

**M A S A N**  
HIGH-TECH MATERIALS



**ANNUAL & SUSTAINABILITY  
REPORT  
2023**



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## MESSAGE FROM MANAGEMENT TEAM

The year 2023 marks the sixth year that I have been CEO of Masan High-Tech Materials and had the responsibility for writing the CEO message. It has been without doubt the most difficult year that I have led the company with multiple challenges across the business coming to the fore with the global economic slowdown impacting both sales volumes and prices while inflationary pressures on cost inputs squeezed margins. Further complicating the business performance was the withdrawal of services by MHT's long-term blasting services provider in Vietnam resulting in the cessation of mining activities at Nui Phao for three quarters of the year. As a result of these multifaceted challenges the financial performance of the business has suffered. MHT delivered FY2023 revenue of VND14,093 billion, a nine percent reduction on the record revenue achieved in 2022 of VND 15,550 billion. Equally with significant cost pressure across the global business and the lack of sales orders in the HCS business leading to underutilization of our equipment in those regions, our Earnings before Interest Tax and Depreciation decreased 52 percent year on year to VND1,550 billion. In response to these challenges, we have launched a global "Fit for Future" program to address this margin erosion and return the business to a long-term sustainable profitability level.

On a positive note, we have improved our safety performance across the business. In 2023, the Total Recordable Injuries Frequency Rate (TRIFR) and Lost Time Injury Frequency Rate, per million man-hours worked at MHT Vietnam were 2.1 (2022: 3.42) and 1.47 (2022: 1.47) respectively. For our HCS operations, the Lost Time Injury Frequency Rate was 2.2 (2022: 6.6) while our analytical services business, ChemiLytics, recorded an LTIFR of 10.4 (2022: 32.2) with one accident within the year 2023. No accident was reported at the Samia and Ganzhou sites in 2023.

The consistent improvement in accident and LTIR figures is primarily due to two factors. In addition to operational and safety training tailored to the individual site needs, the re-integration of the Health and Safety department in Goslar from an outsourced model has increased safety ownership and accountability resulting in improved performance.

In Vietnam, the team implemented a work environment monitoring program, with the number of safety observations relating to personnel and work areas increasing by 44% compared with 2022. The company continued to monitor working conditions to classify hazards to improve workplace safety and personal ownership and accountability. Our key driver remains ensuring every person arrives home safely to their families at the end of every shift.

In response to our profitability margins being squeezed we initiated a "Fit for Future" business optimization program across the MHT businesses to remove waste, optimize the product portfolio and launch a refreshed program of cost optimization. This has seen the following outcomes which are expected to deliver improvements progressively throughout 2024:

- Recommencement of the Monetization of the Copper Inventory Stockpile with sales of VND1,044 billion recorded in 2023 equivalent to 42,387 dry metric tonnes and contracts for supply executed for 45k dry metric tonnes for delivery in 2024;
- New Blasting Services Contract awarded with a 20% reduction in blasting services over the prior contract, blasting recommenced from mid-March 2024;
- Tendering of the Major Mining Contract with an expected reduction of 10% expected once the new contract is awarded;
- All supply and procurement contracts being progressively re-tendered to deliver significant cost saving;
- Reduction in workforce in Vietnam of 36 people, of which 23 were higher paid expatriate roles which have now been localized with Vietnamese staff;
- Completion and Submission of a Feasibility Study and Environment Impact Assessment for an issuance of a new Mining Licence expected to be approved in late 2024 and underpin mining at Nui Phao through till at least 2034;
- General salary increases for employees, including Management and the Executive cancelled for 2023 except where statutory minimums were required to be met in certain jurisdictions;
- In June 2023, Masan High-Tech Materials completed the acquisition of Chemitas, a services provider in energy supply, waste management, and logistics based in Goslar, Germany. This strategic move enhances manufacturing and delivery capabilities while aligning with Masan High-Tech Materials' commitment to delivering comprehensive solutions to its customers in the global market. It is expected that through the acquisition of Chemitas and the consolidation of services in the metallurgical compound in Goslar under HCS Tungsten ownership we will be able to lower our operating cost structure;
- Headcount reduction by 18 FTE across HCS Group in Germany (including HCS Tungsten, Chemitas, and ChemiLytics): YOY Change 569 FTE (Dec 2023) vs. 587 FTE (Dec 2022), primarily due to non-filling of vacant positions;
- Reduced HCS energy consumption by 6% across several sources, including natural gas, electricity, steam, fuel oil, compressed air, mainly

due to optimization of heating and ventilation systems, better production planning as well as replacement of obsolete equipment;

- Cost savings of EUR 150,000 for HCS through sourcing Sodium Sulphate from Vietnam.

In 2023, MHT maintained and continued to promote community engagement activities, including community development and economic recovery programs. The Company is committed to fulfilling its responsibilities to the community by implementing various community development and economic recovery projects with a total investment amount of approximately VND 6.8 billion. These projects have directly benefited about 4,500 households, including over 600 ethnic minority households and 270 vulnerable households. We also continued to be a significant contributor to the state budget with VND 1,414 billion paid making MHT the largest Vietnamese taxpayer in Thai Nguyen province.

Our employees continue to work tirelessly for you, our shareholders, to ensure that MHT reaches its full potential. We now have 2,335 employees across nine countries to deliver on the Vision of the company. In August 2023 we received certification as "A Great Place to Work" for the MHT Vietnam businesses based on anonymous survey feedback from over 1,000 employees. This response despite the challenges and the sacrifices made by employees in 2023 is truly amazing. We have a great foundation on which to continue to build MHT successfully.

In January 2023 we launched a global Whistleblower program and received 17 anonymous reports through the system with 16 closed out and one continuing to be investigated. This program in partnership with Deloitte enables greater accountability to be placed on the company and open feedback so we can ensure we are operating with transparency and integrity across the business.

As we look forward, while 2024 is expected to be challenging with ongoing global turmoil and inflationary pressures and recessionary concerns, we will continue to push the initiatives under the "Fit for Future" program to deleverage the business and optimize costs and production to return margins to long term sustainable and profitable levels.

Thank you for your ongoing support.



**Craig Richard Bradshaw**  
Chief Executive Officer



“

*We will continue to push the initiatives under the "Fit for Future" program to deleverage the business and optimize costs and production to return margins to long term sustainable and profitable levels.”*

**Craig Richard Bradshaw**  
Chief Executive Officer



*H.C. Starck - ChemiLytics - Chemitas Management in Germany*



*Masan High-Tech Materials Management in Vietnam*

## OUTSTANDING ACHIEVEMENTS IN 2023



Net revenue

VND **14,093** billion

VND **1,414** billion

contributed to the State Budget



Two globally patented products launched

**starck2charge<sup>®</sup>**

and

**starck2print<sup>®</sup>**



VND **2,050** million

loaned to **41**

households through the Economic Recovery Loan Fund



The first Vietnamese enterprise in the manufacturing sector to be certified as a

**“Great Place to Work”**

The Vietnamese company with

**The highest contribution**

to Thai Nguyen Province budget

**TOP 10**

Most Innovative Enterprises - Vietnam

**TOP 100**

Sustainable Enterprises - Vietnam



Completion of the acquisition of

**Chemitas**

a German services provider of energy supply, waste management, and logistics services



**7,882** thousand m<sup>3</sup>

of wastewater recycled for production, accounting for **76.7%** of MHT Vietnam's total water usage

**63,9** ha

hectares of land reclaimed and restored



**2,335**

employees globally

**42,230** training hours and

**21,710** employees participated

# 2023 AWARDS AND RECOGNITION



Amidst the challenges as well as dynamic currents of the global market, Masan High-Tech Materials emerged as beacons of innovation and resilience. 2023 marked our transformative endeavors, accompanied by a constellation of prestigious awards - testaments to our relentless pursuit of sustainability and unwavering dedication to our stakeholders, including our people, our clients, and our communities.

In 2023 Masan High-Tech Materials, together with its subsidiaries, was recognized as exemplary business for its commendable efforts and accomplishments. These include “Top 10 Most Innovative Enterprises in Vietnam”, “Top 50 Vietnam The Best”, “Top 100 Sustainable Enterprises”, “Great Place to Work Vietnam”, and “Enterprise For Employees”. These accolades not only honor our achievements in the past year but also serve as catalysts, propelling us towards larger production and commercial goals in 2024, and affirming our commitment to sustainable growth and enduring impact.



## CERTIFICATE OF “TOP 100 SUSTAINABLE BUSINESSES IN VIETNAM 2023” FOR MASAN HIGH-TECH MATERIALS

Voted and awarded by the Vietnam Federation of Commerce and Industry (VCCI)

## CERTIFICATE OF “TOP 10 MOST INNOVATIVE ENTERPRISES IN VIETNAM” FOR MASAN HIGH-TECH MATERIALS

Voted and awarded by Vietnam Business Research (Viet Research)

## CERTIFICATE OF “ENTERPRISE FOR EMPLOYEES” FOR NUI PHAO MINING

Voted and awarded by Vietnam Labor Confederation

## CERTIFICATE OF MERIT FOR NUI PHAO MINING “ENTERPRISE ACHIEVING CULTURAL STANDARDS IN THE PERIOD 2022 - 2023”

Voted and awarded by Labor Federation of Thai Nguyen province

## CERTIFICATE OF “GREAT PLACE TO WORK VIETNAM 2023” FOR MASAN HIGH-TECH MATERIALS

Survey and certification by Great Place to Work®

## CERTIFICATE OF “TOP 50 VIETNAM THE BEST” FOR MASAN HIGH-TECH MATERIALS

Voted and awarded by Vietnam Report JSC

## CERTIFICATE OF MERIT FOR NUI PHAO MINING “OUTSTANDING ACHIEVEMENTS IN THE EDUCATION AND TALENT PROMOTION MOVEMENT, CONTRIBUTING TO THE EDUCATION AND SOCIAL DEVELOPMENT OF THE COMMUNITY IN 2023”

Voted and awarded by Vietnam Association for Promoting Education

## CERTIFICATE OF MERIT FOR NUI PHAO MINING “EXCELLENT ACHIEVEMENTS IN THE PATRIOTIC EMULSION MOVEMENTS OF THAI NGUYEN PROVINCE IN 2023”

Voted and awarded by People’s Committee of Thai Nguyen province



CSI 100 Sustainable Businesses in Vietnam 2023



Top 50 Vietnam The best 2023

# BUSINESS OPERATION REPORT

Business Overview Report

2023 Business Performance

Management Team Assessment Report

Board of Directors Assessment Report

Audit Committee's Review of the Company's Operations

Corporate Governance Report

Risk Management



## BUSINESS OVERVIEW REPORT

### 2023 - 2024 Economic & Financial Review and Outlook

Global economic activity is currently grappling with a widespread and unexpectedly pronounced slowdown, accompanied by inflation rates unseen in many years. The convergence of factors such as the cost-of-living crisis, tightening financial conditions across most regions, escalating geopolitical conflicts such as those between Russia and Ukraine, developments in Red Sea region, alongside the enduring effects of the COVID-19 pandemic, significantly weigh on the economic outlook. Global growth decelerated from 5.8% in 2021 to 3.5% in 2022, further slipping to 3.1% in 2023. The projection for 2024 remains broadly flat at 3.1%. This is the one of the most sub-duded growth trajectories since 2001 with the exception of the global financial crisis and the acute phase of the COVID-19 pandemic. Global headline inflation rose from 4.7% in 2021 to 8.7% in 2022. Following extensive policy tightening, it declined to 6.8% in 2023 and is anticipated to decrease further to 5.8% by 2024. Monetary policy should stay the course to restore price stability, and fiscal policy should aim to alleviate the cost-of-living pressures while maintaining a sufficiently tight stance aligned with monetary policy. Structural reforms can further support the fight against inflation by improving productivity and easing supply constraints, while multilateral cooperation is necessary for fast-tracking the green energy transition and preventing fragmentation.

Our primary markets have exhibited a diverse economic performance from 2021 to 2024. Vietnam's GDP reported a robust performance from 5.5% growth in 2021 to 8% in 2022. However, it moderated to 5.2% growth in 2023 but is expected to rebound to 6% in 2024. Germany, on the other hand, saw a continuous decline from 2.7% in 2021 to 1.8% in 2022 and then shrunk by 0.3% in 2023. It is expected to revive and grow at 0.5% in 2024. The US economy expanded by 1.9% in 2022 following robust growth of 5.9% in 2021. Despite this moderation, the US maintained its strength in 2023 with a growth rate of 2.5%, projections indicate that this momentum will continue, with a forecasted growth of 2.1% in 2024. China's economy exhibited a stagnant growth of 3% in 2022 and rebound to a 5.2% in 2023. The economy is expected to struggle, but it is expected to grow at 4.6% in 2024.

As reported by the IMF, global inflation is expected to fall to 6.8% in 2023 and further down to 5.8% in 2024, still above pre-pandemic levels. The inflationary pressures observed throughout 2023 have significantly affected our business operations, resulting in adverse impacts on both production and freight costs. We anticipate a slight alleviation of this trend in 2024, particularly with the improvement in Chinese consumption and consumer buying confidence across the globe. We are closely monitoring these market developments to adapt accordingly.

## 2023 Market Report

### Tungsten

Tungsten prices rose briefly to a high of \$340/MTU in 1Q23 before retreating to \$300/MTU in 3Q and trending sideways reflecting the generally lackluster demand situation, particularly in the second half of the year. Expectations of a strong recovery in the China domestic economy were not realized as the combination of a property sector in turmoil and punitive trade conditions led by the US stymied a post COVID rebound. Unfortunately, this economic malaise was not constrained to China as the highly interdependent nature of the APAC economies saw a resultant slowdown in Korea and Japan, two significant markets for consumption of tungsten.

Major macro themes of 2023 include a pivot to protectionist trade policies with the US engaging China in an all-out trade war, persistent inflation despite aggressive central bank intervention, intensifying geopolitical tensions, concern of an impending recession in the Eurozone, and stubbornly high energy prices across the board. Tungsten fundamentals remained broadly in balance as evidenced by the comparatively stable price, and the lower demand seen by the mid and upstream actors appears to have been driven by an effort to reduce inventories across the supply chain rather than any serious demand destruction.

