Shariah Compliant

Utilities

Malaysia

July 12, 2024

Maybank Investment Bank

Tenaga Nasional (TNB MK)

Broadening RE horizons

HOLD

Share Price	MYR 14.60
12m Price Target	MYR 13.50 (-3%)
Previous Price Target	*MYR 13.50*

An important RE platform

Vantage RE (Vantage) is Tenaga's renewable energy (RE) platform in the UK and Europe. While not a material earnings contributor, its presence at the forefront of mature RE markets plays an important role in Tenaga's RE talent development and the longer-term fulfilment of Tenaga's ESG (emission) targets. We view Tenaga's risk-reward as being balanced presently. Maintain HOLD with an unchanged DCF-based TP of MYR13.50.

Introducing Vantage

Headquartered in London, Vantage (wholly-owned by Tenaga) currently owns, operates and manages a portfolio of solar and wind (both onshore and offshore) assets in the UK and Ireland. Current gross capacity of operational assets total 806MW, with another 102MW under construction, and 307MW (including battery storage) in the pipeline (planning) stage. Vantage aims to grow its capacity to >2GW by 2030. Tenaga recently hosted site visits to the Blyth Offshore windfarm and Bunkers Hill solar project.

The UK - a vibrant RE market

Wind and gas are the main fuel sources for electricity generation in the UK. RE as a whole, has accounted for c.50% of UK's electricity generation in recent quarters. The government has developed various support schemes over the years to encourage RE investments. The prevailing scheme is the "Contracts for Difference" where developers receive a top-up payment equal to the difference between an awarded strike price and the market reference price. Corporate PPAs are also available.

Maintain HOLD

Our net profit forecasts for Tenaga and MYR13.50 TP (DCF-based assuming 7.5% WACC and 2% LT growth) are unchanged. We note Tenaga is generally insulated from demand risk, and thus does not materially benefit from demand upside. The longer-term outlook appears more optimistic with potential accretion from elevated grid capex (for RE transition) and new generation projects.

FYE Dec (MYR m)	FY22A	FY23A	FY24E	FY25E	FY26E
Revenue	73,183	63,665	51,786	52,662	53,554
EBITDA	16,468	14,484	14,759	15,719	15,984
Core net profit	4,703	3,735	3,666	4,361	4,538
Core FDEPS (sen)	81.4	64.4	63.2	75.2	78.3
Core FDEPS growth(%)	(9.0)	(20.9)	(1.8)	18.9	4.1
Net DPS (sen)	46.0	46.0	46.0	46.0	47.1
Core FD P/E (x)	11.8	15.6	23.1	19.4	18.7
P/BV (x)	0.9	1.0	1.4	1.4	1.3
Net dividend yield (%)	4.8	4.6	3.2	3.2	3.2
ROAE (%)	7.6	5.9	6.2	7.2	7.3
ROAA (%)	2.4	1.8	1.8	2.1	2.2
EV/EBITDA (x)	6.6	7.0	8.6	8.0	7.8
Net gearing (%) (incl perps)	83.4	66.7	65.4	63.0	60.2
Consensus net profit	-	-	3,944	4,545	4,806
MIBG vs. Consensus (%)	-	-	(7.0)	(4.1)	(5.6)

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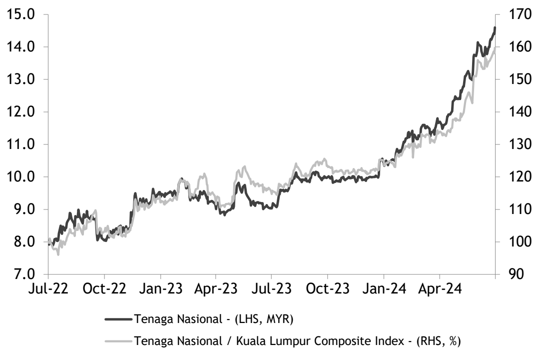
Company Description

Tenaga Nasional engages in the generation, transmission, distribution and sale of electricity and the provision of other related services.

