

# Masan High-Tech Materials (UpCom: MSR)

Rare listed gateway to global ex-China tungsten upcycle

---

Company Report – March 2026

# MSR - Rare listed gateway to global ex-China tungsten upcycle [Company Report]

Industry	Critical Materials
Report Date	March 18, 2026
Current price	VND50,800
Base-case fair price	VND53,600
Upside to fair price	5.5%
Dividend yield	0.0%
TSR	5.5%

Market Cap	USD2,149mn
Foreign Room	USD2,146.6mn
30D ATDV	USD7.4mn
State Ownership	0%
Free Float	5%
Outstanding shares	1,099.8mn
Fully Diluted O/S	1,099.8mn

2026F (base case)	MSR
EV/EBITDA	9.1x
P/E	14.4x
P/B	3.5x
ROE	27.5%
ROA	13.0%

## Company overview

MSR is one of the world's leading strategic tungsten suppliers, representing ~21% of global ex-China tungsten supply on average over 2020–2025. The company's key assets are the Nui Phao polymetallic mine and an integrated tungsten refining facility in Thai Nguyen. Beyond tungsten, MSR generates additional revenue from fluorspar, copper, and bismuth recovered from the Nui Phao resource base.

	2025	2026F	2027F	2028F
Revenue (VND bn)	7,443	28,615	33,595	37,506
Revenue % YoY	-48%	284%	17%	12%
EBITDA (VND bn)	1,865	7,164	12,860	16,052
EBITDA % YoY	31%	284%	80%	25%
NPAT-MI (VND bn)	11	3,876	8,833	11,879
NPAT-MI % YoY	-101%	34,225%	128%	34%
GPM	18.5%	20.2%	34.1%	38.9%
EBITDA margin	25.1%	25.0%	38.3%	42.8%
OPM	16.1%	19.6%	33.5%	38.4%
NPM	0.2%	13.5%	26.3%	31.7%
FCF/Sales	2%	24%	30%	34%
EV/EBITDA	35.1x	9.1x	5.1x	4.1x
P/E	4,947.4x	14.4x	6.3x	4.7x
ROE	0.1%	27.5%	43.1%	38.9%

- MSR is one of the world's largest strategic tungsten suppliers outside China, with operations in Vietnam, representing ~21% of global ex-China tungsten supply\*. Its core assets are the Nui Phao polymetallic mine (NPMC) and the Masan Tungsten Company (MTC), an integrated tungsten refining facility in Thai Nguyen. In addition to tungsten, MSR also monetizes fluorspar, copper, and bismuth from the Nui Phao resource base.
- The company operates an integrated mine-to-midstream refining model. NPMC produces tungsten concentrate (TC), fluorspar, copper, and bismuth, while MTC upgrades internally sourced TC, together with externally sourced tungsten concentrate (ExTC), into higher value-added tungsten products such as APT, YTO, and BTO. By contrast, fluorspar, copper, and bismuth are sold directly after extraction.
- Tungsten is currently MSR's largest business, contributing ~60% of revenue in 2025, followed by fluorspar (~19%), copper (~18%) and bismuth which makes up the rest. While fluorspar has historically been the most stable gross profit contributor, supported by a stable gross margin of ~60–65%, tungsten and copper remain the key swing drivers of gross profit.
- Looking forward, we expect tungsten to become the dominant driver of both revenue and earnings, accounting for ~90% of aggregate 2026–36F revenue and ~85% of aggregate gross profit, underpinned primarily by the global tungsten price upcycle.
- Upside potential:** Higher-than-expected tungsten prices and stronger-than-expected feed grades. Our base case assumes a 2026–28F average tungsten price of USD1,680–1,700/MTU (vs ~USD2,100/MTU currently\*\*, per Fastmarkets) and a more conservative production forecast vs the company's plan. Assuming 2026–28F tungsten prices remain at ~USD2,000/MTU, full production delivery, and base-case EV/EBITDA multiples, Bull Case 1 yields a hypothetical price of **VND69,200/share**, while Bull Case 2 - assuming base-case operations but a higher multiple re-rating - implies a hypothetical price of **VND74,500/share** (details on [slide 34](#)).

# Investment Thesis

---

## **Structural ex-China tungsten supply tightness has driven a sharp price rally, and we expect prices to remain structurally elevated**

1

The global tungsten market, excluding China, remains structurally tight, with supply still highly concentrated in China (~80% of global production and >50% of reserves in 2025), while scalable ex-China alternatives remain limited. Demand is increasingly supported by strategic end-markets such as defense, semiconductors, and EV batteries, and remains relatively inelastic given tungsten's unique physical and chemical properties and low share of end-product cost (per MSR). Prices have re-rated sharply—from ~USD330/MTU in early 2025 to ~USD2,100/MTU currently\*—driven by tighter Chinese supply, export restrictions, and growing supply-chain diversification. We expect tungsten prices to remain structurally above historical averages, supported by China's shift toward net import status\*\*, strong and inelastic demand (per company), and limited ex-China supply additions - supportive factors for MSR.

## **MSR is a rare and attractive listed opportunity to gain strategic ex-China tungsten exposure**

2

MSR is one of the few listed, scaled ex-China tungsten platforms globally, making it a scarce way to gain exposure to an increasingly strategic critical mineral outside China. As one of the world's largest tungsten suppliers outside China, with an integrated mine-to-refining model, MSR offers both scale and stronger value capture than upstream-only peers. With Phase 1B and the NPMC Expansion providing visible medium-term feedstock growth and mine-life extension, we believe MSR represents a differentiated and hard-to-replicate investment opportunity in the global critical materials space.

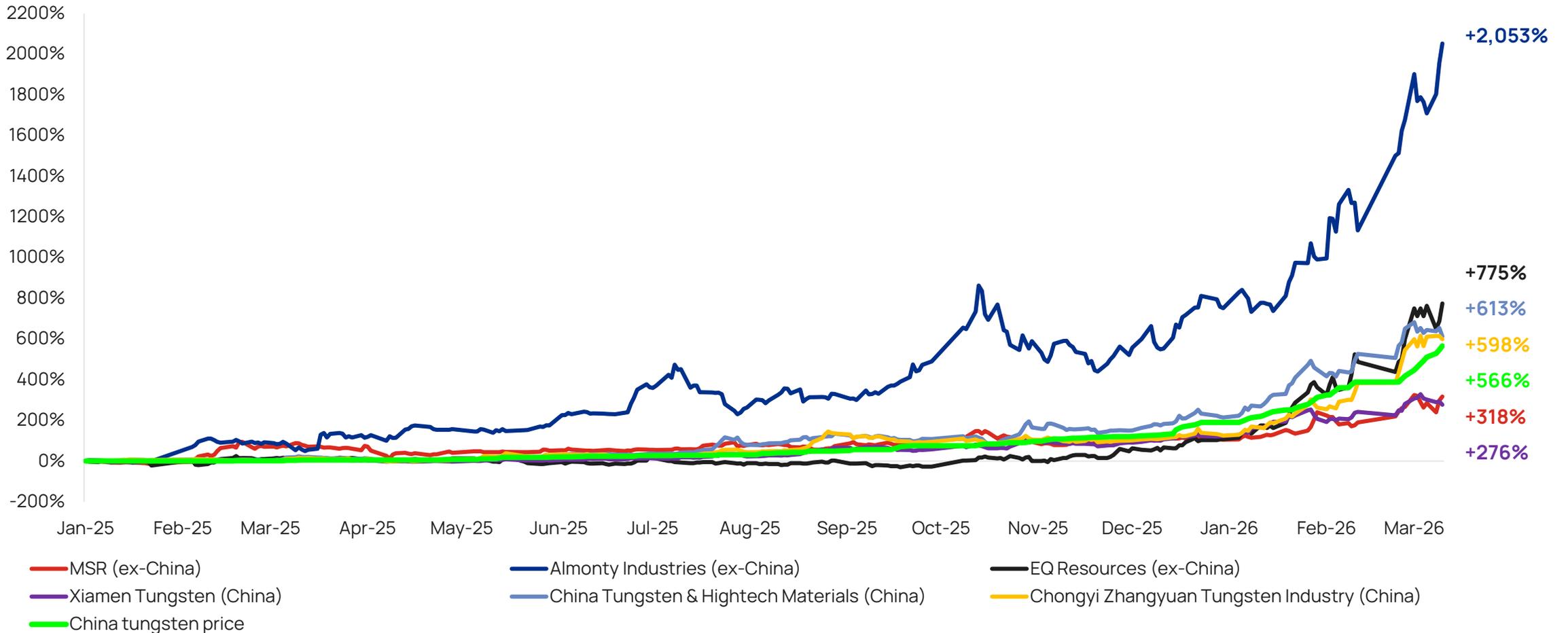
## **Debt is no longer a structural overhang**

3

Historically, high leverage, weak tungsten prices and performance at H.C.Stark (divested in late 2024), and other short-term operational hiccups kept earnings subdued, with interest expense absorbing most operating profit. Going forward, we expect a materially stronger earnings base—driven by the tungsten price upcycle and higher internal tungsten concentrate supply from NPMC Phase 1B and the NPMC Expansion—to improve cash flow, strengthen debt servicing capacity, and materially reduce balance sheet risk.

# Tungsten price rally fuels strong share price gains for global tungsten miners

Change in share price of global tungsten miners and tungsten price vs January 2, 2025



## Company Overview

---

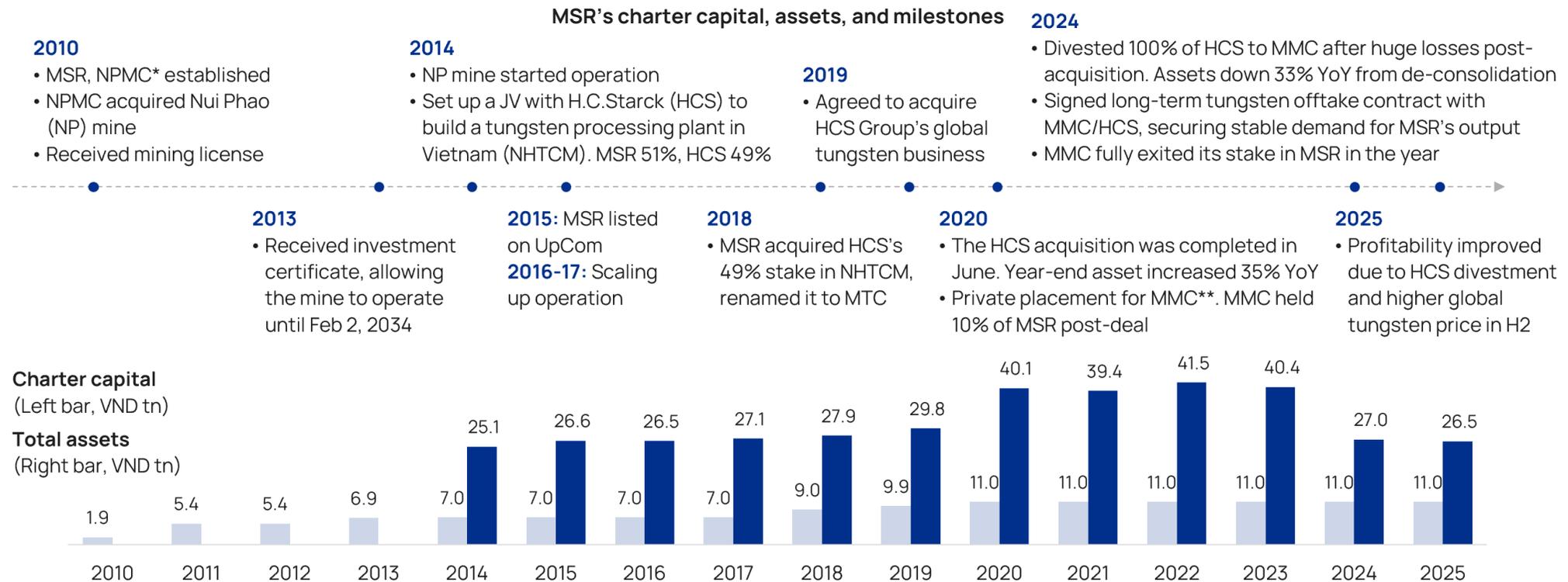
# History and company profile

Masan High-Tech Materials (UpCom: MSR) is a Vietnam-based critical minerals and advanced materials company within the Masan ecosystem, listed on UpCoM. The company was established in 2010 and acquired the Nui Phao mine in the same year.

MSR's core assets are placed in Thai Nguyen, Vietnam, including (1) Nui Phao polymetallic mine and (2) a tungsten processing plant. Nui Phao is a strategically important tungsten resource, frequently cited as among the largest tungsten mines outside China.

**The ore body supports MSR's key products: (1) tungsten, (2) fluorspar, (3) bismuth, and (4) copper** - strategic raw materials that underpin defense, industrial production, electrification, among other critical industries that are the backbone of modern society. **Tungsten is the most important revenue and earnings driver.**

Further details about the company's history are shown in the figure below.

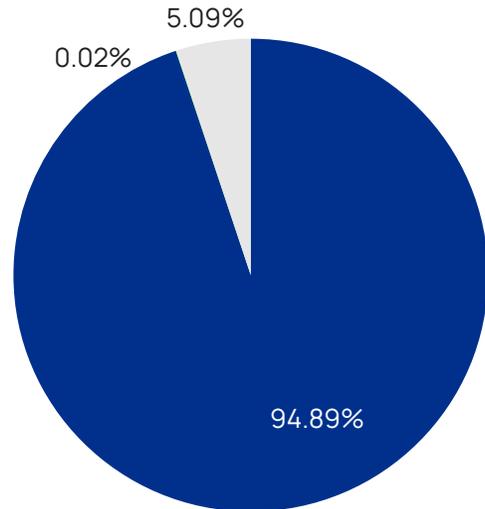


# Ownership and company structure

**Ownership structure:** MSR is a low-float stock. Masan Group (HOSE: MSN) holds 94.89% of MSR through its wholly owned subsidiary, Masan Horizon. Management ownership is minimal at 0.02%, with the remaining shares held by external investors.