Sector-wise Aerospace finally recovered from its COVID slump and, Mining, Energy and Defense performed strongly, but this was offset by headwinds for general manufacturing, infrastructure, and the electronics & semiconductor sector. Automotive production figures were encouraging for FY23 but a strong focus on destocking impacted tungsten demand YOY. NAFTA markets were resilient late into the year helped by the buoyant US economy, EMEA underperformed as a combination of high interest rates and persistently high energy prices saw the EU economy narrowly avoid a recession, and APAC suffered as Japan and Korea's trade dependence on China caused retrenchment across the tungsten consumers.

As we move into FY2024 the Tungsten price is likely to remain stable as despite the temporary weakness in downstream demand the overall inventory levels across the supply chain have reached a low level and supply & demand are well balanced, there is possible upside in the 2H of the year as the destocking cycle concludes and buyers return to the market. Welcome signs of easing inflation, slowing wage growth, and softening energy prices have appeared and central bank policy is pointing towards a cessation of rate hikes and possibly even a reduction, the focus will remain on China to see how aggressively the CCP will act to stimulate the economy.

### Fluorspar

The Acid Grade Fluorspar price remained stable across FY23 thanks to a well-balanced supply and demand picture and very limited sea-borne trade; term contracts being in favor. There was some pricing pressure from Chinese exports, and South African material in the 2H as the China domestic economy slowed, but this had a limited impact on FY24 pricing negotiations as western consumers remain supportive of non-China supply, and future downstream capacity expansions at a number of consumers has encouraged them to pay for surety.

Ex-China producers have been given a boost by the U.S. CHIPS act and IRA, and equivalent legislation in the EU which strongly favor supply for strategic materials such as Fluorine Chemicals for semiconductor process gases, from partner nations with free trade agreements. Offsetting this has been the regulatory headache created by the EU around the phasing out of PFAS chemicals (Per and Polyfluoroalkyl Substances), Fluorine containing chemicals which can be found in everything from food packaging to engineered coatings in semiconductor manufacturing. The EU AHF industry was shaken by the proposal which came during a time of weakening macroeconomic conditions and generally increased regulatory burden. Whilst an immediate loss for the European fluorine industry as companies defer investments, and continue to destock whilst awaiting EU clarification, the same is a boon for the US and India where recent capacity increases brought on stream post COVID can easily facilitate a restructuring of supply chains.

There remains a dearth of high-quality shovel ready Fluorspar projects in the pipeline, and demand forecasts out to 2035 are extremely positive with double digit growth coming from new energy applications; Fluorine electrolytes and fluoropolymer separators in Li-Ion batteries, Fluoropolymer coating for wiring harnesses etc. The future is certainly bright for Fluorspar, and MHT's production remains fully sold for FY24.

### Cobalt

Cobalt prices had a strongly negative year hitting fresh lows in June down by almost 52% YOY, before a dead cat bounce took the price briefly up to \$17.00/lb after the summer lull and back down to ~\$13/lb by the 4Q. The market was hit by a surplus of supply as Cobalt units produced as a byproduct of Indonesian MHP production hit the market much faster than anticipated, and a long running dispute in the DRC between Chinese mining company CMOC and the state-owned mining enterprise Gecamines was resolved. Four Indonesian HPAL plants with capacity of over 160kMT of Nickel in MHP were able to commission in less than 12-months, compared with a typical ramp up of 5 years or more in the West. In the DRC CMOC was able to resume exports from its Tenke Fungurume mine which had stockpiled over 15,000MT of cobalt in hydroxide, and commence production at its Kinsanfu project driving its overall production up by 170% YOY and surpassing Glencore as the world's largest producer.

Demand growth continues at a double-digit rate with Cobalt use in E-mobility applications accounting for 34% of global demand and is continuing to accelerate despite lower cobalt intensities in new battery chemistries. China's EV industry (the world's largest) rebounded in 3Q23 after the government unveiled a \$72.3b package of tax breaks over four years in June, reversing its previous policy to remove all subsidies by 1st Jan 23. Chinese EV makers BYD and NIO posted record quarterly results and U.S. sales performed strongly surpassing 300,000 units sold for the first time a 50% increase on 3Q22. Nevertheless, current analyst consensus is that it will take 2-3 years for demand to catch up with surplus production, likely putting a cap on prices in FY24 notwithstanding any major changes to the supply side picture.

### Bismuth

Bismuth prices continued a historic run of relative stability throughout 2023 trading with a \$0.10/lb range of the FY22 average. Bismuth metal exports from China (the largest global producer) were down YOY as overseas buyers continued to work down inventories and buy on a hand to mouth basis, but this weak export demand was cushioned by stable consumption in the domestic market predominantly from the pharmaceutical and alloying sectors. We forecast a slightly positive forward curve throughout 2024 with some downside risk as the consumer electronics and semiconductor materials sectors remain weak as they work through excess inventory.



## Copper

The global market for copper continued to tighten across FY23 with a supply deficit expected to emerge sometime in FY24-25. Most recently in November the Cobre Panama mine in Canada which accounts for ~1.5% of global supply was forced to stop producing in the face of country wide protests, with protestors arguing that the terms of the royalty payments agreed between owner First Quantum and the Panamanian government were too generous. Meanwhile other large scale copper mines in Chile (the country with the largest contribution to global supply) are reaching or have passed peak production as ore grades decline; output at the world's largest single mine Escondida is expected to decline by 5% by 2025 and state-owned Chilean miner Codelco has reduced production to the lowest level in 25 years. At the same time, there is a lack of high-quality large-scale projects in the development pipeline to cover for the ageing existing assets, and a huge increase in demand forecast to come from the green energy transition. As a clear indicator of tightness in the supply of raw materials smelter conversion term benchmarks (TC/RCs) were set 10% lower for 2024 contracts vs. FY23, marking the first reduction since 2021.

Analysts and producers predict a structural supply deficit of up to 6mio MT to emerge by 2030 as the developed world undertakes the green energy transition and rapidly shifts towards electric vehicles and renewable energy. Copper intensity in renewables such as wind and photovoltaics is four to six times higher compared with fossil fuels, EV's use between four to eight times more copper than internal combustion engine cars; copper is needed for the batteries, motor windings, and rotors, wiring harness, busbars and charging infrastructure. As the World's largest consumer of Copper China has been a big topic of discussion for price direction due to the disconnect between the macro picture of the economy and the fundamentals of domestic demand. Despite underwhelming growth in the broader industrial complex, apparent consumption of Copper was estimated to have grown 4.8% in FY23 thanks to strong demand from green energy applications such as power grid, EV's, and renewables (especially Solar) domestically, and in the case of EV's in export markets as well. Demand in the US and EU was softer with market participants buying hand to mouth in the face of generally worsening economic conditions, and the higher interest rate environment discouraging stockholding but globally growth is still forecast to have increased by 1.6% in FY23 compared with 0.4% in FY22 surpassing pre-COVID levels.

Average Commodity Prices	Unit	Average FY2023	Average FY2022	% change	At 31.12.2023	At 31.12.2022
APT European Low *	USD/mtu	316	338	-6%	300	330
Bismuth Low *	USD/lb	3.9	3.8	4%	3.7	3.7
Copper *	USD/t	8,482	8,814	-4%	8,475	8,387
Fluorspar Acid Grade **	USD/t	467	421	11%	507	465
Cobalt *	USD/lb	15.1	27.9	-46%	13.0	23.5

\* Metals Bulletin

\*\* Industrial Minerals



# BUSINESS PERFORMANCE

## ANNUAL PRODUCTION

### Oxides, Powders, Carbides & Specialty Chemicals

Tungsten production decreased by 21% over FY2022, besides the blasting issue at NPMC, this also came from lower Tungsten carbides and powders production within HCS business, mainly caused by lower market demand. Despite the reduction in overall Tungsten products, MHT still focused on maintaining the share of production coming from secondary supply (scrap), in line with the company's strategy and philosophy of 'Reduce, Reuse, Recycle'.

### Fluorspar, Copper, Bismuth Cement and Cobalt

Fluorspar, Copper, and Bismuth productions for FY2023 reduced compared with FY2022, by 33%, 61%, and 41%, respectively, mainly due to the low feed grade and recovery impacted by blasting contractor service interruption.

#### Cobalt

Cobalt production increased to

**299** tons contained

8% higher compared with FY2022

#### Net Revenue

MHT reported net revenue of VND14,093 billion for FY2023, a 9% decrease from VND15,550 billion recorded in FY2022. Tungsten revenues were at VND11,422 billion – down 15% from FY2022 on the back of lower selling and lower market demand. Fluorspar revenues were down by 19% at VND1,420 billion with lower sales volumes despite higher realized pricing. Bismuth revenues were at VND201 billion, a 27% decrease from VND277 billion in FY2022, due to lower sale quantity. Lower sales quantity for Fluorspar and Bismuth was mainly caused by lower NPMC productions – because of blasting contractor service issues. Copper revenues were at VND1,044 billion as the Company delivered Copper sales to local customers in FY2023. Management expects to continue to realize further benefits from copper sales through-out FY2024 in the domestic market.



Net Revenue 2023

VND **14,093** billion

### EBITDA

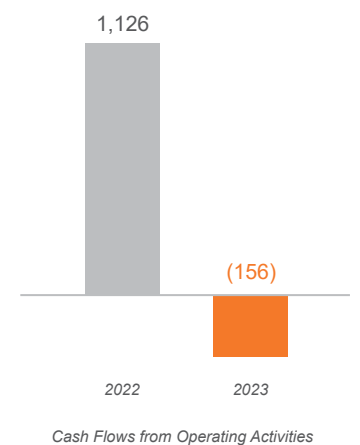
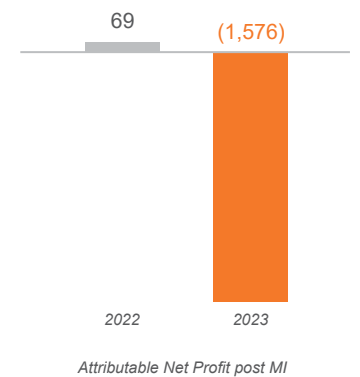
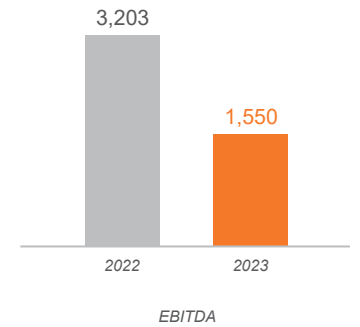
EBITDA decreased by 52% to VND1,550 billion for FY2023. EBITDA margin was at 11% - reduced compared with same period of last year (FY2022: 20.6%). EBITDA margin was mainly impacted by increasing unit production cost for NPMC products, which came from lower production quantity as a consequence of interrupted blasting service as mentioned above. Besides, the EBITDA margin for HCS also decreased due to lower plant utilization – caused by lower market demand in EMEA and NAFTA.

### Attributable Net Profit

The Company delivered an NPAT Post-MI loss of VND1,576 billion for FY2023, a VND1,645 billion decrease over the same period last year. Profitability for the period was impacted by lower EBITDA caused by the blasting service interruption and sluggish market demand as mentioned above.

### Cash Flows from Operating Activities

The Company reported cash outflows from operating activities of VND156 billion, a decrease of VND1,282 billion year on year (2022 cash inflows of VND1,126 billion). The worsening in cash flows from operations was due to decreased EBITDA. In 2024 the business focus will remain on close working capital management during the cost-rising business environment through inventory optimization and continuous improvement in the cash collection cycle.



### Cash Flows from Investing Activities

In 2023 the company's cash outflows for investing activities is VND848 billion (2022 cash outflows of VND2,658 billion), a VND1,810 billion decrease year on year. Major capital expenditure in 2023 was for expansionary capital projects focused on improving efficiencies and plant performance and sustaining capital projects. Additionally, the investing cashflow in 2023 included VND 11,8 billion net cash of investment to acquire a 100% share of Chemitas GmbH ("Chemitas"), an entity providing energy supply, waste management and logistics services based in Goslar, Germany.

### Debit Maturity

Of the Company's total debt obligations, 47% is maturing within 1 year. The Debt/EBITDA ratio increased from 5.0x in 2022 to 10.7x in 2023. Despite a stable borrowings balance between 2022 and 2023, lower EBITDA leads to an increase in the 2023 Debt/ EBITDA ratio.

### Net Assets

The net assets decreased 10.6% year-on-year to VND13,624 billion in 2023 from VND15,247 billion in 2022, mainly due to the after-tax loss (NPAT) of VND 1,530 billion in 2023.



In 2023 the company's cash outflows for investing activities is

VND **848** billion



Debt due within 1 year

**47%**



# MANAGEMENT TEAM ASSESSMENT REPORT

## Dear Shareholders,

Amidst the challenges as well as dynamic currents of the global market, Masan High-Tech Materials Corporation (“Company” or “MHT”) reported net revenue of VND14,093 billion for FY2023, a 9% decrease from VND15,550 billion recorded in FY2022. EBITDA decreased by 52% to VND1,550 billion for FY2023. EBITDA margin was at 11% - reduced compared with same period of last year (FY2022: 20.6%). EBITDA margin was mainly impacted by increasing unit production cost for NPMC products, which came from lower production quantity as a consequence of interrupted blasting service as mentioned above. Besides, the EBITDA margin for HCS also decreased due to lower plant utilization – caused by lower market demand in EMEA and NAFTA.

In June 2023, Masan High-Tech Materials completed the acquisition of Chemitas, a services provider in energy supply, waste management, and logistics based in Goslar, Germany. This strategic move enhances manufacturing and delivery capabilities while aligning with Masan High-Tech Materials’ commitment to delivering comprehensive solutions to its customers in the global market.

