

HRUM IJ • Coal and Nickel

# Harum Energy

## 1Q24 result was inline until EBITDA, PATMI was hit by a loss in fair value adjustment

(Maintain)

**Buy**Target price  
**IDR1,860**Upside  
**66.8%**Current price (6/13/24)  
**IDR1,115**

JCI Index	6,832	Market cap (IDRbn)	15,073	Shares outstanding (mn)	13,518	Free Float (%)	18.6
-----------	-------	--------------------	--------	-------------------------	--------	----------------	------

### Report summary

#### 1Q24 result review: result was inline until EBITDA, PATMI was hit by a loss in fair value adjustment

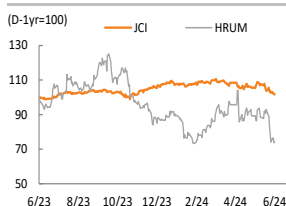
HRUM's 1Q24 revenue stood at USD266mn (-6% QoQ). The decline was primarily due to lower nickel ASPs, despite strong performance in the coal segment. On the cost side, HRUM saw a 26.6% QoQ decrease in coal production cash cost per ton, while nickel cash costs declined slightly by 4.3% QoQ. HRUM's combined EBITDA reached USD92mn, with a consolidated EBITDA margin of 26%. Overall, HRUM's 1Q24 EBITDA represented a run rate of 26% and 33% compared to our/consensus estimates. HRUM recorded an additional fair value adjustment loss of ~USD31mn during the quarter, resulting in a net profit of USD1mn for 1Q24. Excluding these adjustments, the company's normalized PATMI would have been approximately USD32mn.

#### Maintain Buy with a TP of IDR1,860/share

We continue to favor HRUM due to its transition to becoming a major Indonesian nickel player and its relatively undemanding valuation compared to other Indonesian nickel players. As of now, we maintain our Buy recommendation for HRUM with a TP of IDR 1,860/share. Main risks to our call include a decline in coal and nickel prices, delays in project development execution, and potential loss from fair value adjustments.

### Key data

#### Price performance



(%)	1M	6M	12M
Absolute	-17.1	-16.2	-24.1
Relative	-13.5	-11.2	-26.1

#### Earnings and valuation metrics

(FY Dec. 31)	2021	2022	2023	2024F	2025F
Revenue (IDRbn)	336	904	926	1,160	1,565
Gross profit (IDRbn)	175	541	382	424	594
Op. profit (loss) (IDRbn)	132	440	287	325	445
Net profit (loss) (IDR)	74	302	151	206	278
EPS (IDR)	81	337	169	241	319
BPS (IDR)	714	1,107	1,312	1,787	2,301
P/E (x)	13.7	3.3	6.6	4.6	3.5
EV/EBITDA (x)	7.2	2.2	3.0	2.7	2.1
ROE (%)	11.4	30.4	12.9	13.5	13.9

Notes: Using closing price data as of June 13, 2024

Source: Company data, Mirae Asset Sekuritas Indonesia Research estimates

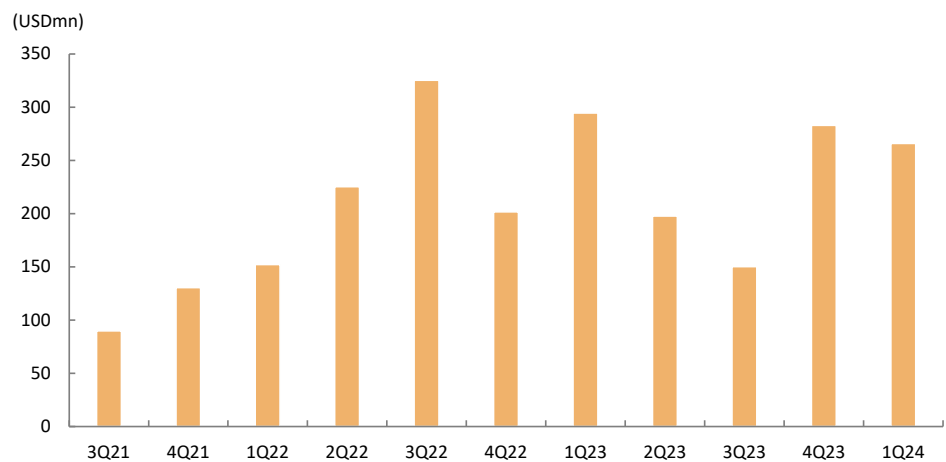
## Latest financial performance review

### 1Q24 result review

#### Quarterly revenue declined on lower nickel ASP

In 1Q24, HRUM's revenue declined by 6.0% QoQ to USD266mn. The decline was mainly driven by a 10.4% QoQ decrease in the ASP of nickel, from USD12,765/ton to USD11,439/ton, despite robust coal segment performance topped by a slight increase in ASP and strong production improvement. Overall, HRUM recorded USD165mn in revenue from its coal segment, while nickel contributed USD97mn to the company's total 1Q24 revenue. This result was fairly in line with our/consensus estimates, representing a run rate of 23%/25% of FY24F estimates.

**Figure 1. HRUM's quarterly revenue**



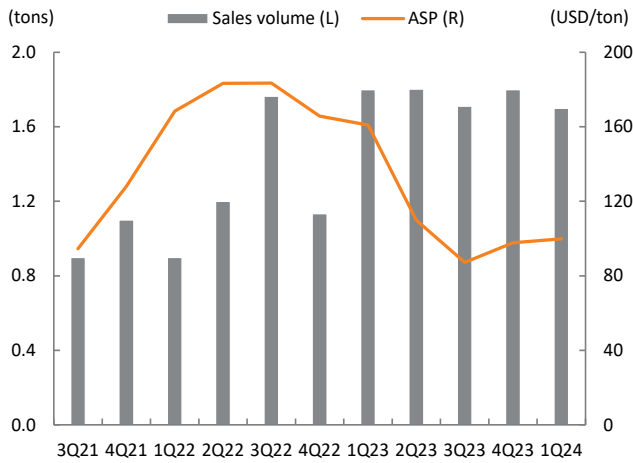
Source: Company data, Mirae Asset Sekuritas Indonesia Research

#### Coal performed well, nickel lagged

In the coal segment, HRUM's 1Q24 production increased to 1.9mn tons (26.7% QoQ, +10.5% YoY), while sales volume slightly declined by 5.6% QoQ to 1.7mn tons. China remains the main export destination, followed by Japan and Bangladesh. Notably, there was a pickup in coal sales contribution to Vietnam, reaching 12% of total sales. HRUM's coal operation remained robust in the first quarter of 2024, with a run rate of ~30% of our 2024F production estimate of ~6.5mn tons. Considering the rapidly fluctuating coal prices amidst global economic uncertainties, which might deter overall demand for coal, we remain conservative and maintain our revenue projections for HRUM's coal segment.