Statistics

52w high/low (MYR)	14.60/9.03
3m avg turnover (USDm)	27.1
Free float (%)	59.2
Issued shares (m)	5,813
Market capitalisation	MYR84.9B
	USD18.1B
Major shareholders:	
Khazanah Nasional Bhd	20.9%
Employees Provident Fund	17.3%
Permodalan Nasional Bhd	15.4%

Price Performance



	-1M	-3M	-12M
Absolute (%)	6	25	61
Relative to index (%)	5	20	39

Source: FactSet

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Risk Rating& Score[1]	32.2 (High)
Score Momentum[2]	+0.2
Last Updated	24 May 2023
Controversy Score[3] (Updated: 23 May 2023)	2 - Customer (quality & safety) incidents

Business Model & Industry Issues

- With the commissioning of Jimah East, Malaysia's diversification into coal plants over the past decade has ended. New plants going forward will be gas or solar-based. The unit cost of generation for both gas and solar plants are for now still higher than coal, although this is essentially borne by consumers via the IBR tariff framework.
- Given the prevailing structure of PPAs in Malaysia, coal will however continue to feature very prominently in Peninsular Malaysia's generation mix for at least the next decade. This means the "coal stigma" will continue to accompany Tenaga for the foreseeable future. Should such pressure increase, Tenaga could consider accelerating its renewable expansion (it already has international solar and wind platforms) or potentially de-merging or spinning off its generation unit.
- The push into renewables has seen the increased adoption of solar via solar farms and rooftop solar. From a land optimisation perspective, the technology is probably better suited for rooftops. With the right incentives, Tenaga's panel leasing business could become more significant in contribution.
- Tenaga scores above-average in our proprietary scoring methodology (see next page) with an overall score of 63/100.

Material E issues

- Significant coal exposure with coal accounting for over 50% of Peninsular Malaysia's generation mix. However, many of these coal plants are new and utilises ultra-supercritical technology. Meanwhile, the cost of insuring coal plants has risen by 10-20% annually in recent years.
- Balance of generation is largely gas-based, which is still a fossil fuel and thus create carbon emissions. In response, Tenaga has in recent years, been consciously increasing its renewable capacity in line with the government's target of achieving a 20% renewable mix by 2025.
- Large-scale renewable facilities such as solar farms and hydro dams are typically land-intensive (a 50MW farm requires c.200 acres of land) and could have an effect on local biodiversity. In Peninsular Malaysia, there are no longer suitable sites for large dams while solar farms are typically situated on unused agricultural land.

Material S issues

- Average electricity tariffs in 2023 are c.20% higher relative to 2013 levels, steep for an essential service. Nevertheless, households have largely been insulated, with tariffs for the two lowest bands (c.70% of households) having been kept unchanged for the past decade.
- Tenaga was found liable for causing flash floods at Cameron Highlands (Bertam Valley) in 2013 having discharged water from its hydroelectric dam following heavy rains. Tenaga has since proactively engaged preventive measures such as regular cleaning of reservoir and dam, and conducting annual flood evacuation drills.
- Tenaga is a major employer in Malaysia, with a staff count of about 35,000 people of which 23,000 are represented by unions. 21% of Tenaga's employees are female. It also owns and operates a leading university in Malaysia which enrols c.10,000 students.

Key G metrics and issues

- Tenaga's constitution states a minimum of 2 and a maximum of 12 directors. MoF Inc being the special shareholder of Tenaga, has the right to appoint up to six directors.
- There are presently 11 members on Tenaga's board comprising of 1 Executive Director (President/CEO), 4 Non-Independent Non-Executive Directors (including the Chairman) and 6 Independent Non-Executive Directors.
- 4 of the 11 board members (including Chairman and President/CEO are appointees by MoF Inc and Khazanah Nasional.
- In terms of board gender and diversity, 6 of the 11 board members are female, and 7 are of non-finance/accounting backgrounds.
- Tenaga has been audited by PricewaterhouseCoopers for at least the past decade.
- The cumulative remuneration of the CEOs represents less than 0.1% of Tenaga's 2022 net profit.
- Female representation at the management level remains relatively low at 24% among senior management.
- Tenaga's track record with its international acquisitions has been mixed – it has substantially impaired its associates in Turkey (fully written-off) and India a few years after acquisition.
- Tenaga's balance sheet remains relatively under-levered, with a net debt-to-equity of 87% at end 2022. MFRS 16 with its lease liabilities has inflated the reported net gearing to c.1.4x, still a comfortable level.