### Record Net Revenue

VND **14,093**<sub>bn</sub>

### EBITDA

VND **1,550**<sub>bn</sub>



We highlighted below the significant outcomes delivered in 2022

## OPERATIONS

In Vietnam, our NPMC operation processed 3.4% more ore compared with the budget due to oxide expansion project commission ahead of schedule. Production of Tungsten, Copper, and Bismuth was impacted due to the processing of lower-grade ore while transitioning from the Eastern pit to the larger orebody in the Western pit in the first quarter of the year, and by the reclamation and processing of low-grade stockpiled ore in the latter part of the year.

## WORKFORCE

At Masan High-Tech Materials, we set important and consistent goals, with a global focus, from strategy to execution. This includes designing organization and restructuring employee benefits, developing global leadership, upgrading Human Resources information system, optimizing technology in HR decisions, and promoting outstanding employee experience activities. Aligned with our vision, mission, and core values of Respect - Innovation - Results, together we stay on track, pursuing the ambition of global sustainable development for the Company.

At Masan High-Tech Materials, attracting, training, and sustainably developing human resources are always prioritized. This is achieved by continuously enhancing and transforming the quality of training, closely linked with recruitment policies, talent attraction, and competitive remuneration policies. We are committed to investing in activities to attract and develop talents at all levels to create a sustainable competitive advantage and a solid foundation for enterprise innovation in the era of globalization.

To adapt to changes and improve the competitiveness of our organization, we believe that establishing a transparent and healthy internal foundation is crucial. We take pride in our team of excellent, understanding, and exemplary global leaders who are at the forefront of reviewing, building, and innovating transparency across processes, people, and technology. One significant step forward was the restructuring of several of the company’s departments, particularly Supply Chain Management, Finance and Accounting, Human Resources, and Health and Safety. This restructuring facilitated the development of a more adaptable organizational framework, streamlining operations and minimizing unnecessary complexity. It also favored a centralized management approach, enhancing the experience of internal and external stakeholders on a larger scale.

In 2023, we achieved our goal of designing “Total Rewards” to gain a competitive advantage by optimizing organizational resources and understanding employee needs. We introduced various new benefits programs, such as a talent retention bonus program, area bonus program, trades skill bonus, or newly issued or re-issued policies, featuring travel support, meal and accommodation benefits, etc. These initiatives have maintained MHT’s commitment to equity and consistency, as well as generated greater employee satisfaction and understanding.

## SAFETY

The Total Recordable Injury Frequency Rate (TRIFR) and the Lost Time Injury Frequency Rate (LTIFR) for the entire year of 2023 were 2.1 and 1.47 respectively. For our HCS operations, the Lost Time Injury Frequency Rate was 2.2 (2022: 6.6 / 2021: 5.5). ChemiLytics recorded an LTIFR of 10.4 (2022: 32.2 / 2021: 10.0) with one accident within the year 2023.

The consistent improvement in accident and LTIR figures (we had no accidents to report at the Sarnia and Ganzhou sites in 2023) is primarily due to two factors. In addition to training tailored to the sites, the re-integration of the H&S department in Goslar, which is now also responsible for ChemiLytics and is the contact for the sites in Ganzhou and Sarnia, is a key reason for the positive development.

Continual efforts are underway to enhance the company’s occupational health and safety management system, aligned with legal requirements and company development. Key activities include identifying workplace risks, prioritizing injury prevention, stringent subcontractor management by issuing subcontractor management guidelines on safety and health, incident investigation training, and reinforcing supervision at all management levels to ensure prompt risk mitigation and safe conditions...

Protecting workers’ health and safety is a crucial requirement, as a precondition for any work to begin. Consequently, in 2023, the company’s medical team also stepped up its communication efforts, sharing healthcare updates to ensure a clear understanding and monitoring of workers’ health. The company consistently prioritizes health emergency action plans to maintain efficient business operations.

## ENVIRONMENT

2023 posed a lot of challenges for MHT in terms of processing, profitability, and the environment. Despite the difficulties, MHT follows a consistent management strategy and persistently adheres to sustainable development goals.

Over the year, 7.8 million m<sup>3</sup> of wastewater was recycled for production purposes, representing 76.1% of MHT Vietnam's total water consumption. The company also reused 390,189 m<sup>3</sup> of waste rock and soil to build waste dumps and other construction projects.

At Goslar and Sarnia, the waste generated during production processes is frequently valuable (particularly metals), which are then used by other companies as raw materials. The average waste recycling rate at both plants is around 56%. At the MTC plant, the waste recycling rate is even higher, exceeding 80%, mainly due to the use of leaching residues (PLR residues) to meet the low-grade standard for Nui Phao Mining's pH neutralization operations.

MTC, Goslar, Sarnia and Ganzhou plants continue to maintain ISO14001 environmental certification. At the Goslar site, the environmental management system was further developed and certified as a sustainability management system in accordance with the Eco Management & Audit Scheme (EMAS). EMAS is considered the world's strictest environmental management system and also includes energy aspects, so that in 2023 a new certification according to ISO 50001 was waived. In particular, in 2022, MTC established an energy management system according to ISO 50001:2018 and obtained certification. The application of the ISO 50001:2018 will be a premise to control the use of energy in a strict, sustainable, and systematic way to deliver energy-saving solutions.

At the Goslar site, various measures enabled specific energy consumption to be reduced by around 6.1% in 2023. This is a significant step on our way to being CO<sub>2</sub>-equivalent neutral by 2045.

NPMC and MTC have also implemented numerous energy-saving solutions, estimated to reduce more than 1,348 MWh, equivalent to 14,409 GJ, and decrease emissions by approximately 973.4 tons of CO<sub>2</sub>eq.

## COMMUNITY RELATIONS

In 2023, MHT maintained and continued to promote community engagement activities, including community development and economic recovery programs. The Company is committed to fulfilling its responsibilities to the community by implementing various community development and economic recovery projects with a total investment amount of approximately VND 6.8 billion. These projects have directly benefited about 4,500 households, including over 600 ethnic minority households and 270 vulnerable households.

The Community team always facilitates two-way communication channels between the Company and its stakeholders, especially the local community, through community consultation and information transparency. The team actively coordinates with departments within the Company and external partners to provide timely information and address the questions and concerns of the local community. Information dissemination is diversified through various channels such as direct messaging, community message boards, and direct phone calls.

Over the year, the Public Consultation and Disclosure Plan (PCDP) continued to prove itself an effective two-way communication between the Company and stakeholders, particularly local communities. The community relation team actively engaged with internal and external stakeholders to maximize information accessibility for local people and timely address their concerns. Information was mainly exchanged and communicated to the community through written documents, mobile phone and Zalo app instead of direct approach at the Information Center. In 2023, there were 916 information documents disclosed with 136 contents, 8 direct visits and hundreds of phone calls to the company's Information Center.

We believe that these community development initiatives will play an important role in helping the Company achieve sustainable growth and actively contribute to the implementation of plans aimed at achieving the Sustainable Development Goals (SDGs).

## FINANCE

MHT reported net revenue of VND14,093 billion for FY2023, a 9% decrease from VND15,550 billion recorded in FY2022. Tungsten revenues were at VND11,422 billion – down 15% from FY2022 on the back of lower selling and lower market demand. Fluorspar revenues were down by 19% at VND1,420 billion with lower sales volumes despite higher realized pricing. Bismuth revenues were at VND201 billion, a 27% decrease from VND277 billion in FY2022, due to lower sale quantity. Lower sales quantity for Fluorspar and Bismuth was mainly caused by lower NPMC productions – because of blasting contractor service issue. Copper revenues were at VND1,044 billion as the Company delivered Copper sales to local customers in FY2023. Management expects to continue to realize further benefits from copper sales throughout FY2024 in the domestic market.

EBITDA decreased by 52% to VND1,550 billion for FY2023. EBITDA margin was at 11% - reduced compared with same period of last year (FY2022: 20.6%). EBITDA margin was mainly impacted by increasing unit production cost for NPMC products, which came from lower production quantity because of interrupted blasting service as mentioned above. Besides, the EBITDA margin for HCS also decreased due to lower plant utilization – caused by lower market demand in EMEA and NAFTA.



## BOARD OF DIRECTORS ASSESSMENT REPORT

The Board of Directors (the “BOD”) of Masan High-Tech Materials Corporation (“MHT”) is honored to submit to shareholders the BOD’s Company’s 2023 performance assessment report.

### BOD’s Assessment of the Company’s Performance

The BOD’s role is to represent shareholders’ interests and ensure high level oversight of corporate activities and performance of the business. Against the backdrop of ongoing challenges facing the global business including global economic slowdown impacting demand for the company’s products, high inflationary pressures on cost inputs and the significant disruption to the Nui Phao operations as a result of the withdrawal of services by the long-term blasting contractor, the Management Team of MHT has worked tirelessly to improve margins through the “Fit for Future” program. This initiative is expected to improve margins throughout 2024 and thereby return the business to profitability.

From a financial perspective, we achieved overall revenue of VND14,093 billion for FY2023, a 9% decrease from record VND15,550 billion achieved in FY2022. While the reduction in revenue is disappointing, 2023 revenue of VND14,093 billion is the second highest revenue achieved for the overall business. While overall volumes were down due to a combination of lower market demand in tungsten and lower production in fluorite due to the blasting interruption, it is worth noting that MHT maintained its market share in tungsten intermediate markets despite the competitive environment for volumes. It was also pleasing to see the commencement of monetization of the Copper Concentrate Stockpile has gained momentum throughout 2023 with the ongoing sales of copper concentrates into the domestic market. Despite this improvement the company at the end of 2023 still had a significant value tied up in its copper stockpile with a current market value approximating VND2,312 billion. The company’s significant profitability is also tied up in this stockpile which will only be released as it is sold.

Disappointingly, EBITDA decreased by 52% to VND1,550 billion for FY2023. EBITDA margin was at 11% - reduced compared with same period of last year (FY2022: 20.6%).

After-tax loss in 2023 amounted to VND 1,576 billion, which was lower by VND 1,645 billion compared to the profit after tax of VND 69 billion achieved in 2022. The decrease in profitability was impacted by several factors, including high borrowing costs in the Company’s capital mar-

kets, increased material costs due to global inflationary pressures; and the decrease in market demand for products. The Company is currently in the equity raise process and has been in discussions with potential investors to reduce the financial leverage ratio.

MHT continues making significant tax contributions to both the Vietnamese State budget, and to the local economies surrounding each of our global operations. In Vietnam specifically, MHT has contributed significantly to the state budget and fulfilled its tax obligations and fee payment responsibilities to the state and provincial budget which amounted to VND1,414 billion in 2023, including corporate income tax, personal income tax, royalty tax, mining right fee, environment protection fee, etc. MHT was recognized in 2023 as the highest Vietnamese taxpayer in the Thai Nguyen province.

MHT continues applying world-class standards and practices across all our businesses and areas relating to the community, health, environment, sustainability, and safety. In Vietnam the business continues to be recognized as a leader in sustainability and aims to meet all requirements of international sustainable business practices. The Board sees the whistleblower initiative as particularly important to ensure that stakeholders have a way in which to raise concerns and get feedback on these concerns anonymously.

MHT is the recipient of a number of prestigious awards in 2023 including “Great Place to Work”; Vietnamese Company with the highest contribution to the Thai Nguyen Provincial Budget; Top 10 Most Innovative Enterprises – Vietnam; Top 100 Sustainable Enterprises – Vietnam. These honors represent significant acknowledgement of the continued efforts and dedication of the company in its pursuit of its Mission and Vision and provide independent validation and affirmation of the position of MHT brand in both national and international markets.

The BOD has accomplished its duties in reviewing and approving the resolutions on the operation of the Company and its subsidiaries. In 2023, no members of the BOD received any remuneration for their duties as BOD’s members, nor have they incurred any expenses.

The resolution passed in the 2023 Annual General Meeting but not yet implemented is:

**To approve the issuance plan of new shares and plan of using proceeds.**

Reason: *Due to the market situation and the Company’s business development strategy, we have decided to put the plan to issue new shares and use proceeds into 2024 Annual General Meeting of Shareholders.*

### BOD’s Assessment of the Company Management Team Performance

The global Management Team continues to manage the Company in a manner deserving the BOD’s and shareholders’ on-going trust and support. The Chief Executive Officer and other managers fulfilled their duties and functions in 2023, and properly implemented all resolutions from the General Meetings of Shareholders.

### BOD Plans and Directions

The company developed its Vision and Mission in 2020 following the acquisition of the HCS business.

#### Vision

To be the leading integrated supplier of high-tech advanced materials critical to global innovation.

#### Mission

We aim to be the partner of choice for high-tech industries where our products are a key component in evolving and shaping the future of our world. Through the application of our materials, we will create unparalleled solutions to drive innovation and productivity which will deliver superior outcomes for all our partners and stakeholders.

The vision and mission were reviewed by executive management, and they remain unchanged in 2023, as they are still considered appropriate for our business at this time.

Given the foregoing, the BOD fully supports the Management Team’s efforts to continue to grow the company and deliver on the Vision and Mission while repositioning the cost structure of the business through the Fit for Future initiative and the continued monetization of the copper concentrate stockpile, to ensure that MHT can deliver superior outcomes for all our partners and stakeholders, including you, our shareholders.



# AUDIT COMMITTEE'S REVIEW OF THE COMPANY'S OPERATIONS

## Review on the Accounting and Financial Operations of the Company

The Audit Committee confirms that the financial figures presented in the report of the Board of Directors submitted to the 2023 Annual General Meetings of Shareholders are a fair reflection of the Company's and its subsidiaries' current financial situation.

