever 6: Carbon capture, utilisation and storage (CCUS)

The Ministry of Economy is expected to table the proposed Bill on the CCUS framework in Parliament in Nov 2024. Prior to this, there will be a presentation on the CCUS framework to the Cabinet.

Source: Multiple news portals

Assessing The Potential Of DCs

How much electricity would DCs consume in the near term?

According to TNB, there are two projects with a total capacity of 535MW completed under the Green Lane Pathway, and another seven more (c.165MW) in the pipeline that will be completed. We believe it will take time for these DCs to ramp up their utilisation rates. Assuming a 30% utilisation in the first year, we estimate that 700MW of DC capacity could consume c. 1840GWh of electricity, which is c. 1.5% of total electricity consumed in West Malaysia in 2023. Electricity demand in Malaysia rose at a much faster 9.6% YoY, vs the GDP growth of 4.2% in 1Q24, largely driven by stronger commercial (+11.2%) and domestic (+16.8%) segments. Demand hit a new peak of 20,028MW in April. Despite strong demand growth of 9.6% YoY in 1Q24, TNB still guided for an annual demand growth of 2.5-3% YoY for this year and in the upcoming regulatory period. We believe total consumption may just beat the growth projections, if utilisation from these DCs kick in progressively.

What about the long run?

TNB has received more than 70 supply applications (express of interest) for DCs with more than 11,000MW, predominantly in the Klang Valley and Johor. The company has inked nine electricity supply agreements (ESA) with total energy demand of c.2.3GW last year. It targets to sign ESAs for another 10 projects with an energy demand of 2GW this year. Some of the commissioned DCs include Bridge Data Centre, SIPP YTL Data Centre, and PDG Data Centre. While these facilities are not yet operating at full speed, it is experiencing substantial increment YoY. These companies have declared their demand profiles for the next 5-6 years, giving TNB time to plan its infrastructure to accommodate this influx. As more DCs come online, TNB will gain a better understanding of the growth patterns, aiding in more accurate forecasting.

For now, TNB sees the potential maximum demand of >5GW by 2035. DC rarely operate at their maximum capacity at all times, and actual usage can vary depending on workload demand. As we see more artificial intelligence (AI) DCs to be developed over the years, the demand for electricity will also increase as these types of DCs tend to have more demanding workloads. At the same time, newer DCs may also have more efficient cooling systems, equipment and hardware use for the same computing power.

Currently, most DCs in Malaysia are Tier-3 facilities, which require an uptime of 99.982%. In these facilities, power consumption, in general, is primarily driven by the cooling system, which accounts for 50% of total usage. This is followed by IT load, including processors at 37%, power conversion at 10%, and lighting at 3%. Assuming the entire 5GW of DCs become fully operational in 2035 at a 100% utilisation rate, that could mean energy consumption of c.43800GWh pa, which will translate to a CAGR of 2.6% pa for electricity consumed between 2023 and 2035F. For every increase or decrease of 1GW in DC developments, we expect the CAGR to swing by approximately 0.5%.

Figure 3: Sensitivity analysis of total DC capacity vs electricity consumption

	3GW	4GW	5GW	6GW	7GW	8GW	9GW	10GW
Total electricity consumption pa at 100% utilisation (GWh)	26280	35040	43800	52560	61320	70080	78840	87600
Estimated CAGR (2023-2035)	1.6%	2.1%	2.6%	3.0%	3.4%	3.8%	4.2%	4.6%

Source: RHB

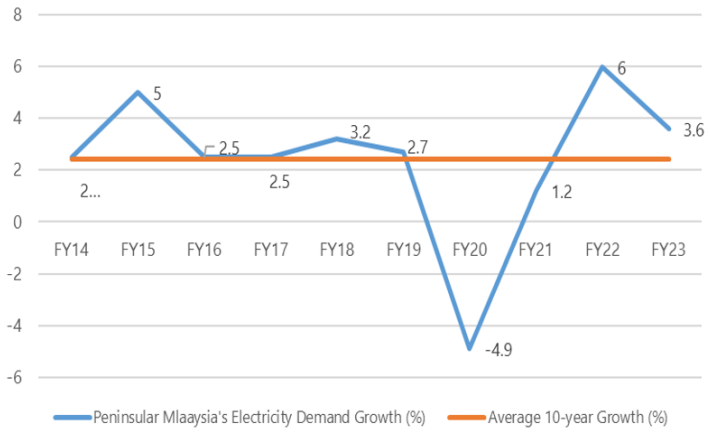
Figure 4: TNB's update on DC developments

Source: Company data

Anticipating higher for longer

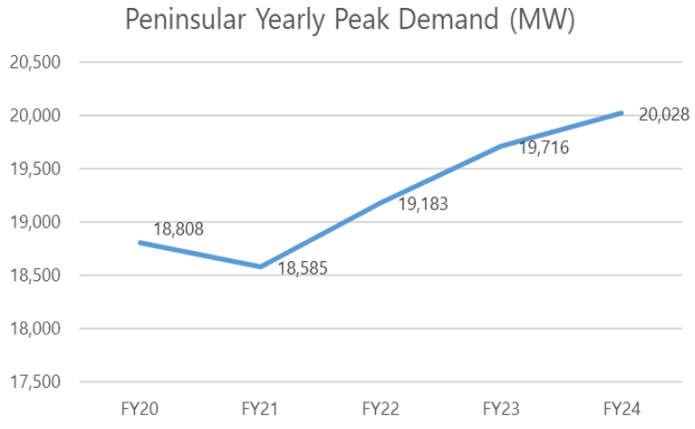
TNB recorded an average 10-year electricity consumption growth of 2.4% over FY14-23. Conservatively, if demand growth remains at 1.5-2.5% in the long run before accounting for the additional bump-up from the growth of DCs, total long-term annual consumption growth could hit at least 3-4% if there is 3GW worth becoming operational by 2035. If TNB is able to achieve its targeted 5GW of DCs to be operational by then, growth could tick up to 4-5%. As such, it is reasonable to assume that West Malaysia would be registering stronger growth vs its 10-year average figure – solely on the back of the mushrooming of DCs.

Figure 5: TNB's electricity annual demand growth against its 10-year average



Source: Company data, RHB

Figure 6: New peak demand recorded at 1,630 hours, on 29 Apr



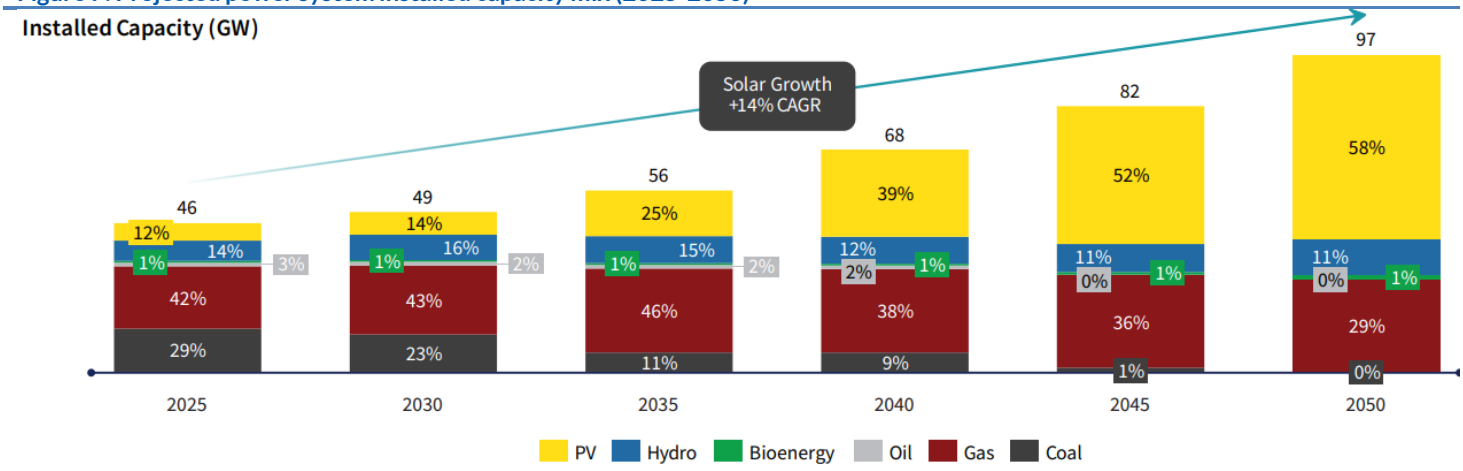
Note: RHB

The Supply Gap

NETR: Solar to drive RE growth but gas remains relevant

According to the NETR's projection, the 70% RE capacity will be dominated by solar at 58% of total installed capacity, followed by hydro and bioenergy at 11% and 1%. As such, solar PV capacity is likely to grow aggressively at a 14% CAGR to 57GW, by 2050. Meanwhile, gas will continue to be the dominant source of fuel for baseload power, although the gas capacity mix is projected to decline to 29% in 2050, from 42% in 2025. This still suggests a decent growth of 9GW, to 28GW from 19GW for the corresponding years.

Figure 7: Projected power system installed capacity mix (2025-2050)



Source: NETR

Do we have enough supply to cope with strong energy demand?

The reserve margin refers to the excess generating capacity available in a power grid compared to its peak demand, providing an additional buffer for circumstances of a sudden spike in demand. The latest peak demand of 20,028MW was observed at 4.30pm on 29 Apr. According to the Single Buyer website, West Malaysia's installed capacity stood at 27.4GW as of April, which implies a reserve margin of c.37% reserve margins. This is rather in line with the Government's projected reserve margin of 28-36% for 2024-2030. As more and more DCs become operational, we can expect demand to hit new peaks, going forward.

We do not have the latest power generation development plan from the Planning and Implementation Committee For Electricity Supply and Tariff (JPPPET). However, based on its latest published document back in 2021, there is a cumulated capacity of 9GW to be retired between 2024 and 2030, ranging from 249MW pa to 2.8GW pa. Most of the retiring plants are gas-fired power plants. There are only two sizeable coal-fired power plants (combined capacity of 3.5GW) retiring in 2029 and 2030. If we extend the timeline further to 2035, there is a total of 13GW capacity to be retired, including two coal plants to be retired after 2030. Assuming peak demand grows at a CAGR of 3% to reach 28.2GW by 2035, this means that West Malaysia will at least have to add 15GW new capacity to reach a minimum reserve margin level of 20%, and adding 21.4GW within this period would maintain a comfortable reserve margin of 28%.

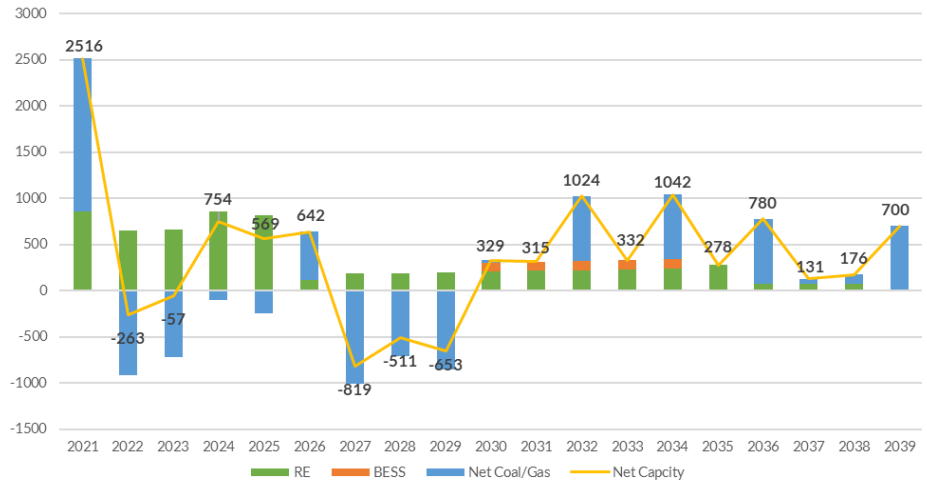
At the same time, JPPPET also scheduled new capacity of 9.4GW and 16GW to be added into the power grid by 2030. Out of these 9.4GW, two combine cycle gas turbine (CCGT) plants – Tadmax (1.2GW) and THB (1.2GW) are scheduled to commence operations in 2024 and 2026. There has not been much official update on these plants but, based on our channel checks, construction of Tadmax is already at the advanced stage and we do not discount the possibility that it may start contributing by the end of 2024 or early 2025.