[1]***Risk Rating & Score*** - derived by Sustainalytics and assesses the company's exposure to unmanaged ESG risks. Scores range between 0 - 50 in order of increasing severity with low/high scores & ratings representing negligible/significant risk to the company's enterprise value, respectively, from ESG-driven financial impacts. [2]***Score Momentum*** - indicates changes to the company's score since the last update - a negative integer indicates a company's improving risk score; a positive integer indicates a deterioration. [3]***Controversy Score*** - reported periodically by Sustainalytics in the event of material ESG-related incident(s), with the impact severity scores of these events ranging from Category 0-5 (0 - no reports; 1 - negligible risks; ...; 5 - poses serious risks & indicative of potential structural deficiencies at the company).

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	Quantitative parameters (Score: 25)					
	Particulars	**Unit**	**2020**	**2021**	**2022**	**Malakoff (MLK MK)**
E	Scope 1 emissions	m tCO2e	39.04	39.80	38.58	16.82
	Scope 2 emissions	m tCO2e	0.22	0.19	0.32	0.07
	Scope 3 emissions	m tCO2e	N/A	N/A	N/A	N/A
	Total	**m tCO2e**	**39.26**	**39.99**	**38.90**	**16.89**
	GHG intensity (Scope 1 and 2)	tCO2e/MWh	0.57	0.55	0.55	0.86
	% Coal capacity	%	46%	43%	42%	**65%**
	% Renewable Energy capacity	%	20%	19%	22%	1%
S	% of women in workforce	%	21.1%	22.1%	21.4%	17.7%
	% of women in management roles	%	21.7%	23.1%	24.3%	12.5%
	Lost time injury frequency (LTIF)	number	1.29	1.03	0.82	0.29
	Contribution & sponsorship	MYR m	63	40	12	36
G	MD/CEO salary as % of reported net profit	%	0.12%	0.14%	0.12%	0.8%
	Board salary as % of reported net profit	%	0.30%	0.26%	0.11%	0.8%
	Independent directors on the Board	%	64%	67%	55%	56%
	Female directors on the Board	%	36%	33%	55%	11%

Qualitative Paramaters (Score: 100)

a) Is there an ESG policy in place and whether there is a standalone ESG committee or is it part of a risk committee?

Yes. It has an established sustainability framework and a sustainability development committee headed by the CEO.

b) Is the senior management salary linked to fulfilling ESG targets?

Yes. ESG-related targets make up 30% CEO's total KPIs.

c) Does the company follow the task force of climate related disclosures (TCFD) framework for ESG reporting?

Yes

e) Does the company have a mechanism to capture Scope 3 emissions - which parameters are captured?

Yes, but Scope 2 and 3 emissions are inherently insignificant for an integrated electricity utility

f) What are the 2-3 key carbon mitigation/water/waste management strategies adopted by the company?

Tenaga has pledged to significantly increase its RE capacity, while also investing in emerging low-emission / green technologies.

g) Does carbon offset form part of the net zero/carbon neutrality target of the company?

Yes

Target (Score: 100)		
Particulars	**Target**	**Achieved**
Increase RE capacity to 8,300MW by 2025	8,300	3,438
Reduce emission intensity by 35% in 2035 vs 2020 baseline	35%	N/A
Net-zero carbon emissions by 2050	Net 0	N/A
Reduce coal capacity by 50% in 2035	50%	0%
Reduce coal capacity by 100% in 2050	100%	0%
Zero fatalities and LTIP <1.0 in 2050	<1.0	1.0
1% of PAT towards environmental and community programs in 2050	1.0%	1.1%

Impact

NA

Overall score: 63

As per our ESG matrix, Tenaga has an overall score of 63.