Key figures of the financial situation as of December 31, 2023:

### Part 1: Balance Sheet

	The Group		The Company	
	31/12/2023 Thousand VND	1/1/2023 Thousand VND	31/12/2023 Thousand VND	1/1/2023 Thousand VND
<b>ASSET</b>				
<b>Current assets</b>	<b>10,603,675,497</b>	<b>12,228,222,738</b>	<b>80,772,867</b>	<b>1,076,331,106</b>
Cash and cash equivalents	974,184,354	1,502,879,248	1,709,356	1,152,355
Short-term financial investments	8,110,000	8,110,000	-	-
Accounts receivable – short-term	2,757,111,564	2,940,659,090	74,306,617	1,071,869,168
Inventories	5,997,555,598	6,858,167,780	-	-
Other current assets	866,713,981	918,406,620	4,756,894	3,309,583
<b>Long term assets</b>	<b>29,768,680,616</b>	<b>29,292,777,451</b>	<b>15,195,104,988</b>	<b>14,188,893,090</b>
Accounts receivable – long-term	1,447,156,838	1,403,254,299	3,000,000,000	2,000,000,000
Fixed assets	20,129,893,349	20,185,726,072	-	-
Investment properties	702,920,163	722,403,002	-	-
Long-term work in progress	2,510,877,620	2,081,826,883	38,628,599	32,416,701
Long-term financial investments	1,637,975,255	1,532,527,099	12,156,476,389	12,156,476,389
Other long-term assets	3,339,857,391	3,367,040,096	-	-
<b>TOTAL ASSETS</b>	<b>40,372,356,113</b>	<b>41,521,000,189</b>	<b>15,275,877,855</b>	<b>15,265,224,196</b>
<b>RESOURCES</b>				
<b>Liabilities</b>	<b>26,747,864,250</b>	<b>26,273,561,415</b>	<b>3,117,172,705</b>	<b>3,106,878,067</b>
Current liabilities	11,020,687,246	17,154,059,090	1,617,172,705	1,606,878,067
Long-term liabilities	15,727,177,004	9,119,502,325	1,500,000,000	1,500,000,000
<b>Equity</b>	<b>13,624,491,863</b>	<b>15,247,438,774</b>	<b>12,158,705,150</b>	<b>12,158,346,129</b>
<b>TOTAL RESOURCES</b>	<b>40,372,356,113</b>	<b>41,521,000,189</b>	<b>15,275,877,855</b>	<b>15,265,224,196</b>

## Review on the Company's Business Performance

In 2023, the Audit Committee did not find any abnormal signs in the Company's business operations. All business activities were conducted in compliance with the Company's Charter, the Law on Enterprises, and other relevant legal regulations.

Business performance results and accounting figures have been carefully checked to ensure the accuracy and legality of accounting books.

The Company fully observed all current legal regulations required for information disclosure to the stock market. Figures of business results as of December 31, 2023:

### Part 2: Income statement

	The Group		The Company	
	2023 Thousand VND	2022 Thousand VND	2023 Thousand VND	2022 Thousand VND
<b>Net operating loss</b>	<b>(1,793,288,426)</b>	<b>(97,418,623)</b>	<b>423,669</b>	<b>889,435</b>
<b>Results of other activities</b>	<b>139,275,602</b>	<b>74,772,222</b>	<b>(1,190)</b>	<b>-</b>
<b>Accounting loss before tax</b>	<b>(1,654,012,824)</b>	<b>(22,646,401)</b>	<b>422,479</b>	<b>889,435</b>
<b>Income tax expense – current</b>	<b>56,989,769</b>	<b>45,262,566</b>	<b>63,458</b>	<b>178,259</b>
<b>Income tax benefit – deferred</b>	<b>(181,391,892)</b>	<b>(173,060,025)</b>	<b>-</b>	<b>-</b>
<b>Net (loss)/profit after tax</b>	<b>(1,529,610,701)</b>	<b>105,151,058</b>	<b>359,021</b>	<b>711,176</b>
<b>Net (loss)/profit attributable to:</b>				
Shareholders of the Company	(1,575,884,320)	69,024,617	359,021	711,176
Non-controlling interest	46,273,619	36,126,441	-	-

## Review on the Governance and Management

### The Board of Directors

The Audit Committee opines that the Board of Directors has fulfilled its management responsibilities in compliance with the Company's Charter, the Resolutions of the General Meetings of Shareholders, the Law on Enterprises, and other relevant legal regulations. The Board of Directors has duly executed all resolutions of the General Meetings of Shareholders in 2023.

The Board of Directors' resolutions were issued in compliance with the legal authority of the Board of Directors and the contents of the resolutions complied with the Company's Charter, the resolutions of the General Meetings of Shareholders, the Law on Enterprises, and other relevant legal regulations.

### The Management Team

The Audit Committee opines that the Management Team has executed the Company's business operations efficiently and in compliance with the Board of Directors' resolutions.

### Conclusion

The Company's operations in 2023 were in compliance with the Company's Charter, the Law on Enterprises and other relevant legal regulations and based on the Resolutions of the General Meetings of Shareholders and the resolutions of the Board of Directors.



# CORPORATE GOVERNANCE REPORT

## Activities of the General Meeting of Shareholders

Information on meetings and Resolutions/Decisions of the General Meeting of Shareholders (including the Resolutions of the General Meeting of Shareholders adopted in the form of collection of written opinions):

<b>Resolution/Decision No.</b>	<b>199/2023/NQ-DHDCD</b>
<b>Date</b>	<b>April 18, 2023</b>
<b>Content</b>	<ul style="list-style-type: none"> <li>• Approve the Board of Directors' assessment report for 2022;</li> <li>• Approve the Audit Committee's report on the Company's business results and performance results of the Board of Directors and the Chief Executive Officer in 2022;</li> <li>• Approve the 2022 Financial Statements of the Company as audited by KPMG Company Limited;</li> <li>• Approve the 2023 business plan of the Company on a consolidated basis;</li> <li>• Approve the 2022 dividend distribution plan;</li> <li>• Approve the 2023 dividend advance;</li> <li>• Approve the selection of one of the following auditing companies as the audit unit for the fiscal year 2023 of the Company and authorizing the Board of Directors to select and sign an audit contract with one of these companies. That company:             <ul style="list-style-type: none"> <li>» KPMG Vietnam Co., Ltd;</li> <li>» Deloitte Vietnam Co., Ltd;</li> <li>» PwC (Vietnam) Company Limited; and</li> <li>» Ernst &amp; Young Vietnam Co., Ltd.</li> </ul> </li> <li>• Approve the remuneration for members of the Board of Directors of the Company in 2023: VND 0 dong and a budget plan for the operating expenses of the Board of Directors, including committees under the Board of Directors. The value in 2023 is not more than VND 1 billion;</li> <li>• Approve the plan to issue new shares under the Employee Stock Option Plan (ESOP);</li> <li>• Approve the dismissal of Mr. Akira Osada as a member of the Board of Directors due to his resignation on April 1, 2023;</li> <li>• Approve the appointment of Mr. Tadakazu Ohashi as a member of the Board of Directors of the Company for the remaining term of 2021-2026;</li> <li>• Approve the listing of public offering bonds in 2023 and the registration of centralized trading for privately-placed bonds;</li> </ul>

## The Board of Directors

Information about the members of the Board of Directors (BOD)

MEMBER OF THE BOARD OF DIRECTORS	POSITION (Independent member of the Board of Directors, non-executive member of the Board of Directors)	DAY BECOMING/NO LONGER INDEPENDENT MEMBER OF THE BOARD OF DIRECTORS/ BOARD OF DIRECTORS	
		Date of appointment	Date of dismissal
<b>Mr. Danny Le</b>	Chairman (non-executive member)	19/04/2019	-
<b>Mr. Nguyen Thieu Nam</b>	First Vice Chairman of the Board of Directors (non-executive member)	18/02/2013	-
<b>Mr. Craig Richard Bradshaw</b>	Member of the Board of Directors (executive member)	16/04/2019	-
<b>Mr. Tadakazu Ohashi</b>	Member of the Board of Directors (non-executive member)	18/04/2023	-
<b>Ms. Nguyen Thu Hien</b>	Member of the Board of Directors (independent member)	12/04/2021	-

## Supervision by the BOD over the Management Team

- At the meetings of the BOD, the CEO reported the operations of the Company and the key operations of the Company's subsidiaries.
- Supervising and directing the implementation of the investment plans of the Company and its subsidiaries.
- Implementing the tasks as delegated under the resolutions of the BOD.



## Activities of the Board of Directors' committees

### a Activities of the Sustainability Committee

- Review and monitor the performance of the Company as it affects matters related to sustainability, the environment, communities, and other key stakeholders.
- Review and provide guidance to management on sustainability issues and impacts and the integration of sustainability into Company's business, including innovation, manufacturing and sourcing and operations.
- Review the activities of the Company's community development initiatives.
- Review and provide recommendations to management on reporting to shareholders and other communities regarding corporate responsibility activities.
- Review and provide guidance to management, and report to the Board regarding the involvement of signification corporate responsibility issues in major business decisions, in order to protect the Company's valuable goodwill, and human and intellectual capital.
- Review and provide recommendations to the Board on any shareholder proposal that relates to the matters overseen by the committee.
- Oversee the management of risks related to sustainability, the environment, and the Company's impacts on communities.

### b Activities of the Risk Committee

- Review and discuss with management and the Company's independent auditor the Company's quarterly financial statements.
- Assess compliance with the Company's code of business practices and its code of conduct, consider and approve (if appropriate) any waiver provided in the codes.
- Review periodically with management and the legal counsel the Company's compliance with laws and regulations, including corporate securities trading policies, legal matters, litigation or any other contingency that could have a significant impact on the Company's financial statements.
- Discuss with the Management Team the Company's policies regarding risk assessment and risk management, and the steps the Management Team has undertaken to monitor and control them.

## Resolutions of the Board of Directors

RESOLUTION NO.	DATE	CONTENT	PERCENTAGE
62/2023/NQ-HDQT	20/02/2023	• Approve the appointment of Ms. Dinh Le Hang to the role of Deputy General Director of the Company.	100%
177/2023/NQ-HDQT	11/04/2023	• Approve the meeting date of the Annual General Meeting of Shareholders for 2023 which is Tuesday, April 18, 2023. • Approve the scheduled meeting agenda of the General Meeting of Shareholders in 2023. • Approve the submission of the financial statements for 2022 audited by KPMG Co., Ltd. to the General Meeting of Shareholders.	100%
299/2023/NQ-HDQT	09/06/2023	• Approval of guarantee for payment obligations of Nui Phao Mining Company Limited and Masan Tungsten Limited Liability Company related to short-term interconnected credit lines up to VND 400,000,000 at Ho Chi Minh City Development Joint Stock Commercial Bank (HD Bank).	100%
481/2023/NQ-HDQT	01/08/2023	• Approval of guarantee for payment obligations of Nui Phao Mining Company Limited and Masan Tungsten Limited Liability Company related to short-term credit lines of VND 1,200,000,000,000 at Vietnam Prosperity Joint Stock Commercial Bank.	100%
587/2023/NQ-HDQT	07/11/2023	• Approval of the bond issuance plan of MSRB2328001 with a maximum face value of VND 500,000,000,000.	100%
588/2023/NQ-HDQT	07/11/2023	• Approval of the bond issuance plan of MSRB2328002 with a maximum face value of VND 500,000,000,000.	100%
589/2023/NQ-HDQT	07/11/2023	• Approval of the bond issuance plan of MSRB2328003 with a maximum face value of VND 500,000,000,000.	100%

## Audit Committee

Information about members of the Audit Committee

No.	Member of the Audit Committee	Position	Date of becoming/ no longer member of the Audit Committee	Qualification
1	Ms. Nguyen Thu Hien	Head of Audit Committee	12/04/2021	<ul style="list-style-type: none"> <li>Bachelor of Foreign Trade Economics, Foreign Trade University, Hanoi</li> <li>Master of Business Administration, Asian Institute of Management, Makati, Manila, Philippines</li> <li>International Internal Auditor, American Institute of International Internal Auditors</li> </ul>
2	Mr. Nguyen Thieu Nam	Member of Audit Committee	12/04/2021	Bachelor of Commerce

### ► Surveillance activities of the Audit Committee toward the Board of Directors, Management Team and shareholders:

- Supervising and reviewing the management and execution of 2023 business activities by the Board of Directors and the Management Team.
- Reviewing and supervising the issuing of resolutions and decisions of the Board of Directors and the Management Team.
- Reviewing the reasonableness, legality, honesty and diligence in implementing accounting operations and forming financial statements.
- Supervising the accuracy of the financial statements of the Company and making official disclosures related to the Company's financial performance.
- Reviewing transactions with affiliated persons subject to approval by the Board of Directors or the General Meeting of Shareholders and providing recommendations on transactions requiring approval of the Board of Directors or the General Meeting of Shareholders.

### ► The coordination among the Audit Committee with the Board of Directors, Management Team and other managers:

- Attending and providing comments at meetings of the BOD.
- Supervising the implementation of the resolutions of the General Meeting of Shareholders and the BOD passed in 2023.
- Supervising compliance with regulations of the Law on Enterprises, the Law on Securities, the Company Charter, the resolutions of the General Meeting of Shareholders regarding the administration and management of the Company's business activities.
- Reviewing financial statements of 2023.