Figure 8: Malaysia's power generation development plan (2021-2039F)

Year	Planned capacity addition	Retiring Plants	Net increase/decrease in capacity (MW)
2021	Edra Energy (CCGT) (3x747MW) RE (860MW)	YTL Power (CCGT) (585MW)	2516
2022	RE (652MW)	TNB Pasir Gudang (CCGT) (275 MW) GB3 (CCGT) (640MW)	-263
2023	RE (663MW)	Panglima (CCGT) (720MW)	-57
2024	TADMAX (CCGT) (2x600MW) RE (855MW)	SKS Prai CCGT (341MW) TTPC (CCGT) (650MW) TNB Gelugor (CCGT) (310MW)	754
2025	RE (818MW)	TNB Putrajaya GT4 & GT5 (OCGT) (249 MW)	569
2026	THB (CCGT) (2x600MW) RE (117MW)	KLPP (CCGT) (675MW)	642
2027	Nenggiri (Hydro) (300MW) RE (184MW)	Segari Energy Ventures (CCGT) (1,303MW)	-819
2028	RE (192MW)	TNB Tuanku Jaafar PD1 (CCGT) (703MW)	-511
2029	CCGT (1x700MW) CCGT (1x500MW) RE (199MW)	KEV Gas U1 & U2 (Thermal Gas) (578MW) KEV Coal U3-U6 (Coal) (1,474MW)	-653
2030	CCGT (4x700 MW) RE (207 MW) BESS (1X100MW)	TNB Tuanku Jaafar PD2 (CCGT) (708MW) TNB Janamanjung (Coal) (2,070 MW)	329
2031	CCGT (1x700MW) Coal (2x700MW) BESS (1x100MW) RE (215MW)	Tanjung Bin Power (Coal) (2,100 MW)	315
2032	CCGT (1x700MW) BESS (1x100MW) RE (224MW)		1024
2033	CCGT (2x700MW) BESS (1x100MW) RE (232MW)	Jimah Energy Venture (Coal) (1,400MW)	332
2034	Coal (1x700MW) BESS (1x100MW) RE (242MW)		1042
2035	RE (278MW)		278
2036	CCGT (1x700MW) RE (80MW)		780
2037	CCGT (1x700MW) Coal (1x700MW) OCGT (1x100MW) RE (77MW)	TNB Prai (CCGT) (1,071MW) TNB CBPS (CCGT) (375MW)	131
2038	CCGT (1x700MW) RE (76MW)	Pengerang Power (Co-Gen) (600 MW)	176
2039	CCGT (1x700MW)		700

Source: Report on Peninsular Malaysia Generation Development Plan 2020 (2021-2039)

Figure 9: Net increases/decreases in capacity



Source: NETR

No major sizeable gas plant addition in the near term

In TNB's current pipeline of projects, the two meaningful hydropower projects over the next three years are the 650MW Sungai Perak Hydro Life Extension Programme (HLEP) as well as 300MW Nenggiri project – these are scheduled to commence operations by 2026 and 2027. Meanwhile, near-term domestic capacity addition would be largely contributed by solar projects including the HHFS in which phase 1 (276MWp) is scheduled to be kickstarted by 2025, the CGPP (135MW; COD: 2025), and a centralised solar park (5x 150MWp; COD: 2026). We believe the Paka Repowering facility (1,400MW) and new combined cycle power plant at Paka (2,100MW), which will only kick in by 2030 and 2031, are meant to replace expiring coal-fired power plants.

Figure 10: TNB's current project pipeline

	Projects			2024 Outlook
GenCo	Sungai Perak Hydro Life Extension Programme	651MW	COD: 2026	• Finalisation of new PPA • Commencement of preliminary and main works
	Nenggiri Hydro Project	300MW	COD: 2Q2027	Achieve 56% project progress
	Hybrid Hydro-Floating Solar PV (HHFS)	~2,900MWp by 2040	Phase 1 276MWp, COD: 2025	Finalisation of potential offtake mechanisms, completion of feasibility studies and ESIA[1]
	Paka Repowering	1,400MW	COD: 2030	Finalisation of relevant agreements with the regulator
	New Combined Cycle Power Plant (Kapar)	2,100MW	COD: 2031	Receive Letter of Notification from regulator
	Co-firing of Hydrogen & Ammonia			Hydrogen: Completion of feasibility study Ammonia: Completion of FEED study & regulatory review
NED	Solar Greenfield Development (UK)	102MWp	COD: 2024	Achieve COD by 3QFY2024
	Corporate Green Power Programme (CGPP)	135MWp	COD: 2025	Commencement of construction works
	Centralised Solar Park	5 x 150MWp	COD: 2026	Achieve financial close

Note: Solar capacity is quoted in MWp

[1] Environmental Social Impact Assessment

Source: Company data

Extension of existing PPAs or to add new gas plants

We see the possibility of Malaysia developing greater reliance on conventional power generators in order to avoid unexpected blackouts, on top of facilitating the supply to accommodate a significant surge in constant DC loads. As the country has already adopted the no-new-coal-plant policy, CCGTs could offer higher efficiency compared to conventional gas plants and can be a good option for the baseload in the short to medium term.

To accommodate rising demand from DCs, which also lift the overall baseload demand – given their all-day-long operations – we believe that there is a need to increase its baseload supply at the same time. That said, in the long run, there might be a mismatch between energy supply and demand, especially when the electricity supply is largely dominated by RE – and RE plants presently cannot provide constant and stable output to the grid. Note that, generally, solar power plants cannot only four sun hours on average in a day, and a hydropower plant will have varying output depending on the weather and water flow conditions.

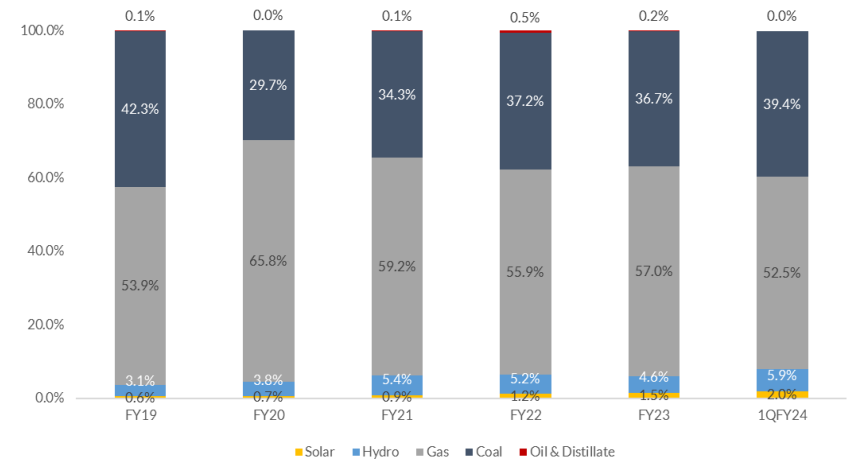
We understand that there is an ongoing cumulated capacity of 1+1 year short term PPAs to be awarded in the near term and some of the participants with existing gas plants (expired or expiring) are Edra Energy, TNB and Malakoff. If the demand growth continues to accelerate, we shall see the extension of PPAs for the upcoming expiring gas plants. In the longer run, there should be more new gas-fired power plants to be developed (could be built within 48 months) to replace expiring coal-fired power plants (soonest by 2029). This is also in line with the NETR's projection whereby gas will continue to be the dominant source of fuel for baseload power – although the gas capacity mix is projected to decline to 29% in 2050, from 42% in 2025. This still suggests a decent growth of 9GW, from 19GW to 28GW. With that, we believe existing IPPs such as TNB and Malakoff are likely to see new gas-fired plant expansions in the future following their retirement of existing coal-fired plants.

However, we may see a higher reliance on LNG supply, while energy security remains a key factor – given the limited availability of domestic gas feedstock. Currently, Malaysia relies heavily on domestically produced gas. Increasing dependence on imported LNG may pose new energy security risks, in case of supply disruptions or geopolitical tensions with exporting countries.

Capacity mix vs generation mix

While an increase in RE capacity is crucial for the transition to sustainable energy sources, it does not always directly translate to a proportional increase in the power generation mix, especially for solar energy. This discrepancy arises due to several factors including intermittency and variability. Although the RE capacity mix is currently at 27.05%, the actual generation capacity is less than 10% (Figure 11). While increasing solar power capacity is a positive step towards a future with sustainable energy, it is equally vital to address the factors that affect the actual contribution of solar power to the energy generation mix. This includes investing in energy storage, improving grid infrastructure, and creating supportive policies that encourage not just capacity growth but also the effective utilisation of solar energy.

Figure 11: Energy generation mix for West Malaysia



Source: Company data, RHB

BESS for better grid stability

BESS can help bridge the gap between variable RE supply and constant demand from DCs. The overall grid stability could be enhanced by storing excess RE during low-demand periods and releasing it during peak demand. Grid-scale BESS will be expedited in the medium term and the Energy Commission is still finalising the mechanism for compensation, for the pilot 400MWh BESS. We believe that the Government will aim to establish up to 500MW by 2030, vs the earlier timeline of "from 2030 onwards".

We do not expect to see the significant widespread adoption of grid-scale BESS in Malaysia over the next three years, mainly due to limited infrastructure and cost considerations. This is also in line with the Energy Commission's view of not over-investing the existing grid, as the cost curve is likely to decline over the long run in the event of technology advancements. Based on our conversation with the Energy Commission, Australia could be a good reference case whereby behind-the-meter BESS is largely encouraged to avoid grid disruption.

Nuclear energy to be considered? There has been increasingly more attention given to nuclear power globally as an alternative, as it offers a reliable and low-carbon baseload source. However, public acceptance and waste disposal remain concerns. Malaysia would need careful planning and addressing public anxieties before pursuing this option.

Renewables Remain Unstoppable

Checking in on LSS progress over the years

The solar energy sector faced significant setbacks during 2021-2022, grappling with the delays of LSS projects caused by pandemic-related lockdowns and further exacerbated by elevated panel prices. In turn, the Energy Commission extended PPAs from 21 years to 25 years, and moved the COD to 31 Dec 2023. This led to a stagnant period for solar capacity expansion. After a standstill of four quarters (2Q22-1Q23) with progress stuck at 56%, there was a noticeable improvement by the end of 2023, reaching 70%. This momentum continued into 1Q24, with progress climbing to 75%. The accelerated development can be attributed to the Government's decision not to grant further extensions to the CODs.