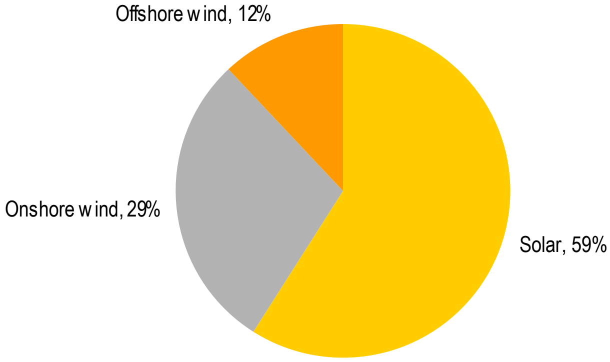
ESG score	Weights	Scores	Final Score
Quantitative	50%	25	13
Qualitative	25%	100	25
Target	25%	100	25
Total			**63**

As per our ESG assessment, Tenaga has an established framework, internal policies, and tangible mid/long-term targets. Reduction of coal capacity is contingent upon the expiry of existing PPAs. Tenaga's overall ESG score is 63, which makes its ESG rating above average in our view (average ESG rating = 50; refer to Appendix I for our ESG Assessment Scoring).

Visiting Vantage

Vantage is a wholly-owned of Tenaga headquartered in London. It currently owns, operates and manages a portfolio of solar and wind (both onshore and offshore) assets in the UK and Ireland. Current gross capacity of operational assets total 806MW, with another 102MW under construction, and 307MW (including battery storage) in the pipeline (planning) stage.

Fig 1: Vantage assets by type



Source: Company

Vantage aims to grow its capacity to >2GW by 2030, through either 1) developing own projects or purchasing (from other developers) projects at early development stage, or 2) purchasing project rights at late-stage development phase and managing construction. The former includes managing various early-stage development activities such grid applications and environmental impact assessments (which can be relatively onerous in the UK).

Vantage is led by CEO Vian Davys (>20 years of experience in the RE sphere in the UK and globally) and supported by an experienced team comprising of local hires in the UK working alongside Tenaga's secondees from Malaysia (employee count of 39 of which 28% are Tenaga secondees).

Vantage does not materially contribute to Tenaga's earnings, accounting c.4% of group EBITDA in FY23. Tenaga's cost of investment into Vantage was GBP500m, of which about a third has been recouped.

Fig 2: Vantage financials

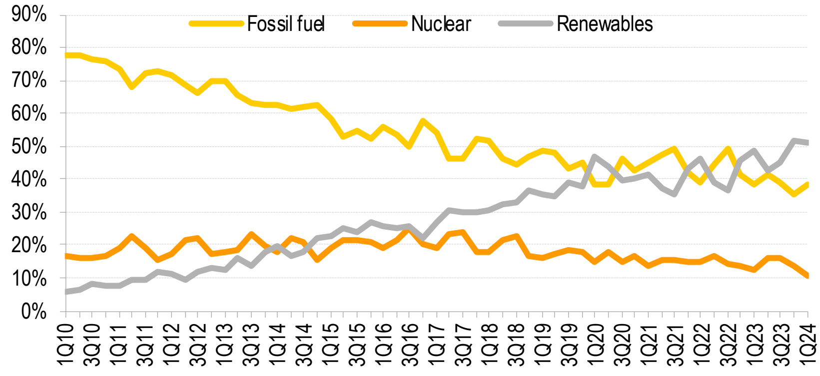
(GBP m)	2021	2022	2023
Revenue	34.1	97.1	135.9
EBITDA	23.9	72.5	94.4
EBITDA margin	70%	75%	69%
Total asset	841	1,209	1,404

Source: Company

The electricity market in the UK is liberalised, with generators bidding in the wholesale market to contribute to the power grid in half-hour intervals. In each half-hour trading period, the marginal cost of the last generating unit (typically gas-fired which is at the bottom of the merit order) used to meet demand sets the price that generators receive.