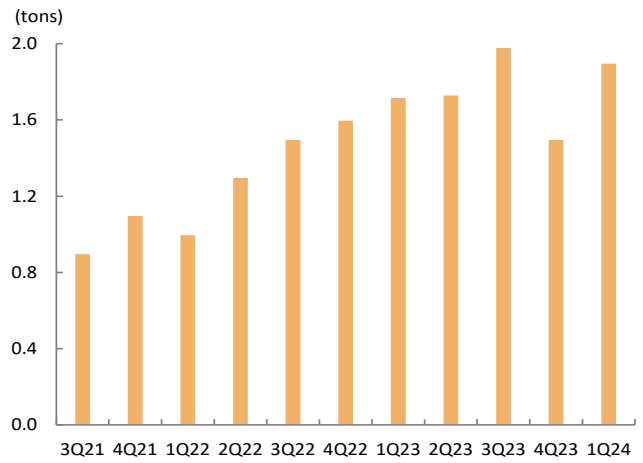
In the nickel segment, HRUM produced 8,286 tons of nickel (+8.5% QoQ). While nickel production from IMI declined by 25.3% QoQ to 5,800 tons, WMI entered commercial production in March 2024 and produced 2,486 tons of high-grade nickel matte. Despite the production decline from IMI, which brought its nickel sales volume down by 13.7% QoQ to 6,765 tons, HRUM's total nickel sales volume still improved by 8.5% QoQ to 8,509 tons, supported by the sales volume from WMI, which stood at 1,744 tons. As of 1Q24, HRUM's revenue from nickel stood at USD97mn with a run rate of ~16% of our estimate. We expect some improvement in the coming quarters following the gradual increase in production from WMI, which should be more visible in 2Q24.

**Figure 2. Quarterly coal sales volume and ASP**



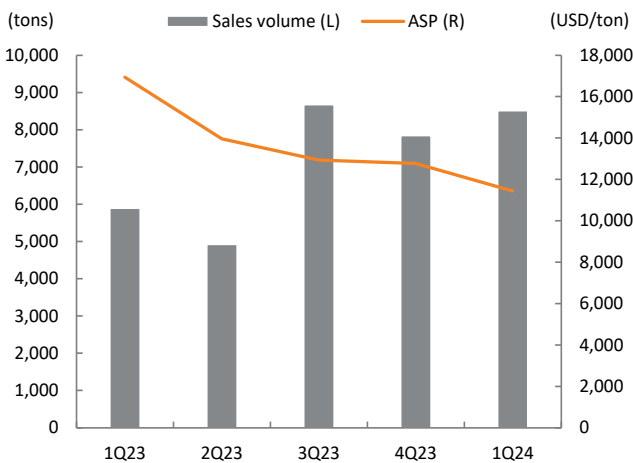
Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 3. Quarterly coal production**



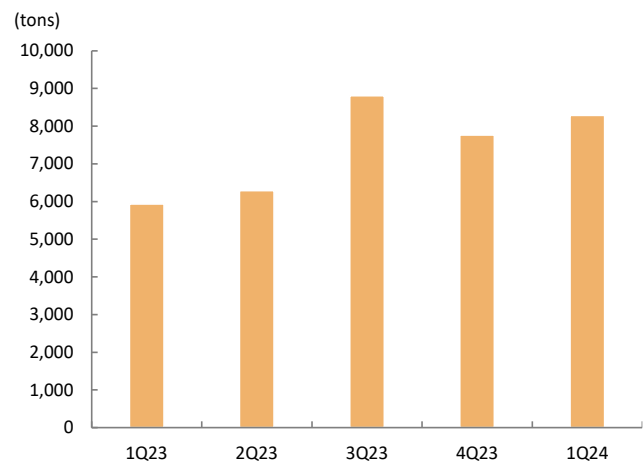
Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 4. Quarterly nickel sales volume and ASP**



Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 5. Quarterly nickel production**



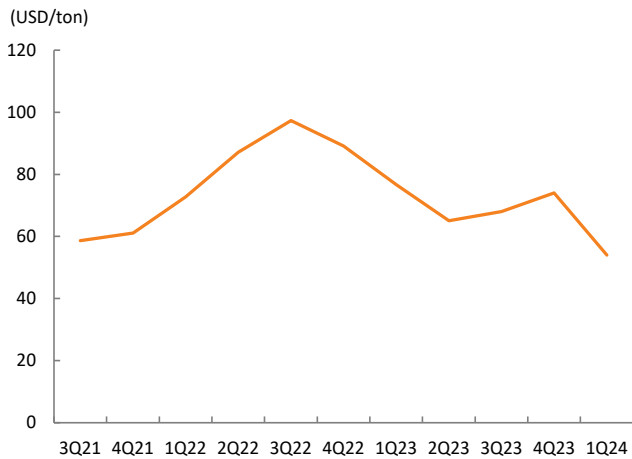
Source: Company data, Mirae Asset Sekuritas Indonesia Research

**1Q24 coal cost improved, nickel remained volatile**

On the cost side, HRUM's coal production cash cost per ton decreased by 26.6% QoQ in 1Q24, primarily due to lower mining costs from a lower stripping ratio (9.8x vs. 15.5x in the previous quarter) and the reversal of a past DMO provision of USD 17.8mn. Despite a higher stripping ratio in 1Q24 compared to 1Q23 (7.5x), the production cash cost per ton decreased by 29.1% YoY. Overall, 1Q24 cash cost stood at ~USD54/ton, backed by the factors mentioned earlier and lower royalty expenses per ton. We anticipate that the cash cost may normalize to around USD65-75/ton in the coming quarters, as the DMO provision reversal might be a one-off adjustment.