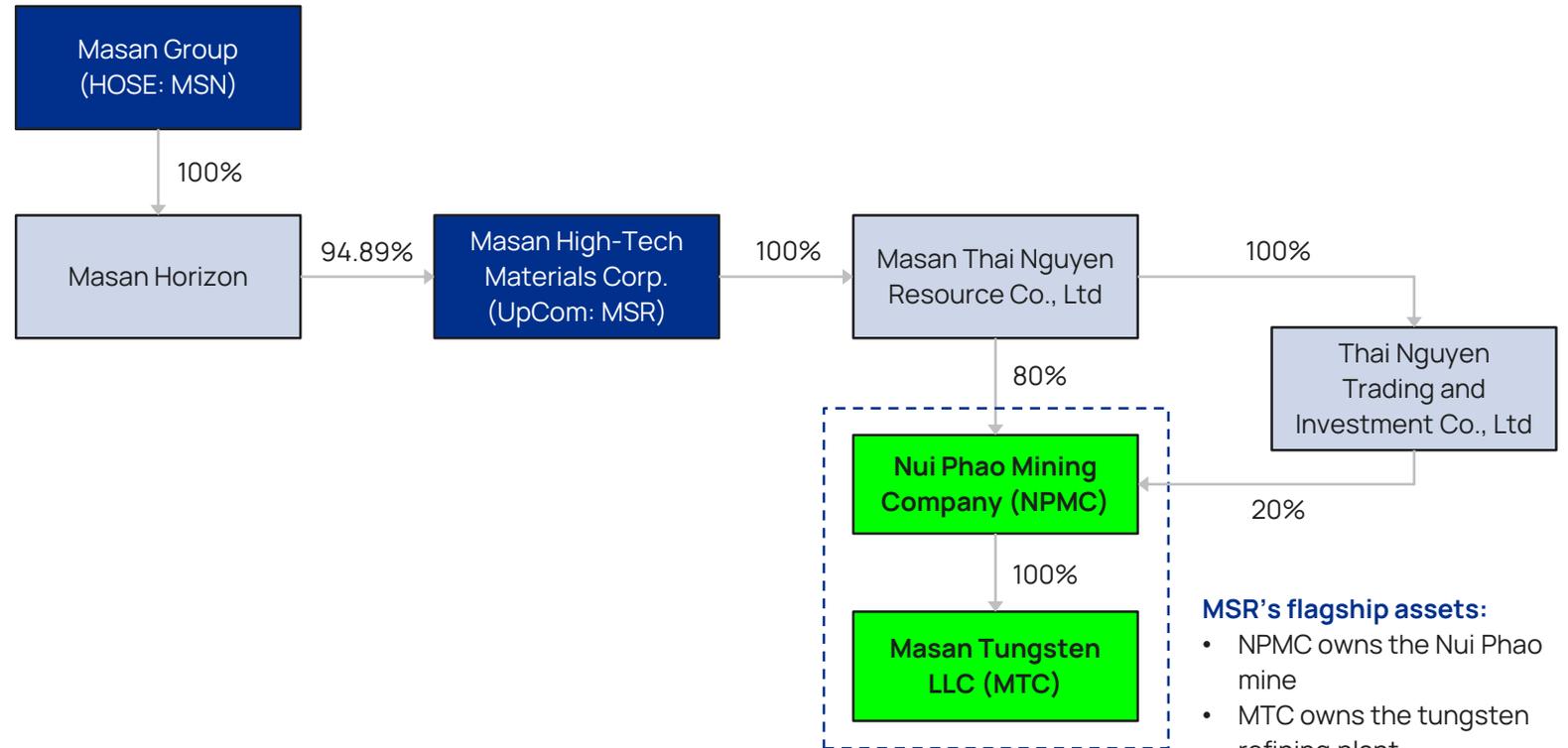
**Company structure:** MSR operates two principal flagship assets: (1) Nui Phao polymetallic mine – held through its 100%-owned subsidiary, Nui Phao Mining Company (NPMC), and (2) tungsten refining plant – operated by its 100%-owned subsidiary, Masan Tungsten LLC (MTC), which processes raw tungsten concentrate (from NPMC and external procurement) into higher-value intermediate products. All operating subsidiaries are fully owned by MSR; there are no minority interests at the subsidiary level.

MSR's ownership structure



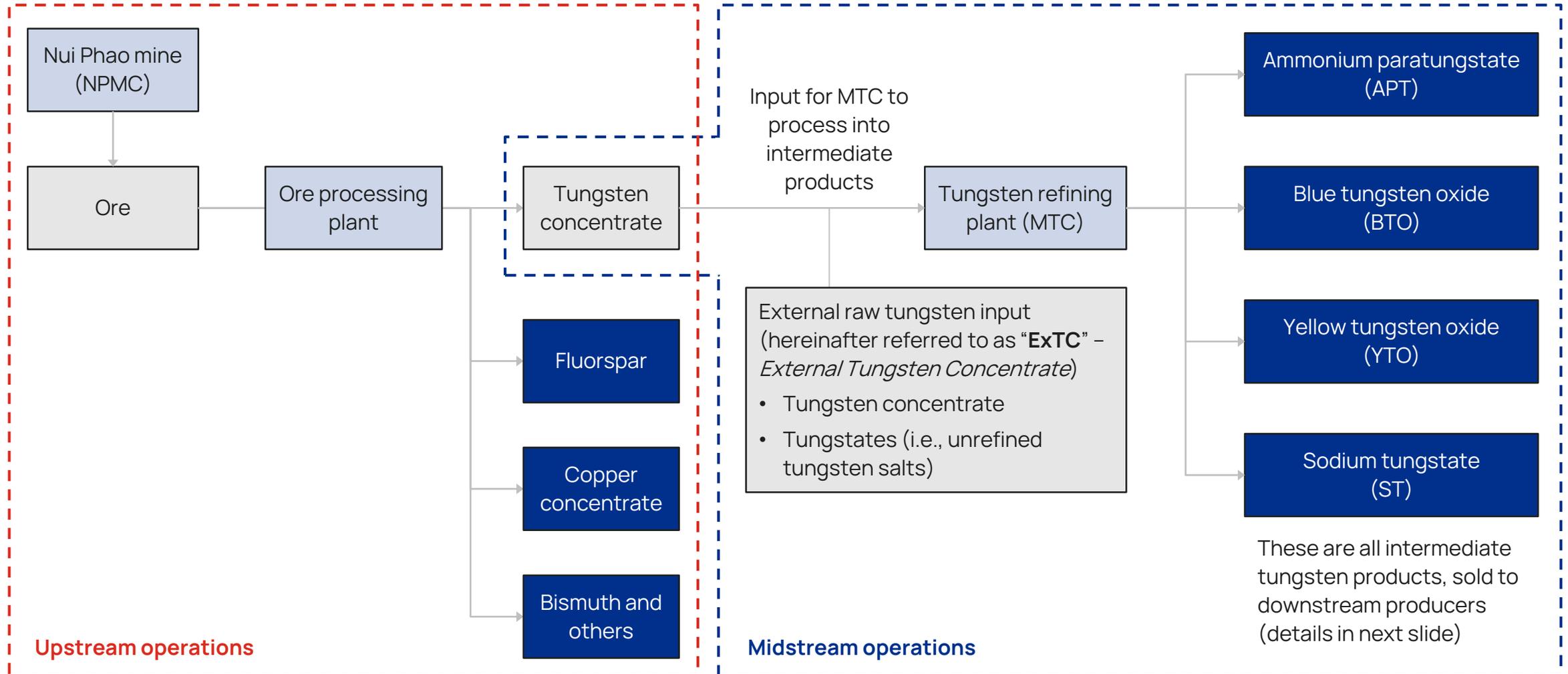
- Masan Horizon (100% owned by MSN)
- Management
- Others

MSR's company structure



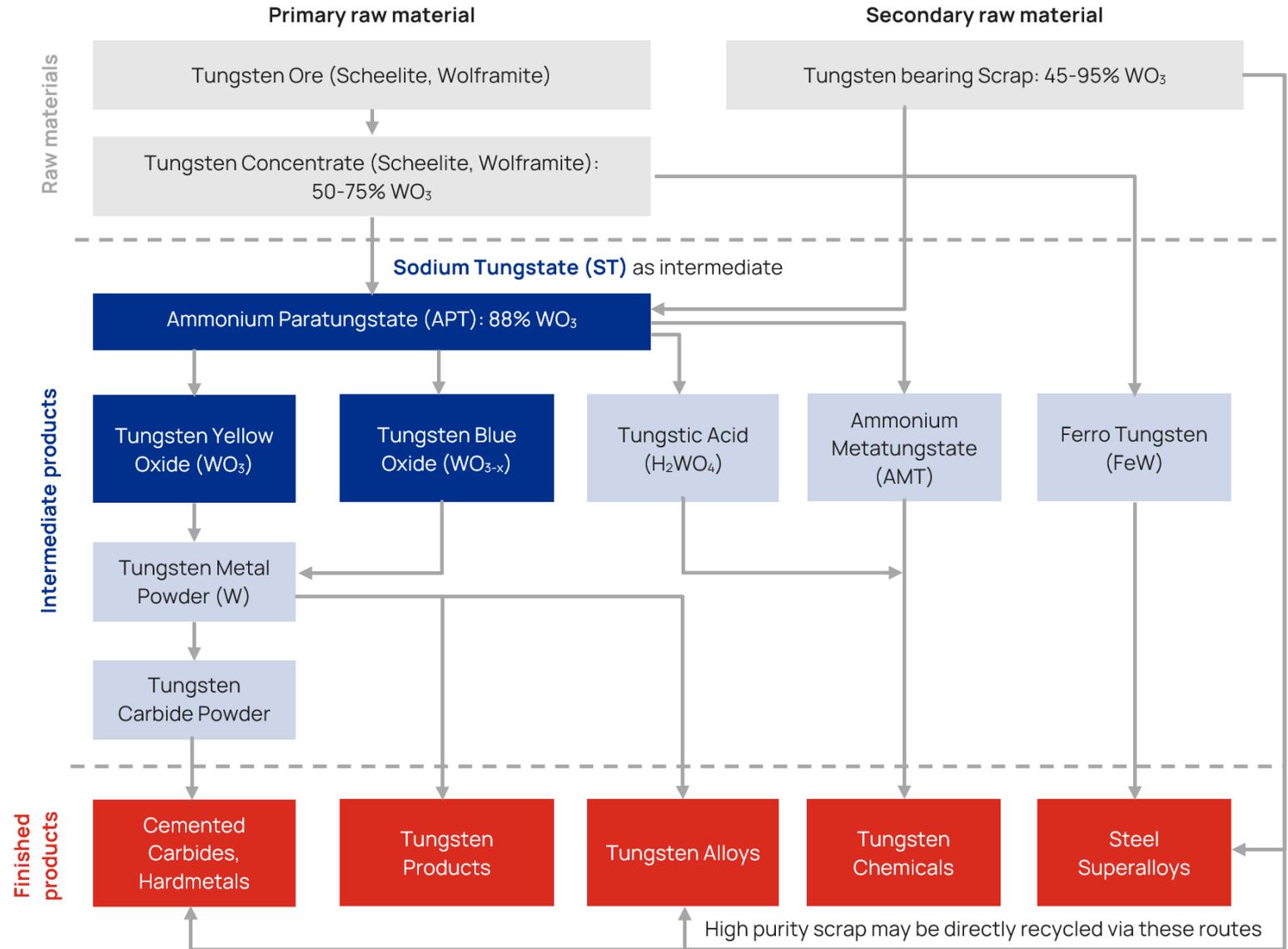
- MSR's flagship assets:**
- NPMC owns the Nui Phao mine
  - MTC owns the tungsten refining plant

# Business model and value chain



# Tungsten production value chain, and where MSR fits in

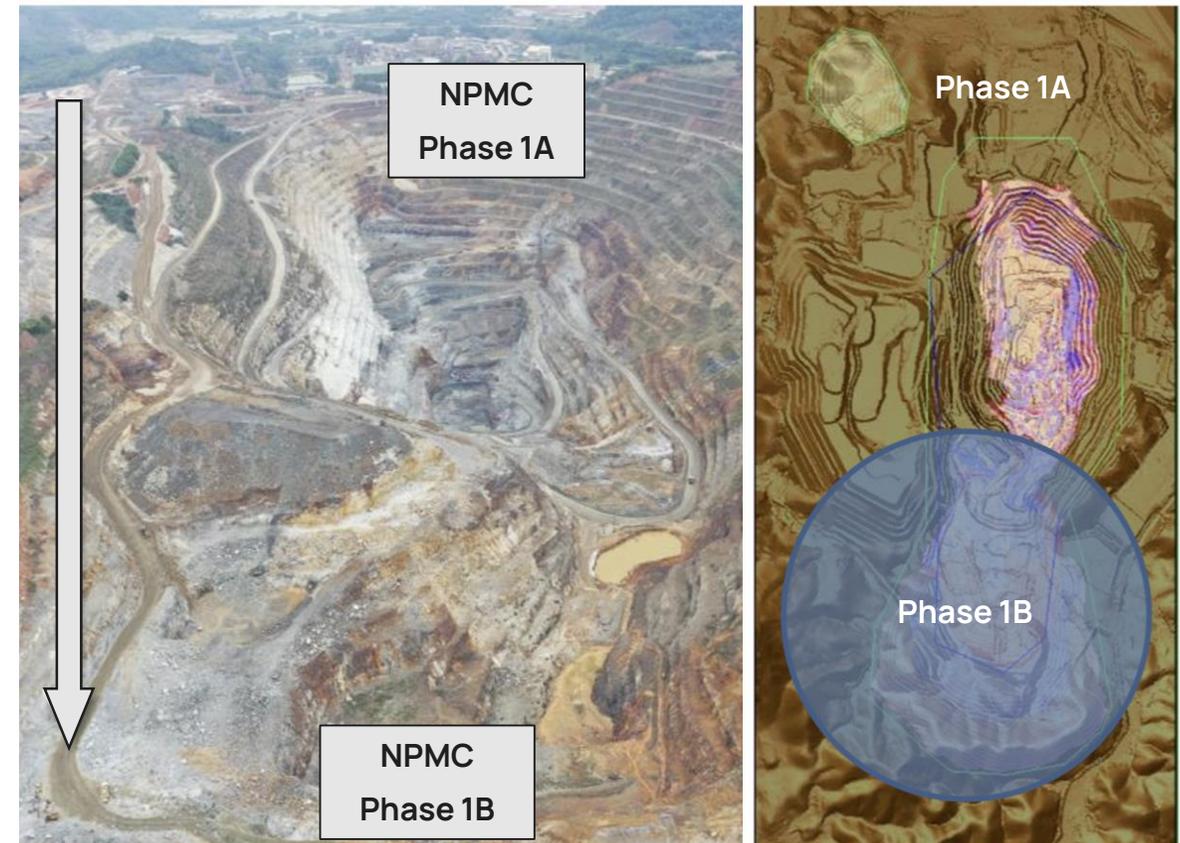
Dark blue boxes and text show MSR's tungsten products, and where they fit in the whole value chain