Wind (both onshore and offshore) and gas are the main fuel sources for electricity generation in the UK. RE as a whole, has accounted for c.50% of UK's electricity generation in recent quarters.

Fig 3: UK generation mix



Source: UK Department for Energy Security & Net Zero

The government has developed various support schemes over the years to encourage RE investments. The prevailing scheme is the "Contracts for Difference" where developers would receive a top-up payment equal to the difference between an awarded strike price and the market reference price. Corporate PPAs are also available as an option to RE project owners.

Blyth Offshore windfarm

Blyth is a small coastal wind farm located about 0.5 miles off the coast of Blyth, Northumberland. Vantage operates the project in partnership with EDF Renewables, a RE major. The project comprises 5 turbines of 8.3MW each (totalling 41.5 MW). Each turbine has a tip height of 191m.

Blyth was constructed in 2017, and was the first offshore wind farm to use float and submerge technology (the foundations on which the turbines sit on are gravity-based resting instead of being drilled into the seabed).

Fig 4: Blyth - on site office and warehouse

Source: Maybank IBG Research

Fig 5: Blyth - offshore wind farm

Source: Maybank IBG Research

Fig 6: Blyth - wind turbine up close

Source: Maybank IBG Research

Bunkers Hill Solar Project

Bunkers Hill is a solar farm near Hook, Hampshire currently under construction. The farm has a capacity of 66.7 MW_P, with a grid export capacity of 50 MW_{AC}. Panels are sourced from China and installed on fixed-tilt structures. Planning application was granted consent in 2022 and enabling works for the site began in summer 2023, with targeted commissioning in 3Q24.

Vantage has plans to install battery energy storage systems (BESS) on site. Existing BESS in the UK are located at the grid (AC-coupled), not at generation sites (DC-coupled). Thus, there are regulatory hurdles to be cleared as support schemes are in place for the solar farm. Regulatory discussions are currently ongoing.