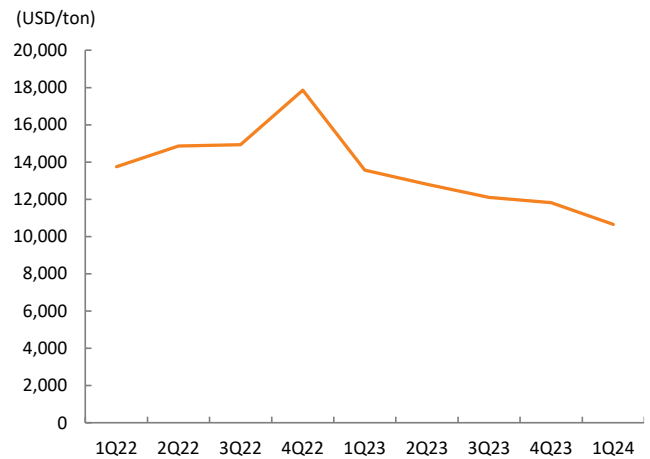
In the nickel segment, HRUM's cash cost improved slightly, declining by 4.3% QoQ and 21.5% YoY. We believe HRUM's nickel segment operating costs haven't stabilized yet, mainly due to WMI's recent commissioning and production ramp-up. The company indicated that WMI's cash cost might be slightly higher initially before stabilizing by the end of 2Q24.

**Figure 6. Quarterly coal cash cost**



Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 7. Quarterly nickel cash cost**

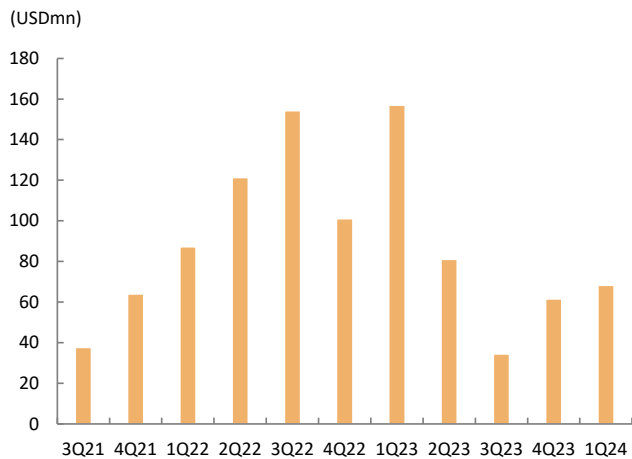


Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Result was inline until EBITDA, PATMI was hit by a loss in fair value adjustment**

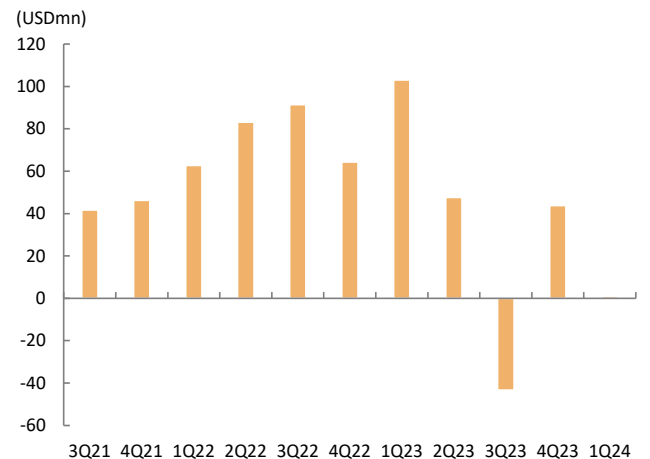
With the aforementioned dynamics, HRUM's combined EBITDA stood at USD92mn, with a consolidated EBITDA margin of 26%, slightly better than the previous quarter's margin of approximately 22%. As previously indicated, margins may be squeezed in the coming quarters and move downward to around the 4Q23 level. Overall, HRUM's 1Q24 EBITDA stood at a run rate of 26% and 33% to our/consensus estimate. Note that in terms of net profit, as HRUM recorded another loss of fair value adjustment during this quarter of ~USD31mn, its net profit for 1Q24 stood at USD1mn. Excluding the adjustments, the company's normalized PATMI in 1Q24 would have been ~USD32mn.

**Figure 8. Quarterly EBITDA trajectory**



Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 9. Quarterly net profit trajectory**



Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Table 1. HRUM's 1Q24 net profit normalization****(USDmn)**

	1Q23	1Q24	chg. (% YoY)
Operating profit / loss	144.2	68.2	-52.7%
Share in profit of an associate	14.7	0.9	
Other income / expenses including adjustments	0.8	-40.6	
Profit before income tax – as reported	159.7	28.5	-82.1%
Reversal of one-time adjustments to other income/loss related to investment in associate before obtaining control	-	30.7	
<b>Normalized profit before income tax</b>	<b>159.7</b>	<b>59.3</b>	<b>-62.9%</b>
Income tax expense	-32.1	-18.3	
<b>Normalized NPAT</b>	<b>127.6</b>	<b>40.9</b>	<b>-67.9%</b>
<b>Normalized PATMI</b>	<b>103.0</b>	<b>31.7</b>	<b>-69.2%</b>

Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Table 2. HRUM's 1Q24 result run rate****(USDmn)**

Run rate	1Q24 Actual (a)	2024F MASI (b)	2024F Consensus (c)	(a)/(b) (%)	(a)/(c) (%)	Comment
Revenue	266	1,160	1,075	22.9	24.7	In line/Above
EBITDA	92	353	282	26.1	32.7	In line /Above
Operating profit	68	325	241	21.0	28.4	In line/ In line
Net profit	1	206	185	0.5	0.5	Below/Below

Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Table 3. HRUM's 1Q24 key financial highlight****(USDmn)**

	1Q23	4Q23	1Q24	chg. (% QoQ)	chg. %, (YoY)
Revenue	295	283	266	-6.0	-9.7
COGS	132	200	196	-2.1	48.7
Gross profit	163	83	70	-15.5	-57.0
Opex	19	30	2	-93.7	-90.0
EBITDA	159	65	92	42.8	-42.1
Operating profit	144	53	68	27.8	-52.7
Profit before income tax	160	65	29	-56.0	-82.1
Income tax expenses	32	14	18	29.6	-42.9
Net profit	103	44	1	-97.7	-99.0
<b>Margins (%)</b>					
Gross profit margin	55.3	29.3	26.3	-10.1	-52.3
EBITDA margin	53.3	21.8	25.6	17.9	-51.9
Operating profit margin	49.0	18.9	25.6	36.0	-47.6
Net profit margin	43.3	17.9	3.8	-78.6	-91.1
<b>Operational data</b>					
Coal production (mn tons)	1.7	1.5	1.9	26.7	10.5
Coal sales Volume (mn tons)	1.8	1.8	1.7	-5.6	-5.6
Coal ASP (USD/ton)	161	98	100	2.1	-37.9
Stripping ratio (x)	7.5	15.5	9.8	-36.8	30.7
Cash cost (USD/ton)	77	74	54	-26.6	-29.1
Nickel production (tons)	5,935	7,763	8,286	6.7	39.6
Nickel sales Volume (tons)	5,892	7,842	8,509	8.5	44.4
Nickel ASP (USD/ton)	16,938	12,765	11,439	-10.4	-32.5
Cash cost (USD/ton)	13,561	11,132	10,651	-4.3	-21.5

Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Nickel segment development progress**

We are quite optimistic on HRUM's transition to a major nickel player in Indonesia. However, as of now, we believe its nickel business's translation into financials and profitability may still fluctuate as the company commissions and ramps up production. Recent major updates in HRUM's nickel segment include WMI entering commercial production in March 2024, producing 2,486 tons and selling 1,744 tons of high-grade nickel matte at an average selling price (ASP) of USD 13,686 per ton (a ~27% discount to the LME benchmark). BSE is still under development, with major equipment deliveries expected in Q4 2024. POS's inaugural nickel ore production is underway this year, with drilling in progress.