# Core Assets – NPMC (1): Current operations at NPMC Phase 1A and 1B with life-of-mine expected until 2029

Item	Details
Overview	<ul style="list-style-type: none"> <li>• <b>Location:</b> Thai Nguyen, Vietnam.</li> <li>• <b>Reserve:</b> 83.2mn tonnes of ore, comprising Phase 1A and Phase 1B, making NPMC one of the largest tungsten reserves outside China.</li> <li>• <b>Key products:</b> Tungsten, Fluorspar, Copper, Bismuth.</li> <li>• <b>Commercial production start:</b> March 1, 2014.</li> </ul>
Phase 1A	<ul style="list-style-type: none"> <li>• 55.2mn tonnes of reserve.</li> <li>• Currently mined by open-pit method.</li> </ul>
Phase 1B	<ul style="list-style-type: none"> <li>• 28mn tonnes of ore reserve. To start mining in H1 2026.</li> <li>• A combination of open-pit and underground mining methodology has been approved in the latest amendment of mining license.</li> </ul>
License	<ul style="list-style-type: none"> <li>• Investment Certificate No. 17121000026, initially valid until 2 Feb 2034, subsequently extended to 2 Feb 2044.</li> <li>• Mining License: No. 1710/GP-BTNMT dated 21 September 2010 and its amendments.</li> </ul>
Max capacity	<ul style="list-style-type: none"> <li>• 3.5mn tonnes of ore per year.</li> </ul>
Current status, future outlook	<ul style="list-style-type: none"> <li>• Phase 1A has depleted; operations transitioning to Phase 1B.</li> <li>• Production expected to ramp up from 2027 as mining progresses into higher-grade zones after transition from phase 1A to 1B.</li> </ul>

NPMC is transitioning mining operations from Phase 1A to the Phase 1B



# Core Assets – NPMC (2): Potential mine life extension to 2036 via Nui Phao Expansion

- On November 24, 2025, Vietnam issued Decision 2581/QĐ-TTg, amending the national mineral master plan (2021–2030, vision to 2050), which also includes MSR’s NPMC mine.
- The amendment aligns NPMC mine boundaries, reserves, and development plans with the Government’s plan, enabling updated mining licenses.
- The plan also introduces two new adjacent projects, including the Nui Phao Expansion (42.9 ha, ~55 Mt ore) and the Nui Chiem area.

## Mine reserves at Thai Nguyen area, per the government’s masterplan

Mine	Area (ha)	Reserve	
		Ore reserve ('000 tonnes)	tWO <sub>3</sub> * (tonnes of WO <sub>3</sub> )
<b>Existing project</b>			
Nui Phao Mine (NPMC’s mine)	151.8	83,220	124,830
<b>New projects</b>			
Nui Phao Expansion (located right next to NPMC’s current mine)	42.9	55,192	94,830
Nui Chiem area	984.3	60,000	13,500

**MSR is confident that they can secure the Nui Phao Expansion project**, because:

Under Vietnam’s Law on Geology and Minerals (effective July 2025): (1) existing operators have priority rights for exploration and expansion of contiguous ore bodies without requiring a production rights auction, and (2) mining operators must apply advanced technology appropriate to the mine’s characteristics.

As the current operator of Nui Phao, MSR/NPMC is well positioned to develop the expansion area.

**If approved, the expansion could extend the mine life to 2036, according to management estimates.**

Given the high likelihood of MSR securing this project, we have also factored this mine into our base-case projection.

# Core Assets – MTC: Tungsten refining plant

Item	Details
Overview	The MTC plant, located adjacent to the Nui Phao mine, is an advanced tungsten chemical processing facility and a cornerstone of MSR's vertically integrated value chain, converting tungsten ore into high-purity, high-value intermediates.
Establishment, ownership	<ul style="list-style-type: none"> <li>• Founded in 2014 as a JV with H.C. Starck (MSR: 51%, HCS: 49%).</li> <li>• In August 2018, MSR acquired HCS's 49% stake, becoming the 100% owner.</li> </ul>
Global positioning	<ul style="list-style-type: none"> <li>• One of the few large-scale tungsten chemical processing facilities outside China, capable of producing high-tech tungsten intermediates directly at the mine source.</li> <li>• A strategic supplier within the global tungsten supply chain.</li> </ul>
Production capacity	<ul style="list-style-type: none"> <li>• 9,345 tonnes per annum WO<sub>3</sub>.</li> </ul>
Feedstock supply	<p>Two source of input:</p> <ul style="list-style-type: none"> <li>• 100% Tungsten Concentrate from NPMC.</li> <li>• <b>External Tungsten Concentrate (ExTC)</b> sourced internationally (excluding China and Russia), with &gt;1,000 tonnes secured under long-term contracts.</li> </ul> <p><b>Structural barriers supporting MSR's access to ExTC:</b> (1) scarcity of large-scale tungsten processing capacity outside China, and (2) High barrier to entry for new capacity (per the company), including complex technology to build new plants, and lengthy customer qualification cycles.</p>

MTC tungsten refining plant

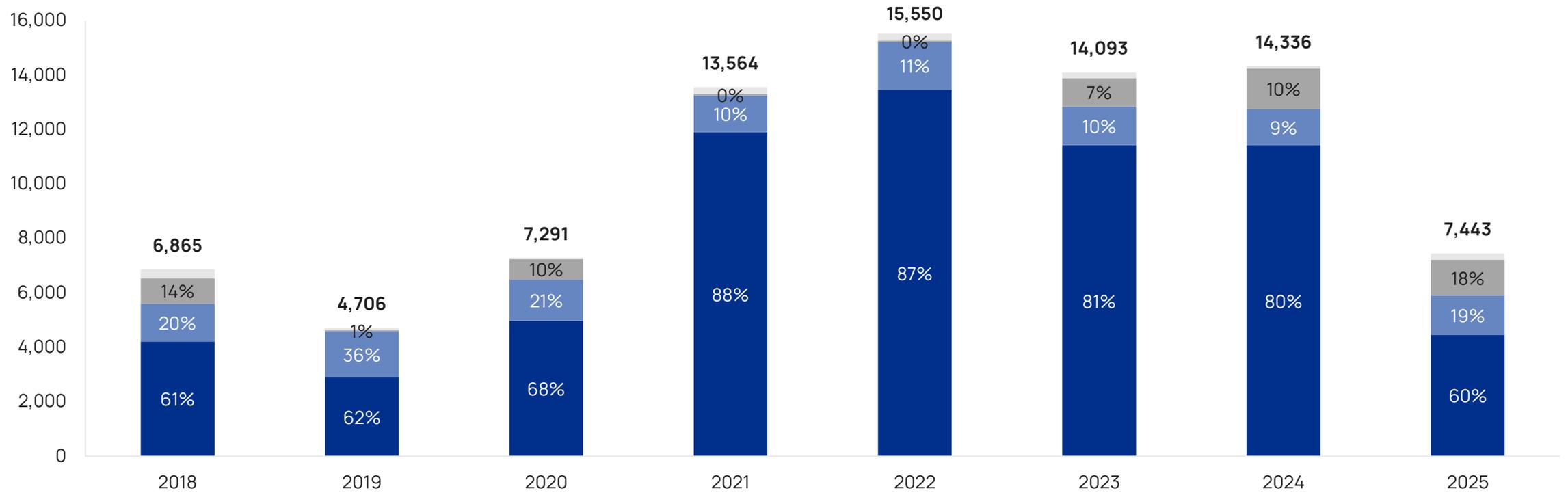


# Revenue and gross profit structure (1)

In terms of revenue, tungsten is MSR's core business. In 2025 it contributed ~60% of revenue, followed by fluospar ~19% and copper ~18%; bismuth/other accounted for the rest.

**HCS consolidation (2020) and de-consolidation (2024):** During 2020–2024, revenue stepped up after MSR consolidated H.C. Starck (HCS) in mid-2020 - a globally renowned downstream tungsten player with production hubs in Germany, Canada and China and a global customer base, acquired to enable vertical integration, market expansion, and tungsten recycling capabilities. However, as deleveraging became a priority and HCS faced demand weakness/cost pressure in 2023–2024, MSR divested 100% of HCS to Mitsubishi Materials for USD134.5m, closing December 18, 2024. After the divestment, MSR retained the offtake agreement with HCS and used the proceeds to reduce debt. As a result, 2025 revenue fell YoY due to the HCS deconsolidation, while profitability improved.

MSR's net revenue breakdown by segment (VND bn)

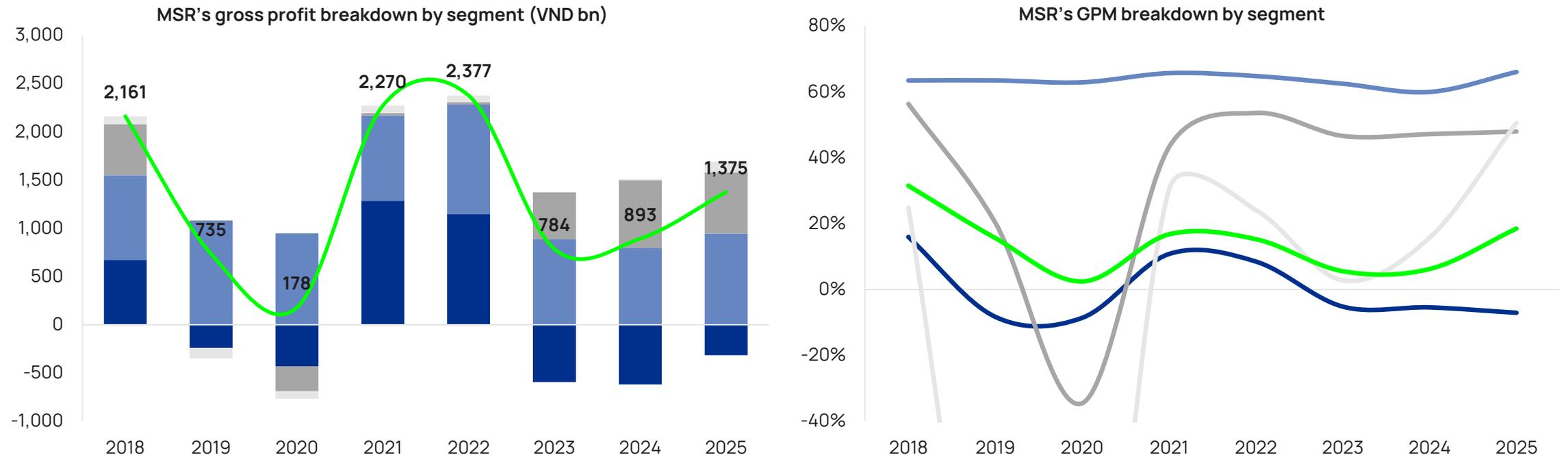


## Revenue and gross profit structure (2)

Fluorspar has historically been the most stable contributor, sustaining GPM of ~60–65% and providing a consistent GP base, while tungsten and copper are the primary swing factors.