Figure 12: LSS progress (1Q24 vs 2Q23) by state

Region	Capacity Awarded	Operational Capacity (MW)	Capacity In Progress (MW)	Operational Capacity (%)	Operational Capacity (MW)	Capacity In Progress (MW)	Operational Capacity (%)	Operational Capacity % Increase
		1Q24			1Q23			
Perlis	83.996	83.996	0	100%	33.996	50	40%	60%
Kedah	481.63	431.63	50	90%	345.87	135.76	72%	18%
P. Pinang	96	81	15	84%	21	75	22%	62%
Perak	542.18	432.18	110	80%	238.88	303.3	44%	36%
Kelantan	90	30	60	33%	0	90	0%	33%
Terengganu	323.99	206.99	117	64%	206.99	117	64%	-
Pahang	309.916	209.916	100	68%	209.916	100	68%	-
Selangor	218.97	99.98	118.99	46%	66.98	151.99	31%	15%
N. Sembilan	61	61	0	100%	61	0	100%	-
Melaka	56.8	56.8	0	100%	56.8	0	100%	-
Johor	68.99	68.99	0	100%	68.99	0	100%	-
Sabah	111.9	60	51.9	54%	50	61.9	45%	9%
Total	**2445.372**	**1822.482**	**622.89**	**75%**	**1360.422**	**1084.95**	**56%**	**19%**

Source: Energy Commission, RHB

This renewed pace of project execution contributed to the improved financial performance of most solar EPCC companies in FY23 compared to the previous year, as they were able to resume and complete more projects. However, Samaiden recorded a decline in earnings during FY23 due to increased staff-related expenses. Furthermore, the company only secured a substantial LSS contract in 2H23, with corresponding earnings expected to contribute positively to FY24 results.

Figure 13: Financial performance of solar EPCC providers – FY23 vs FY22

	FY23 (MYRm)	FY22 (MYRm)	YoY (%)
Samaiden (Jun FYE)			
Revenue	171.0	151.0	*13.2*
Net Earnings	10.0	12.0	*(16.7)*
Sunview (Mar FYE)			
Revenue	347.0	99.3	*>100*
Net Earnings	13.1	9.0	*45.6*
Pekat (Dec FYE)			
Revenue	227.5	179.2	*26.9*
Net Earnings	13.4	9.9	*35.4*

Source: Bloomberg, RHB

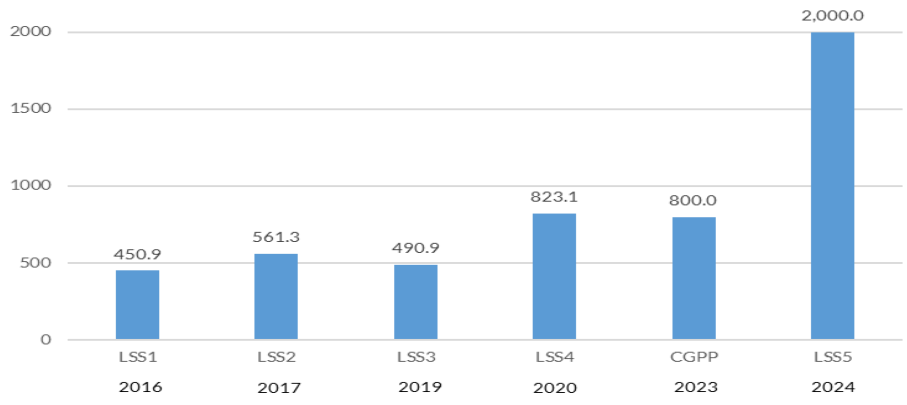
Looking at the solar players' valuations, most are trading close to their historical means, which suggests they might be undervalued, given the structural growth of the solar energy landscape with the continuous projects. Samaiden is trading at 17x (at its 2-year mean), Sunview (SUNVIEW MK, NR) is at 18x FY25 P/E (2-year mean: 16x), and Pekat (PEKAT MK, NR) is at 20x FY25 P/E (2-year mean: 21x). Pekat is trading at premium to the other two players – this could be due to the latter's better margins and the more stable nature of its business, focusing on C&I and residential projects, rather than the more volatile utility-scale solar projects. Growth prospects aids Pekat's higher valuation given its involvement in the earthing and lightning protection (ELP) of the growing DCs as well as its new acquisition of a switchgear company.

Continuous dishing out of programmes after a lull in 2021-2022

Following the establishment of a RE capacity mix target, the Malaysian Government has aggressively expanded its solar energy initiatives. The sluggish solar sector underwent a revival towards the end of 2022 with the announcement of the CGPP, which introduced a quota of 800MW. This programme features virtual PPAs that require solar power producers to secure their own corporate consumers. The CGPP was officially launched in May 2023.

Two months after the launch of CGPP, the Government unveiled the NETR, presenting opportunities for more than 4GW of additional solar capacity. Further demonstrating its commitment, the fifth cycle of the LSS (introducing 2GW), along with various other RE initiatives, was announced in early 2024. These measures underscore the Government's determination to accelerate the expansion of solar energy in Malaysia and achieve its RE mix targets. This proactive approach indicates that solar EPCC companies are well-positioned to benefit from structural growth in the sector. With current contract opportunities exceeding 7GW and assuming a value of MYR2.5m/MW, the potential market is estimated to be worth MYR26bn. However, note that the capacity from the NETR is more of a long-term view, as the 2.5 GW HHFS projects will be executed in phases. Even so, with the recent LSS5 introducing its largest quota yet, we believe future programmes will follow this trend of increased capacity. This substantial market potential is expected to provide strong earnings for solar EPCC players, since future initiatives are projected to be 1.5x the capacity awarded previously.

Figure 14: MW capacity awarded/shortlisted for programmes



Source: Energy Commission, RHB

However, careful monitoring of programme execution is necessary. For example, EPCC contract delays have arisen due to challenges faced by shortlisted CGPP bidders in finalising off-taker agreements. To date, only one 29.99MW project has been awarded to Sunview, from Cenergi Solar Kuala Ketil. Any setbacks in these programmes will impact utility-scale-focused players like Samaiden and Sunview. Nonetheless, these companies have indicated that the issues are nearing resolution, with tender awards expected in 2H24. Successful execution of the CGPP will be crucial in replenishing solar energy players' orderbooks and ensuring earnings visibility for the next year.

Reviewing the 31% RE mix by 2025 target

Achieving Malaysia's RE mix target of 31% by 2025 appears challenging. According to the Malaysia Renewable Energy Roadmap (MyRER), this target requires a capacity of 12,916MW. In Oct 2023, then-Minister of Natural Resources, Environment, and Climate Change Nik Nazmi Nik Ahmad, reported that the current RE capacity was 27.05%, or 10,410.25MW. This leaves an additional 2,506MW needed to meet the 2025 target.

Even if all planned projects under the LSS initiatives (LSS1-4), the CGPP, and the first phase of TNB's HHFS projects are completed, they will collectively contribute only c.1,700MW. Meanwhile, the net energy metering (NEM) quota balance is only left with c.277MW. Consequently, to meet the 31% target, other utility-scale projects must be initiated and brought online. Consideration may be given to expediting the shortlisting of LSS 5 bidders and awarding EPCC contracts, or advancing the CRESS program, to help bridge this gap.

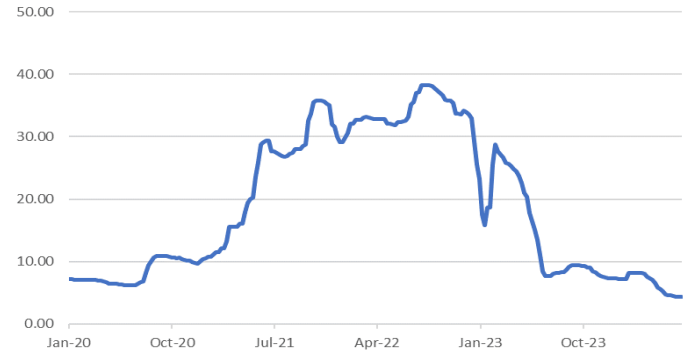
Looking beyond the short-term targets, Nik Nazmi anticipated that by 2030, green energy will contribute 37.8% (18,545.05MW) to Malaysia's total electricity capacity. For the remaining capacity, it is projected that 38.94% (19,098MW) will be generated from natural gas, while coal will still account for 23.25% (11,401MW). Hence, Malaysia would only need another 2.2% to reach the 40% capacity mix target by 2035. To bridge the gap and achieve these ambitious goals, additional efforts and investments in RE projects will be crucial.

Sustained decline in panel costs

Polysilicon prices skyrocketed between 2021-2022, causing significant cost increases for solar modules and leading to project delays and contract renegotiations. The surge was primarily due to supply shortages as demand outpaced production capacity. While prices briefly dropped in mid-2021, they rebounded sharply later that year and remained high throughout 2022, fueled by the energy crisis and production disruptions. However, polysilicon prices have since fallen by over 80% from their peak, driven by increased production capacity and slightly reduced demand. This dramatic decline has significantly reduced the cost of solar panels (currently guided at USD0.10/W), making solar energy a more attractive option as the payback period for solar installations shortens, incentivising a wider adoption of solar power.

The reduced costs not only benefits the asset owner with reduced capex costs, it would also benefit solar EPCC players as there will be increasing number of orders from the commercial and industrial (C&I) and residential sectors. This trend is expected to bolster the orderbooks and revenue streams for said players, ensuring their earnings growth. Looking ahead, industry experts anticipate that polysilicon prices will remain soft into 2025 due to ongoing oversupply. While rising aluminium prices also contributed to module cost increases as it is used for mounting structures, the impact such increases has been relatively minor.

Figure 15: Polysilicon spot prices (USD/kg)



Source: Bloomberg, RHB

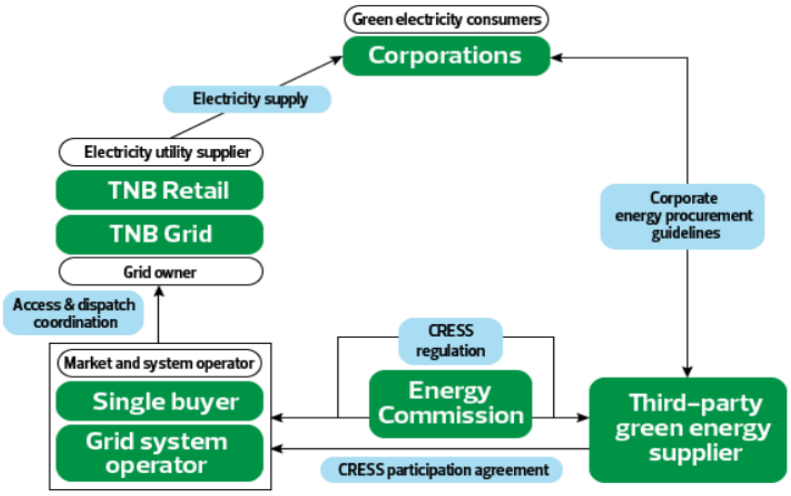
Figure 16: Aluminium spot prices (USD/tonne)

Source: Bloomberg, RHB

Grid access open a game changer?

The Government introduced CRESS, with guidelines to be launched in September. Under this scheme, eligible RE generators and corporate companies can arrange for green electricity supply on agreed-upon terms through the existing supply system. Corporate companies can directly source RE from identified generators with TPA, and these RE generators can also supply RE to corporate users through the TNB grid network by participating in the New Enhanced Dispatch Arrangement (NEDA) market. The Energy Commission will regulate the implementation of CRESS under the Electricity Supply Act 1990, with the single buyer and grid system operator acting as market and system operators. TNB will continue to function as a utility electricity supplier, consistently delivering the required electricity supply to users both within and outside the green electricity supply period.