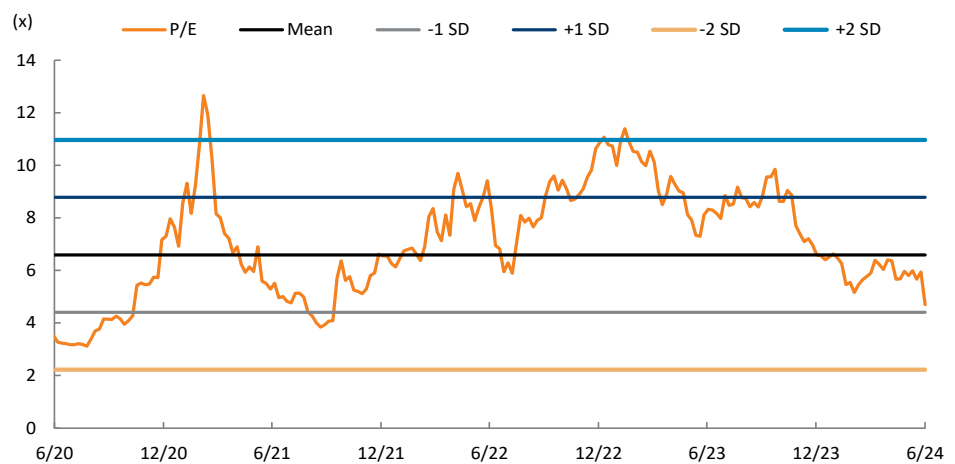
**Maintain Buy with a TP of IDR1,860/share**

As HRUM is still in the process of consolidating its nickel business segment, its financials might be subject to adjustments in accounting treatments, including fair value adjustments. We are assessing future fair value adjustments and may revise our projections accordingly.

Currently, our target price is IDR 1,860 per share, implying an FY24F P/E of 7.7x. This is derived by assigning a P/E target multiple of 6.2x to the coal segment (approximately 54% of total 2024 net profit, at -0.5 SD of HRUM's 5-year average P/E) and 10.9x to the nickel segment (approximately 46% of total FY24 net profit, based on the average P/E of domestic nickel players).

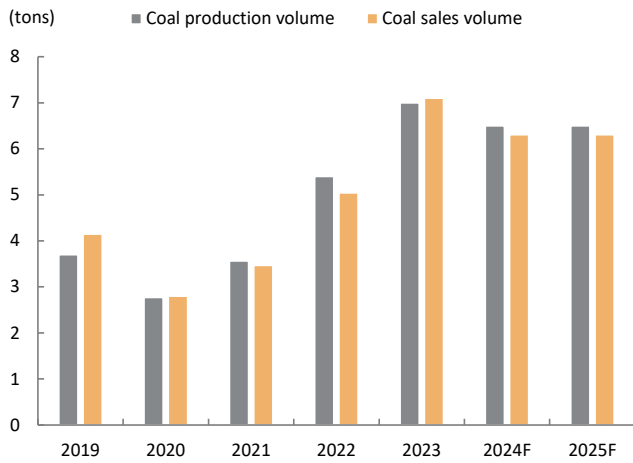
Risks to our recommendation include: 1) lower nickel and coal demand and prices due to sluggish economic activity in China and persistent global nickel oversupply condition; 2) delays in project development execution; and 3) potential loss from fair value adjustments.

**Figure 10. HRUM's forward P/E band**



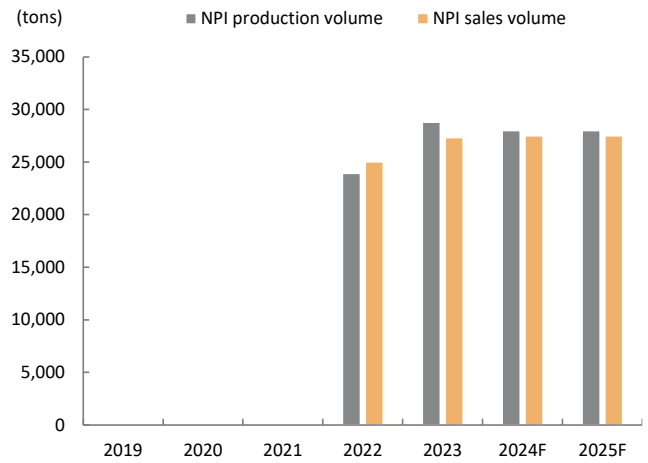
Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 11. Coal production and sales volume**



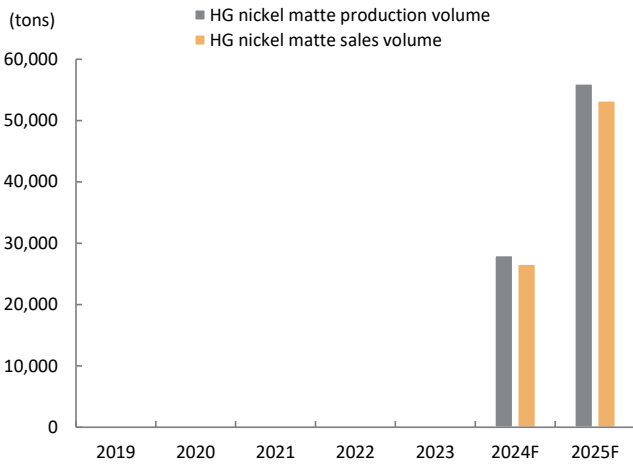
Source : Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 12. NPI production and sales volume**