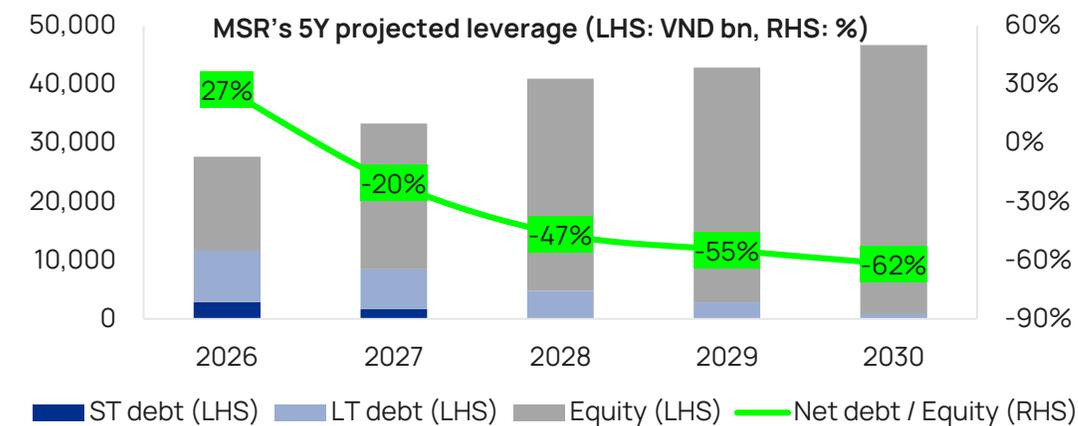
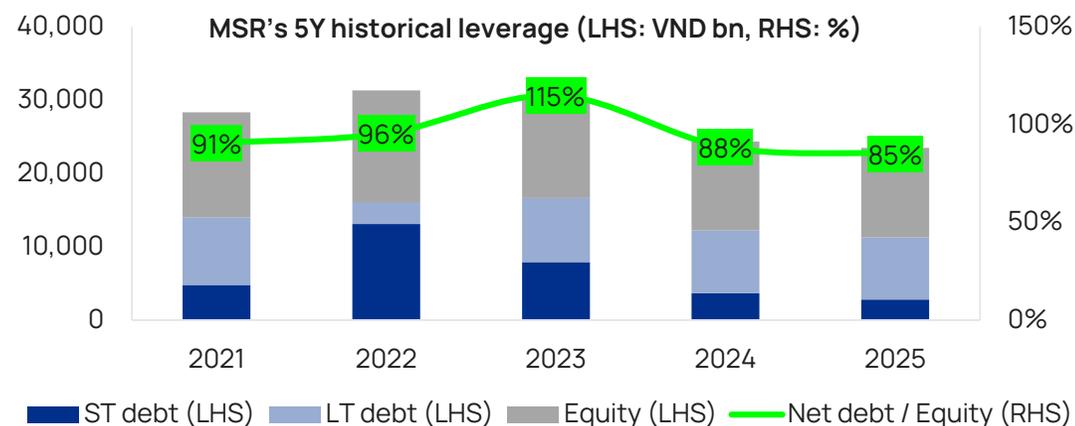
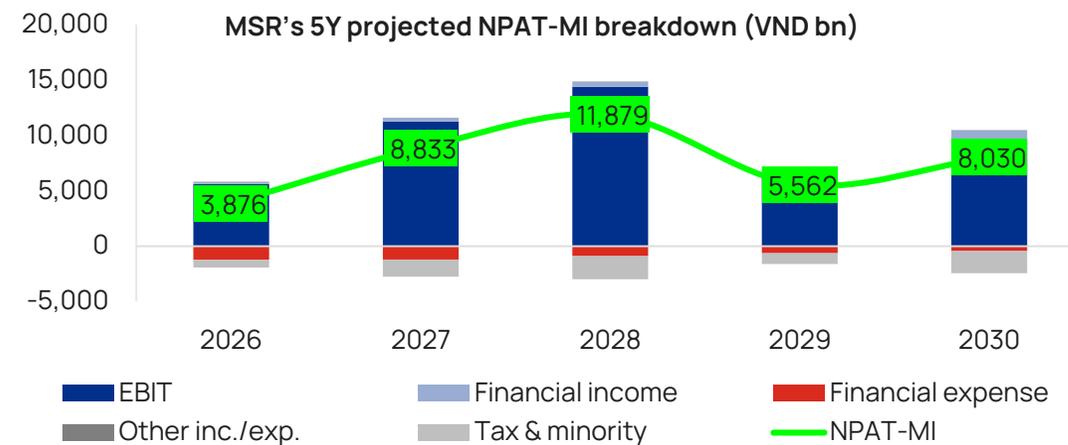
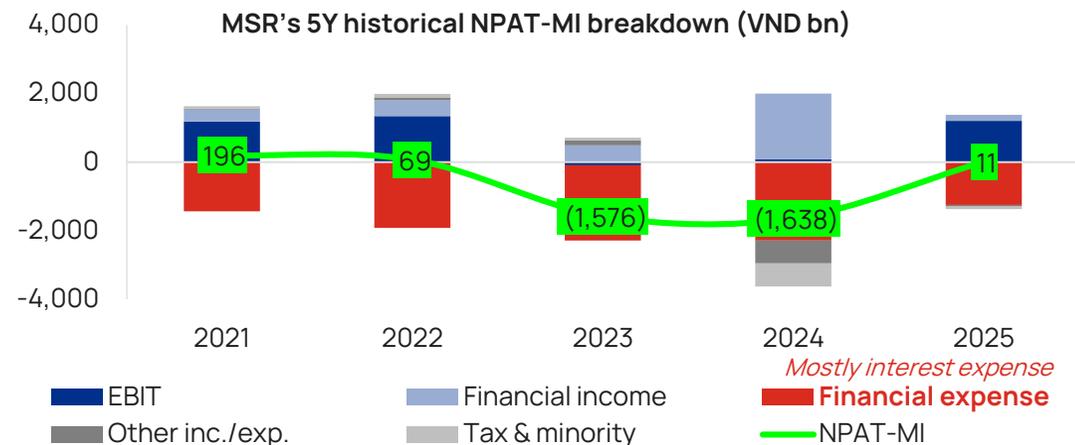
**Tungsten** swung from gross losses of VND594bn (USD22.8mn) and VND620bn (USD23.8mn) in 2023 and 2024 to a strong recovery in 2025, with losses halved YoY. The downturn stemmed from the April 2023–March 2024 suspension of blasting, forcing Nui Phao to process low-grade, oxidized stockpiles with poor recovery and high unit costs. HCS also faced weak demand and high costs, further pressuring margins. The late-2024 divestment of HCS removed a lower-margin, capital-intensive business from consolidation. With blasting restored and ore feed resumed, financials improved, while the tungsten price surge (USD330/MTU in early 2025 to USD862/MTU by late 2025, per Fastmarkets) drove a sharp gross profit rebound.

**Copper** saw strong revenue and gross profit in 2020 as MSR obtained special permission to exports, while domestic demand was weak due to limited refining capacity. Following the Government's ban on copper concentrate exports, MSR recorded no copper sales in 2021–2022 despite continuing mining operations, leading to a significant inventory buildup. From 2022 onward, domestic refining capacity expanded, creating viable local demand. As a result, MSR shifted to domestic sales in 2023–2025, with demand expected to remain stable given improved downstream absorption. Per the company, copper inventory stood at 2,047 contained tonnes at the end of 2025, and expected to be cleared by the end of 2026.



# Debt was a past burden, not a future concern, given structurally higher earnings from a tungsten price upcycle and improved internal feedstock from new mines

Historically, MSR's earnings were constrained by a heavy interest burden from elevated debt, weak tungsten prices and HCS performance, and short-term operational issues. As a result, financial expenses absorbed most operating income, leading to weak NPAT-MI and limited debt repayment capacity. Looking ahead, we expect structurally stronger earnings, driven primarily by a favorable tungsten price cycle (further discussed in [slide 22](#)) and improved internal tungsten concentrate supply from NPMC Phase 1B and the NPMC Expansion\*.



# Management team



**Danny Le (Mr.)**  
CEO of MSN



**Michael Hung Nguyen (Mr.)**  
Deputy CEO of MSN



**Michael Glover (Mr.)**  
CEO of MSR



**Aditya Aggarwal (Mr.)**  
Deputy CEO of MSR



**Thang Phan Chien (Mr.)**  
Deputy CEO of MSR

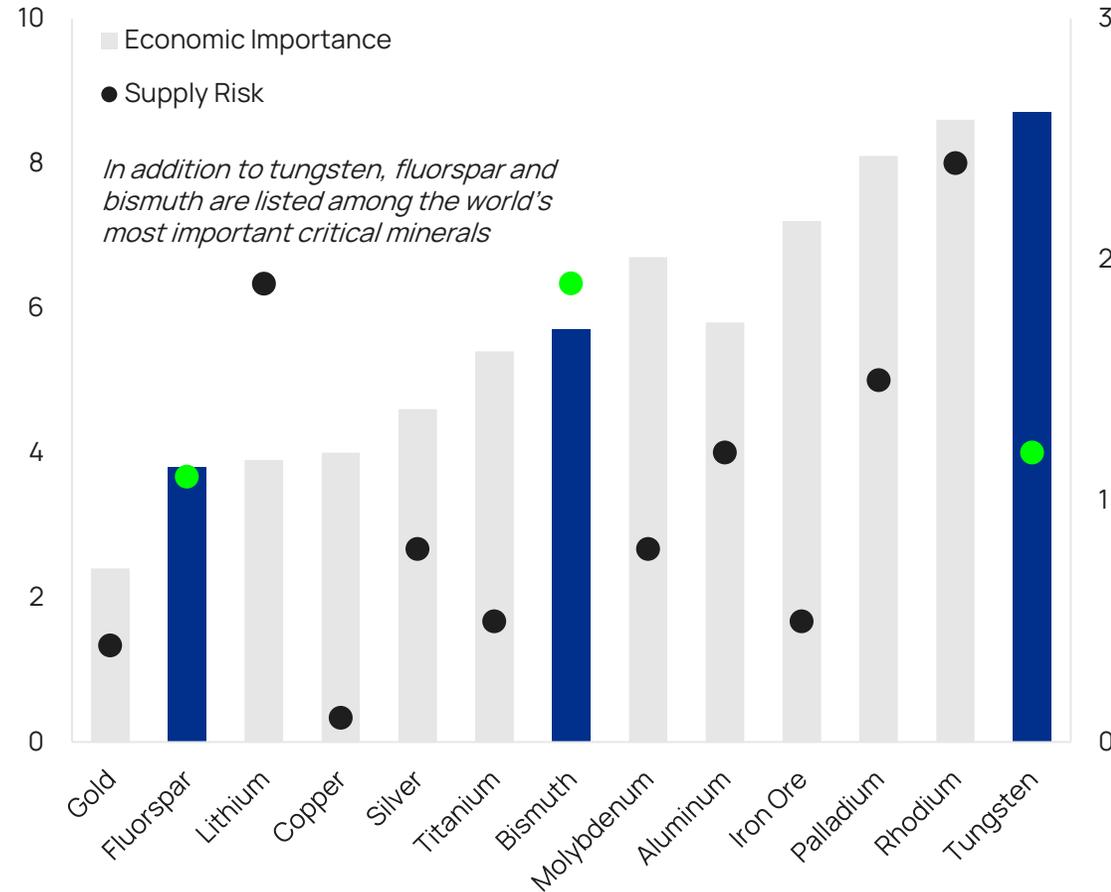
Name	Position	Shares in MSR	Note
Mr. Danny Le	CEO of MSN, Chairman of MSR	0 shares (0%)	<ul style="list-style-type: none"> <li>Leads Masan's strategy, works closely with subsidiary CEOs, playing a key role in major transformational initiatives.</li> <li>Previously worked in Investment Banking at Morgan Stanley in New York.</li> </ul>
Mr. Michael Hung Nguyen	Deputy CEO of MSN, BOD member of MSR, 2nd Vice Chairman of MSR	0 shares (0%)	<ul style="list-style-type: none"> <li>Built Masan's transaction and execution platform to support subsidiaries and expansion into new sectors.</li> <li>Previously helped establish J.P. Morgan's Vietnam investment banking execution team.</li> </ul>
Mr. Michael Glover	CEO of MSR	0 shares (0%)	<ul style="list-style-type: none"> <li>Chemical engineer with 30+ years of international experience in minerals, plant operations, and project delivery.</li> <li>Holds Bachelor's and Master's degrees in Chemical Engineering from the University of the Witwatersrand</li> </ul>
Mr. Aditya Aggarwal	Deputy CEO of MSR	260,000 shares (0.02% of S/O)	<ul style="list-style-type: none"> <li>Over 15 years of experience in M&amp;A, fundraising, corporate finance, strategy, and telecom technology.</li> <li>MBA from the Indian Institute of Management, Bachelor of Technology from National Institute of Technology, India.</li> </ul>
Mr. Thang Phan Chien	Deputy CEO of MSR	0 shares (0%)	<ul style="list-style-type: none"> <li>Oversees Media, Community, and External Relations at Masan High-Tech Materials..</li> <li>Previously, he was the Director of Communications, Community and External Relations of MSR.</li> </ul>

# Tungsten Industry Overview

---

# Tungsten is one of the world's most important critical materials

Economic importance\* (LHS) and supply risk (RHS) of globally key critical materials (per the European Commission's study)

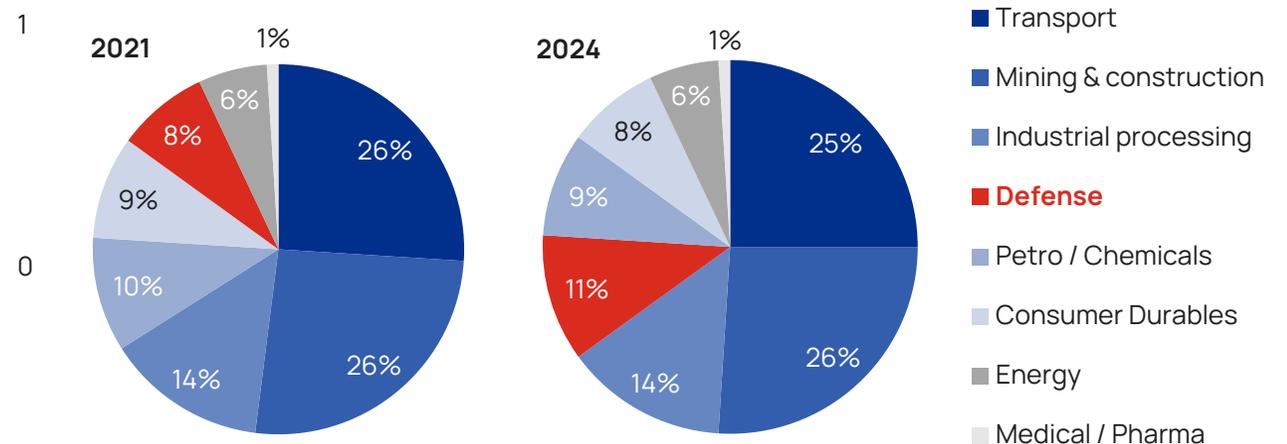


Tungsten is a strategic material underpinning essential industries, defense and future high-tech development

- **Defense:** Due to its exceptional hardness, density, and extremely high melting point, tungsten is widely used in military applications such as armor-piercing munitions and armored systems. For defense, tungsten has virtually no substitutes.
- **Automotive:** Used to produce batteries (mainly lithium-ion) for EV and hybrid vehicles.
- **Semiconductor:** Requires tungsten hexafluoride (WF<sub>6</sub>) in its production.
- **Traditional industries:** Tungsten is extensively utilized in cutting, drilling, and machining tools, particularly in tungsten carbide. Its characteristics make it indispensable across heavy industrial sectors.