Fig 7: Bunkers Hill – Panels on site

Source: Maybank IBG Research

Fig 8: Bunkers Hill – inverter substation

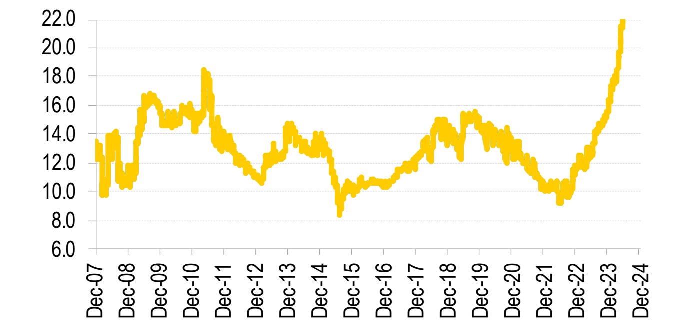
Source: Maybank IBG Research

Fig 9: Bunkers Hill - switchyard

Source: Maybank IBG Research

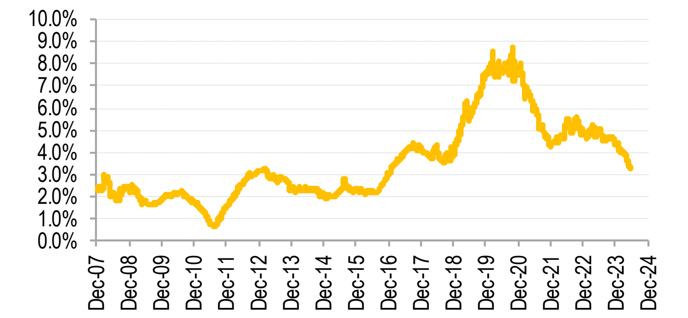
Valuations

Fig 10: Trailing PER



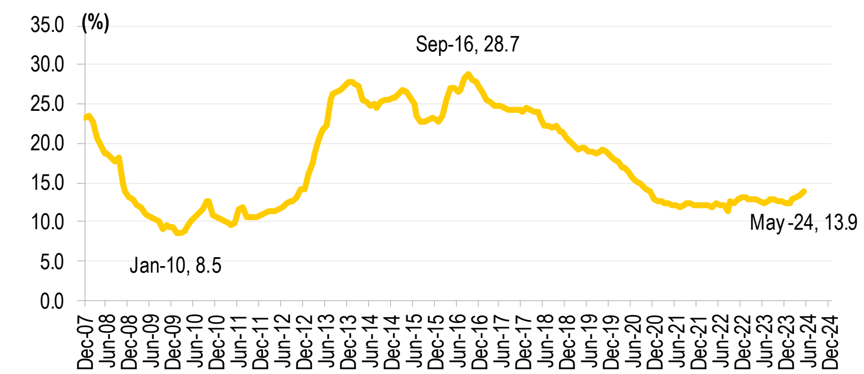
Source: Bloomberg, Maybank IBG Research

Fig 11: Trailing net yield



Source: Bloomberg, Maybank IBG Research

Fig 12: Foreign shareholding



Source: Company

Risk statement

There are several risk factors for our earnings estimates, price target, and rating for Tenaga. Regulatory developments, such as the determination of regulated returns, have direct impact on earnings. Changes in electricity demand patterns or plant outages could also result in loss of earnings for Tenaga.

Appendix I

Methodology of our proprietary ESG scoring methodology.

We evaluate the ESG ratings based on quantitative, qualitative and ESG targets. We assign a score for each of these three parameters. The overall rating is based on the weighted average of the scores: quantitative (50%), qualitative (25%) and ESG target (25%).

For the quantitative, qualitative and ESG target, the sub-parameters are assigned a score - '0' for data not available, '+1' for improving trajectory, positive change, 'Yes', better than peers or a positive number if historical is not available and '-1' for declining trajectory, negative change, 'No', lower than peers or a negative number. The total of the scores of all the sub-parameters is divided by the total number of sub-parameters, to derive the score of each of the three parameters.

The sub-parameters may be different for different industries depending on the key areas to monitor for each industry. A company should achieve a minimum score of 50 for an average ESG rating.