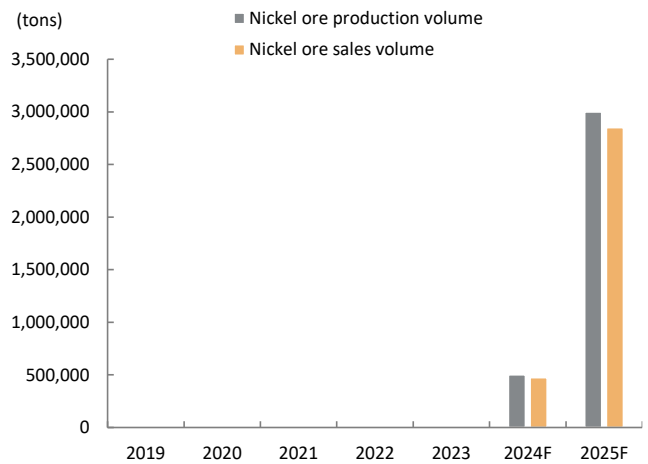
Source : Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 13. Nickel production and sales volume**



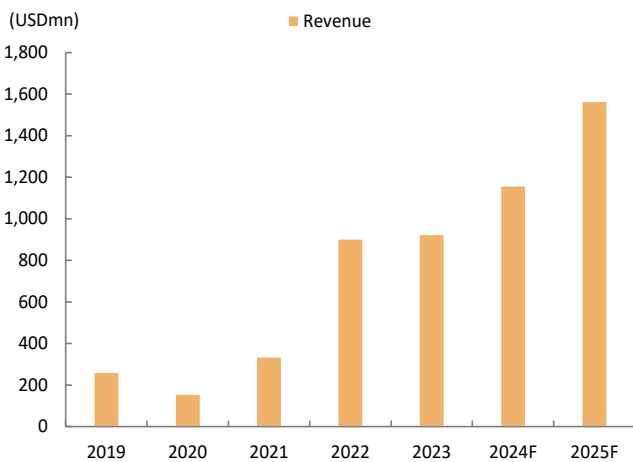
Source : Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 14. Nickel ore production and sales volume**



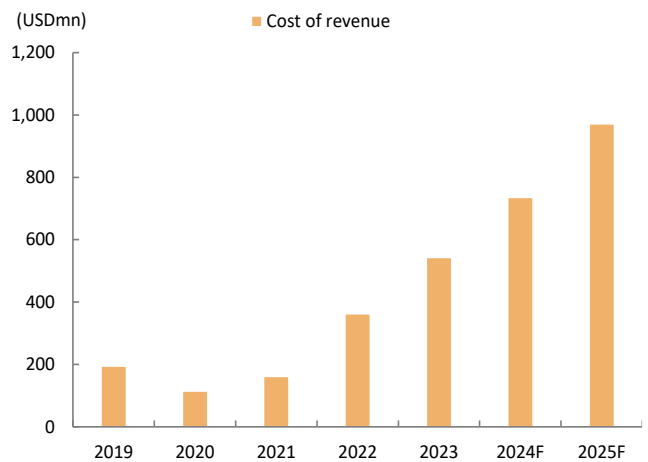
Source : Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 15. Revenue trajectory**



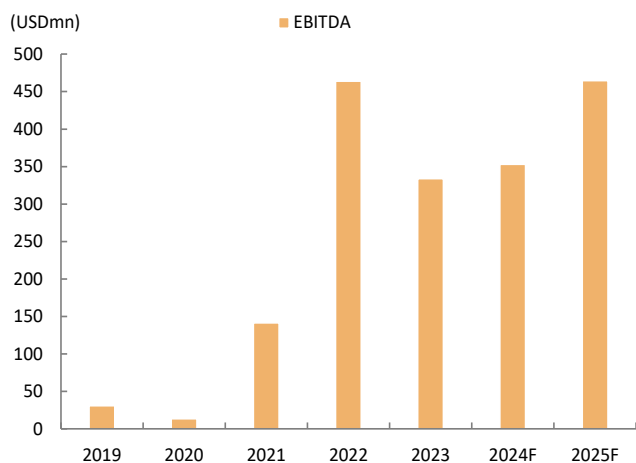
Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 16. Cost of revenue trajectory**



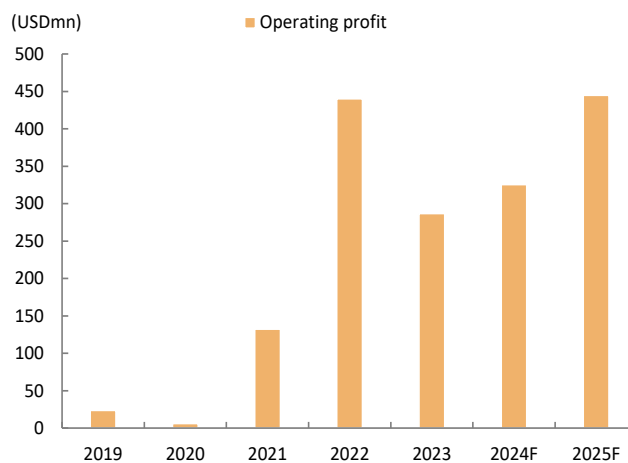
Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 17. EBITDA trajectory**



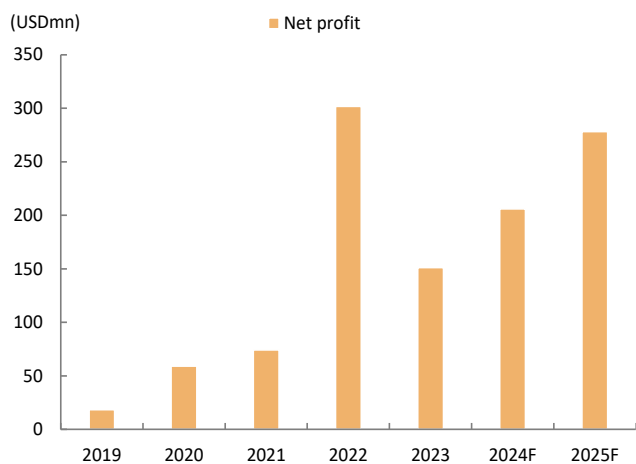
Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 18. Operating profit trajectory**