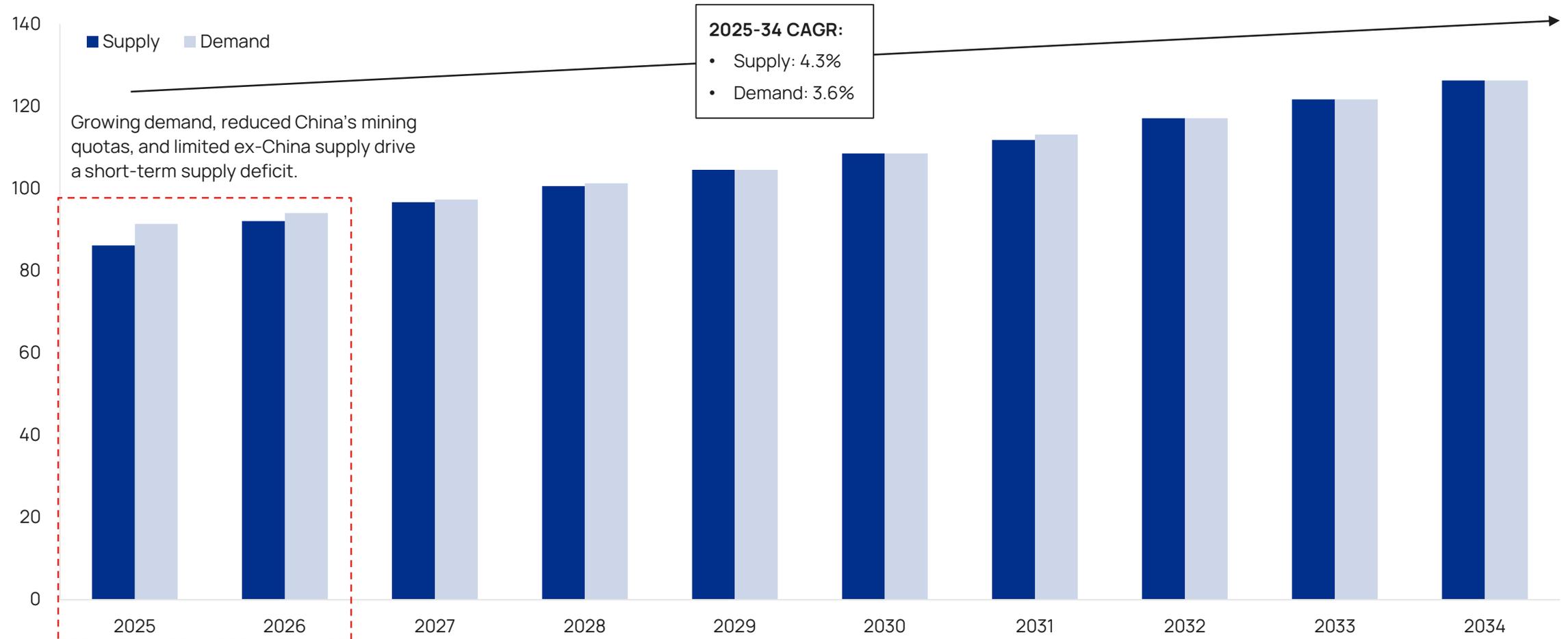
**Substitution risk:** In most applications, tungsten remains difficult to replace, as virtually no materials can replicate its unique physical and chemical properties.

Tungsten's demand by end-use industries, with defense showing significant growth



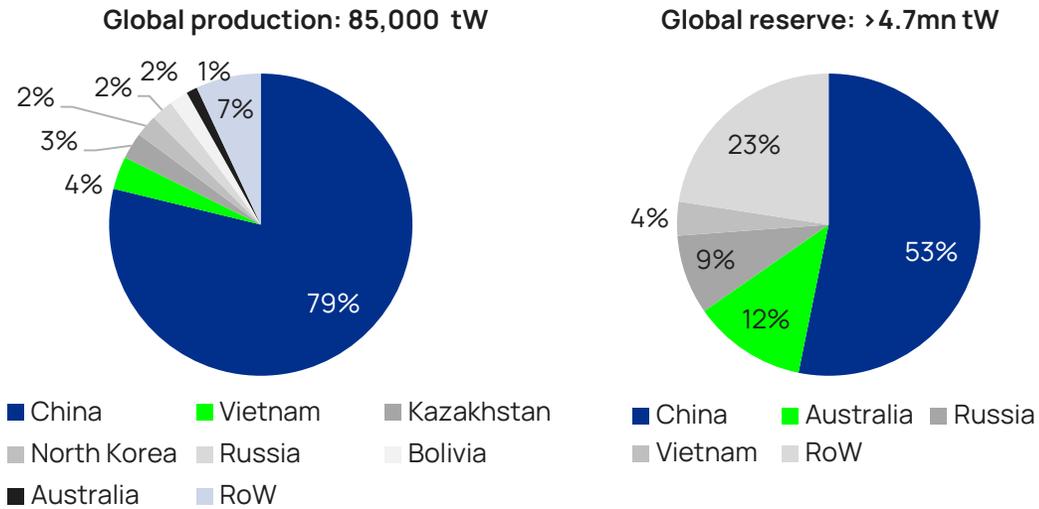
# Global tungsten market appears balanced in the longer term, with a near-term supply deficit...

Tungsten global demand, supply (k tonnes WO<sub>3</sub>), including China

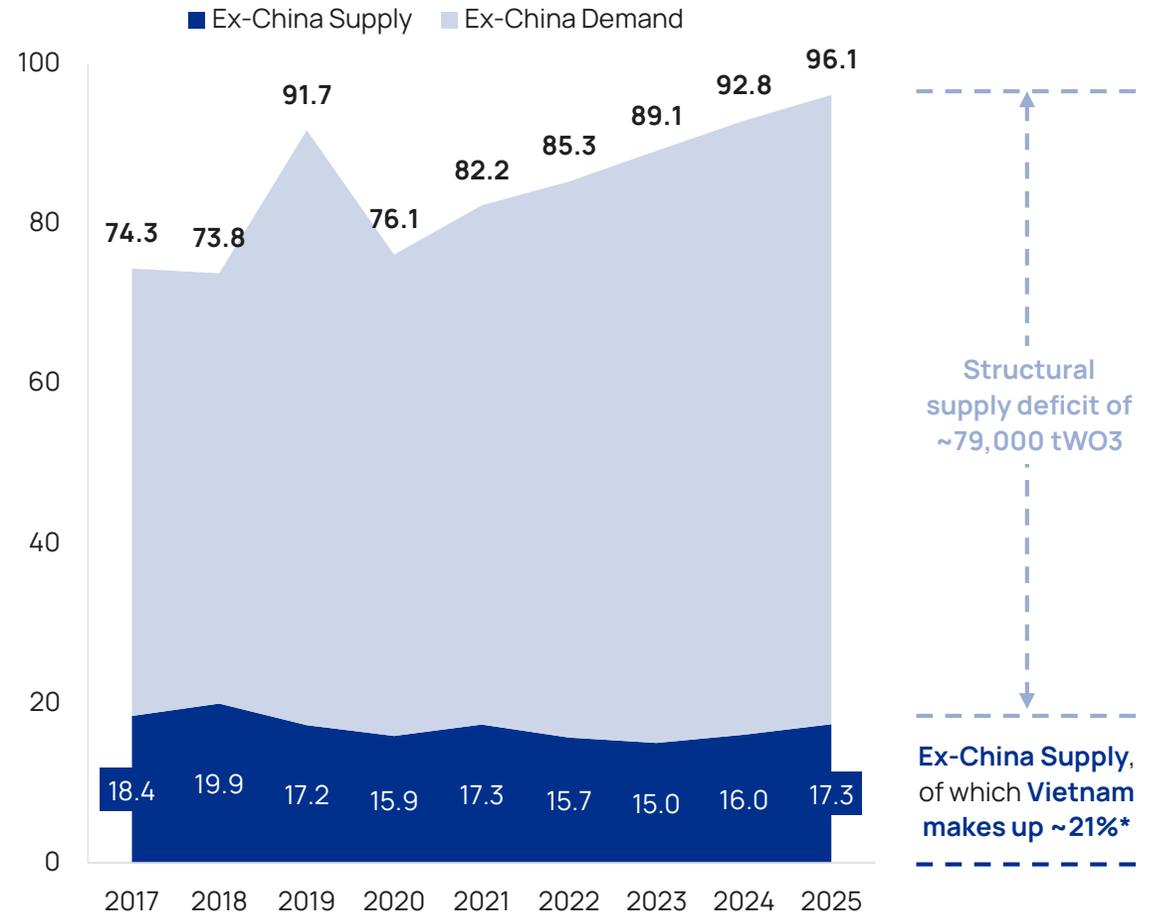


# ...However, China dominates supply, demand, and reserves. Ex-China markets remain structurally undersupplied, making non-Chinese supply critically important

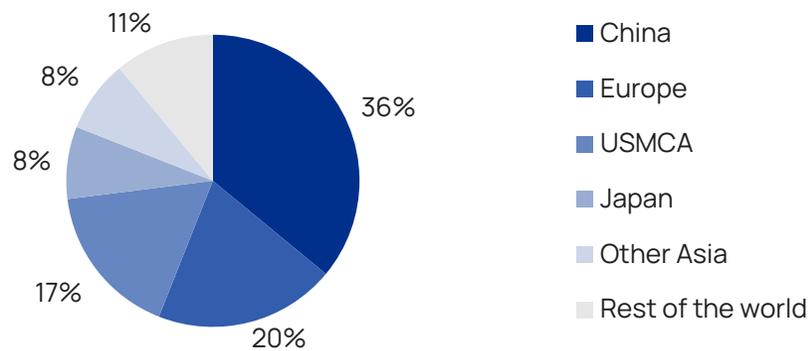
Global tungsten supply and reserve is concentrated in China (2025)



Excluding China, the world is under a severe tungsten supply deficit (k tonnes WO3)

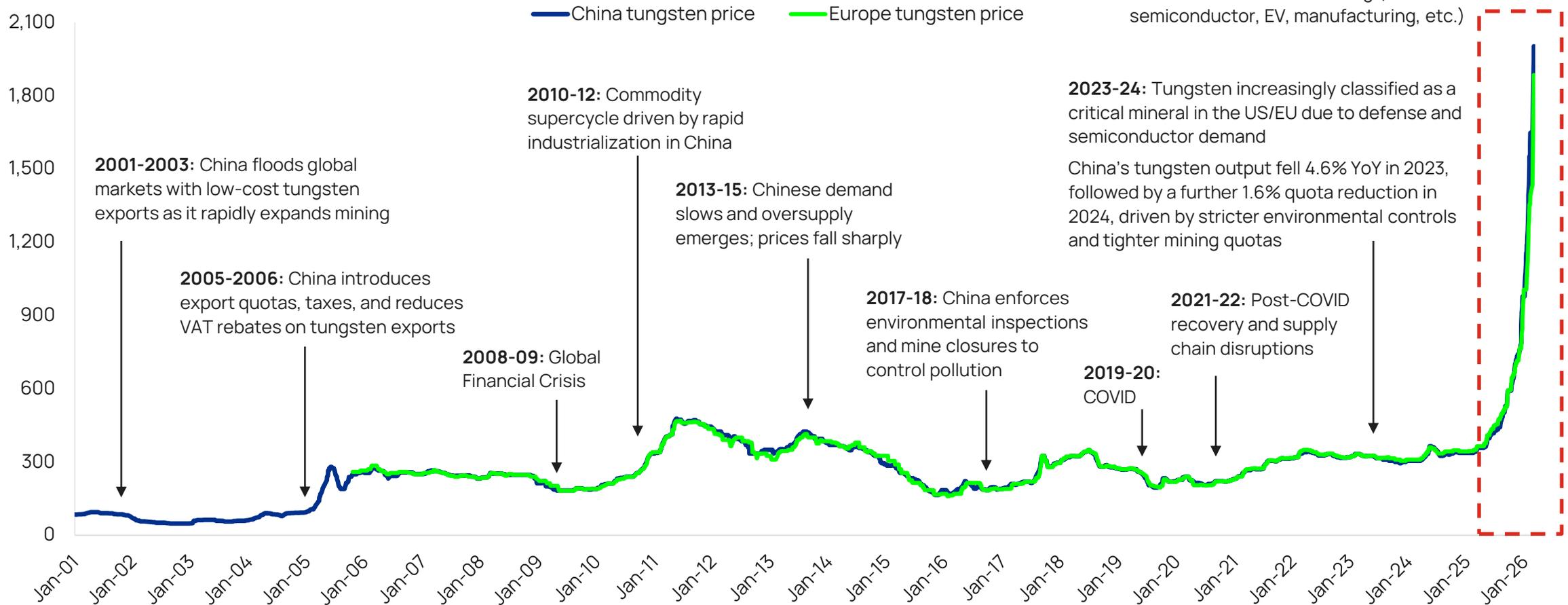


China is also the world's largest consumer of tungsten (2021)



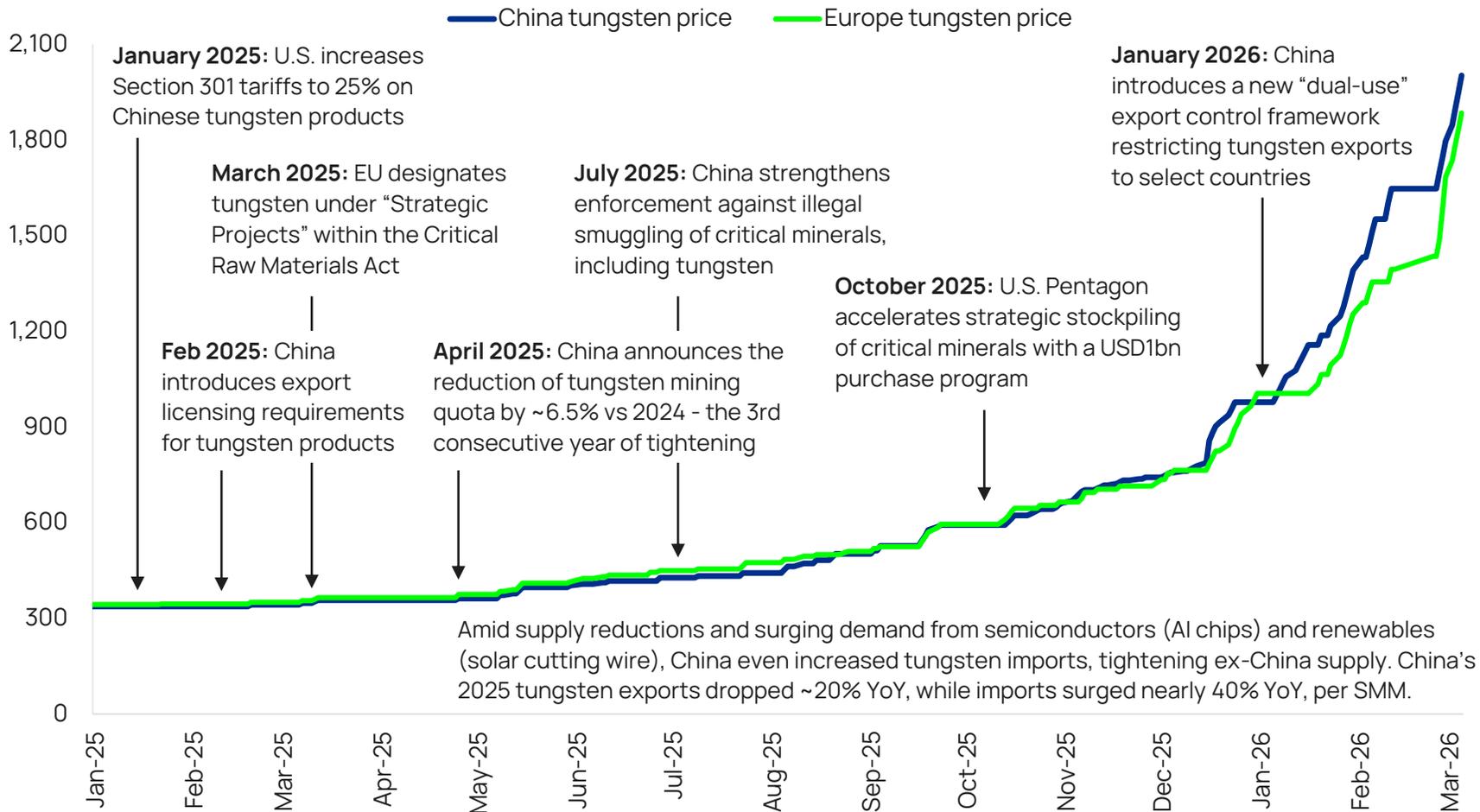
# China has a strong pricing influence over global tungsten prices. Most major price movements have been mainly driven by the country (1)