Figure 17: Framework for the implementation of open-grid access through CRESS



Source: Ministry of Energy Transition & Water Transformation

We believe the CRESS scheme will commence following the conclusion of LSS 5, given the need to ensure clear connection points to the grid. The LSS 5 application period closed on 24 Jul, and we anticipate the announcement of winners to be made in 4Q24. Hence, we expect the scheme to likely start next year.

We anticipate an overall quota for the entire programme to ensure grid stability, as well as a quota for each project, possibly set at 30MW, ie similar to the CGPP.

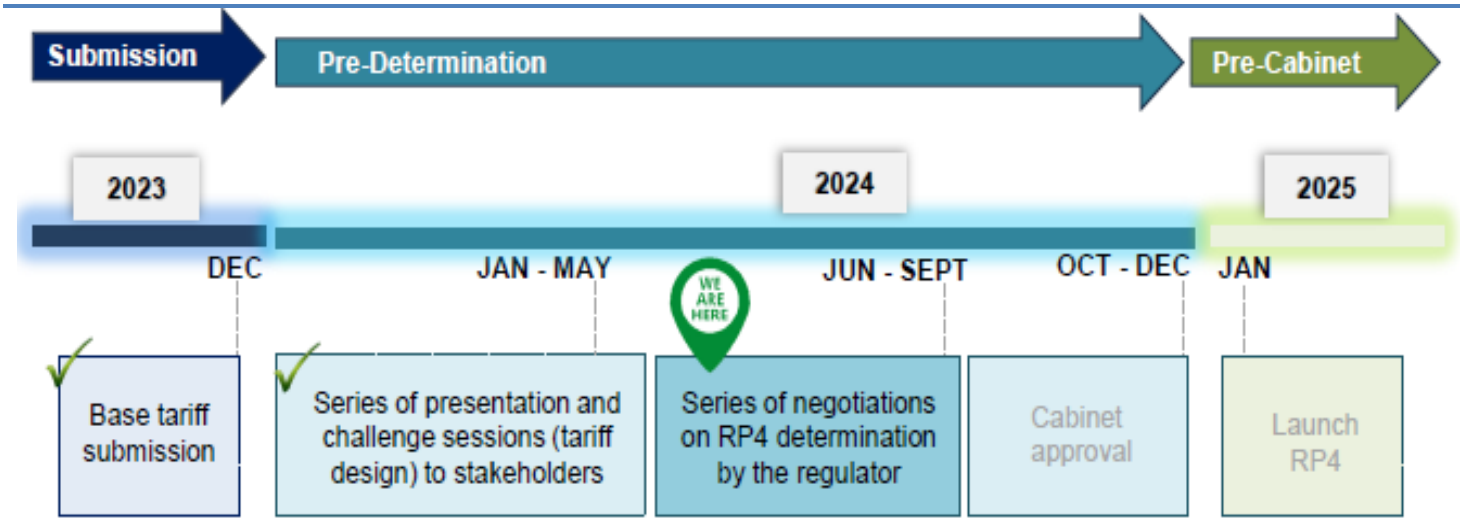
Although much is still being discussed with the Government, the introduction of CRESS represents a progressive step towards power industry reform, leading to a more liberal and competitive market. This change also presents an opportunity for existing IPPs to sell their power output to new clients after PPAs expire. This could attract more players to become green energy power producers, with the ability to negotiate direct pricing for green electricity. This initiative also provides companies with flexibility in choosing their energy sources, thereby helping them meet ESG sustainability targets. Additionally, it offers the ability to hedge against future fluctuations in green electricity rates. We view this as a highly positive development, as it will significantly increase the adoption of green energy. We expect this initiative to benefit solar EPCC players by boosting their C&I orders

All Eyes On RP4 Outcome

TNB submitted its proposal for Regulatory Period (RP) 4 (2025-2027) at the end of last year, and is currently in a series of negotiations with the regulators. The outcome is likely to be known by the end of the year after the Cabinet gives its approval (this is expected to happen in 4Q24). The new tariff details will set the company's regulatory earnings for the next three years. In the past five years, regulatory net returns have been in the range of MYR3.8bn to MYR5.0bn in FY19-FY23.

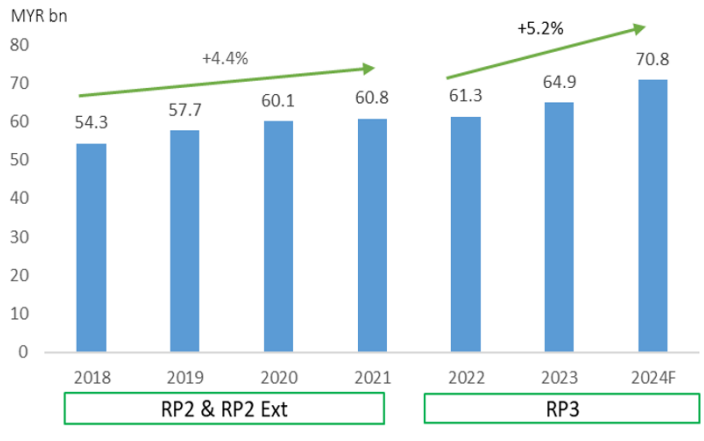
We understand that the returns are disclosed before financing and the implied returns for some years appeared to be above its WACC of 7.3%, possibly due to efficiency gains. After taking into consideration of finance cost, we estimate net regulated earnings accounted for 60-84% of TNB's headline profit in FY19-FY22. As for FY23, headline profit was lower than the total net regulated earnings, dragged by losses from the domestic power generation business arm – no thanks to the negative margin stemming from the swing in fuel margins.

Figure 18: RP4 milestones



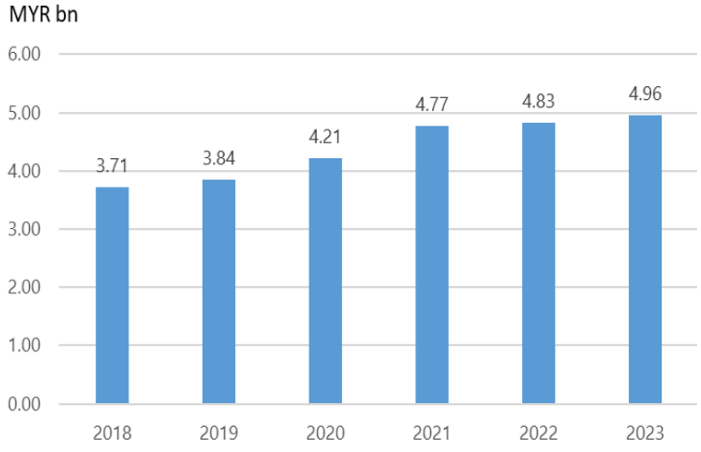
Source: Company data

Figure 19: Regulated asset base (MYRbn) 2018-2024F



Source: Company data, RHB

Figure 20: Regulated net returns (before finance costs) for 2018-2023 (MYRbn)

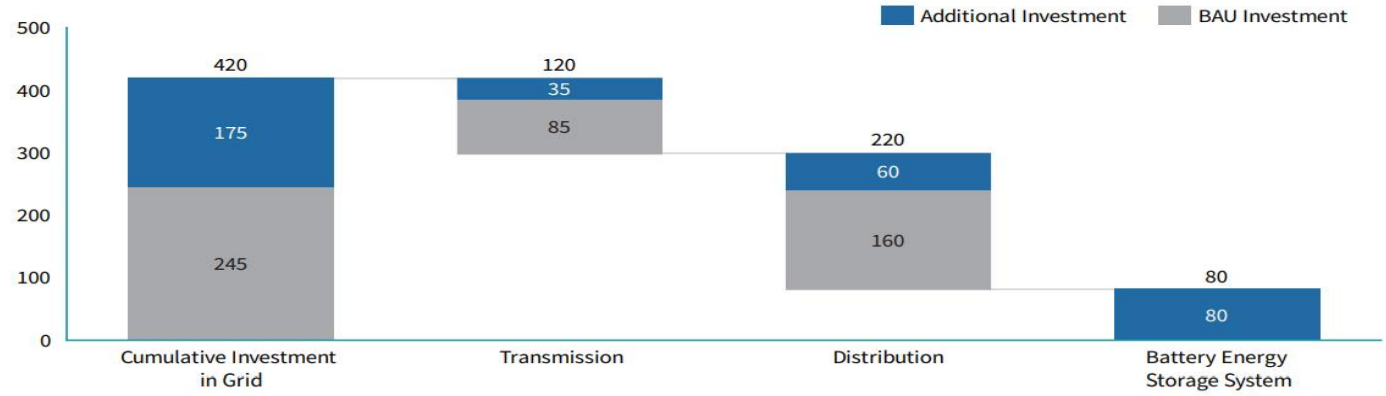


Source: Company data, RHB

How much can TNB spend in total?

Back in Aug 2023, the media said that TNB will invest MYR90bn over the next six years (2025-2030), which translated to MYR15bn pa. Based on the published NETR, it is projected that total grid investment needed in 2023-2050 amounts to MYR420bn, ie c.MYR15.6bn pa. From the breakdown, we gather that 42% or MYR175bn is attributable to additional investments for energy transition, while the remaining is regarded as business-as-usual (BAU) investments. Interestingly, MYR80bn of the MYR175bn was allocated for BESS. As of now, there are not many listed companies that have a footprint in BESS.

Figure 21: Projected power system cumulative investments, 2023-2050 (MYRbn)

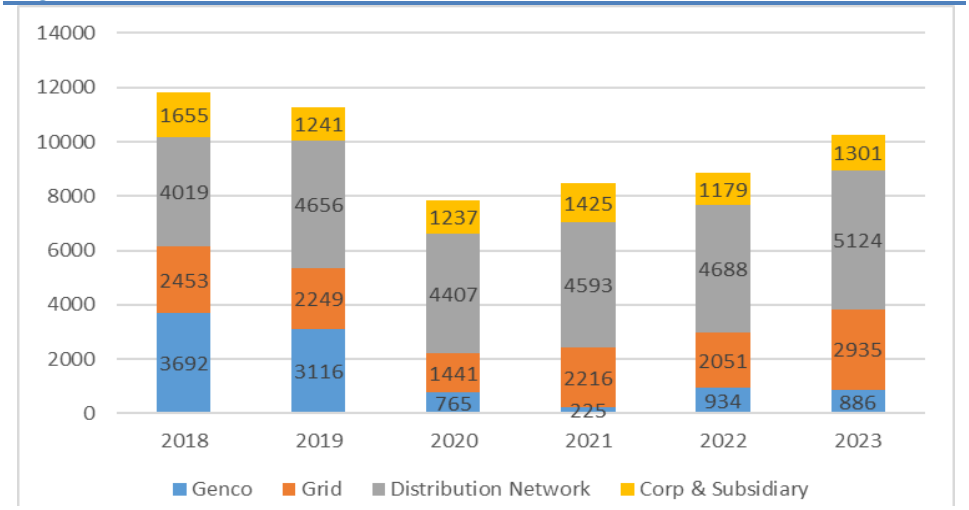


Source: NETR

TNB's annual capex spending ranged between MYR7.9bn and MYR11.8bn in FY18-23. Grid and distribution network capex, which are largely the regulated capex that makes up the bulk of the total yearly figure, accounted for 55-80% of total group capex. Notably, genco-related capex in the past two years have been relatively low at <MYR1bn compared to the range of MYR3-5bn five years prior to COVID-19. Interestingly, TNB guided that its total capex could be up to MYR13.8bn (+36% YoY), of which regulated capex could be in the range of MYR6.4-7.7bn. This implies that capex for genco, corporates & other subsidiaries will also be spiked up to c.MYR6bn this year. Both capex related to regulatory and non-regulatory factors are higher mainly due to carried-forward projects, the expedition of certain projects like smart meters, additional capex as well as larger genco projects such as Nenggiri and HELP projects.