### ► Other activities of the Audit Committee (if any): None.

### ► Training on Corporate governance: None.

## Transactions between the Company and the affiliated persons or between the Company and major shareholders, internal persons and related persons of internal persons

NO.	Name of organization/ individual	Relationship with the Company	ID/Registration Number*, date of issue, place of issue	Head office address/ Contact address	Transaction time with the Company	Resolution/Decision Number passed by the General Meeting of Shareholders/ Board of Directors, etc. (if any, specify the date of issue)	Note
1	Masan Tungsten Limited Liability Company	Subsidiary	4601163743 issued on 15 January 2014 in Thai Nguyen	Suoi Cat Hamlet, Ha Thuong Commune, Dai Tu District, Thai Nguyen Province	2023	154/2022/NQ-DHDCD dated 25/04/2022	MHT's income from business cooperation agreement
2	Masan Tungsten Limited Liability Company	Subsidiary	4601163743 issued on 15 January 2014 in Thai Nguyen	Suoi Cat Hamlet, Ha Thuong Commune, Dai Tu District, Thai Nguyen Province	2023	154/2022/NQ-DHDCD dated 25/04/2022	MHT's interest costs incurred
3	Nui Phao Mining Company Limited	Subsidiary	4600864513 issued on 5 July 2010 in Thai Nguyen	Suoi Cat Hamlet, Ha Thuong Commune, Dai Tu District, Thai Nguyen Province	2023	154/2022/NQ-DHDCD dated 25/04/2022	MHT's income from business cooperation agreement

### Transaction between internal persons of the Company, related persons of internal persons and the Company's subsidiaries of which the Company takes controlling power

NO.	PERSON EXECUTING TRANSACTION	RELATIONSHIP WITH THE INTERNAL PERSON	NAME OF THE SUBSIDIARY, COMPANY IN WHICH LISTED COMPANY TAKES CONTROLLING POWER	TRANSACTION TIME	CONTENT, QUANTITY, TOTAL VALUE OF TRANSACTION
1	Nui Phao Mining Company Limited	Related person of the internal person	Masan Tungsten Limited Liability Company	2023	NPM's sale of goods with a total value of
2	Nui Phao Mining Company Limited	Related person of the internal person	Masan Tungsten Limited Liability Company	2023	NPM's income from back charge with a total value of
3	Masan Consumer Corporation	Related person of the internal person	Nui Phao Mining Company Limited	2023	Sale of goods to NPM, with a total value of
4	Masan Consumer Corporation	Related person of the internal person	Nui Phao Mining Company Limited	2023	Provide services to NPM
5	WinCommerce General Commercial Services Joint Stock Company	Related person of the internal person	Nui Phao Mining Company Limited	2023	WCM holds bonds issued by NPM, interest costs
6	Masan Tungsten Limited Liability Company	Related person of the internal person	Nui Phao Mining Company Limited	2023	MTC's sale of goods to NPM
7	Masan Tungsten Limited Liability Company	Related person of the internal person	Nui Phao Mining Company Limited	2023	Loan granted by MTC to NPM, interest costs
8	Masan Tungsten Limited Liability Company	Related person of the internal person	H.C. Starck Tungsten GmbH	2023	MTC's sale of goods
9	Masan Tungsten Limited Liability Company	Related person of the internal person	H.C. Starck Tungsten LLC (USA)	2023	MTC's sale of goods
10	Masan Tungsten Limited Liability Company	Related person of the internal person	H.C. Starck Canada Inc.	2023	MTC's sale of goods
11	Masan Tungsten Limited Liability Company	Related person of the internal person	H.C. Starck Tungsten GmbH	2023	Shipping costs paid by MTC on behalf of the Company
12	Masan Tungsten Limited Liability Company	Related person of the internal person	H.C. Starck Tungsten GmbH	2023	MTC buys raw materials

### Transactions between the Company and other objects

Transactions between the Company and companies that members of the Board of Directors, members of the Audit Committee, or the CEO of the Company is or was a founding member, members of the Board of Directors, or the CEO of those companies (the "Related persons") in the last three (03) years (as at the time of reporting)

YEAR	RELATED PERSON (HAVING TRANSACTIONS WITH THE COMPANY)	RELATIONSHIP WITH THE COMPANY	DESCRIPTION OF TRANSACTION
2021	Nui Phao Mining Company Limited	BOD member of the Company is also an MC member of the related person	Business Cooperation Agreement
2021	Nui Phao Mining Company Limited	BOD member of the Company is also an MC member of the related person	MHT's income from back charge
2021	Masan Tungsten Limited Liability Company	BOD member of the Company is also an MC member of the related person	Business Cooperation Agreement
2021	Masan Tungsten Limited Liability Company	BOD member of the Company is also an MC member of the related person	MHT's income from back charge
2021	Masan Tungsten Limited Liability Company	BOD member of the Company is also an MC member of the related person	Loan granted by MTC to MHT and interest paid by MHT
2021	Nui Phao Mining Company Limited	BOD member of the Company is also an MC member of the related person	NPM's income from back charge
2022	Masan Tungsten Limited Liability Company	BOD member of the Company is also an MC member of the related person	Guarantee for payment obligations of MTC related to the credit line between MTC and Ho Chi Minh City Development Commercial Joint Stock Bank
2022	Nui Phao Mining Company Limited	BOD member of the Company is also an MC member of the related person	Guarantee for NPM's payment obligations related to the credit line between NPM and Vietnam Prosperity Commercial Joint Stock Bank
2022	Nui Phao Mining Company Limited	BOD member of the Company is also an MC member of the related person	Guarantee for NPM's payment obligations related to the credit line between NPM and Vietnam Prosperity Commercial Joint Stock Bank

YEAR	RELATED PERSON (HAVING TRANSACTIONS WITH THE COMPANY)	RELATIONSHIP WITH THE COMPANY	DESCRIPTION OF TRANSACTION
2023	Masan Group Corporation	BOD member of the Company is also the CEO of the related person	Service Purchase Agreement
2023	Masan Group Corporation	BOD member of the Company is also the CEO of the related person	Bond interest incurred within the year
2023	Nui Phao Mining Company Limited	BOD member of the Company is also an MC member of the related person	Profits from the business cooperation agreement generated within the year
2023	Nui Phao Mining Company Limited	BOD member of the Company is also an MC member of the related person	Payment transactions made by the Company on behalf of its subsidiaries
2023	Nui Phao Mining Company Limited	BOD member of the Company is also an MC member of the related person	Payment transactions made by MHT's subsidiaries on behalf of the Company
2023	Masan Tungsten Limited Liability Company	BOD member of the Company is also an MC member of the related person	Profits from the business cooperation agreement
2023	Masan Tungsten Limited Liability Company	BOD member of the Company is also an MC member of the related person	Loan granted to the Company by its subsidiaries
2023	Masan Tungsten Limited Liability Company	BOD member of the Company is also an MC member of the related person	Payment transactions made by the Company on behalf of its subsidiaries
2023	Masan Tungsten Limited Liability Company	BOD member of the Company is also an MC member of the related person	Interest costs for its subsidiary incurred within the year

Transactions between the Company and the company that the related persons of members of Board of Directors, Audit Committee, Director (CEO) as a member of Board of Directors, Director (CEO): None.

Other transactions of the Company (if any) that may be beneficial material or immaterial for members of the Board of Directors, Audit Committee, Director (CEO): None.

► **SHARE TRANSACTIONS OF INTERNAL PERSONS AND RELATED PERSON OF INTERNAL PERSON**

None.

► **OTHER SIGNIFICANT MATTERS**

As for the list of affiliated persons and related benefits, please refer to Report on Corporate Governance for 2023 as announced on website of the company.



# RISK MANAGEMENT

## MHT Risk Management

At MHT, risk management constitutes an essential component of our comprehensive organizational governance framework, playing a pivotal role in enhancing the sustainable value of the company. MHT is unwavering in its dedication to upholding rigorous risk management practices aligned with international standards and pertinent legal considerations.

The risks identified through our systematic risk assessment process could pose threats to MHT and have adverse impacts on products, processes, and stakeholders, including shareholders. As such, effective risk management continues to be a fundamental component of the MHT business ethos. MHT aims to seamlessly integrate risk management into critical business activities, functions, processes, and corporate systems through the following mechanisms:

### 1 Risk assessment

Every business unit within MHT, as well as the corporate risk management function, undertakes a thorough risk assessment focused on all material risks. This process involves a comprehensive analysis of potential causes and impacts associated with these risks. Subsequently, MHT formulates and diligently monitors the mitigating controls designed to diminish the likelihood of a risk event occurring or to mitigate the potential impacts should such an event transpire.

### 2 Risk reporting

Throughout MHT's operations, robust systems are in place to guarantee that all identified material risks, capable of influencing both short-term and long-term business plans, are promptly reported to the management. The evaluation of risk materiality is conducted by considering both financial and non-financial impacts, encompassing factors such as sustainability, community welfare, health, safety, environmental considerations, security, reputational concerns, and legal implications.

MHT adheres to well-established processes when initiating new activities or implementing changes to established practices. This includes a meticulous approach to risk assessments and the formulation of comprehensive risk management plans to anticipate and address potential business challenges. Matters related to corruption, statutory compliance, reputational risk, and legal exposures are vigilantly reported and addressed, ensuring seamless business continuity, and facilitating growth in alignment with the organization's long-term vision.

### 3 Risk control

MHT has implemented controls for all identified risks, managed at the functional level across its business units. In addition to this, regular audits are conducted to assess the effectiveness of both preventive and mitigating controls. Improvement plans are promptly implemented whenever necessary, ensuring a dynamic and proactive approach to risk management throughout the organization.



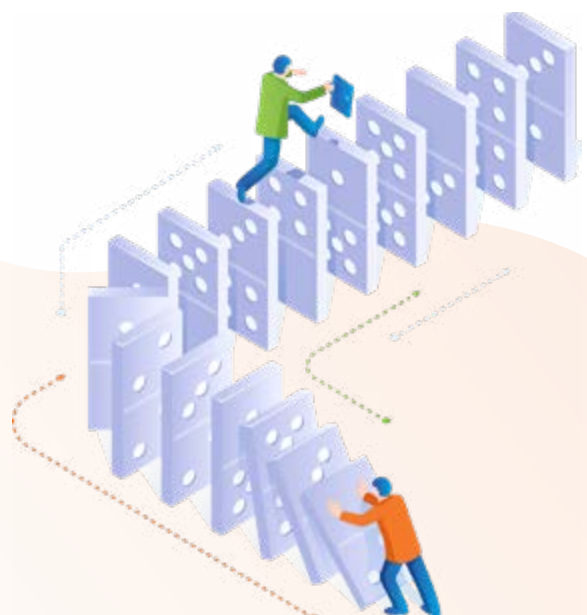
## Principal Risks

### Robust Risk Assessment Statement

The Board of MHT has undertaken a thorough evaluation of the company's principal risks, encompassing those that pose potential threats to the business model, future performance, reputation, solvency, or liquidity within the upcoming three-year period.

The Directors have determined a three-year timeframe as appropriate for several reasons. MHT operates with an annual budget, a three-year plan, and maintains a long-term outlook. The selection of a three-year period is deemed a judicious balance, accommodating both long-term and short-term performance drivers.

While acknowledging the significant impact of commodity prices, currency exchange rates, and interest rate volatility on MHT's annual budget, three-year plan, and long-term outlook, the Directors have based their assessment on current forecasts, sensitivity analyses, the latest funding and liquidity updates, the maturity profile of MHT's existing short-term and long-term debt, the company's risk profile, and the robust controls and mitigation measures in place should specific risks materialize. Through regular strategic discussions at the Board level, including but not limited to the reviews of capital expenditure and assessments of the life of MHT's mineral assets, the Directors maintain a reasonable expectation that MHT will sustain its operations and fulfill its obligations as they arise.



## Risk Factors

### External Risks

**Fluctuations in commodity prices (including sustained price shifts) and impacts of ongoing global economic volatility may negatively affect our results, including cash flows and asset values.**

The pricing dynamics of our minerals, metals, chemicals, powders, and carbides are intricately tied to the global commodity markets, historically known for their notable volatility. Our strategic approach involves selling products through a combination of long-term and short-term contracts, tethered to prevailing market prices. Despite the diversity inherent in our broad product portfolio, MHT acknowledges that it does not operate in complete insulation from the fluctuations in market prices.

Fluctuations in commodity prices can stem from diverse factors, including shifts in global economic and geopolitical conditions, industry demand, augmented supply resulting from the development of new resources or increased production from existing ones, technological advancements, product substitutions, and the imposition of national tariffs. MHT specifically faces exposure to price movements in Tungsten, Fluorspar, Copper, Cobalt, Bismuth, Gold, and Iron ore.

The current landscape, characterized by the ongoing Russia-Ukraine conflict and persistent trade tensions, poses potential threats to global economic growth. Such uncertainties, coupled with the redirection of trade flows or the hyperinflationary environment observed in FY2022, heighten the likelihood of global recessionary pressures. This scenario could adversely impact the future demand and prices for our commodities and industrial products.

Ongoing geopolitical disturbances, uncertainties, and market-based protectionism have the potential to impede international trade and dampen business confidence, thereby posing risks to our ability to trade in specific markets and elevating price volatility. The persistent effects of sustained price shifts and short-term volatility, compounded by rising inflation and the gradual withdrawal of monetary stimulus programs by global central banks, pose inherent risks to our financial and operating results. These risks encompass potential impacts on our operational and financial results, including the cash flows and asset values.

**Our financial results may be negatively affected by exchange rate fluctuation.**

The geographic dispersion of our assets across various countries introduces a diverse array of currency rates that exert influence on our assets, earnings, and cash flows. The consequential fluctuations in the exchange rates of these currencies can wield a substantial impact on our financial results.

Predominantly, our sales transactions are denominated in the Vietnamese Dong, US Dollar, Euro, Canadian Dollar, Chinese Yuan, and Japanese Yen, while our financial performance is presented exclusively in Vietnamese Dong at MHT consolidated level.

Our operational costs are intricately linked to the currencies of the countries housing our assets and facilities, as well as the currencies determining the costs associated with labor, imported equipment, and services. This interplay of currency dynamics underscores the significance of vigilantly managing and navigating the potential effects of exchange rate fluctuations on our financial performance.

**Business framework impacted by political, judicial, regulatory and climate change, or alleged compliance issues within the countries in which we operate or assets in which we have an interest could have a negative impact on our business.**

The operational landscape of our business is susceptible to the influence of political, judicial, regulatory, and climate change factors, as well as alleged compliance issues within the countries where we conduct operations or hold interests in assets. These factors could potentially exert adverse effects on our business.

Risks associated with the locations of our operating assets encompass a broad spectrum, including but not limited to terrorism, civil unrest, judicial activism, regulatory investigations or inquiries, nationalization, protectionism, renegotiation or nullification of existing contracts, leases, permits, or other agreements, imposts, controls, or prohibitions on product production or use, restrictions on repatriation of earnings or capital, and changes in laws and policies. Additionally, unforeseeable risks may emerge.

In regions where our assets are situated, there may be heightened risks related to bribery and corruption, including potential delays or disruptions arising from the refusal to make facilitation payments. If any of

our operating assets are affected by one or more of these risks, it could have a material adverse impact on MHT's overall operating results, financial condition, and prospects.