FYE 31 Dec	FY22A	FY23A	FY24E	FY25E	FY26E
Key Metrics					
P/E (reported) (x)	11.5	16.1	23.0	19.4	18.6
Core P/E (x)	11.8	15.5	23.0	19.4	18.6
Core FD P/E (x)	11.8	15.6	23.1	19.4	18.7
P/BV (x)	0.9	1.0	1.4	1.4	1.3
P/NTA (x)	2.7	2.5	3.4	3.2	3.0
Net dividend yield (%)	4.8	4.6	3.2	3.2	3.2
FCF yield (%)	1.7	37.4	5.8	6.1	6.5
EV/EBITDA (x)	6.6	7.0	8.6	8.0	7.8
EV/EBIT (x)	12.1	15.1	19.3	16.9	16.3
INCOME STATEMENT (MYR m)					
Revenue	73,183.0	63,665.1	51,786.2	52,661.9	53,553.6
EBITDA	16,467.7	14,484.0	14,759.2	15,718.8	15,984.3
Depreciation	(7,526.6)	(7,804.2)	(8,175.7)	(8,230.9)	(8,282.4)
Amortisation	0.0	0.0	0.0	0.0	0.0
EBIT	8,941.1	6,679.8	6,583.5	7,487.9	7,701.9
Net interest income /(exp)	(2,178.6)	(2,199.7)	(2,044.5)	(2,035.1)	(2,016.4)
Associates & JV	97.6	62.4	50.0	50.0	50.0
Exceptionals	(319.3)	(290.6)	0.0	0.0	0.0
Other pretax income	0.0	0.0	0.0	0.0	0.0
Pretax profit	6,540.8	4,251.9	4,589.0	5,502.8	5,735.5
Income tax	(2,063.1)	(974.7)	(1,089.4)	(1,308.7)	(1,364.5)
Minorities	(94.1)	166.7	166.7	166.7	166.7
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	4,383.6	3,443.9	3,666.4	4,360.8	4,537.7
Core net profit	4,702.9	3,734.5	3,666.4	4,360.8	4,537.7
BALANCE SHEET (MYR m)					
Cash & Short Term Investments	13,034.4	21,004.6	21,272.6	21,807.8	22,629.0
Accounts receivable	26,818.4	14,965.7	12,769.2	12,985.1	13,205.0
Inventory	3,290.8	2,758.0	2,177.7	2,176.3	2,208.2
Property, Plant & Equip (net)	116,577.1	122,024.7	122,849.0	123,618.2	124,335.7
Intangible assets	37,998.7	35,312.5	35,312.5	35,312.5	35,312.5
Investment in Associates & JVs	1,679.2	1,667.2	1,652.2	1,637.2	1,622.2
Other assets	6,523.7	7,038.7	7,038.7	7,038.7	7,038.7
Total assets	**205,922.3**	**204,771.4**	**203,071.9**	**204,575.9**	**206,351.4**
ST interest bearing debt	13,262.2	7,030.6	7,030.6	7,030.6	7,030.6
Accounts payable	11,509.7	12,830.7	10,315.3	10,308.9	10,460.0
LT interest bearing debt	50,620.0	54,739.6	54,739.6	54,739.6	54,739.6
Other liabilities	69,564.0	69,088.0	69,088.0	69,088.0	69,088.0
Total Liabilities	**144,956.1**	**143,688.7**	**141,173.3**	**141,166.9**	**141,318.0**
Shareholders Equity	58,517.1	58,825.8	59,832.4	61,533.5	63,348.5
Minority Interest	2,449.1	2,256.9	2,066.2	1,875.5	1,684.8
Total shareholder equity	**60,966.2**	**61,082.7**	**61,898.6**	**63,409.0**	**65,033.3**
Total liabilities and equity	**205,922.3**	**204,771.4**	**203,071.9**	**204,575.9**	**206,351.4**
CASH FLOW (MYR m)					
Pretax profit	6,540.8	4,251.9	4,589.0	5,502.8	5,735.5
Depreciation & amortisation	7,526.6	7,804.2	8,175.7	8,230.9	8,282.4
Change in working capital	(10,977.0)	13,395.0	261.4	(221.0)	(100.6)
Other operating cash flow	5,226.9	5,500.6	(50.0)	(50.0)	(50.0)
Cash flow from operations	9,377.9	32,218.5	13,931.2	14,189.1	14,519.2
Capex	(8,445.3)	(10,571.2)	(9,000.0)	(9,000.0)	(9,000.0)
Free cash flow	932.6	21,647.3	4,931.2	5,189.1	5,519.2
Dividends paid	(2,181.3)	(2,537.5)	(2,659.8)	(2,659.8)	(2,722.6)
Equity raised / (purchased)	0.0	0.0	0.0	0.0	0.0
Change in Debt	12,061.1	(3,576.6)	0.0	0.0	0.0
Other invest/financing cash flow	(7,012.1)	(7,660.3)	(2,003.5)	(1,994.1)	(1,975.4)
Effect of exch rate changes	0.0	0.0	0.0	0.0	0.0
Net cash flow	3,800.3	7,872.9	268.0	535.3	821.2