As we believe TNB would lead the charge in replacing the expiring coal plants with RE and gas-powered ones, the sector's genco capex is also expected to increase over the long run. For now, we assume genco capex to increase to MYR3-5bn. This would probably bring the total TNB capex to MYR12-15bn for FY25-27F.

Figure 22: TNB's capex breakdown (2018-23)



Source: Company data

We believe there would some adjustments in RP4, with the possibility of key features listed below:

i. Electricity annual demand growth of 3-4% (RP3: 1.7%);
ii. Slight increase in the base tariff rate, with tariff tiering to account for potential energy export and DC users;
iii. Regulated return to TNB: WACC to remain similar at 7.3% (RP3: 7.3%);
iv. Average regulated capex to increase by 25-40% to MYR8.6-9.6bn pa and average opex at MYR6-6.5bn for the setting of the average base tariff;
v. Continuity of the imbalance cost pass-through (ICPT) review for uncontrollable costs every six months;
vi. Continuity of the revenue adjustment for the revenue cap price setting business entities.

Assuming the regulated asset base (RAB) will grow by 25-40% to MYR8.6-9.6bn pa in RP4 and a similar WACC of 7.3%, we estimate RAB and the regulated net returns will expand at a CAGR of 6.8-8.1% (vs RP3's 5%). We believe if there is a possibility of the Energy Commission allowing for higher capex spending if stronger average growth demand is imputed in RP4. Based on our sensitivity analysis, we see regulatory net returns to increase by 1.34% for every MYR1bn increase in average capex pa.

If the total MYR90bn target remains put, it would then imply that capex spending is backloaded in the remaining three years in FY28-30 with an estimate of MYR20-21bn pa. We do not discount the possibility of capex being backloaded, especially after our conversation with the Energy Commission back in June. The current gird is still able to accommodate additional 6GW of RE without a massive grid upgrade. The Energy Commission still expects major investments in grid infrastructure upgrades in the long run, but would like to strike a balance to avoid over-spending, in view of the risk of technology obsolescence. The Energy Commission is in the midst of evaluating multiple scenarios of RP4 proposals and emphasises the importance of a fair cost allocation in arriving at tariffs, to avoid the socialisation of massive capex spending.

Figure 23: TNB's RP parameters

	RP1	RP2 + RP2 EXT	RP3
Year	2015-2017	2018-2021	2022-2024
Average base tariff	38.53 sen/kWh	39.45 sen/kWh	39.95 sen/kWh
WACC	7.5%	7.3%	7.3%
Approved 3-year Capex (MYRbn)	18.5	18.8	20.6
RAB as at end RP (MYRbn)	51.2	60.1	70.8

Source: Company data, RHB

Key Beneficiaries

TNB remains the key beneficiary in the sector, especially with its T&D arm providing stable infrastructure to drive the NETR. Its long-term capex spending to upgrade infrastructure will ensure the continuous widening of its RAB and net returns. This is anchored by the recent mushrooming of DCs, resulting in higher energy consumption. At the same time, we see its domestic generation arm benefiting from potential capacity expansion in both gas-fired and RE facilities to accommodate such energy demand.

Experienced IPPs have the edge. In the longer run, there should be more new gas plants to be developed, which is in line with NETR's projection where gas will continue to be the dominant source of fuel for baseload power. With that, we believe existing IPPs are likely to see new gas plant expansions in the future following their retirement of existing coal plants.

Solar energy contractors are still beneficiaries. As there is an aggressive expansion in domestic RE capacity, we see the domestic solar EPCC contractors such as Samaiden, Sunview Group and Pekat Group as direct beneficiaries. With current contract opportunities exceeding 7GW and assuming a value of MYR2.5m/MW, the potential market is estimated to be worth MYR26bn. However, note that the capacity from the NETR is more of a long-term view, as the 2.5 GW HHFS projects will be executed in phases.

Even so, with the recent LSS5 introducing its largest quota yet, we believe future programs will follow this trend of increased capacity. This substantial market potential is expected to provide strong earnings for solar EPCC players, given that future initiatives are projected to be 1.5x the capacity awarded previously. Furthermore, the CRESS and cross border selling through ENEGEM will provide more C&I orders. Reservoir Link, being a sub-contractor and mounting structure provider, will also benefit from higher job flows in our view.

Sector call and TP adjustments

Maintain OVERWEIGHT; Top Picks: Tenaga Nasional (TNB), YTL Power and Samaiden. We remain positive on NETR given decent progress seen for the key initiatives mentioned under NETR. The recent introduction of CRESS is crucial to push through the TPA mechanism. The establishment of ENEGEM is also important to facilitate energy exports to Singapore. West Malaysia's electricity consumption growth is expected to surpass its average 10-year growth of 2.4%, largely led by the continuous expansion of DCs. Experienced IPPs will play a vital role, in stepping up their capacity in order to bridge the supply gap. We take this opportunity to adjust our TPs for TNB and Malakoff.

TNB (TNB MK BUY, TP: MYR16.70). We increase FY25F and FY26F earnings by 4% and 5% after lifting our capex assumptions to MYR13.8bn and MYR14bn. As such, our TP rises to MY16.70 (with a 6% ESG discount). TNB is trading at 16.4x FY25 P/E (above +2SD from the 10-year mean of 12x). This should increase, due to: i) Its T&D investments to strengthen the T&D asset base; ii) its strong balance sheet to expand RE capacity and replace coal-fired assets with gas-fire ones; and iii) rising data centres to spur energy demand to alleviate tariff hike pressure. Pending the RP4 outcome to be known by the end of the year, we may see some restructuring in terms of tariffs to account for new initiatives such as energy exports, wheeling charges collection under TPA mechanism. We estimate average regulated capex to increase by 25-40% vs RP2 levels, to MYR8.6-9.6bn pa – with a higher annual demand growth of 3-4% and unchanged WACC of 7.3%. Based on our sensitivity analysis, we see regulatory net returns increasing by 1.34% for every MYR1bn increase in average capex pa.

Malakoff (MLK MK, BUY, TP: MYR1.11). As an experienced independent power producer, we believe Malakoff Corp (MLK) is well positioned to benefit from rising energy demand in the long term. We see potential extension of power purchase agreements on its recently retired gas plants. Our earnings estimates remain largely unchanged but our DCF-based TP is lifted to MYR1.11 from MYR0.86 after ascribing a higher long-term terminal growth rate of 1% (from 0%) as we are now more upbeat on its long-term growth prospects. Note that we have ascribed a 10% discount to its intrinsic value, premised on our ESG score of 2.5. Our TP implies 15x FY25F P/E, which is at +2SD from its 5-year mean.

YTL Power (YTLP MK, BUY, TP: MYR6.68). We like YTLP for its long-term earnings growth potential from its artificial intelligence-data centre (AI-DC) development, while the near-term catalyst will be the conclusion of the off-taker for its first 20MW (out of 100MW) AI-DC. A portion of its 664ha of land (c.500acres) is being carved out to develop the 500MW YTL Green Data Centre Park. We understand the DC will be split into six phases and others for future development. Singapore-based Sea will be the anchor tenant for the 32MW (out of the 48MW) IT load hyperscale DC for more than 10 years. Phase 2 will accommodate the 100MW AI-DC. The first 20MW is 70% completed, and should be ready for server installation by the end of the year. The remaining 80MW capacity is also still under construction and will be ready for server installation by the middle of next year. There is another new DC phase under construction that will host a 40+40MW capacity and adopt an air-cooling system. The commercialisation of YTL Power's first 48MW data centre (DC) is essential to establish a track record as a co-location provider. Meanwhile, YTLP is confident of securing Nvidia Corp's chips by 1H25, and we could expect to see the first 20MW AI-DC ramping up next year.

Samaiden Group (SAMAIDEN MK, BUY; TP: MYR1.58). We remain optimistic on Samaiden Group's prospects, driven by its extensive pipeline and solid position in RE. With a diversified portfolio comprising solar, biogas, and biomass, it strategically positions itself as a significant contributor to Malaysia's sustainable energy initiatives. In FY24, Samaiden saw a momentum surge, steadily securing RE contracts one after another: The group bagged three EPCC contracts – a 50MW LSS4 plant for Uzma, a 50MW ground mounted solar PV plant at Kulim Hi-Tech Park and a 2MW small hydropower facility at the Pelagat Forest Reserve in Terengganu. Moreover, it managed to secure a gross total of 43.32MW capacity under the CGPP and a 7MW biomass PPA under the Feed-in Tariff (FiT) scheme.

Further bolstering Samaiden's FY25-26 activities will be the upcoming CGPP tenders, which are set to gain traction in the next few months. Other programmes to fuel growth will be the much-talked-about NETR, as well as the recently announced Integrated Clean Energy or TBB programme, which features the LSS 5 initiative. The group's recent CGPP win may help it for the LSS 5 application. Our TP of MYR1.58 is based on a SOP valuation, comprising : i) 24x FY25F P/E on EPCC earnings, (ii) DCF (WACC of 7.8% for its 60%-owned biogas asset), and iii) DCF (WACC of 7.8% for its biomass asset). Our TP includes a 6% ESG premium, as Samaiden's ESG score is three notches above the country median.

Shariah Compliant

20 August 2024

Utilities | Power

Tenaga Nasional (TNB MK)

Grid Gain Power Play; Keep BUY

Buy (Maintained)

Target Price (Return):	MYR16.70 (+20%)
Price (Market Cap):	MYR13.90 (USD18,436m)
ESG score:	2.7 (out of 4)
Avg Daily Turnover (MYR/USD)	136m/29.3m

- **Keep BUY, new MYR16.70 TP from MYR16.10, 20% upside with c.4% FY25F yield.** We continue to like Tenaga Nasional, as it is a proxy to Malaysia's energy transition growth journey under the National Energy Transition Roadmap (NETR). TNB should also continue benefiting from the continuous upgrade in transmission and distribution assets, where the demand for energy can be anchored by the mushrooming data centre (DC) developments.
- **The DC fiesta.** The growth of electricity consumption in West Malaysia is expected to surpass its 10-year average of 2.4%, largely led by the continuous expansion of DCs. We expect DC energy consumption alone to chart a CAGR of 1.6-2.6% between 2023-2035 if 3-5GW of DCs are fully operational by 2035. The Government has projected an energy reserve margin of 28-36% over 2024-2030. To accommodate such strong demand, we understand that there is an on-going cumulated capacity of 1GW 1+1 year short-term power purchase agreements (PPA) to be awarded in the near term. We do not discount the possibility of PPA extensions on expiring gas plants and believe experienced gas-based independent power producers (IPPs) such as TNB will potentially benefit from additional gas capacity expansion in the long run, as this fuel source replaces coal.
- **Regulatory Period (RP) 4 expectations.** Pending the RP4 outcome (to be known by end-2024) we may see some restructuring in terms of tariffs to account for new initiatives such as energy exports and wheeling charges collection under the third-party access or TPA mechanism. We estimate average regulated capex to increase by 25-40% vs RP2 levels, to MYR8.6-9.6bn pa with higher annual demand growth of 3-4% and an unchanged WACC of 7.3%. Based on our sensitivity analysis, we see regulatory net returns rising by 1.34% for every MYR1bn increase in average capex pa.
- **We lift FY25 and FY26 earnings estimates by 4% and 5%** after increasing our capex assumptions to MYR13.8bn and MYR14bn. As such, our DCF-based TP rises to MY16.70 (with a 6% ESG discount imputed). TNB is trading at 16.7x FY25 P/E (above +2SD from the 10-year mean of 12x). The re-rating should continue, due to: i) Its transmission and distribution (T&D) investments to strengthen the T&D asset base; ii) its strong balance sheet to expand RE capacity and replace coal with gas assets; and iii) rising number of data centres to spur energy demand to alleviate tariff hike pressure. Our TP implies 1.56x FY25 P/BV (+1SD from the 10-year mean). TNB's foreign shareholdings improved to 14.8% as of June (Dec 2023: 12.5%), albeit still well below the peak of 28.7% that was recorded in 2016. Downside risks: Higher operating costs and greater-than-expected plant outages.