Tungsten price chart (USD/MTU)



# China has a strong pricing influence over global tungsten prices. Most major price movements have been mainly driven by the country (2)

Tungsten price chart (USD/MTU)



We believe the tungsten price will remain structurally high in the future (vs the past 10 years), driven by:

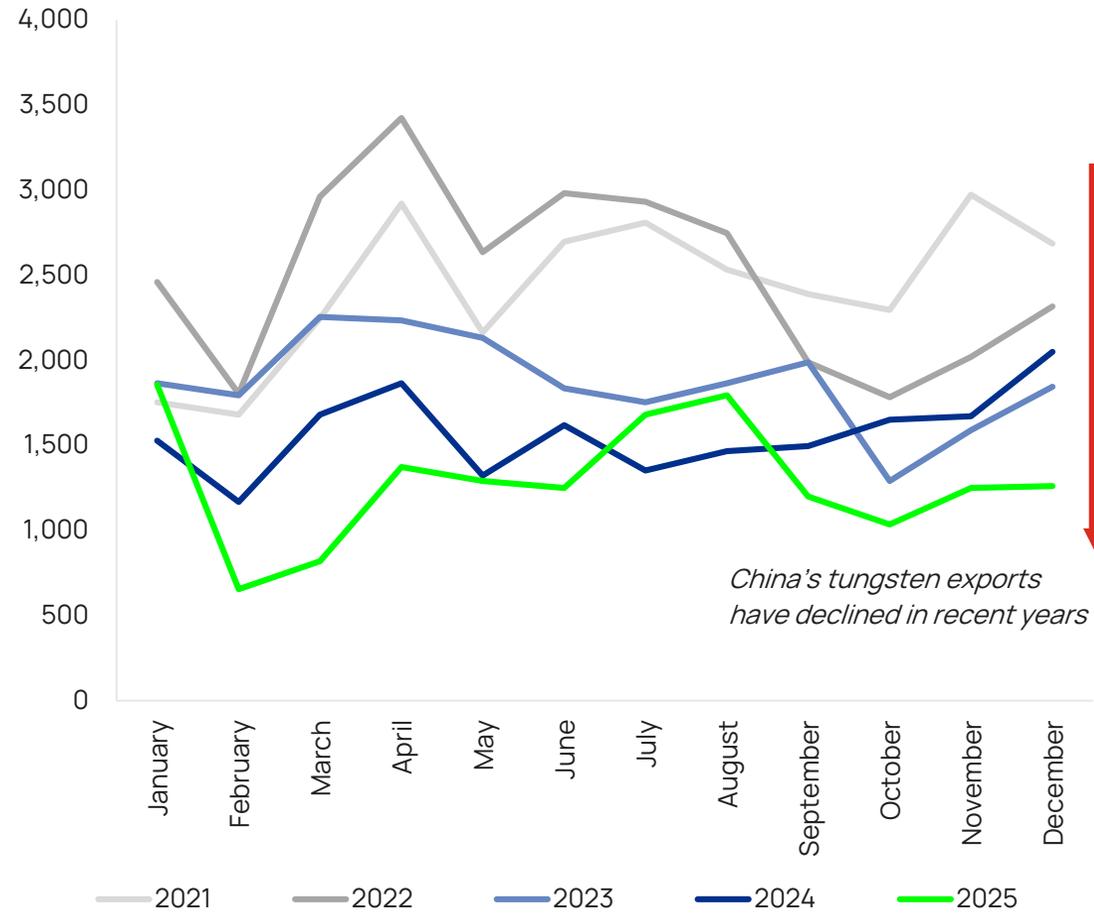
**China appears to be moving toward being a net importer in tungsten, with exports declining and imports rising.** This reduces domestic supply and worsens the ex-China supply deficit. This even makes Chinese tungsten price higher vs the international price.

**Strong and inelastic demand.** Demand remains strong and inelastic, driven by critical applications such as defense, semiconductors, and EV batteries. Per the company, tungsten represents a small share of downstream product costs and has limited substitutes, allowing buyers to absorb higher prices.

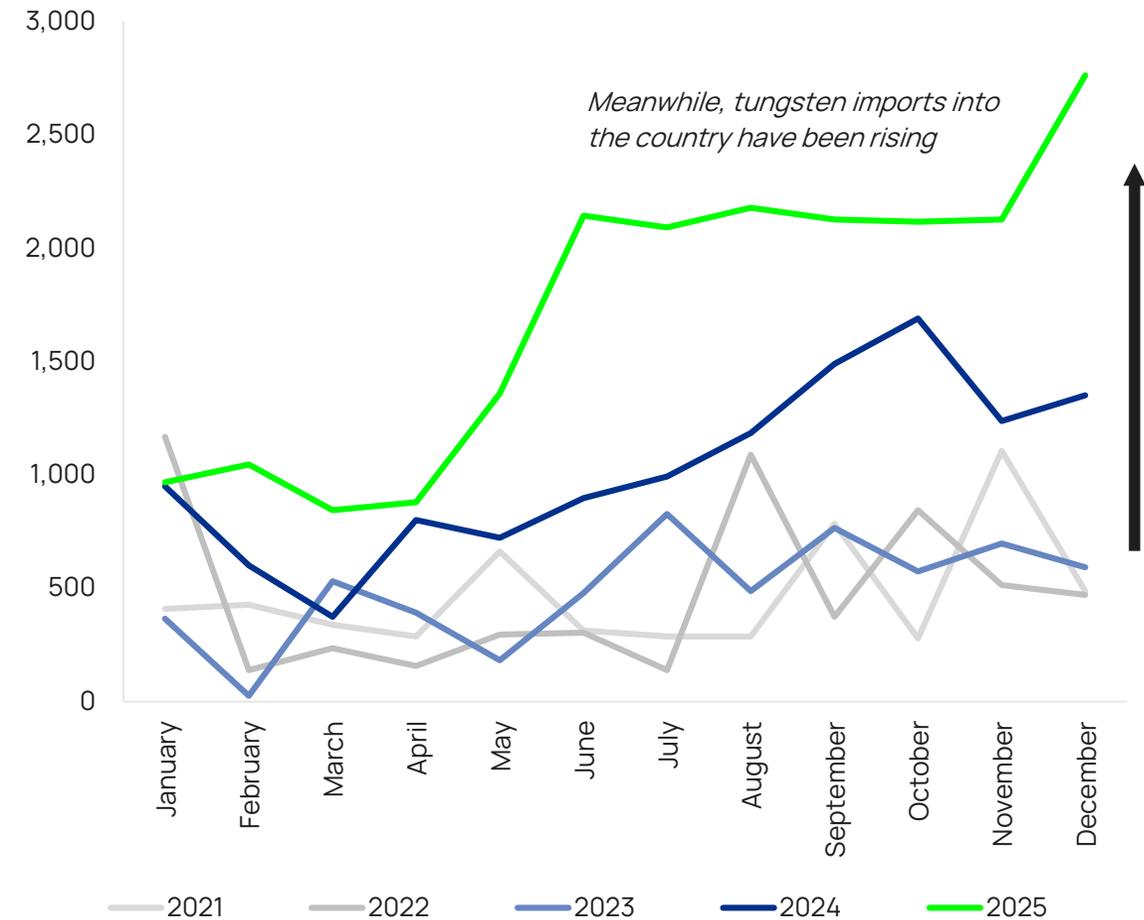
**Limited ex-China supply pipeline.** New tungsten mines outside China face long development timelines due to regulatory barrier, financing, construction, etc. (per mining.com). For projects currently advancing, they are unlikely to close the ex-China deficit, per our estimates.

# China's tungsten trade balance tightening toward net importer status, raising the strategic value of non-Chinese supply

Exports of China's tungsten products (tonnes WO3)



Imports of China's tungsten concentrate (tonnes WO3)

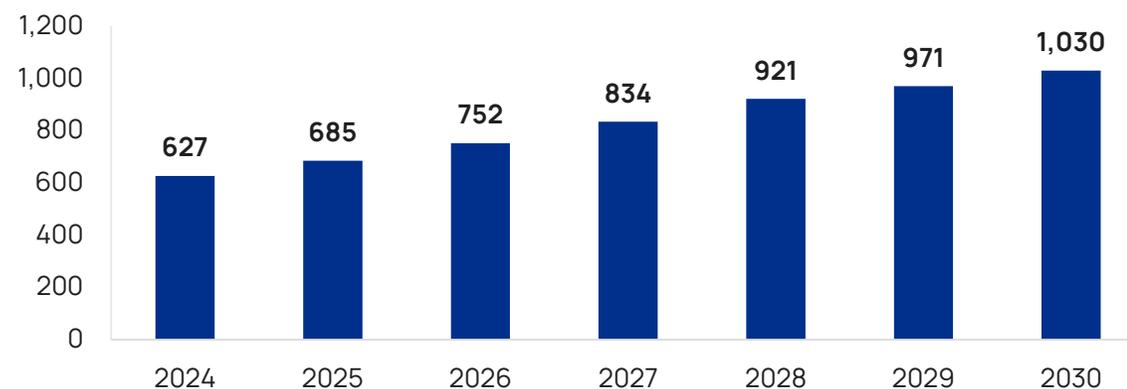


# Downstream demand for tungsten is very strong, particularly for critical industries like defense, semiconductors, and EV batteries

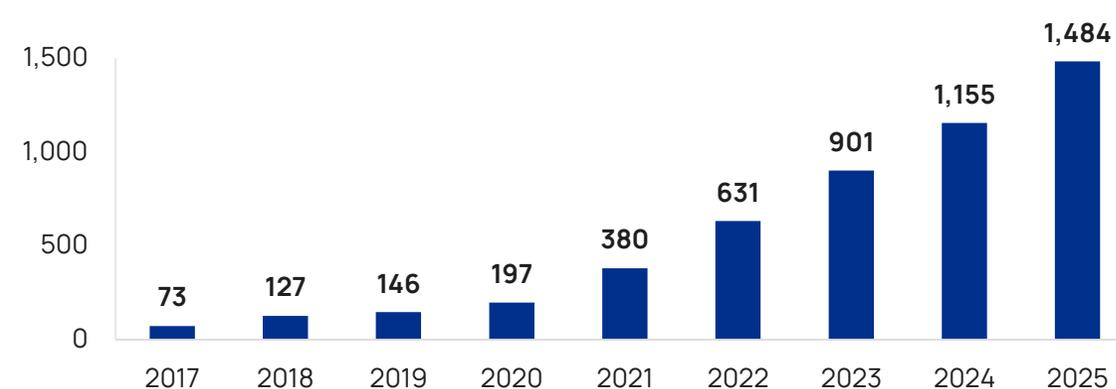
Strong pledge for increased military spending from global superpowers as geopolitical tension rises

United States	Germany	France	United Kingdom	Japan
<ul style="list-style-type: none"> <li>Defense spending rose from <b>US\$817B (2023) to US\$850B (2025 request)</b><sup>(1)</sup></li> <li><b>New goal: US\$1T annual defense budget, including US\$150B increase approved in April 2025</b><sup>(2)</sup> by House Armed Services Committee</li> <li>Focus on force readiness, modernization and global deterrence<sup>(1)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Defense budget rose from <b>US\$67B (2023)</b><sup>(3)</sup> to <b>US\$86B (2024)</b><sup>(4)</sup>; expected to reach <b>3.5% of GDP by 2029</b> (up from 2.1%)</li> <li><b>€100B special fund for Bundeswehr modernization</b>, planned through 2027<sup>(5)</sup></li> <li>Constitutional amendment in March <b>allows for defense borrowing beyond constitutional cap</b><sup>(6)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Defense spending grew to <b>US\$64B (2024)</b><sup>(3)</sup>, with a long-term <b>target of 3–3.5% of GDP</b><sup>(7)</sup></li> <li><b>€413B</b> allocated under the <b>LPM 2024–2030</b> to modernize forces, boost cybersecurity and readiness<sup>(8)</sup></li> <li>Additional <b>€5B</b> funding planned from public-private sources<sup>(7)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Budget rising from <b>£54B (FY 2023/24) to £60B (FY 2025/26)</b>; <b>2.3% of GDP</b> currently<sup>(9)</sup></li> <li><b>Target to reach 2.5% of GDP by 2027 and 3% longer term</b><sup>(10)</sup></li> <li>Current defense budget has an annual growth rate of <b>~2.3%</b><sup>(10)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Defense budget jumped from <b>¥6.6T (US\$45B, 2023) to ¥8.5T (US\$58B, 2025)</b><sup>(11)</sup></li> <li>Targeting <b>¥8.9T (US\$61B) by 2027</b><sup>(11)</sup>, a significant increase over previous levels</li> <li>Aiming to <b>fundamentally reinforce its defense capabilities amidst a severe and complex security environment</b><sup>(11)</sup></li> </ul>

PwC projects global semiconductor demand to grow by 8.6% 2024-30 CAGR (mn units)



Lithium battery sees rapid annual demand growth from rising EV adoption (GWh/year)



# Current ex-China tungsten mine pipeline unlikely to close the supply deficit

According to MSR, most proposed “new tungsten mines” ultimately fail to reach production. While roughly ten projects appeared promising on paper, only a few have commenced operations over the past decade, and several of those have since stalled or shut down. Below is a list of the tungsten projects recently put into operation or currently in the global pipeline that are considered among the most likely to advance to production.