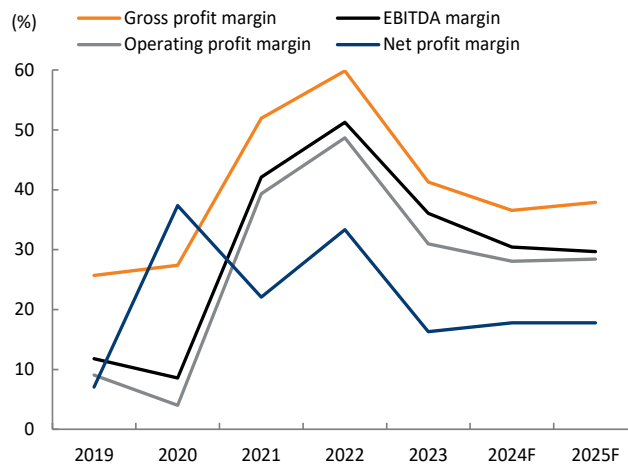
Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 19. Net profit trajectory**



Source: Company data, Mirae Asset Sekuritas Indonesia Research

**Figure 20. Margins trajectory**



Source: Mirae Asset Sekuritas Indonesia Research



## Harum Energy (HRUM IJ)

## Income statement (summarized)

(USDmn)	12/22	12/23	12/24F	12/25F
<b>Revenue</b>	<b>904</b>	<b>926</b>	<b>1,160</b>	<b>1,565</b>
Cost of sales	363	543	736	972
<b>Gross profit</b>	<b>541</b>	<b>382</b>	<b>424</b>	<b>594</b>
Operating expenses	363	543	736	972
EBITDA	464	334	353	465
<b>Operating profit</b>	<b>440</b>	<b>287</b>	<b>325</b>	<b>445</b>
Interest income/expense	-1	13	16	18
Other income	38	-37	5	5
<b>Pretax profit</b>	<b>478</b>	<b>263</b>	<b>346</b>	<b>468</b>
Income taxes	98	67	80	108
Minority interest	78	45	61	82
<b>Net profit</b>	<b>302</b>	<b>151</b>	<b>206</b>	<b>278</b>
<b>Margin (%)</b>				
Gross margin	59.9	41.3	36.6	37.9
EBITDA margin	51.3	36.1	30.4	29.7
Operating margin	48.7	31.0	28.1	28.4
Net margin	33.4	16.3	17.8	17.8
<b>Growth (%)</b>				
Revenue	169.0	2.3	25.3	35.0
Cost of sales	124.7	49.6	35.5	32.1
Gross profit	210.0	-29.4	10.9	40.0
Operating expenses	138.9	-5.7	3.2	50.8
EBITDA	227.8	-28.0	5.7	31.6
Operating profit	232.8	-34.8	13.5	36.7
Other income/expenses	-896.3	-163.9	-187.9	11.3
Pretax profit	274.3	-44.9	31.7	35.1
Income taxes	236.1	-31.1	18.1	35.4
Net profit	306.9	-49.9	36.4	35.0

## Balance sheet (summarized)

(USDmn)	12/22	12/23	12/24F	12/25F
<b>Current Assets</b>				
Cash	371	157	235	413
Account receivables	92	130	142	193
Inventories	43	78	92	121
Others	14	67	77	104
<b>Non-current assets</b>				
Investment in associates	389	226	193	174
Fixed assets	52	169	131	119
Mine properties	273	253	239	231
Others	45	553	1,116	1,529
<b>Total assets</b>	<b>1,279</b>	<b>1,633</b>	<b>2,224</b>	<b>2,885</b>
<b>Current liabilities</b>				
Account payable	96	105	206	278
Accrued expense	62	39	127	168
ST financials	1	72	86	87
Others	66	41	3	4
<b>Non-current liabilities</b>				
LT financials	1	137	164	197
Others	60	65	110	145
<b>Total liabilities</b>	<b>287</b>	<b>458</b>	<b>696</b>	<b>879</b>
Capital stock	29	29	29	29
Additional paid in capital	170	170	170	170
Retained earnings	543	694	961	1,321
Minority interest	258	289	376	494
<b>Total equities</b>	<b>992</b>	<b>1,175</b>	<b>1,529</b>	<b>2,007</b>
<b>Growth (%)</b>				
Total assets	46.2	27.7	36.2	29.7
Total liabilities	28.4	60.0	51.8	26.3
Total equities	52.3	18.4	30.1	31.3

## Forecast/Valuations (Summarized)

	12/22	12/23	12/24F	12/25F
P/E (x)	3.3	6.6	4.6	3.5
P/B (x)	1.0	0.8	0.6	0.5
EPS (IDR)	337	169	241	319
BPS (IDR)	1,107	1,312	1,787	2,301
DPS (IDR)	15.4	0.0	0.0	0.0
Payout ratio (%)	4.6	0.0	0.0	0.0
Div. yield (%)	0.8	0.0	0.0	0.0
Revenue growth (%)	169.0	2.3	25.3	35.0
EBITDA growth (%)	227.8	-28.0	5.7	31.6
Operating profit growth (%)	232.8	-34.8	13.5	36.7
Net profit growth (%)	306.9	-49.9	36.4	35.0
A/R turnover (x)	9.9	7.1	8.2	8.1
Inventory turnover (x)	8.4	7.0	8.0	8.0
A/P turnover (x)	17.1	5.9	9.9	9.9
ROA (%)	23.6	9.2	9.3	9.6
ROE (%)	30.4	12.9	13.5	13.9
Current ratio (X)	2.3	1.7	1.3	1.6
Gross debt/equity (%)	0.2	17.7	16.4	14.1
Net debt/equity (%)		Net cash	Net cash	Net cash

Source: Company data, Mirae Asset Sekuritas Indonesia Research estimates

## Cash flow (Summarized)

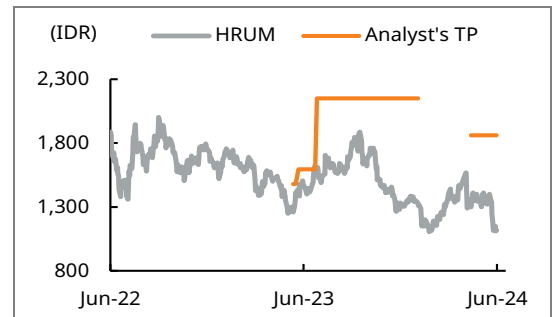
(USDmn)	12/22	12/23	12/24F	12/25F
<b>Operating cash flow</b>				
Net profit	302	151	206	278
Depreciation	-57	-98	-114	-127
Change in working capital	62	2	44	57
Others	91	155	0	0
<b>Investment cash flow</b>	<b>-103</b>	<b>9</b>	<b>-87</b>	<b>-45</b>
Capex	-10	-109	10	5
Others	-93	118	-45	-30
<b>Financing cash flow</b>	<b>-74</b>	<b>-433</b>	<b>29</b>	<b>15</b>
Change in financial liabilities	-98	206	42	33
Change in equity	36	0	0	0
Dividend	-14	-63	-13	-18
Others	1	-576	0	0
<b>Increase (Decrease) in Cash</b>	<b>221</b>	<b>-213</b>	<b>77</b>	<b>179</b>
<b>Beginning Balance</b>	<b>149</b>	<b>371</b>	<b>157</b>	<b>235</b>
<b>Ending Balance</b>	<b>371</b>	<b>157</b>	<b>235</b>	<b>413</b>