Forecasts and Valuation	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Total turnover (MYRm)	50,868	53,067	54,003	56,492	58,498
Recurring net profit (MYRm)	3,898	3,138	3,840	4,694	4,859
Recurring net profit growth (%)	(9.8)	(19.5)	22.4	22.2	3.5
Recurring P/E (x)	20.12	25.00	20.43	16.71	16.15
P/B (x)	1.3	1.3	1.3	1.3	1.3
P/CF (x)	8.37	2.43	4.68	4.69	4.47
Dividend Yield (%)	2.6	3.3	3.2	3.9	4.0
EV/EBITDA (x)	6.25	6.43	6.12	5.80	5.68
Return on average equity (%)	6.0	4.7	6.5	7.8	7.9
Net debt to equity (%)	83.4	66.7	70.0	72.0	74.7

Source: Company data, RHB

Analyst

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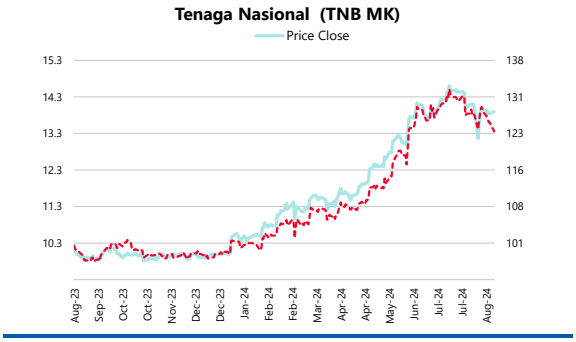
Share Performance (%)

	YTD	1m	3m	6m	12m
Absolute	38.4	(3.7)	10.3	24.1	39.7
Relative	25.1	(4.4)	8.3	16.9	25.7
52-wk Price low/high (MYR)					9.82 –14.6



Source: Bloomberg

Overall ESG Score: 2.7 (out of 4)

E: MODERATE

TNB's thermal power plants primarily use coal or fossil fuels to generate power, but the group aims to be completely coal-free by 2050, with an interim target of a 35% reduction in emissions intensity by 2035. However, in FY23, its GHG emissions increased by 1.3%.

S: EXCELLENT

Policies on employee relations, health & safety, and community engagement are robust. It has health and safety policies and processes in place, and seeks to maintain a good safety record. Its lost time incident rate improved to 0.74 in 2023 (2022: 0.82) but it recorded four fatalities, hence the lower score for this pillar. Its community engagement focuses on outreach programmes that focus on the availability of electricity to those in need.

G: EXCELLENT

Board characteristics are within Bursa Malaysia requirements, with 50% comprising independent directors. Women comprise 42% of the board. TNB ensures timely, reliable and accurate information is provided, and within regulatory and market guidelines. Shareholder rights are protected, as the group ensures shareholders are able to participate and contribute to the general meeting.

Financial Exhibits

Asia
Malaysia
Utilities
Tenaga Nasional
TNB MK
Buy

Valuation basis

DCF

Key drivers

i. Stronger earnings from non-regulated assets;
ii. High dividend payout ratios.

Key risks

i. Aggressive regulatory reform;
ii. Impairment on international assets.

Company Profile

Tenaga Nasional generates, transmits and distributes electricity in West Malaysia and Sabah. The national utility company has a near-monopoly in the transmission and distribution of electricity in West Malaysia and Sabah.

Financial summary (MYR)	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Recurring EPS	0.69	0.56	0.68	0.83	0.86
DPS	0.36	0.46	0.44	0.54	0.56
BVPS	10.37	10.42	10.66	10.71	10.96
Return on average equity (%)	6.0	4.7	6.5	7.8	7.9

Valuation metrics	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Recurring P/E (x)	20.12	25.00	20.43	16.71	16.15
P/B (x)	1.3	1.3	1.3	1.3	1.3
FCF Yield (%)	1.2	27.6	4.8	3.7	4.5
Dividend Yield (%)	2.6	3.3	3.2	3.9	4.0
EV/EBITDA (x)	6.25	6.43	6.12	5.80	5.68
EV/EBIT (x)	13.82	16.28	14.57	12.70	12.00

Income statement (MYRm)	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Total turnover	50,868	53,067	54,003	56,492	58,498
Gross profit	25,133	26,639	27,065	28,147	29,053
EBITDA	20,812	18,623	19,970	21,384	22,290
Depreciation and amortisation	(11,403)	(11,266)	(11,577)	(11,623)	(11,739)
Operating profit	9,410	7,357	8,393	9,761	10,551
Net interest	(3,935)	(3,836)	(4,037)	(4,242)	(4,664)
Pre-tax profit	5,349	3,374	4,424	5,638	6,013
Taxation	(1,791)	(770)	(784)	(993)	(1,060)
Reported net profit	3,463	2,770	3,840	4,694	4,859
Recurring net profit	3,898	3,138	3,840	4,694	4,859

Cash flow (MYRm)	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Change in working capital	(10,680)	14,261	(2,425)	(3,674)	(3,699)
Cash flow from operations	9,378	32,219	16,760	16,716	17,531
Capex	(8,429)	(10,571)	(13,000)	(13,800)	(14,000)
Cash flow from investing activities	(14,366)	(5,782)	(12,531)	(13,468)	(13,629)
Dividends paid	(2,181)	(2,538)	(2,496)	(3,051)	(3,158)
Cash flow from financing activities	3,409	(12,985)	(1,802)	(2,105)	(2,593)
Cash at beginning of period	6,706	4,893	19,391	21,817	20,533
Net change in cash	(1,579)	13,452	2,427	1,143	1,309
Ending balance cash	5,127	18,345	21,817	22,960	21,842

Balance sheet (MYRm)	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Total cash and equivalents	13,034	21,005	23,431	22,147	24,740
Tangible fixed assets	116,577	122,025	123,448	124,202	125,709
Total investments	1,679	1,667	1,736	1,786	1,861
Total assets	205,922	204,771	210,806	210,607	215,300
Short-term debt	13,262	7,031	7,031	7,031	7,031
Total long-term debt	50,620	54,740	59,940	60,260	65,540
Total liabilities	144,956	143,689	148,579	147,932	151,279
Total equity	60,966	61,083	62,227	62,676	64,021
Total liabilities & equity	205,922	204,771	210,806	210,607	215,300

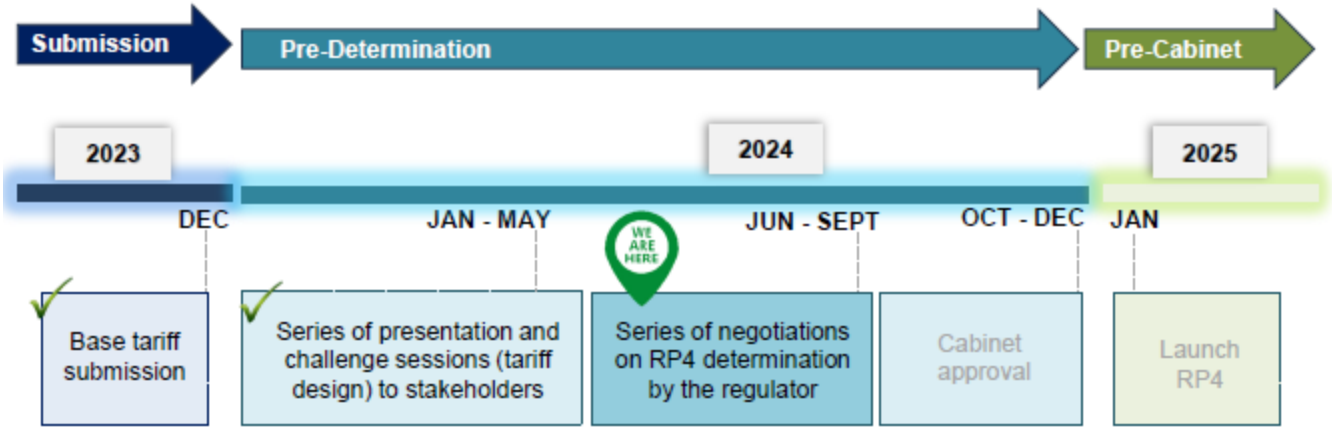
Key metrics	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Revenue growth (%)	5.7	4.3	1.8	4.6	3.6
Recurrent EPS growth (%)	(9.8)	(19.5)	22.4	22.2	3.5
Gross margin (%)	49.4	50.2	50.1	49.8	49.7
Operating EBITDA margin (%)	40.9	35.1	37.0	37.9	38.1
Net profit margin (%)	6.8	5.2	7.1	8.3	8.3
Dividend payout ratio (%)	58.7	93.7	65.0	65.0	65.0
Capex/sales (%)	16.6	19.9	24.1	24.4	23.9
Interest cover (x)	2.23	1.68	1.86	2.13	2.10

Source: Company data, RHB

TNB submitted its proposal for Regulatory Period (RP) 4 (2025-2027) at the end of last year, and is currently in a series of negotiations with the regulators. The outcome of these is likely to be known by the year-end, after the expected approval from the Cabinet in 4Q24. The new tariff details will set the company's regulatory earnings for the next three years. In the past five years, regulatory net returns have ranged MYR3.8-5.0bn in FY19-FY23.

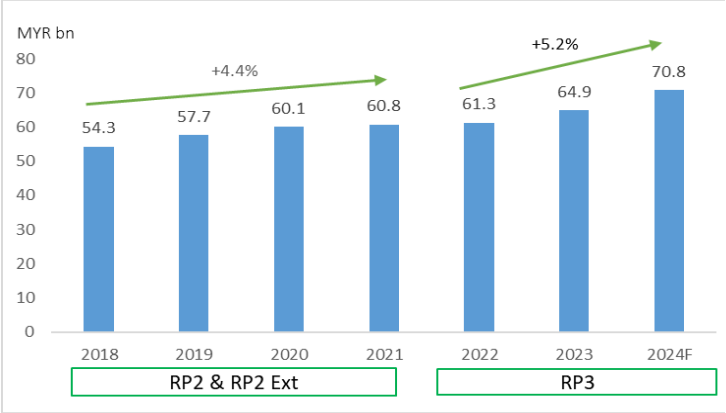
We understand that the returns are disclosed before financing, and the implied returns for some years appeared to be above its WACC of 7.3%, due to efficiency gains. After taking into consideration of finance cost, we estimate net regulated earnings accounted for 60-84% of TNB's headline profit in FY19-FY22. As for FY23, headline profit was lower than the total net regulated earnings, dragged by losses from domestic generation business arm – this was no thanks to negative margin from fuel margin swing.