Despite our governance and compliance processes, which encompass the review of internal controls over financial reporting and specific controls related to competition, data protection and privacy, offers to government officials, and disclosure of state or commercial secrets, there remains a degree of uncertainty. These processes may not be foolproof in identifying financial misstatements or preventing potential breaches of law, accounting, or governance practices.

Furthermore, adherence to our Code of Conduct, along with policies such as anti-corruption and competition policies, does not guarantee immunity against instances of fraudulent behavior and dishonesty, nor does it assure compliance with legal or regulatory requirements. This inherent risk may lead to regulatory fines, loss of profits, litigation, allegations or investigations by regulatory authorities, loss of operating licenses, and/or reputational damage.

Our operating assets represent significant long-term investments, the viability of which is contingent upon sustained long-term fiscal stability. Changes in fiscal legislation, shifts in the interpretation of fiscal laws, periodic challenges, and disputes with tax authorities, along with legal proceedings pertaining to fiscal matters, have the potential to adversely affect these material investments.

The natural resources industry is consistently viewed as a source of tax revenue and may be subject to broader fiscal measures applicable to businesses at large. The impact of these fiscal measures on our operations requires vigilant consideration and management.

Detailed information regarding the applicable taxes can be found in the notes accompanying the consolidated financial statements. These notes provide comprehensive insights into the fiscal landscape, aiding stakeholders in understanding the intricacies of our tax-related commitments and obligations.

Our business is intricately intertwined with the dynamic and evolving landscape of government regulations and international standards. This includes controls on imports, exports, pricing mechanisms, compliance requirements, and considerations related to greenhouse gas emissions. Additionally, we must contend with unforeseen closure and site rehabilitation expenses.

Given the nature of the industries in which we operate, our activities are subject to stringent regulations governing community welfare, health, environmental impact, and safety. The increasing requirements associated with regulatory, community, health, environmental, and safety approvals pose potential challenges, capable of resulting in substantial delays or interruptions. Moreover, these evolving regulatory standards may adversely affect the economic viability of new developments, the expansion of existing assets and operations, as well as the overall performance of our operating assets.

As regulatory standards and expectations continue to evolve, our operations may be exposed to heightened levels of regulation, necessitating increased compliance efforts and associated costs. Adapting to new operating and reporting standards, alongside the potential for unforeseen closure and site rehabilitation expenses.

Infrastructure, comprising rail, ports, power, and water, serves as a vital foundation for our business operations. The potential impact of climate change introduces new challenges, including heightened competition for and increased regulation on limited resources such as power and water. These factors have the capacity to significantly and adversely impact both the expansion of our business and the operational efficiency of our assets.

Navigating the regulatory landscape presents its own set of challenges. The unpredictability of new or evolving regulations and international standards, coupled with the difficulty of influencing these factors and the inherent complexity in their understanding, underscores the intricacies we face. The consequences of potential compliance costs, litigation expenses, regulatory delays, rehabilitation expenses, and operational impacts arising from government actions, court decisions, regulatory changes, and evolving standards pose material risks. These risks have the capacity to adversely affect MHT's future results, prospects, and overall financial condition.

## Business Risks

***Failure to discover or acquire new resources, maintain reserves, obtain grant of required licenses/permits, or develop new assets could directly affect our future results and financial condition.***

The demand for our products and the production from our assets inherently lead to the gradual depletion of existing reserves. Given that a portion of our revenues and profits is derived from our minerals, the success of our exploration and acquisition endeavors becomes integral to our future results and financial condition. Our ability to generate reserves to meet future production requirements at a competitive cost is a key determinant of our sustainability.

Exploration activities, often conducted in proximity to established assets, bring about potential challenges, including increased land tenure, infrastructure, and associated political risks. The failure to discover or acquire new resources, sustain reserves, uphold our scrap collection supply chain, or develop new assets, such as scrap recycling facilities, in quantities sufficient to maintain or enhance current reserve levels, would adversely impact our future results, financial condition, and business prospects.

The economic viability of some existing reserves may be compromised by a deterioration in commodities pricing. The actual scope of our exploration drilling activities and future drilling budget hinges on factors such as the size and quality of our resource and reserve inventory, drilling results, commodity prices, drilling and production costs, lease expirations, land access, infrastructure constraints, regulatory approvals, and other relevant considerations.

Prudent management of these factors is paramount to ensuring the sustained success of our operations. Our commitment to strategic exploration, acquisition, and resource management is pivotal in mitigating risks and enhancing the resilience of our business in the dynamic landscape of commodity markets.

The estimation of mineral reserves involves numerous uncertainties. Geological assumptions made about our mineralization, while valid at the time of estimation, may undergo significant changes when new information becomes available. Projections of reserves to be recovered, as well as the anticipated cost of recovering reserves, are contingent upon uncertain assumptions. The global financial outlook, characterized by its inherent uncertainties, may influence economic assumptions related to reserve recovery, potentially necessitating reserve restatements.

Changes to reserve estimates can have implications for the carrying values of our assets and may also exert a negative impact on our future financial condition and results. The dynamic nature of geological conditions, coupled with economic uncertainties, requires ongoing vigilance and adaptability in our mineral reserve estimation processes.

***Potential changes to our portfolio of assets through merger, acquisition and divestment activity may have a material adverse effect on our future results and financial condition.***

Acquisitions or divestments carry inherent risks that may impact on the overall success of such transactions. These risks include:



### Loss of value

The potential for a poor investment decision or missed investment opportunity leading to a loss of value.



### Market reaction

Adverse market reaction stemming from the basis, timing, or terms on which changes are made, affecting stakeholder perception.



### Regulatory implications

The imposition of adverse regulatory conditions and obligations, creating additional challenges and compliance requirements.



### Commercial objectives

The possibility of commercial objectives not being achieved as expected, impacting the anticipated outcomes of the transaction.



### Unforeseen liabilities

The emergence of unforeseen liabilities resulting from changes to the portfolio, potentially affecting financial stability.



### Performance shortfall

Sales revenues and operational performance not meeting expectations, affecting overall business performance.



### Delayed synergies or Cost savings

Anticipated synergies or cost savings being delayed or not achieved, impacting the financial benefits of the transaction.



### Retention of key staff

Inability to retain key staff, leading to potential disruptions in operations and a loss of institutional knowledge.



### Higher transaction costs

Transaction-related costs exceeding initial estimates, affecting the overall financial efficiency of the acquisition or divestment.

***Increased costs and schedule delays may adversely affect our capital development projects.***

Despite our commitment of significant time, effort, and resources to project planning, review, and approval processes, the inherent complexity of some development projects introduces factors beyond our control. This complexity may lead to underestimations of both the cost and time required for project completion.

Various unforeseen circumstances, such as incidents or unexpected conditions encountered during development, can cause setbacks or cost overruns. The acquisition of necessary licenses, permits, or authorizations may prove unattainable at anticipated costs or may be subject to significant delays. Moreover, changes in market conditions can render a project less economically attractive than initially projected.

Additionally, challenges, both foreseeable and unforeseen, may arise during the development and management of projects, impacting our ability to execute as effectively as anticipated.

The culmination of these factors can result in increased capital costs, schedule delays, and consequently, materially, and adversely affect the anticipated financial returns from development projects. To address these challenges, our approach involves ongoing risk assessment, adaptability to changing conditions, and strategic contingency planning to enhance the resilience of our development initiatives.



## Financial Risks

***If our liquidity, or cash flow deteriorates significantly, it may adversely affect our ability to fund our major capital programs.***

While our objective is to uphold a robust balance sheet, we acknowledge that external factors such as fluctuations in commodity prices and ongoing global economic volatility pose potential challenges. These uncertainties could significantly and adversely impact our future cash flows and our ability to access capital from financial markets at acceptable pricing. The maintenance of key financial ratios and credit ratings is pivotal, as any deviations may adversely affect our liquidity, cash reserves, interest rate costs on borrowed debt, and future access to financial capital markets. This, in turn, may impact our ability to fund current and future major capital projects.

Engaging with commercial counterparties introduces an additional layer of risk. The volatility of global financial markets necessitates a diligent approach to managing credit exposures with a consistent single book methodology. While our existing counterparty credit controls aim to quantify and assess all credit exposures consistently, there remains a potential for losses due to credit exposure to a major customer segment or financial counterparty. Additionally, the performance of customers, suppliers, or contractors against existing contracts and obligations is subject to uncertainties. The failure of these counterparties to meet their obligations could have a negative impact on our financial condition and results.

In navigating this dynamic environment, our commitment involves continuous risk assessment, adaptability to changing conditions, and strategic contingency planning. This approach aims to enhance the resilience of our financial position and mitigate potential challenges arising from external factors and commercial counterparties.

## Operational Risks

***Unexpected natural and operational catastrophes may adversely impact our assets, functions, or people.***

- **Operational accidents:** Operational processes may be prone to accidents such as fires, gas leaks, road incidents, port and shipping incidents, mechanical equipment failures, and cyber or conventional security attacks. The failure to effectively communicate during an operational crisis could lead to significant reputational damage.

- **Natural catastrophes:** Mineral assets are susceptible to unexpected natural events like earthquakes, floods, and typhoons, presenting additional challenges.

- **Global operations:** Global operations and corporate offices worldwide expose us to risks associated with natural pandemics, civil unrest, terrorism, or criminal events that could impact services, people, and local communities.

To address these risks, our risk financing (insurance) approach involves purchasing external insurance for various risks, including property damage, business interruption, corporate general liability, marine cargo, construction, and employee health benefits. However, existing insurance plans may not cover all the costs sometimes.

The potential disruptions in production, increased costs, and loss of facilities underscore the importance of having comprehensive risk mitigation strategies. While insurance provides a level of protection, the potential for third-party claims exceeding policy limits or uninsured/underinsured losses could have a material adverse effect on our financial position or results of assets.

***Information technology and operational technology services are subject to cybersecurity risks and threats that may materially affect our business and reputation.***

Our strategic focus on owning and operating long-life, low-cost assets hinges on achieving full integration and high automation throughout the resource-to-customer value chain. The dependency on traditional and emerging technologies is instrumental in enhancing safety, reducing costs, and unlocking value. However, this reliance introduces cybersecurity considerations that are critical to our operational resilience and success.

The escalating frequency and magnitude of global cyber events present potential risks, including the compromise of sensitive information and unplanned or extended outages to our systems and networks. These events encompass a spectrum of cyber threats such as system vulnerabilities exploitation, malware attacks, phishing, and other sophisticated cyber intrusions, including incidents stemming from human error. The repercussions of such events could range from misappropriation of funds and negative impacts on asset productivity to health and safety concerns, environmental damage, compromised product quality, loss of intellectual property, disclosure of commercially or personally sensitive information, regulatory fines, additional costs, and reputational damage.

As MHT continues its successful growth strategy, the elevated global profile and increased online presence make it a potentially attractive target for cyber security attacks. Despite ongoing reasonable efforts to safeguard against cyber events, there remains a vulnerability to both targeted and non-targeted cyber-attacks. It is noteworthy that, in FY2023, no significant breaches of our business-critical technology environment or material disclosures of market-sensitive information resulting from cyber events were detected.

***Cost pressures and reduced productivity could negatively impact on our operating margins and expansion plans.***

The industry continues to grapple with persistent cost pressures, and our products' prices, being influenced by global commodity markets, limit our ability to counterbalance these pressures through corresponding price increases. This dynamic can negatively impact our operating margins. Although efforts are underway to reduce costs, the commodity price linkage of key inputs and potential timing lags pose challenges, potentially affecting our operating margins over an extended period.

In addition to the secular rise in costs, the supply chain disruptions of key raw materials, reagents, and consumables could materially and adversely impact our earnings. Factors such as the unavailability of energy, fuel, or water due to climate changes, inadequate infrastructure capacity, interruptions in supply due to equipment failure, or other causes, along with challenges in extending supply contracts on economic terms, are significant considerations.

Cost and productivity pressures on MHT, contractors, and subcontractors may heighten the risk of industrial action and employment litigation. This, in turn, could lead to increased operating costs at existing assets, potential interruptions or delays, and negatively impact on our operating margins and expansion plans.

Commercial counterparties with their own management and operating standards may act contrary to our standards or fail to adopt or comply with standards equivalent to ours. Non-compliance with our internal CHES standards or other applicable standards by suppliers, contractors, or customers may result in adverse reputational and legal impacts.

## Sustainability Risks

**Community, Health, Environmental and Safety impacts, incidents, or accidents may adversely affect our people, assets and reputation or license to operate.**



### Community

Our assets and activities have the potential to directly influence communities, presenting risks associated with adverse impacts on human rights or breaches of international laws and conventions. Managing these risks is crucial to maintaining operational resilience and our license to operate. Local communities may express dissatisfaction with our operations or oppose new development projects, potentially resorting to legal action. Such opposition can lead to schedule delays, increased costs, and reduced production. Community-related risks encompass a range of challenges, including protests, civil unrest, adverse human rights impacts, health and safety complaints, grievances, shareholder activism, and civil society activism. In extreme cases, these risks may jeopardize the viability of our operations and adversely impact our reputation and license to operate.

To address these challenges, our approach involves:

- **Proactive engagement:** Engaging with local communities in a transparent and inclusive manner to foster understanding and address concerns.
- **Stakeholder collaboration:** Collaborating with stakeholders, including local communities, to identify and mitigate potential risks and promote positive impacts.
- **Compliance with Laws and Standards:** Adhering to international laws, conventions, and industry standards to prevent breaches and uphold human rights.
- **Continuous monitoring:** Regularly monitoring community sentiment and feedback to identify emerging issues and proactively address them.
- **Effective grievance mechanisms:** Implementing effective grievance mechanisms to address community concerns promptly and responsibly.