FYE 31 Dec	FY22A	FY23A	FY24E	FY25E	FY26E
Key Ratios					
Growth ratios (%)					
Revenue growth	39.1	(13.0)	(18.7)	1.7	1.7
EBITDA growth	7.4	(12.0)	1.9	6.5	1.7
EBIT growth	10.3	(25.3)	(1.4)	13.7	2.9
Pretax growth	18.2	(35.0)	7.9	19.9	4.2
Reported net profit growth	2.4	(21.4)	6.5	18.9	4.1
Core net profit growth	(8.5)	(20.6)	(1.8)	18.9	4.1
Profitability ratios (%)					
EBITDA margin	22.5	22.8	28.5	29.8	29.8
EBIT margin	12.2	10.5	12.7	14.2	14.4
Pretax profit margin	8.9	6.7	8.9	10.4	10.7
Payout ratio	60.2	77.1	72.5	61.0	60.0
DuPont analysis					
Net profit margin (%)	6.0	5.4	7.1	8.3	8.5
Revenue/Assets (x)	0.4	0.3	0.3	0.3	0.3
Assets/Equity (x)	3.5	3.5	3.4	3.3	3.3
ROAE (%)	7.6	5.9	6.2	7.2	7.3
ROAA (%)	2.4	1.8	1.8	2.1	2.2
Liquidity & Efficiency					
Cash conversion cycle	55.6	55.4	18.0	18.0	18.5
Days receivable outstanding	100.3	118.1	96.4	88.0	88.0
Days inventory outstanding	15.9	20.7	21.2	18.7	18.6
Days payables outstanding	60.7	83.5	99.6	88.8	88.1
Dividend cover (x)	1.7	1.3	1.4	1.6	1.7
Current ratio (x)	1.2	1.2	1.3	1.3	1.3
Leverage & Expense Analysis					
Asset/Liability (x)	1.4	1.4	1.4	1.4	1.5
Net gearing (%) (incl perps)	83.4	66.7	65.4	63.0	60.2
Net gearing (%) (excl. perps)	83.4	66.7	65.4	63.0	60.2
Net interest cover (x)	4.1	3.0	3.2	3.7	3.8
Debt/EBITDA (x)	3.9	4.3	4.2	3.9	3.9
Capex/revenue (%)	11.5	16.6	17.4	17.1	16.8
Net debt/ (net cash)	50,847.8	40,765.6	40,497.6	39,962.4	39,141.2

Source: Company; Maybank IBG Research

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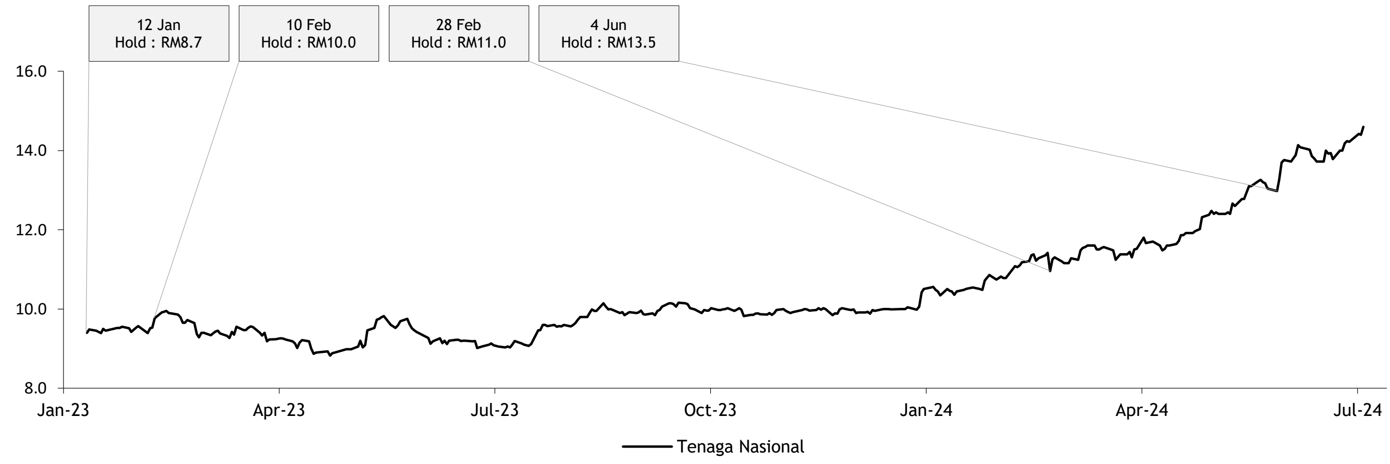

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