Figure 1: RP4 milestones



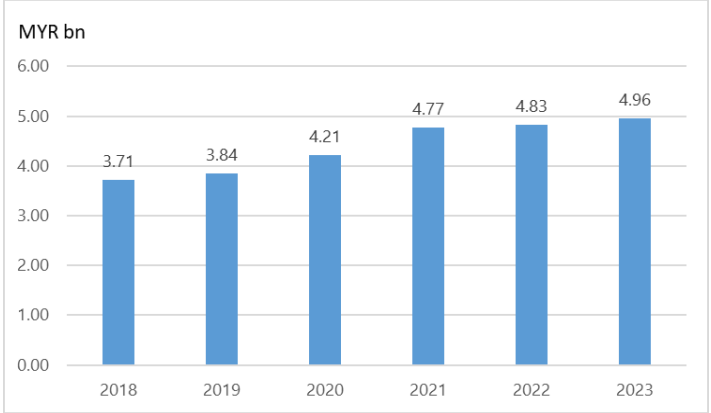
Source: NETR

Figure 2: Regulated asset base (MYRbn) over 2018-2024F



Source: Bloomberg, RHB

Figure 3: Regulated net returns (before finance costs) over 2018-2023 (MYRbn)



Source: Bloomberg, RHB

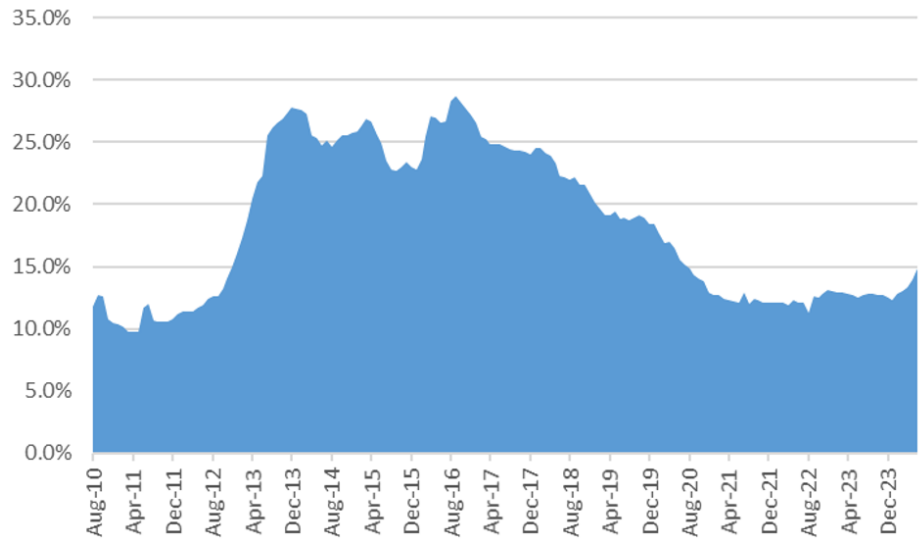
We believe there could be some adjustments in RP4, with the possibility of the key features listed below:

i. Electricity annual demand growth of 3-4% (RP3: 1.7%);
ii. Slight increase in the base tariff rate, with tariff tiering to account for potential energy exports and data centre users;
iii. Regulated return to TNB – WACC to remain similar at 7.3% (RP3: 7.3%);
iv. Average regulated capex to increase by 25-40% to MYR8.6-9.6bn pa, and average opex at MYR6-6.5bn for the setting of the average base tariff;
v. Continuity of the ICPT review for uncontrollable costs every six months;
vi. Continuity of the revenue adjustment for the revenue cap price setting business entities.

Assuming that the regulated asset base (RAB) will grow by 25-40% to MYR8.6-9.6bn pa in RP4 and a similar WACC of 7.3%, we estimate RAB and the regulated net returns to record a CAGR of 6.8-8.1% (vs RP3's 5%). We believe that there is a possibility of the Energy Commission allowing for higher capex spending if stronger average growth demand is factored into RP4. Based on our sensitivity analysis, we expect regulatory net returns to increase by 1.34% for every MYR1bn increase in average capex pa.

If the total MYR90bn target remains unchanged, it would then imply that capex spending is backloaded in the remaining three years in FY28-30, with an estimate of MYR20-21bn pa. We are not discounting the possibility of capex being backloaded, especially after our conversation with the EC back in June. The current gird is still able to accommodate additional 6GW of RE without a massive grid upgrade. The EC still expects major investments in grid infrastructure upgrades in the long run but would like to strike a balance to avoid over-spending given the risk of technology obsolescence. The EC is in the midst of evaluating multiple scenarios of RP4 proposals and emphasises the importance of a fair cost allocation in arriving at tariffs to avoid the socialisation of massive capex spending.

Figure 4: TNB's foreign shareholding



Source: RHB, TNB

Emissions And ESG

Trend analysis

In FY23, TNB's total GHG emissions increased by 1.3%. The group also started reporting its scope 3 emissions.

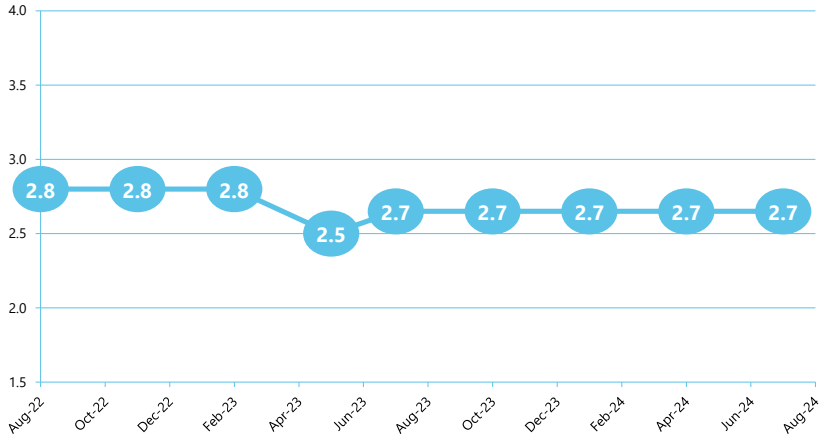
Emissions (tCO2e)	Dec-21	Dec-22	Dec-23
Scope 1	39,770,000	38,580,000	38,920,000
Scope 2	280,000	320,000	390,000
Scope 3	na	na	0
Total emissions	40,050,000	38,900,000	39,310,000

Source: Company data, RHB

Latest ESG-Related Developments

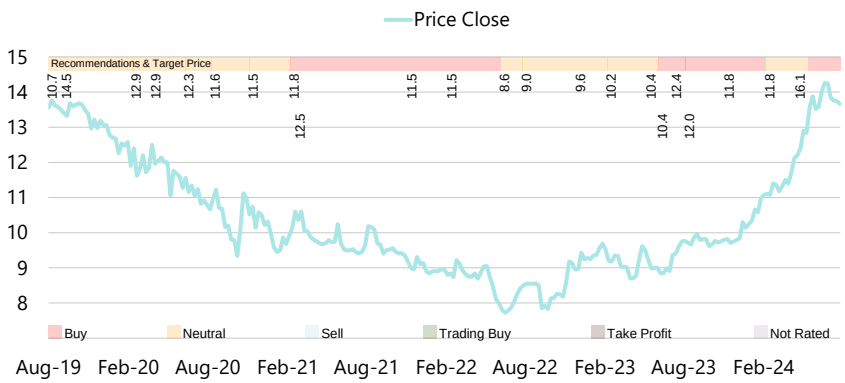
- TNB is reducing its coal capacity through ongoing initiatives under the Future Generation Sources strategy, and is on track to achieve its target of decreasing coal capacity by 50% by 2035 and 100% by 2050, compared to the baseline year of 2021.
- TNB is spearheading at least 3GW worth of RE projects (500MW solar parks and 2.5GW hybrid hydro floating solar projects) from the NETR.
- TNB signed an MoU with Siemens Energy to accelerate the decarbonisation of its thermal power plants by leveraging green hydrogen generated from RE resources.
- In 2023, TNB secured 90MW (135MWp) in solar power generation through the Corporate Green Power Programme (CGPP) and, upon commissioning, the estimated emissions avoidance is around 70,646 tCO2e pa.

ESG Rating History



Source: RHB

Recommendation Chart



Source: RHB, Bloomberg

Date	Recommendation	Target Price	Price
2024-06-03	Buy	16.1	13.0
2024-02-28	Neutral	11.8	11.0
2023-11-27	Buy	11.8	9.8
2023-08-27	Buy	12.0	10.0
2023-07-28	Buy	12.4	9.6
2023-06-25	Buy	10.4	9.2
2023-05-30	Neutral	10.4	9.6
2023-02-28	Neutral	10.2	9.4
2022-12-19	Neutral	9.6	9.3
2022-08-17	Neutral	9.0	8.9
2022-08-14	Neutral	8.6	8.6
2022-06-27	Neutral	8.6	8.0
2022-05-31	Buy	11.5	9.2
2022-02-25	Buy	11.5	9.0
2021-11-26	Buy	11.5	9.4

Source: RHB, Bloomberg

Shariah Compliant

20 August 2024

Utilities | Power

Malakoff Corp (MLK MK)

In a Sweet Spot; Keep BUY

Buy (Maintained)

Target Price (Return):	MYR1.11 (+16%)
Price (Market Cap):	MYR0.96 (USD1,070m)
ESG score:	2.5 (out of 4)
Avg Daily Turnover (MYR/USD)	5.80m/1.27m

- **Keep BUY, new DCF-derived TP of MYR1.11 from MYR0.86, 16% upside with c.5% FY25F yield.** As Malakoff Corp is an experienced independent power producer (IPP), we believe it is well-positioned to benefit from the rising demand for energy over the long term. We see, too, the potential extension of power purchase agreements (PPA) on its recently retired gas-fired power plants.
- **The data centre (DC) fiesta.** West Malaysia's electricity consumption growth is expected to surpass its average 10-year growth of 2.4% largely, led by the continuous expansion of DCs. We see DC energy consumption charting a CAGR of 1.6-2.6% in 2023-2035, if 3-5GW of DCs are to be fully operational by 2035. The Government has projected the reserve margin at 28-36% between 2024 and 2030.
- **Potential PPA extension in the short term.** To accommodate such robust demand, we understand that there is an on-going cumulated capacity of 1GW 1+1 year short-term PPAs to be awarded in the near term. We do not discount the possibility of PPA extensions on expiring gas plants. Note that MLK's PPA on 650MW GB3 and 350MW Prai power plants expired in Dec 2022 and Jun 2024. As such, these two plants stand a chance of getting a second life – if their PPAs are extended.
- **More to come in the long run?** In the longer run, there should be more new gas-fired plants to be developed, which is in line with the National Energy Transition Roadmap's (NETR) projection, where gas will continue to be the anchor – being the dominant source of fuel for baseload power. We note, however, that the gas capacity mix is projected to decline from 2025's 42% to 2050's 29%. This still suggests a decent growth of 9GW, ie from 19GW to 28GW. With that, we believe existing IPPs are likely to see new gas-fired plant expansions in the future following the retirement of existing coal-fired plants. MLK currently has 5.3GW of thermal capacity and targets to achieve 10GW by 2031 and, therefore, we expect them to add new gas capacity in the medium term.
- **BUY.** Our earnings estimates remain largely unchanged but we upgrade our DCF-based TP to MYR1.11 from MYR0.86 after ascribing a higher long-term terminal growth rate of 1% (from 0%) as we are more upbeat over its long-term prospects. Note that we have ascribed a 10% discount, based on our ESG score of 2.5. Our TP implies 15x FY25F P/E, which is at +2SD from its 5-year mean. Downside risks: Unscheduled outages, higher operating costs, and disruptions in fuel supply.