### Safety

MHT recognizes that certain risks possess the potential for severe impacts on people, property, reputation, and the operating license. These risks encompass a range of scenarios, including landslides, chemical accidents, toxic gas leaks, traffic collisions, mine explosions, radiation, waste management, lifting operations, and high-altitude work. To address these risks effectively, the company employs a robust health and safety management system, ensuring efficient operations and minimizing potential adverse consequences.



### Governance and compliance

MHT operates under the mandate and governance of global standards, supported by comprehensive strategies and frameworks. The commitment to maintaining effective global frameworks and associated controls is paramount, as any lapse in these measures could potentially result in major health, safety, or environmental incidents.



### Climate change

The physical and non-physical impacts of climate change pose significant challenges to our assets, productivity, and the markets where we sell our products. These impacts encompass acute and chronic changes in weather patterns, policy and regulatory shifts, technological developments, and market and economic responses. The utilization of fossil fuels in our mining and processing operations, either directly or through the purchase of fossil fuel-based utilities and consumables, contributes to greenhouse gas emissions, making our operations susceptible to climate-related risks.

National governments globally, including those in countries where we have assets such as Vietnam, Germany, Canada, China, North America, and Japan, have introduced or are considering regulatory responses to greenhouse gas emissions. The international community's commitment to addressing climate change, as reflected in the global climate agreement at the 21st Conference of the Parties (COP21) in Paris in December 2015, further underscores the regulatory landscape.

However, the absence of regulatory certainty, global policy inconsistencies, and the challenges associated with managing our diversified business portfolio across various regulatory frameworks present potential adverse effects on our assets and supply chain. Proposed regulatory mechanisms may impact our assets directly or indirectly through our suppliers and customers. Assessments of the potential impact of future climate change regulation remain uncertain due to the wide scope of potential regulatory changes across the countries in which we operate.

The physical effects of climate change on our assets, such as changes in rainfall patterns, water shortages, rising sea levels, increased storm intensities, and higher temperatures, could materially and adversely affect the financial performance of our assets.



### Health

The company acknowledges the importance of addressing health risks and environmental impacts associated with its operations, recognizing the potential consequences on human health, reputation, licensing processes, and business operations. Key considerations include:

- 1. Health Risks:** Age-related issues, fatigue management, and exposure to harmful agents such as noise, fine dust, diesel exhaust, cobalt, nickel, sulfuric acid fumes, ammonia, and radiation pose potential health risks.
- 2. Community health emergencies:** Global production facilities expose the company to emergencies related to community health, such as Covid-19, influenza, and infectious outbreaks.
- 3. Environmental impacts:**
  - Assets have the potential to impact air quality, biodiversity, water resources, and ecosystem services.
  - Changes in scientific understanding, regulatory requirements, or stakeholder expectations may affect project approvals and result in increased costs for mitigation, offsets, or compensatory actions.
- 4. Environmental incidents:**
  - Historical and present environmental incidents, including uncontrolled tailings containment breaches and the release of polluting substances, may have material adverse impacts on people, communities, assets, reputation, and the license to operate.
  - Operational closure and site rehabilitation plans are in place, but changes in regulatory or community expectations may necessitate adjustments, potentially increasing financial provisioning and costs.

## Management of Principal Risks, External Risks, Business risks

The breadth of our operations and our involvement in diverse industries expose us to a multitude of factors that may influence our results. The key risks that have the potential to adversely impact our performance, along with our strategies for managing and mitigating these risks, are elucidated below.



### External risks

**Principal risk** Our exposure to risks is heightened by fluctuations in commodity prices and demand within major markets, as well as shifts in currency exchange rates, interest rates, and governmental actions. These risks encompass the emergence of new regulations and standards, alleged compliance breaches, pandemics, and political events that can impact long-term fiscal stability.

**Mitigation approach** The strategic diversification of our portfolio across commodities, markets, geographies, and currencies serves as a cornerstone in mitigating the effects of volatility. The Risk & Audit Committee, as detailed in the Risk Management and Principal Risks sections, diligently oversees these risks. Additionally, proactive engagement with governments and key stakeholders is a priority, ensuring a comprehensive understanding of potential adverse impacts stemming from proposed fiscal, tax, investment, infrastructure access, regulatory changes, and evolving local and international standards. Where feasible, measures are taken to mitigate these impacts.

Our commitment to ethical business practices is enshrined in our Code of Conduct, outlining requirements for conducting operations with integrity, including engagements with government officials and third parties. Internally, robust processes and controls are established to ensure effective internal control over financial reporting. The Legal function assumes responsibility for overseeing our compliance with securities dealing obligations and continuous and periodic disclosure requirements.



### Financial risks

**Principal risk** The persistent volatility in global financial markets poses a potential threat to our future cash flows, affecting our ability to access and source capital from financial markets, and impacting our credit rating. This volatility may disrupt planned expenditures and hinder the recovery of investments in mining manufacturing projects. Furthermore, adverse market conditions may lead to commercial counterparties, including customers, suppliers, contractors, and financial institutions, failing to meet their contractual obligations. This complex financial landscape necessitates vigilant risk management and strategic planning to navigate potential challenges and sustain our financial resilience.

**Mitigation approach** Our commitment to maintaining a strong balance sheet is fortified by our portfolio risk management strategy. A key element of this strategy involves diversifying our portfolio to mitigate overall cash flow volatility. Regular cash flow analyses are employed to monitor volatilities and key financial ratios, ensuring a proactive approach to risk management.

To enhance control and oversight, credit limits and review controls are meticulously established for all customers and financial counterparties.



### Business risks

**Principal risk** Our operational landscape is inherently fraught with risks, particularly in the realm of the inherent uncertainty associated with identifying and substantiating reserves. The challenges extend to the acquisition of assets and the effective management of our capital development projects. Navigating these uncertainties demands a vigilant and strategic approach to ensure sustainable growth and value creation.

**Mitigation approach** Our reliance on qualified third parties plays a pivotal role in ensuring technical integrity and providing assurance for our Mineral Resource development and Ore Reserves reporting. This approach extends to meeting audit and specialist needs, enhancing the overall reliability of our operations.

To fortify our investment decisions, including mergers and acquisitions, we have instituted rigorous investment approval and monitoring processes overseen by an internal investment committee. A well-defined capital expenditure request framework governs the incorporation of growth options into our portfolio, ensuring a structured and governance-driven approach.

The ongoing transformation of our operating model is geared towards delivering a streamlined and scalable MHT. This redesign aims to establish a competitive advantage by defining work, organizational structures, and performance measurements. The implementation of defined global business processes, including SAP, fosters an enterprise-wide approach.

In pursuit of operational excellence, common processes have been introduced to generate valuable data and enhance operating discipline. The establishment of global sourcing arrangements is underway to secure continuity of supply and competitive costs for crucial supply inputs.

From an industrial relations perspective, meticulous planning has been undertaken to facilitate the seamless integration of the HCS business into MHT. Sustainability risk mitigation is embedded in our project functions, ensuring that our projects remain safe, predictable, and competitive in the ever-evolving landscape.



## Operational risks

### Principal risk

Unforeseen natural and operational calamities have the potential to exert adverse impacts on our assets. Information technology and operational technology services are susceptible to cybersecurity risks and threats, which may significantly impact our business operations and reputation. The confluence of operational cost pressures and diminished productivity could potentially exert adverse effects on operating margins and impede the realization of our expansion plans.

### Mitigation approach

Through the implementation of our robust risk management processes, we endeavor to identify potential catastrophic operational risks and institute essential controls and performance requirements to maintain the efficacy of our control measures. Business continuity plans and crisis and emergency management protocols have been instituted to mitigate the potential consequences of unforeseen events. In alignment with our risk management strategy, we maintain substantial third-party insurance coverage for losses stemming from property damage, business interruption, and construction-related incidents.

Given our substantial reliance on information technology and operational technology for asset operations, we have implemented a comprehensive set of measures designed to safeguard against, detect, and respond to cyber events. An enterprise-wide cyber risk management strategy is evolving to ensure the security of our technology assets supporting global operations. This strategy encompasses various activities, such as employee cybersecurity awareness and training, monitoring of enterprise and operational technology networks, vulnerability identification and remediation initiatives, secure-by-design architecture, and processes for managing third-party technology risks. In the event of incidents, root-cause analyses are conducted, and requisite follow-up actions are taken.

The Board receives regular updates on cyber risk management activities, including pertinent information on any significant cyber incidents. Our strategic objective is to uphold adequate operating margins by aligning MHT with our values, capabilities, and competitive resources to meet evolving market needs, thereby creating sustainable long-term value for shareholders and stakeholders. Our concentrated efforts to reduce operating costs and enhance productivity have yielded tangible results, evidenced by a reduction in controllable costs.

To further enhance the sustainability of productivity improvements, we are refining our operating model. The redesigned operating model aims to deliver a streamlined and scalable MHT, providing a competitive advantage through the definition of work, organizational structures, and performance metrics. Globally standardized business processes, including SAP, foster an enterprise-wide approach across MHT, generating valuable data and improving operating discipline. We have established global sourcing arrangements to ensure a continuous supply and competitive costs for key inputs post integration of the HCS business into MHT.



## Sustainability risks

### Principal risk

Occurrences involving CHES incidents or accidents pose potential risks, with the capacity to negatively impact individuals, neighboring communities, assets, reputation, and our license to operate. The potential physical impacts and associated responses to climate change present additional considerations that may influence the value of MHT, our assets, and the markets we serve.

### Mitigation approach

Our commitment to addressing sustainability risks is most aptly delineated in the Sustainability section of this annual integrated report. The standards outlined encompass Group-wide performance requirements pertaining to CHES (Chemical, Hazardous Material, Environmental, Safety, and Security) with the overarching objective of fortifying effective management control over these risks. The global CHES planning process is instrumental in identifying any deficiencies in these standards, guiding subsequent enhancements to the overall CHES framework on a global scale.

Our corporate planning, investment decision-making, and business management processes are imbued with a dedicated focus on the identification, assessment, and management of climate change risks. Employing a comprehensive and strategic approach to corporate planning, we utilize scenarios to thoroughly assess our portfolio's resilience to various climate-related factors.

The integrated report also elucidates our approach to engaging with community stakeholders. We are committed to fostering transparent communication and collaboration with the community, and details of this engagement strategy are comprehensively covered herein.

To ensure adherence to our standards, we actively undertake internal audits, rigorously testing compliance and formulating action plans to rectify any identified gaps. Key audit findings are presented to senior management, with reports deliberated upon by the Board Sustainability committee, reinforcing our commitment to continuous improvement and accountability in sustainability practices.



## HCS RISK MANAGEMENT

At H.C. Starck GmbH, risks and opportunities are identified at the level of the top management, site and HSEQ management with the involvement of employees (in the form of the works council) as part of a context analysis. A distinction is made between the areas of the company's continued existence, occupational health and safety, the environment, energy, and quality management. The topics with the highest priority are included in the corporate objectives. The individual departments then carry out their risk analyses on this basis and define measurable measures to minimize risks and take advantage of the opportunities that arise. As part of MHT risk management and the management systems, the measures and targets are regularly tracked so that a prompt response can be made if necessary.

### Risks resulting from stakeholder needs and expectations

Stakeholder	Expectations and needs	Risks	Mitigation approach
Customer	<ul style="list-style-type: none"> <li>• Goods according to specification/ punctual delivery/ flexibility</li> <li>• Sustainability (especially Carbon footprint)</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of customers</li> <li>• High manufacturing</li> <li>• Costs for narrow specs</li> <li>• Stocks</li> <li>• Loss of reputation</li> </ul>	<p>Through controlled production processes and the know-how of our employees, we continuously increase the quality level (QL) of our production. A regular analysis of the QL reveals systematic problems that can then be rectified.</p> <p>Due to the recycling process established at HCS, we can offer our customers products with a comparatively low carbon footprint compared to production from primary raw materials. We investigate our process both for energy or fresh water saving opportunities and develop new processes with a lower carbon footprint than conventional production processes.</p>
Public / Politics	<ul style="list-style-type: none"> <li>• Responsible sourcing of raw materials</li> <li>• Emergency management / pro-active information / crisis management</li> </ul>	<ul style="list-style-type: none"> <li>• Security of supply</li> <li>• Costs</li> <li>• Loss of reputation</li> <li>• Claims for damages</li> </ul>	<p>HCS has been certified as a "Conformant Smelter" for many years and meets the corresponding OECD and EU requirements. We are a founding member of the Tungsten Industries - Conflict Minerals Council (TI-CMC) and provide a Director of the Board. As part of Responsible Supply Chain Management, we are already addressing the upcoming due diligence requirements for companies within their supply chain.</p> <p>The buildings of HCS and ChemiLytics at the Goslar site are located in the immediate vicinity of residential buildings. Compliance with permits and limit values is our highest priority, as is regular monitoring. Open communication with our neighbors is recognized by them.</p>

Stakeholder	Expectations and needs	Risks	Mitigation approach
<b>Capital</b>	<ul style="list-style-type: none"> <li>• Fire protection systems</li> <li>• Hedging (investments/ products/ reserves / risk minimization)</li> <li>• Fast reaction to damage events</li> </ul>	<ul style="list-style-type: none"> <li>• High premiums / high costs for HCS in the case of an incident</li> <li>• Costs for measures and implementation</li> <li>• Completeness</li> <li>• High own contribution</li> </ul>	Insurance companies in particular expect high security standards. To meet expectations, we are prepared to invest in protective equipment that goes beyond the standard required by law. In addition, our own plant fire department and the high standard of training of our employees ensure rapid and routine intervention in the event of possible damage.
<b>Organizations and employees</b>	Training/ Education and Jobs	<ul style="list-style-type: none"> <li>• Head-hunters (poaching well-trained employees)</li> <li>• Employee structures</li> <li>• Expectations (management, employees and associations)</li> </ul>	We are addressing the shortage of skilled workers caused in particular by demographic change by offering attractive training and working conditions. For example, we have set up our own training programs.
<b>Management and authorities</b>	<ul style="list-style-type: none"> <li>• Corporate development / securing and expanding the market position</li> <li>• Compliance</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of customers</li> <li>• Negative revenue development</li> <li>• Recession</li> <li>• Liability risk</li> <li>• Loss of reputation</li> <li>• Costs for measures and implementation</li> </ul>	<p>We ensure customer loyalty and positive sales development through a long-term, future-oriented strategy and organic growth.</p> <p>Through a legal cadastre, we are aware of legal guidelines and requirements. Regular updates ensure that we are always up to date. The processing status of the legal register is regularly checked and reported. Compliance audits supplement the monitoring of legal conformity.</p>