Mine	Location	Key owner	Reserve of tungsten	Status	Tungsten capacity (tWO <sub>3</sub> )*		
					2026	2027	2028
Boguty	Kazakhstan	Jiabin International (parent is Jiangxi Copper Group, a Chinese SOE)	~140,800 tWO <sub>3</sub> reserves (68.4 Mt ore @ 0.206% WO <sub>3</sub> )	Production started into 2025; To increase capacity in early 2027	~7,100	~8,900	~8,900
Sangdong	South Korea	Almonty Industries	~37,000 tWO <sub>3</sub> (7.9 Mt ore @ 0.47% WO <sub>3</sub> )	Starting operation in late 2025; to double capacity in 2027	~2,300	~4,600	~4,600
Dolphin	Australia	Group 6 Metals	~40,800 tWO <sub>3</sub> (4.43 Mt ore @ 0.92% WO <sub>3</sub> )	Operating; ramp-up since 2023. Currently mining open-pit, to move to underground from mid 2026	~2,000	~2,000	~2,000
Hemerdon	UK	Tungsten West	~69,500 tWO <sub>3</sub> reserves (38 Mt ore @ 0.183% WO <sub>3</sub> )	Expected to start by Q4 2026, with ramp up in following 1-2 years	Start-up	~3,300	~3,300
El Moto	Spain	Abenojar Tungsten	~400,000 tWO <sub>3</sub> reserves (91 Mt ore @ 0.44% WO <sub>3</sub> )	Expected to start by H2 2027, with ramp up in following 1-2 years	Construction	Start-up phase	~3,100

Assuming these mines (excluding Boguty, given its linkage to China) operate at full capacity, additional ex-China supply would reach only ~13,000 tWO<sub>3</sub> per year by 2028, which remains far below the estimated 2025 ex-China supply deficit of ~79,000 tWO<sub>3</sub> (as referenced in [slide 20](#))

## Estimated Fair Value

---

## Base Case: Blended fair value

We derive a fair price of **VND53,600/share** for MSR using a 50:50 blend of DCF (FCFF) and EV/EBITDA comparables approaches, capturing both the long-term intrinsic value of the asset base and the market-driven valuation dynamics typical for commodity producers.

**DCF (FCFF):** We forecast cash flows over the remaining life of the Nui Phao mine until 2036, incorporating both NPMC Phase 1B and the Nui Phao Expansion project, which extends the operational profile of the asset. Beyond 2036, we assume the mining operations to phase down as the mine depletes, while the MTC tungsten chemical processing plant continues operating using externally sourced tungsten concentrate. During this phase, the business transitions to a more stable processing-driven model. We incorporate these cash flows and apply a 0% terminal growth rate, assuming steady-state operations thereafter.

**EV/EBITDA comparables:** We apply EV/EBITDA multiples derived from a peer group of Chinese tungsten producers. We choose Chinese tungsten due to similarity in business model and available historical multiples trading data.

We assign equal weighting (50:50) to both approaches to balance the long-term asset value captured in the DCF with the market-based valuation framework typically applied to commodity-linked equities, whose valuations tend to be more sensitive to commodity price cycles and investor sentiment.

Method	Weight	VND / share	Weighted price
DCF - FCFF	50%	37,500	18,800
EV/EBITDA comparables - 5Y median @ 12.1x	50%	69,500	34,800
<b>Fair price - blended (VND / share)</b>			<b>53,600</b>
Current share price (VND / share)			50,800
Upside / (Downside)			5.5%
Dividend yield			0.0%
<b>TSR</b>			<b>5.5%</b>
2026F P/E @ fair price / (market price)			15.2x / (14.4x)
2027F P/E @ fair price / (market price)			6.7x / (6.3x)
2028F P/E @ fair price / (market price)			5x / (4.7x)
2026F EV/EBITDA @ fair price / (market price)			9.7x / (9.1x)
2027F EV/EBITDA @ fair price / (market price)			5.4x / (5.1x)
2027F EV/EBITDA @ fair price / (market price)			4.3x / (4.1x)

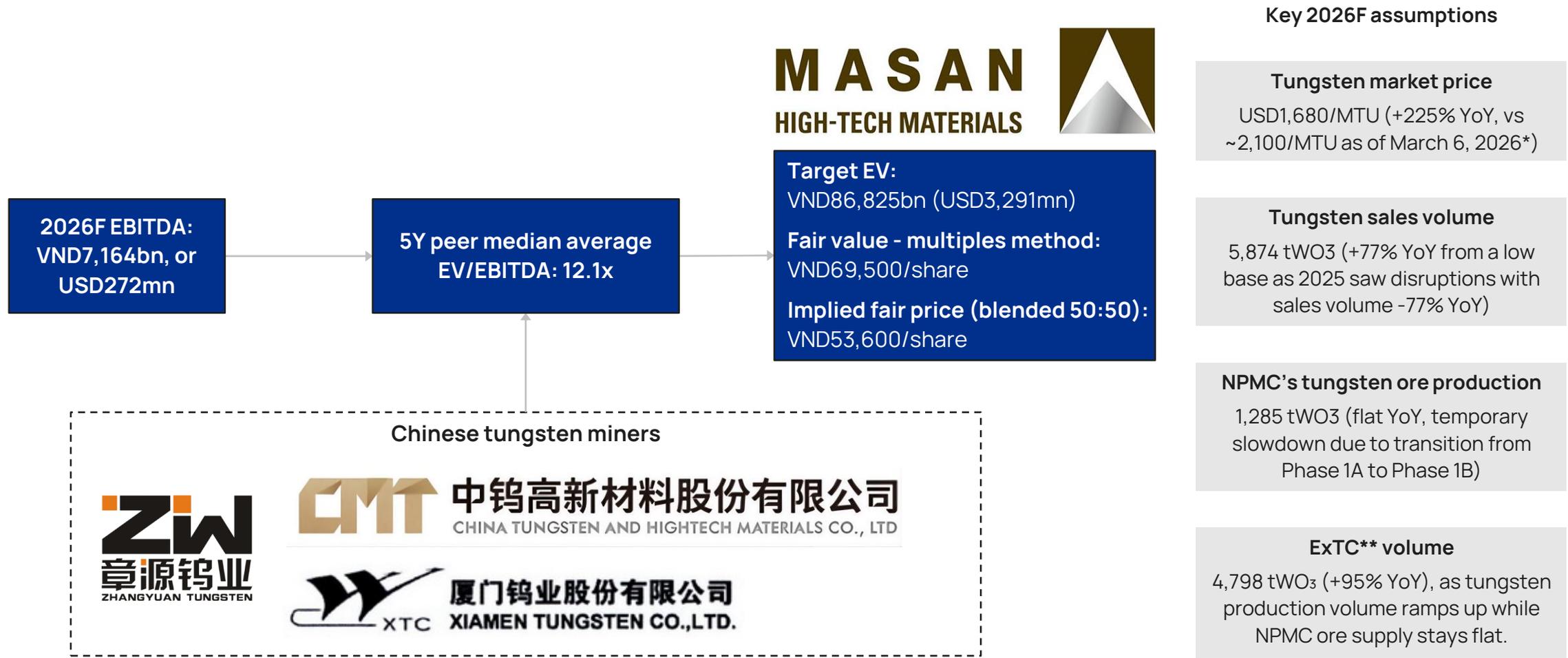
## Base Case: DCF

WACC	13.8% Note
Rf	6.0%
ERP	8.0%
Beta	1.1 2Y adjusted beta - Bloomberg
<b>Cost of equity</b>	<b>14.8%</b>
Pre-tax cost of debt	11.3% Average of blended ST, LT interest rate
Tax rate	18.6% Some key subsidiaries of MSR enjoys favourable CIT
<b>After-tax cost of debt</b>	<b>9.2%</b>
Debt-to-Capital	17%
Equity-to-Capital	83%
<b>Terminal growth</b>	<b>0%</b>

FCFF	VND bn	USD mn
PV of forecast period	51,889	1,967
PV of terminal years	856	32
<b>Enterprise value</b>	<b>52,745</b>	<b>1,999</b>
Plus: Cash	255	10
Less: Debt	-11,732	-445
Less: MI	0	0
<b>Value of Equity</b>	<b>41,268</b>	<b>1,564</b>
O/S (mn)	1,100	
<b>Price per share (VND)</b>	<b>37,500</b>	

FCFF (VND bn)	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
<b>EBIT</b>	<b>5,610</b>	<b>11,269</b>	<b>14,393</b>	<b>6,494</b>	<b>9,681</b>	<b>9,357</b>	<b>10,116</b>	<b>11,039</b>	<b>11,991</b>	<b>12,968</b>	<b>7,020</b>	<b>864</b>	<b>911</b>	<b>959</b>
less: tax	-842	-1,690	-2,159	-974	-1,936	-1,871	-2,023	-2,208	-2,398	-2,594	-1,404	-173	-182	-192
add: depreciation	1,554	1,591	1,660	1,760	1,869	1,959	2,011	2,034	2,047	2,056	2,025	0	0	0
less: capex	-713	-672	-885	-1,122	-1,106	-854	-424	-363	-88	-227	-57	0	0	0
(increase) / decrease in NWC	1,275	-326	-289	567	-64	-70	-51	-33	-31	-31	-181	1,398	68	-42
<b>Unlevered free cash flow / FCFF</b>	<b>6,885</b>	<b>10,172</b>	<b>12,719</b>	<b>6,725</b>	<b>8,445</b>	<b>8,522</b>	<b>9,629</b>	<b>10,470</b>	<b>11,520</b>	<b>12,171</b>	<b>7,403</b>	<b>2,090</b>	<b>797</b>	<b>725</b>
Discount factor	0.9	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2
<b>PV of FCFF</b>	<b>6,049</b>	<b>7,851</b>	<b>8,624</b>	<b>4,006</b>	<b>4,420</b>	<b>3,918</b>	<b>3,890</b>	<b>3,716</b>	<b>3,592</b>	<b>3,334</b>	<b>1,781</b>	<b>442</b>	<b>148</b>	<b>118</b>

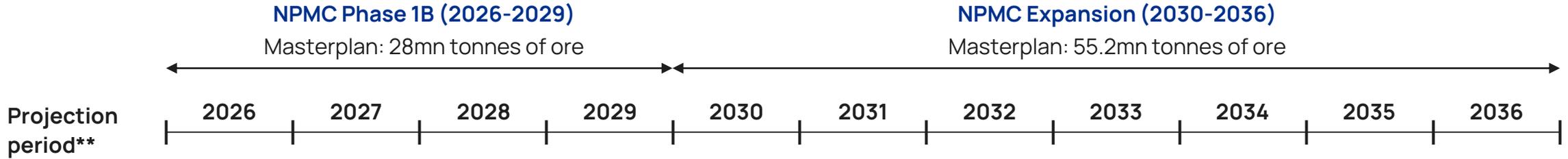
# Base Case: Comparables (1)



## Base Case: Comparables (2)

Ticker	Name	Country	Mkt Cap (USDmn)	Net Sales T12M (USDmn)	NPAT T12M (USDmn)	TTM P/E	LQ P/B	EV/EBITDA 5Y average	EV/EBITDA T12M
600549 CH	Xiamen Tungsten Co Ltd-A	China	16,821	5,659	292	54.1x	6.9x	12.1x	25.5x
000657 CH	China Tungsten & Hightech-A	China	22,587	2,394	219	74.9x	15.7x	11.9x	60.9x
002378 CH	Chongyi Zhangyuan Tungsten-A	China	7,472	655	30	232.1x	22.9x	18.6x	100.0x
<b>Median - Tungsten (China)</b>			<b>16,821</b>	<b>2,394</b>	<b>219</b>	<b>74.9x</b>	<b>15.7x</b>	<b>12.1x</b>	<b>60.9x</b>
<b>MSR</b>	<b>Masan High-Tech Materials</b>	<b>Vietnam</b>	<b>2,149</b>	<b>286</b>	<b>0</b>	<b>4947.4x</b>	<b>4.6x</b>	<b>22.2x</b>	<b>35.1x</b>

# Base Case: Comparables (3)



**Total 2026-36F base-case NPMC's TC\* production: ~32,800 tWO3**

Tungsten price (USD/MTU)	1,680	1,700	1,700	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
--------------------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

*2026F price: ~20% discount vs March 6, 2026's average market price of ~USD2,100/MTU (Fastmarkets' reference price)*

Annual EBITDA (VND bn / USD mn)	7,164 (USD272)	12,860 (USD488)	16,052 (USD609)	8,254 (USD313)	11,550 (USD438)	11,317 (USD429)	12,127 (USD460)	13,073 (USD496)	14,038 (USD532)	15,023 (USD569)	9,046 (USD343)
---------------------------------	----------------	-----------------	-----------------	----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	----------------

**Total 2026-2036F EBITDA: VND130,506bn (USD4,947mn) within 11 years**

**Total 2026-2036F EBITDA / 2026F EBITDA = 18.2x**

## Base Case: Sensitivity analysis to tungsten price assumptions

Sensitivity analysis to the 2026F average tungsten price assumption (also drives subsequent price forecasts as later-year prices are modeled on YoY growth), ceteris paribus

2026F tungsten market price	USD/MTU	500	700	900	1,100	1,300	1,500	1,680	1,900	2,100	2,300	2,500	2,700
2026F Revenue	VND bn	10,015	13,168	16,320	19,473	22,625	25,777	<b>28,615</b>	32,082	35,235	38,387	41,540	44,692
2026F EBITDA	VND bn	1,321	2,311	3,302	4,292	5,282	6,273	<b>7,164</b>	8,253	9,243	10,234	11,224	12,214
2026F EBITDA margin	%	13.2%	17.6%	20.2%	22.0%	23.3%	24.3%	<b>25.0%</b>	25.7%	26.2%	26.7%	27.0%	27.3%
Implied fair price - EV/EBITDA multiples	VND / share	5,100	16,000	27,000	37,900	48,800	59,700	<b>69,500</b>	81,500	92,400	103,300	114,300	125,200
Implied fair price - DCF	VND / share	33,600	34,200	34,900	35,600	36,200	36,900	<b>37,500</b>	38,300	38,900	39,600	40,300	41,000
Implied fair price - Blended	VND / share	19,400	25,100	31,000	36,800	42,500	48,400	<b>53,600</b>	60,000	65,700	71,500	77,400	83,100
Upside/(downside) to base case	%	-63.8%	-53.2%	-42.2%	-31.3%	-20.7%	-9.7%	<b>0.0%</b>	11.9%	22.6%	33.4%	44.4%	55.0%
Upside/(downside) to current price	%	-61.8%	-50.6%	-39.0%	-27.6%	-16.3%	-4.7%	<b>5.5%</b>	18.1%	29.3%	40.7%	52.4%	63.6%

Note: 2026F tungsten price forecast is in line with the table. For 2027-28F, we assume prices are 5% above 2026F to reflect stronger momentum in Q1 2026. In 2029F, we assume prices decline 30% YoY from 2028F and remain flat thereafter, as we expect a post-Trump administration environment to ease geopolitical tensions and reduce tungsten stockpiling demand from the defense sector.