## Appendix 1

### Important disclosures and disclaimers

#### Two-year rating and TP history

Company	Date	Rating	TP (IDR)
Harum Energy (HRUM JJ)	6/14/2024	Buy	1,860
	4/26/2024	Buy	1,860
	1/18/2024	Under review	
	12/7/2023	Buy	2,150
	9/19/2023	Buy	2,150
	8/4/2023	Buy	2,150
	7/10/2023	Buy	2,150
	6/5/2023	Trading Buy	1,595
	5/26/2023	Trading Buy	1,480



#### Stock ratings

Buy	Expected 12-month performance: +20% or greater
Trading Buy	Expected 12-month performance: +10% to +20%
Hold	Expected 12-month performance: -10% to +10%
Sell	Expected 12-month performance: -10% or worse

#### Sector ratings

Overweight	Expected to outperform the market over 12 months
Neutral	Expected to perform in line with the market over 12 months
Underweight	Expected to underperform the market over 12 months

Rating and TP history: Share price (—), TP (—), Not Rated (■), Buy (▲), Trading Buy (■), Hold (●), Sell (◆)

\* Our investment rating is a guide to the expected return of the stock over the next 12 months.

\* Outside of the official ratings of PT Mirae Asset Sekuritas Indonesia, analysts may call trading opportunities should technical or short-term material developments arise.

\* The TP was determined by the research analyst through valuation methods discussed in this report, in part based on estimates of future earnings.

\* TP achievement may be impeded by risks related to the subject securities and companies, as well as general market and economic conditions.

#### Disclosures

As of the publication date, PT Mirae Asset Sekuritas Indonesia ("MASID") and/or its affiliates do not have any special interest in the subject company and do not own 1% or more of the subject company's shares outstanding.

#### Analyst certification

The research analysts who prepared this report (the "Analysts") are certified to the Indonesia Financial Services Authority and are subject to Indonesian Capital Market regulations. They are neither registered as research analysts in any other jurisdiction nor subject to the laws or regulations thereof. Each Analyst responsible for the preparation of this report certifies that (i) all views expressed in this report accurately reflect the personal views of the Analyst about any and all of the issuers and securities named in this report; (ii) no part of the compensation of the Analyst was, is, or will be directly or indirectly related to the specific recommendations or views contained in this report; and (iii) The report does not contain any material non-public information. Except as otherwise specified herein, the Analysts have not received any compensation or any other benefits from the subject companies in the past 12 months and have not been promised the same in connection with this report. Like all employees of MASID, the Analysts receive compensation that is determined by overall firm profitability, which includes revenues from, among other business units, the institutional equities, investment banking, proprietary trading, and etc. At the time of publication of this report, the Analysts do not know or have reason to know of any actual, material conflict of interest of the Analyst or MASID except as otherwise stated herein.

#### Disclaimers

This report was prepared by MASID, a broker-dealer registered in the Republic of Indonesia and a member of the Indonesia Stock Exchange; on behalf of MASID and its affiliated companies and is provided for information purposes only. Information and opinions contained herein have been compiled in good faith and from sources believed to be reliable, but such information has not been independently verified and MASID (including but not limited to the Analyst, respective employees who owns the expertise) makes no guarantee, representation or warranty, express or implied, as to the fairness, accuracy, completeness, or correctness of the information and opinions contained herein or of any translation into English from the Indonesia language or as to any information contained in this report or any other such information or opinions remaining unchanged after the issue thereof. In case of an English translation of a report prepared in the Indonesia language, the original Indonesian language report may have been made available to investors in advance of this report. The intended recipients of this report are sophisticated institutional investors who have substantial knowledge of the local business environment, its common practices, laws, and accounting principles, and no person whose receipt or use of this report would violate any laws or regulations or subject MASID or any of its affiliates to registration or licensing requirements in any jurisdiction shall receive or make any use hereof.

This report is for general information purposes only and is not and shall not be construed as an offer or a solicitation of an offer to effect transactions in any securities or other financial instruments. The report does not constitute investment advice to any person, and such person shall not be treated as a client of MASID by virtue of receiving this report. This report does not take into account the particular investment objectives, financial situations, or needs of individual clients. The report is not to be relied upon in substitution for the exercise of independent judgment. Information and opinions contained herein are as of the date hereof and are subject to change without notice. The price and value of the investments referred to in this report and the income from them may depreciate or appreciate, and investors may incur losses on investments. Past performance is not a guide to future performance. Future returns are not guaranteed, and a loss of original capital may occur. Please note that the graphs, charts, formulae, or other devices set out or referred to in this document cannot, in and of itself, be used to determine in deciding which securities to buy or sell, or when to buy or sell a securities. MASID, its affiliates, and their directors, officers, employees, and agents do not accept any liability (express or implied) for any loss arising out of the use hereof and howsoever arising (including, but not limited to any claims, proceeding, action, suits, losses, expenses, damages or costs) which may be brought against or suffered by any person as a result of acting in reliance upon the whole or any part of the contents of this report.

MASID may have issued other reports that are inconsistent with, and reach different conclusions from, the opinions presented in this report. The reports may reflect different assumptions, views, and analytical methods of the analysts who prepared them. MASID may make investment decisions that are inconsistent with the opinions and views expressed in this research report. MASID, its affiliates, and their directors, officers, employees, and agents may

have long or short positions in any of the subject securities at any time and may make a purchase or sale, or offer to make a purchase or sale, of any such securities or other financial instruments from time to time in the open market or otherwise, in each case either as principals or agents. MASID and its affiliates may have had, or may be expecting to enter into, business relationships with the subject companies to provide investment banking, market-making, or other financial services as are permitted under the applicable laws and regulations. In considering any investments you should make your own independent assessment and seek your own professional financial and legal advisors. Should you choose not to seek such advice, you should consider carefully whether the securities is suitable for you.