Analyst

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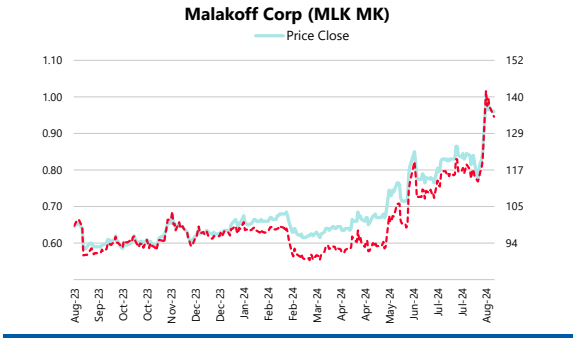
Share Performance (%)

	YTD	1m	3m	6m	12m
Absolute	51.2	14.3	42.2	41.2	47.7
Relative	37.9	13.6	40.2	34.0	33.7
52-wk Price low/high (MYR)					0.59 –1.00



Source: Bloomberg

Forecasts and Valuation	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Total turnover (MYRm)	10,355	9,067	7,166	6,932	6,765
Recurring net profit (MYRm)	671	(409)	279	361	366
Recurring net profit growth (%)	94.3	(161.0)	-	29.2	1.4
Recurring P/E (x)	7.16	na	17.20	13.31	13.13
P/B (x)	0.9	1.1	1.1	1.0	1.0
P/CF (x)	80.59	2.76	2.67	2.81	na
Dividend Yield (%)	5.0	1.6	4.7	5.3	6.1
EV/EBITDA (x)	4.71	10.01	5.19	4.63	4.90
Return on average equity (%)	5.5	(16.7)	6.2	7.8	7.8
Net debt to equity (%)	107.6	112.4	99.6	88.4	90.3

Source: Company data, RHB

Overall ESG Score: 2.5 (out of 4)

E: GOOD

Malakoff's emissions management system ensures regulatory compliance and best sustainability practices. It also has a rigorous coal selection process to minimise coal emissions. In 2023, GHG emissions decreased by 2.1% to 16,476,659.42 tCO2e. Current RE capacity stands at 153MW, and it is actively pursuing strategic projects in the small hydropower plant, large-scale solar and WTE segments to expand its clean and green energy portfolio.

S: GOOD

Malakoff strives to provide equal opportunity employment and has zero tolerance on discrimination. Health and safety measures are also in place in accordance with ISO 45001:2018. In 2023, the lost time injury frequency rate for both Malakoff and its subsidiary Alam Flora increased to 0.73 and 0.86 (from 0.29 and 0.68 in 2022). The group also recorded one non-employee fatality.

G: EXCELLENT

Board characteristics are in line (and half of them members are independent directors). Women make up 11% of the board. Malakoff provides clear, timely and reliable information that is compliant with Malaysia's regulatory framework. Shareholder rights are well protected.

Financial Exhibits

Asia
Malaysia
Utilities
Malakoff Corp
MLK MK
Buy

Valuation basis

DCF

Key drivers

iii. Increase in despatch rate;
iv. Stable operations;
v. Lower-than-expected operating expenses

Key risks

vi. Unscheduled outages;
vii. Higher operating costs;
viii. Disruption in fuel supply.

Company Profile

Malakoff Corp is an international power and water producer. It currently owns power generation assets in Malaysia, the Middle East North Africa (MENA) region and Australia, and water production in the MENA region. It is also engaged in power and water desalination plant operations & maintenance (O&M) business that currently provides services to all its majority-owned power plants and associates' assets, as well as third parties. It also provides electricity and chilled water for the air conditioning at Kuala Lumpur Sentral.

Financial summary (MYR)	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Recurring EPS	0.13 -	0.08	0.06	0.07	0.07
DPS	0.05	0.02	0.04	0.05	0.06
BVPS	1.11	0.90	0.91	0.93	0.95
Return on average equity (%)	5.5	(16.7)	6.2	7.8	7.8

Valuation metrics	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Recurring P/E (x)	7.16	na	17.20	13.31	13.13
P/B (x)	0.9	1.1	1.1	1.0	1.0
FCF Yield (%)	(5.0)	30.4	29.2	27.2	(9.4)
Dividend Yield (%)	5.0	1.6	4.7	5.3	6.1
EV/EBITDA (x)	4.71	10.01	5.19	4.63	4.90
EV/EBIT (x)	10.61	na	12.27	9.74	10.31

Income statement (MYRm)	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Total turnover	10,355	9,067	7,166	6,932	6,765
Gross profit	2,570	2,411	1,417	1,492	1,430
EBITDA	2,216	992	1,758	1,824	1,727
Depreciation and amortisation	(1,233)	(1,089)	(1,015)	(956)	(906)
Operating profit	983	(97)	744	868	822
Net interest	(523)	(494)	(531)	(532)	(477)
Pre-tax profit	737	(955)	372	506	514
Taxation	(351)	93	(85)	(134)	(138)
Reported net profit	302	(837)	279	361	366
Recurring net profit	671	(409)	279	361	366

Cash flow (MYRm)	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Change in working capital	(2,270)	1,014	127	18	(552)
Cash flow from operations	60	1,737	1,801	1,707	0
Capex	(301)	(276)	(400)	(400)	(450)
Cash flow from investing activities	1,811	1,079	(292)	(331)	0
Dividends paid	(293)	(255)	(223)	(252)	(292)
Cash flow from financing activities	(1,900)	(1,784)	(1,363)	(1,353)	0
Cash at beginning of period	1,569	1,540	2,571	2,717	2,740
Net change in cash	(29)	1,031	146	23	0
Ending balance cash	1,540	2,571	2,717	2,740	2,740

Balance sheet (MYRm)	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Total cash and equivalents	1,540	2,571	2,717	2,740	2,057
Tangible fixed assets	10,957	10,454	9,840	9,283	8,828
Total investments	1,913	1,365	1,525	1,695	1,865
Total assets	21,984	20,301	19,385	18,950	18,521
Short-term debt	972	927	927	927	927
Total long-term debt	7,771	7,878	7,378	6,878	6,378
Total liabilities	15,288	14,754	13,774	13,220	12,707
Total equity	6,696	5,547	5,611	5,730	5,814
Total liabilities & equity	21,984	20,301	19,385	18,950	18,521

Key metrics	Dec-22	Dec-23	Dec-24F	Dec-25F	Dec-26F
Revenue growth (%)	60.2	(12.4)	(21.0)	(3.3)	(2.4)
Recurrent EPS growth (%)	94.3	(161.0)	0.0	29.2	1.4
Gross margin (%)	24.8	26.6	19.8	21.5	21.1
Operating EBITDA margin (%)	21.4	10.9	24.5	26.3	25.5
Net profit margin (%)	2.9	(9.2)	3.9	5.2	5.4
Dividend payout ratio (%)	80.0	(9.0)	80.0	70.0	80.0
Capex/sales (%)	2.9	3.0	5.6	5.8	6.7
Interest cover (x)	1.62	(0.17)	1.16	1.44	1.46

Source: Company data, RHB

Figure 1: DCF valuation

NPV of forecast	11,289.7
Less (net debt)/net cash	(5,102.3)
Total Equity Value	6,187.4
Shares (m)	5,000.0
ESG discount	**10%**
TP (MYR)	**1.11**
WACC	7.4%
Long-term growth rate (%)	0.0%

Source: RHB

Figure 2: MLK's domestic thermal power generation

No.	Plant Name	Location	Plant Type	PPA Expiration	Generating Capacity	Effective Equity Participation	Effective Capacity
1.	Prai Power Plant	Penang	CCGT	2024	350 MW	100.0%	350 MW
2.	SEV Power Plant(1)	Perak	CCGT	2027(1)	1,303 MW	93.8%	1,222 MW
3.	Kapar Power Plant (GF 1-3)(2)	Selangor	Multi Fuel	2029	2,200 MW	40.0%	880 MW
4.	Tanjung Bin Power Plant	Johor	Coal	2031	2,100 MW	90.0%	1,890 MW
5.	Tanjung Bin Energy Plant	Johor	Coal	2041	1,000 MW	100.0%	1,000 MW

Note:
(1) PPA was renewed in July 2017, to operate SEV Power Plant for another 10 years until 2027.
(2) Kapar Power Plant has four phases. The terms of the PPA of the fourth phase expired in 2019 and the terms of the PPA for the other three phases will expire in 2029.
Source: Company data

Emissions And ESG

Trend analysis

Malakoff's total GHG emissions declined 2.1% YoY in FY23, driven by increased efficiencies resulting in lower emissions.

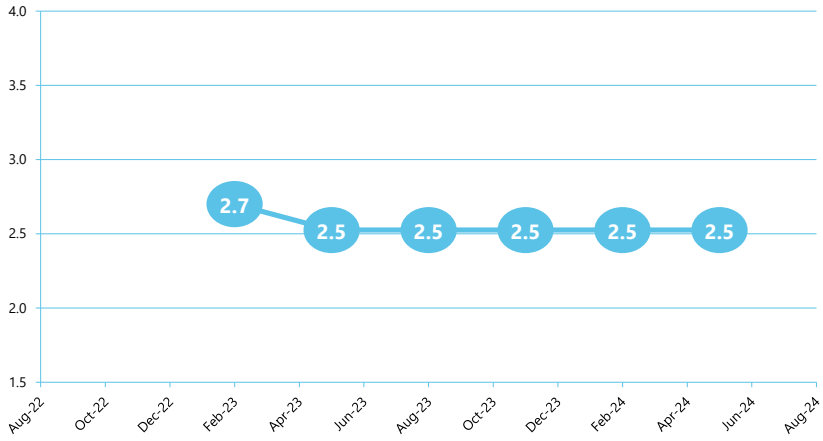
Emissions (tCO2e)	Dec-21	Dec-22	Dec-23
Scope 1	17,784,912	16,815,734	16,476,660
Scope 2	59,940	69,474	80,110
Scope 3	-	-	-
Total emissions	17,844,852	16,885,208	16,556,770

Source: Company data, RHB

Latest ESG-Related Developments

- Malakoff commissioned 23MW rooftop solar PV facilities in 2023, generating about 2,501MWh of clean energy and reducing carbon emissions by 14,632 tCO2e.
- The group launched the biomass co-firing initiative, a key component of the NETR, aiming to achieve 15% biomass co-firing at the Tanjung Bin Power Plant by 2027.
- The group signed an MoU with ITOCHU Corporation of Japan to study the feasibility of co-firing its coal plants in Johor with hydrogen/ammonia, which will be a crucial step towards reducing carbon emissions while leveraging hydrogen/ammonia as a transitional fuel.

ESG Rating History



Source: RHB

Recommendation Chart

Source: RHB, Bloomberg

Date	Recommendation	Target Price	Price
2024-05-30	Buy	0.86	0.73
2024-02-25	Buy	0.77	0.66
2023-11-26	Buy	0.72	0.64
2023-08-28	Buy	0.73	0.64
2023-05-28	Buy	0.77	0.68
2023-02-24	Buy	0.86	0.68
2020-08-19	Buy	1.12	1.00
2020-05-21	Buy	1.09	0.89
2020-02-20	Buy	1.05	0.90
2019-11-21	Buy	1.00	0.89
2019-10-30	Buy	0.97	0.86
2019-09-25	Buy	0.97	0.85
2019-05-28	Buy	1.00	0.84
2019-02-25	Neutral	0.93	0.94
2018-11-26	Neutral	0.93	0.87

Source: RHB, Bloomberg

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