Sensitivity analysis to the 2029F onwards tungsten price assumption (we assume 2029F onwards tungsten price to remain flat), ceteris paribus

2029F onwards tungsten market price	USD/MTU	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600
2029-36F aggregate revenue	VND bn	120,049	139,937	159,825	179,712	199,600	219,487	239,375	<b>259,262</b>	279,150	299,038	318,925	338,813
2029-36F aggregate EBITDA	VND bn	28,335	37,777	47,219	56,661	66,103	75,545	84,987	<b>94,429</b>	103,871	113,313	122,755	132,197
2029-36F average EBITDA margin	%	23.6%	27.0%	29.5%	31.5%	33.1%	34.4%	35.5%	<b>36.4%</b>	37.2%	37.9%	38.5%	39.0%
Implied fair price - EV/EBITDA multiples	VND / share	69,500	69,500	69,500	69,500	69,500	69,500	69,500	<b>69,500</b>	69,500	69,500	69,500	69,500
Implied fair price - DCF	VND / share	18,800	21,500	24,100	26,800	29,500	32,200	34,800	<b>37,500</b>	40,200	42,900	45,500	48,200
Implied fair price - Blended	VND / share	44,200	45,600	46,900	48,200	49,600	50,900	52,200	<b>53,600</b>	54,900	56,300	57,600	58,900
Upside/(downside) to base case	%	-17.5%	-14.9%	-12.5%	-10.1%	-7.5%	-5.0%	-2.6%	<b>0.0%</b>	2.4%	5.0%	7.5%	9.9%
Upside/(downside) to current price	%	-13.0%	-10.2%	-7.7%	-5.1%	-2.4%	0.2%	2.8%	<b>5.5%</b>	8.1%	10.8%	13.4%	15.9%

Note: For this table, we keep the 2026-28F tungsten price projection constant, at USD1,680-1,700/MTU (similar to base case).

# Scenario Analysis

	Bear case	Base case	Bull case 1	Bull case 2	
Equity value - DCF (VND bn)	26,511	41,268	58,713 (Bullish vs base case)	41,268 (Same as base case)	
Equity value - EV/EBITDA multiples (VND bn)	50,014	76,456	93,393	122,520	
2026F EBITDA (VND bn)	4,982	7,164	8,561 (Bullish vs base case)	7,164 (Same as base case)	
Peers' EV/EBITDA	12.1x (Same as base case)	12.1x	12.1x (Same as base case)	18.6x (Bullish vs base case)	
Blended equity value - 50:50 mix (VND bn)	38,262	58,862	76,053	81,894	
Implied fair price (VND / share)	34,900	53,600	69,200	74,500	
Upside/(Downside) vs current price VND50,800/share	-31.3%	+5.5%	+36.2%	+46.7%	
Key assumptions	2026-36F total tungsten sales volume (tWO3)	~83,960	~83,960	~83,960	
	2026-36F total NPMC TC* production volume (tWO3)	~29,500 (10% discount vs the base case)	~32,800	~41,200 (MSR's production plan)	~32,800 (Same as base case)
	2026-36F total ExTC volume (tWO3)	~57,900	~54,600	~46,200	~54,600
	2026-28F tungsten price (USD/MTU) (Discount vs current price of ~USD2,100/MTU**)	1,340 to 1,400 (~33%-36% discount)	1,680 to 1,700 (~19%-20% discount)	2,000 to 2,020 (~4%-5% discount)	1,680 to 1,700 (Same as base case)
	2029F onwards tungsten price (USD/MTU) (Discount vs current price of ~USD2,100/MTU**)	1,000 (~52% discount)	1,200 (~43% discount)	1,400 (~33% discount)	1,200 (Same as base case)

# Bull Case 2: Extended comparables peer list (1)



For Bull Case 2, we keep operating assumptions unchanged from the base case, but apply a higher EV/EBITDA multiple

Key 2026F assumptions  
(same as base case)

Tungsten market price

USD1,680/MTU (+225% YoY, vs ~2,100/MTU as of March 6, 2026\*)

Tungsten sales volume

5,874 tWO<sub>3</sub> (+77% YoY from a low base as 2025 saw disruptions with sales volume -77% YoY)

NPMC's tungsten ore production

1,285 tWO<sub>3</sub> (flat YoY, temporary slowdown due to transition from Phase 1A to Phase 1B)

ExTC\*\*\* volume

4,798 tWO<sub>3</sub> (+95% YoY), as tungsten production volume ramps up while NPMC ore supply stays flat.



Target EV:  
VND132,889bn (USD5,037mn)  
Fair value - multiples method:  
VND111,400/share  
Implied fair price (blended 50:50):  
VND74,500/share

2026F EBITDA:  
VND7,164bn, or  
USD272mn

Peer median EV/EBITDA:  
18.6x



Source: MSR, Almonty, Vietcap. \*Fastmarkets' data. \*\*For non-Chinese tungsten miners, we apply 2026F EV/EBITDA based on Bloomberg consensus, as historical trading multiples are not meaningful given EBITDA losses over the past five years. We believe these players, similar to MSR, are entering a new growth cycle driven by stronger tungsten prices, which should turn their earnings positive from 2026F onwards. \*\*\*ExTC refers to the external tungsten concentrate input source for MTC.

## Bull Case 2: Extended comparables peer list (2)

For non-Chinese tungsten miners, we apply Bloomberg consensus' 2026F EV/EBITDA, as historical trading multiples are not meaningful given EBITDA losses over the past five years. We believe these players, similar to MSR, are entering a new growth cycle driven by stronger tungsten prices, which should turn their earnings positive from 2026F onwards.

Ticker	Name	Country	Mkt Cap (USDmn)	Net Sales T12M (USDmn)	NPAT T12M (USDmn)	TTM P/E	LQ P/B	EV/EBITDA 5Y average	EV/EBITDA T12M
<b>Chinese tungsten miners</b>									
600549 CH	Xiamen Tungsten Co Ltd-A	China	16,821	5,659	292	54.1x	6.9x	12.1x	25.5x
000657 CH	China Tungsten & Hightech-A	China	22,587	2,394	219	74.9x	15.7x	11.9x	60.9x
002378 CH	Chongyi Zhangyuan Tungsten-A	China	7,472	655	30	232.1x	22.9x	18.6x	100.0x
<b>Non-Chinese tungsten miners</b>									
ALM US	Almonty Industries Inc	Canada	5,123	22	(47)	N/A	N/A	38.0x	N/A
EQR AU	Eq Resources Ltd	Australia	1,218	43	(25)	N/A	14.2x	23.6x	N/A
<b>Median - Tungsten (China)</b>			<b>16,821</b>	<b>2,394</b>	<b>219</b>	<b>74.9x</b>	<b>15.7x</b>	<b>12.1x</b>	<b>60.9x</b>
<b>Median - Tungsten (ex-China)</b>			<b>3,171</b>	<b>32</b>	<b>(36)</b>	<b>N/A</b>	<b>14.2x</b>	<b>30.8x</b>	<b>N/A</b>
<b>Median - Tungsten (all)</b>			<b>7,472</b>	<b>655</b>	<b>30</b>	<b>74.9x</b>	<b>15.0x</b>	<b>18.6x</b>	<b>60.9x</b>
<b>MSR</b>	<b>Masan High-Tech Materials</b>	<b>Vietnam</b>	<b>2,149</b>	<b>286</b>	<b>0</b>	<b>4947.4x</b>	<b>4.6x</b>	<b>22.2x</b>	<b>35.1x</b>

# Disclaimer

---

## Analyst Certification of Independence

We, Huy Hoang and Nam Hoang, hereby certify that the views expressed in this report accurately reflect my personal views about the subject securities or issuers. We also certify that no part of our compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this report. The equity research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues, which include revenues from, among other business units, Institutional Equities and Investment Banking.

Vietcap and its officers, directors and employees may have positions in any securities mentioned in this document (or in any related investment) and may from time to time add to or dispose of any such securities (or investment). Vietcap may have, within the last three years, served as manager or co-manager of a public offering of securities for, or currently may make a primary market in issues of, any or all of the entities mentioned in this report or may be providing, or have provided within the previous 12 months, significant advice or investment services in relation to the investment concerned or a related investment.

Copyright 2026 Vietcap Securities Company "Vietcap". All rights reserved. This report has been prepared on the basis of information believed to be reliable at the time of publication. Vietcap makes no representation or warranty regarding the completeness and accuracy of such information. Opinions, estimates and projection expressed in this report represent the current views of the author at the date of publication only. They do not necessarily reflect the opinions of Vietcap and are subject to change without notice. This report is provided, for information purposes only, to institutional investors and retail clients of Vietcap in Vietnam and overseas in accordance to relevant laws and regulations explicit to the country where this report is distributed, and does not constitute an offer or solicitation to buy or sell any securities discussed herein in any jurisdiction. Investors must make their investment decisions based upon independent advice subject to their particular financial situation and investment objectives. This report may not be copied, reproduced, published or redistributed by any person for any purpose without the written permission of an authorized representative of Vietcap. Please cite sources when quoting.

**U.K. and European Economic Area (EEA):** Unless specified to the contrary, issued and approved for distribution in the U.K. and the EEA by Vietcap issued by Vietcap has been prepared in accordance with Vietcap's policies for managing conflicts of interest arising as a result of publication and distribution of investment research. Many European regulators require a firm to establish, implement and maintain such a policy. This report has been issued in the U.K. only to persons of a kind described in Article 19 (5), 38, 47 and 49 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (all such persons being referred to as "relevant persons"). This document must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is only available to relevant persons and will be engaged in only with relevant persons. In other EEA countries, the report has been issued to persons regarded as professional investors (or equivalent) in their home jurisdiction. **Australia:** This material is issued and distributed by Vietcap in Australia to "wholesale clients" only. Vietcap does not issue or distribute this material to "retail clients". The recipient of this material must not distribute it to any third party or outside Australia without the prior written consent of Vietcap. For the purposes of this paragraph the terms "wholesale client" and "retail client" have the meanings given to them in section 761G of the Corporations Act 2001. **Hong Kong:** The 1% ownership disclosure as of the previous month end satisfies the requirements under Paragraph 16.5(a) of the Hong Kong Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission. (For research published within the first ten days of the month, the disclosure may be based on the month end data from two months prior.) **Japan:** There is a risk that a loss may occur due to a change in the price of the shares in the case of share trading, and that a loss may occur due to the exchange rate in the case of foreign share trading. In the case of share trading, Vietcap will be receiving a brokerage fee and consumption tax (shouhizei) calculated by multiplying the executed price by the commission rate which was individually agreed between Vietcap and the customer in advance. **Korea:** This report may have been edited or contributed to from time to time by affiliates of Vietcap. **Singapore:** Vietcap and/or its affiliates may have a holding in any of the securities discussed in this report; for securities where the holding is 1% or greater, the specific holding is disclosed in the Important Disclosures section above. **India:** For private circulation only, not for sale. **Pakistan:** For private circulation only, not for sale. **New Zealand:** This material is issued and distributed by Vietcap in New Zealand only to persons whose principal business is the investment of money or who, in the course of and for the purposes of their business, habitually invest money. Vietcap does not issue or distribute this material to members of "the public" as determined in accordance with section 3 of the Securities Act 1978. The recipient of this material must not distribute it to any third party or outside New Zealand without the prior written consent of Vietcap. **Canada:** The information contained herein is not, and under no circumstances is to be construed as, a prospectus, an advertisement, a public offering, an offer to sell securities described herein, or solicitation of an offer to buy securities described herein, in Canada or any province or territory thereof. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the dealer registration requirement in the relevant province or territory of Canada in which such offer or sale is made. The information contained herein is under no circumstances to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient. To the extent that the information contained herein references securities of an issuer incorporated, formed or created under the laws of Canada or a province or territory of Canada, any trades in such securities must be conducted through a dealer registered in Canada. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed judgment upon these materials, the information contained herein or the merits of the securities described herein, and any representation to the contrary is an offence. **Dubai:** This report has been issued to persons regarded as professional clients as defined under the DFSA rules. **United States:** This research report prepared by Vietcap is distributed in the United States to Major US Institutional Investors (as defined in Rule 15a-6 under the Securities Exchange Act of 1934, as amended) only by Decker&Co, LLC, a broker-dealer registered in the US (registered under Section 15 of Securities Exchange Act of 1934, as amended). All responsibility for the distribution of this report by Decker&Co, LLC in the US shall be borne by Decker&Co, LLC. All resulting transactions by a US person or entity should be effected through a registered broker-dealer in the US. This report is not directed at you if Vietcap Broker or Decker&Co, LLC is prohibited or restricted by any legislation or regulation in any jurisdiction from making it available to you. You should satisfy yourself before reading it that Decker&Co, LLC and Vietcap is permitted to provide research material concerning investment to you under relevant legislation and regulations.