No part of this document may be copied or reproduced in any manner or form or redistributed or published, in whole or in part, without the prior written consent of MASID. The media is not allowed to quote this report in any article whether in full or in parts without permission from MASID. For further information regarding company-specific information as it pertains to the representations and disclosures in this Appendix 1, please contact [researchteam@miraeeasset.co.id](mailto:researchteam@miraeeasset.co.id) or +62 (21) 5088-7000.

#### **Distribution**

**United Kingdom:** This report is being distributed by Mirae Asset Securities (UK) Ltd. in the United Kingdom only to (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"), and (ii) high net worth companies and other persons to whom it may lawfully be communicated, falling within Article 49(2)(A) to (E) of the Order (all such persons together being referred to as "Relevant Persons"). This report is directed only at Relevant Persons. Any person who is not a Relevant Person should not act or rely on this report or any of its contents.

**United States:** MASID is not a registered broker-dealer in the United States and, therefore, is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. This report is distributed in the U.S. by Mirae Asset Securities (USA) Inc., a member of FINRA/SIPC, to "major U.S. institutional investors" in reliance on the exemption from registration provided by Rule 15a-6(b)(4) under the U.S. Securities Exchange Act of 1934, as amended. All U.S. persons that receive this document by their acceptance hereof represent and warrant that they are a major U.S. institutional investor and have not received this report under any express or implied understanding that they will direct commission income to MASID or its affiliates. Any U.S. recipient of this document wishing to effect a transaction in any securities discussed herein should contact and place orders with Mirae Asset Securities (USA) Inc. Mirae Asset Securities (USA) Inc. accepts responsibility for the contents of this report in the U.S., subject to the terms hereof, to the extent that it is delivered to a U.S. person other than a major U.S. institutional investor. Under no circumstances should any recipient of this research report effect any transaction to buy or sell securities or related financial instruments through MASID. The securities described in this report may not have been registered under the U.S. Securities Act of 1933, as amended, and, in such case, may not be offered or sold in the U.S. or to U.S. persons absent registration or an applicable exemption from the registration requirements.

**Hong Kong:** This report is distributed in Hong Kong by Mirae Asset Securities (HK) Limited, which is regulated by the Hong Kong Securities and Futures Commission. The contents of this report have not been reviewed by any regulatory authority in Hong Kong. This report is for distribution only to professional investors within the meaning of Part I of Schedule 1 to the Securities and Futures Ordinance of Hong Kong (Cap. 571, Laws of Hong Kong) and any rules made thereunder and may not be redistributed in whole or in part in Hong Kong to any person.

**India:** This report is being distributed by Mirae Asset Capital Markets (India) Private Limited ("MACM") in India to the customers based in India and is personal information only for those authorised recipient(s). MACM is inter alia a Securities and Exchange Board of India ("SEBI") registered Research Analyst in India and is not registered outside India. MACM and Mirae Asset, Korea are group entities. MACM makes no guarantee, representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information and opinions contained herein. The user assumes the entire risk of any use made of this information. This report has been provided for assistance only and is not intended to be and must not alone be taken as the basis for an investment decision. Recipient must read the entire Appendix 1 to the report carefully for Important Disclosures & Disclaimers.

**All other jurisdictions:** Customers in all other countries who wish to effect a transaction in any securities referenced in this report should contact MASID or its affiliates only if distribution to or use by such customer of this report would not violate applicable laws and regulations and not subject MASID and its affiliates to any registration or licensing requirement within such jurisdiction.

## Mirae Asset Securities International Network

### Mirae Asset Securities Co., Ltd. (Seoul)

One-Asia Equity Sales Team  
Mirae Asset Center 1 Building  
26 Eulji-ro 5-gil, Jung-gu, Seoul 04539  
Korea

Tel: 82-2-3774-2124

### Mirae Asset Securities (USA) Inc.

810 Seventh Avenue, 37th Floor  
New York, NY 10019  
USA

Tel: 1-212-407-1000

### Mirae Asset Securities (Singapore) Pte. Ltd.

6 Battery Road, #11-01  
Singapore 049909  
Republic of Singapore

Tel: 65-6671-9845

### Mirae Asset Investment Advisory (Beijing) Co., Ltd

2401B, 24th Floor, East Tower, Twin Towers  
B12 Jianguomenwai Avenue, Chaoyang District  
Beijing 100022  
China

Tel: 86-10-6567-9699

### Ho Chi Minh Representative Office

7F, Saigon Royal Building  
91 Pasteur St.  
District 1, Ben Nghe Ward, Ho Chi Minh City  
Vietnam

Tel: 84-8-3910-7715

### Mirae Asset Securities (HK) Ltd.

Units 8501, 8507-8508, 85/F  
International Commerce Centre  
1 Austin Road West  
Kowloon  
Hong Kong  
Tel: 852-2845-6332

### Mirae Asset Wealth Management (Brazil) CCTVM

Rua Funchal, 418, 18th Floor, E-Tower Building  
Vila Olimpia  
Sao Paulo - SP  
04551-060  
Brazil  
Tel: 55-11-2789-2100

### Mirae Asset Securities (Vietnam) LLC

7F, Saigon Royal Building  
91 Pasteur St.  
District 1, Ben Nghe Ward, Ho Chi Minh City  
Vietnam

Tel: 84-8-3911-0633 (ext.110)

### Beijing Representative Office

2401A, 24th Floor, East Tower, Twin Towers  
B12 Jianguomenwai Avenue, Chaoyang District  
Beijing 100022  
China

Tel: 86-10-6567-9699 (ext. 3300)

### Mirae Asset Capital Markets (India) Pvt Ltd

1st Floor, Tower 4, Equinox Business Park,  
LBS Marg, Off BKC, Kurla (West), Mumbai - 400 070  
India

Tel: 91-22-62661300 / 48821300

### Mirae Asset Securities (UK) Ltd.

41st Floor, Tower 42  
25 Old Broad Street,  
London EC2N 1HQ  
United Kingdom

Tel: 44-20-7982-8000

### PT. Mirae Asset Sekuritas Indonesia

District 8, Treasury Tower Building Lt. 50  
Sudirman Central Business District  
Jl. Jend. Sudirman, Kav. 52-54  
Jakarta Selatan 12190  
Indonesia  
Tel: 62-21-5088-7000

### Mirae Asset Securities Mongolia UTsk LLC

#406, Blue Sky Tower, Peace Avenue 17  
1 Khoroov, Sukhbaatar District  
Ulaanbaatar 14240  
Mongolia

Tel: 976-7011-0806

### Shanghai Representative Office

38T31, 38F, Shanghai World Financial Center  
100 Century Avenue, Pudong New Area  
Shanghai 200120  
China

Tel: 86-21-5013-6392