### Risks resulting from relevant external and internal topics

Topic	Risks	Mitigation approach
<ul style="list-style-type: none"> <li>• Uncertainties on financial markets</li> <li>• Geopolitical risks (Trade Wars, Sanctions...)</li> <li>• Cost pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of sales due to cautious customers</li> <li>• Restricted market access</li> <li>• Energy prices and/or availability</li> <li>• Threats to the preservation of supply chains/ customer relationships</li> <li>• Lower margins/ losses/ less cash</li> <li>• Staff reductions</li> </ul>	The risks associated with these issues are considered as part of our annual strategic planning. We counter them by efficient processes, innovation, and cost advantage through flexible use of raw materials.
<ul style="list-style-type: none"> <li>• Financial, credit, interest rate and liquidity risks</li> <li>• Risks relating from political, legal, and social changes</li> </ul>	<ul style="list-style-type: none"> <li>• Deferral of investments</li> <li>• Lower market share</li> <li>• Difficulties within the raw material supply (CAHRAs)</li> </ul>	<p>We counter this risk through a syndicated loan agreement with the H.C. Starck Group, interest rate hedges and long-term contracts.</p> <p>The risks can be minimized through a global orientation of the company, cooperation, and joint ventures.</p>
<ul style="list-style-type: none"> <li>• Product life cycles, further development of portfolio, development of new markets</li> <li>• Strategic projects for future business</li> </ul>	Loss of customers, margins, and market share if trends are not recognized/ development takes too long	<p>Market monitoring supports our annual policy strategy and development projects. We invest in emerging markets. Our application engineering department gives us an insight into our customers' development activities.</p> <p>Together with you, we carry out development on the market. We control the duration and costs of projects through strong project management. Our involvement in standardization committees ensures that we have a technical edge, especially in analytical technology.</p>

Topic	Risks	Mitigation approach
<ul style="list-style-type: none"> <li>Plant and product safety</li> <li>Occupational accidents, near misses</li> </ul>	<ul style="list-style-type: none"> <li>Damage (people, environment)</li> <li>Production losses</li> </ul>	<p>Within our standardizes integrated management system we have a portfolio of measures to counter these risks. This includes, for example: high safety standards, emergency management, reporting of critical incidents, security checks of employees within defined security areas, regulation for the handling of occupational accidents, accident and safety reports, trainings, and training management.</p>
Total Productive Management (TPM)	Production losses	<p>Production downtime not only leads to extended delivery times, it can also affect our customers' confidence in our performance. We can minimize these risks through preventive maintenance, redundancies, and business continuity plans (BCP) on the one hand, as well as the approval of several plants at one customer and the qualification of alternative raw materials at a global materials management.</p>
<ul style="list-style-type: none"> <li>Delivery reliability (Raw materials, supplies, technical goods)</li> <li>Transport and storage risks</li> <li>Energy costs and price volatility of energies</li> </ul>	<ul style="list-style-type: none"> <li>Single sourcing (security and prices)</li> <li>Production costs</li> <li>Dependence</li> </ul>	<p>We avoid supply risks through long-term contracts and framework agreements and by avoiding single sourcing (multi-supplier strategy), consignment stocks + magazines and strategic raw material hedging. We also counter price developments on the energy market by continuously improving our energy-related performance (continuous improvement according to ISO50001:2018, EMAS) and planning for an independent, regenerative energy supply.</p> <p>By holding the necessary certificates (such as EMAS), we achieve tax advantages for energy-intensive business sectors.</p>

Topic	Risks	Mitigation approach
<ul style="list-style-type: none"> <li>Confidentiality (unauthorized to know or disclose confidential information)/ data protection.</li> <li>Cybercrime/ image (shitstorm...)</li> <li>Network independence (cloud-based systems), back-up solution</li> </ul>	<ul style="list-style-type: none"> <li>Loss of production (undefined period)</li> <li>Loss of know-how/ loss of data/ loss of money</li> </ul>	<p>The measures in the IT area are diverse: from a risk assessment based on ISO 27001 as well as the BSI basic protection hazard catalogue, BSI standard 100-3), to access restrictions, appropriateness of IT systems (IT landscape, roadmap), redundancies, and separation of office and production networks. Important data should be located on the company's own servers instead of in a cloud.</p>
<ul style="list-style-type: none"> <li>Demographics</li> <li>Competition on labor market</li> <li>Motivation and workload, mental stress</li> <li>Shift/ working time models</li> <li>Generation change ("Generation Z")</li> </ul>	<ul style="list-style-type: none"> <li>Shortage of skilled workers</li> <li>Staff turnover/ Head-hunters</li> <li>Employability</li> <li>Loss of knowledge</li> <li>Openness to innovations</li> <li>Loss of personnel (burn out)</li> </ul>	<p>The labor market is highly competitive, and the shortage of skilled workers is increasing, particularly in the EMEA and NAFTA economic regions. HCS and ChemiLytics are an attractive employer with an open management culture, work-life balance, work-life balance and flexible working time models. After outsourcing occupational health management and occupational safety for several years, these topics were reintegrated into the HSEQ management department. The complex of topics is rounded off by the offer of apprenticeships at HCS and ChemiLytics.</p>

# SUSTAINABILITY PERFORMANCE REPORT

Sustainability Framework

Improved Sustainability Governance Structure

Energy Management Committee

Sustainability Innovation

Sustainability Mining & Raw Materials

Sustainability Processing

Sustainability Supply Chain Management

Sustainability Human Resources

Sustainability Health & Safety

Sustainability Security

Sustainability Environment

Sustainability Community





## SUSTAINABILITY FRAMEWORK

Masan High-Tech Materials is committed to compliance with international standards of corporate governance for the sustainable and long-term development of the Company. Therefore, the company and its subsidiaries are all developed in a manner that complies with the local regulatory requirements and World Bank guidelines/policies on social and environmental safeguards, the IFC Sustainability Framework, and the Sustainable Development Framework issued by the ICMM for the mining and high-tech materials sector. We do so by integrating these practices into all our business areas towards the highest standards of transparency and consistency.

The sustainability framework enhances our effectiveness by enabling us to benchmark our performance and continuously improve our sustainability initiatives. Our core values govern our approach, meaning that we place equal importance on investor returns, people and community, the environment, and sound governance that adheres to our ethics. At the highest level, policies are designed to define the standards of measurement. Procedures are derived to monitor adherence to the Company's standards, while indicators enable top management and stakeholders to track our performance transparently.

Targets are periodically reviewed and updated to align with our aspirations. Finally, reports are consolidated to present the information to our stakeholders. Our commitments and initiatives have been demonstrated through the following objectives.

- Operating consistently in line with leading international practices in all business areas towards transparency and consistency of corporate governance;
- Building and maintaining enduring relationships based on recognition and respect with the stakeholders and contributing to the long-term economic, social, and institutional development of our communities
- Seeking continual improvement in safety, health, and environmental performance through robust management systems.

We embed our sustainability framework into all our operations, implementing it at the employee level with the aid of a document that outlines clearly and transparently the values employees need to demonstrate in their day-to-day activities. Our policies set out what we believe in and what we promise to achieve in the areas of health and safety, environment, community relations, and supply chain management.

## OUR SUSTAINABILITY VALUES

Sustainability means more than taking responsibility for one's environment, employees, and supply chains. It must take all stakeholders into account, as well as compliance with applicable laws, regulations, and guidelines.

As a global company, Masan High-Tech Materials (MHT) demonstrates a high level of responsibility to all its stakeholders including customers, employees, investors, and the communities in which it operates.

This commitment was summarized in MHT Group's first joint Code of Conduct in 2022, which will be slightly amended in 2024. While our 2022 policy solely considered the most severe form of child labor, adopting a zero-tolerance policy based on the OECD Due Diligence Guidance for Conflict Minerals Supply Chains, our 2024 update will extend this stance to all forms of child labor following ILO standards.

The employees of MHT are taking all reasonable and necessary steps to comply with the Code, the law, as well as the Company policies and procedures.

## CODE OF CONDUCT THE BASIS FOR OUR SUCCESS

### 1 Fair Competition

MHT is committed without reservation to fair competition and fair contracting practices with its business partners. Any forms of collusion, or coordination that result in an unfair advantage for one party are prohibited among competitors, as is the abuse of a dominant market position.

### 2 Business and financial records

Documents, including those in electronic form, are the property of MHT and are kept secure. Personal data is treated with the utmost care and in strict confidence. MHT's financial reports are prepared according to the relevant legal requirements and internationally accepted accounting practices and principles. All necessary measures to prevent money laundering are taken within MHT's sphere of influence.

### 3 Compliance with International Commercial Law and Provisions on Exports

MHT complies with all international agreements, conventions, and treaties, as well as national laws controlling trade and financial transactions, and consistently monitors compliance with international and national export control laws.

### 4 Company assets

All employees are similarly responsible for the protection of MHT's material and immaterial assets. Particular importance is attached to the results of scientific research and technical developments, such as inventions, patents, and other know-how. It is prohibited to disclose company and business secrets to third parties in any form. Third-party confidential information that is within MHT's responsibility must also be protected with the same care.

### 5 Conflicts of interest

MHT has a zero-tolerance policy for bribery and corruption. MHT does not enter into business relationships whose existence or desired scope is dependent on the payment of bribes. At MHT, preventing corruption also means obtaining information about business partners in advance. Business decisions on behalf of MHT may not be influenced by the acceptance of advantages or the granting of benefits and privileges ("perks").

### 6 Behaviour toward Government Agencies; Cooperation

The Company is committed to complying with all laws and legislation regulating its businesses. Therefore MHT is dealing with all relevant government agencies cooperatively and with an open approach. If an employee learns that a government agency, legislative body, or other authorized institution, is investigating MHT, the legal department must be informed immediately.

### 7 Environmental Protection and Safety

MHT and its employees bear responsibility for protecting people and the environment following all legal and regulatory requirements in the relevant jurisdiction, as well as international industry practice. The Health & Safety, Environment, and Quality policies are the primary guide for all employees on these matters. Safety is the top priority in all dealings involving products that pollute the environment. Additionally, every employee shares the responsibility for ensuring occupational safety in his or her area.

### 8 Labour and employment

MHT does not tolerate discrimination, harassment, abuse, or corporal punishment in any form, whether by business partners, candidates or applicants, or employees. Furthermore, MHT has a zero-tolerance policy towards any form of forced labor, modern slavery, or the most severe form of child labor.

### 9 Behaviour towards Suppliers of Raw Materials

MHT is working together with partners whose stance on ethical, social, and environmental policy matters is consistent with that of MHT. For this reason, all suppliers of raw materials have to prove that all applicable guidelines laws, and regulations, like the OECD Due Diligence and EU regulation for conflict raw materials, are complied with and that they own all of the necessary permits, authorizations, and approvals. Furthermore, all parties involved in our supply chain commit to comply with our purchasing guidelines.

### 10 Ensuring Compliance

MHT does not tolerate any legal violations whatsoever and consistently complies with the guidelines and rules described. Therefore compliance with this Code of Conduct, the law, and the Company's policies is subject to regular reviews, executed on behalf of the executive management by the supervisors.

### 11 External Relations

MHT has a policy on how to deal with external stakeholders and who is authorized to communicate with them. Therefore, in all matters concerning the company, employees who do not have authorization must avoid giving the impression that they speak on behalf of the company.

### 12 The Compliance Organisation and Contact Persons

Your Line Manager / Supervisor is the first point of contact for any questions you may have regarding the Code of Conduct.

If the matter concerns your supervisor, you can contact the HR department or your next higher supervisor.

The Executive Management Team performs the corporate compliance function in the MHT Group. A member of the Team is your contact person for any questions you may have regarding the Code of Conduct. Inquiries can also be made anonymously, and all reasonable efforts are made to maintain confidentiality, although MHT is, of course, obligated to initiate investigations to comply with the law and support law enforcement.

If you have specific legal questions, particularly regarding whether certain actions are lawful, please contact the appropriate Legal Department.

MHT guarantees that no employee will be subject to discrimination, retaliation, or any other adverse treatment based on the employee having made a report in good faith.

## Sustainability Goals reflected in HCS Policies and Regulations

Our vision is to be the leading integrated supplier of sophisticated high-tech materials critical to global innovation. To sustain and continuously improve all our processes and functions we focus on the following:

### Customer satisfaction

We increase customer satisfaction and loyalty by responding:

- flexibly,
- with the desired quality (Zero defect strategy)
- and competitively on customer requirements

### Occupational health & safety

Our employees enjoy a working environment in which they:

- stay healthy
- and are actively involved in its improvement

We implement the necessary safety measures and pursue a Zero accidents strategy.

### Employee satisfaction

We promote employee satisfaction through:

- a secure job
- performance-based remuneration
- an appreciative management culture
- a culture of coexistence
- and the elimination of cultural and language barriers

### Sustainability

We commit to working responsibly with the resources at our disposal. For this purpose, we:

- use our recycling expertise, offer our customers a “closed loop” process and buy our raw materials responsibly (Conflict-free sourcing)
- increase our process efficiency of energy use and availability of our production equipment

- improve both our environmental and energy performance continuously to achieve
- offer our employees flexible working hours, good training and needs-based education

### Competitive Ability

We maintain our competitive advantage in the marketplace:

- based on our Code of Conduct and in compliance with ISO 37301
- by demonstrating a high level of security of supply through a “multi-supplier” strategy in which we continuously develop our suppliers
- by increasing process efficiency continuously
- through innovations in technologies and products. We identify new trends at an early stage and align our research and processes accordingly
- by maintaining our know-how through active knowledge management
- with a strong corporate culture

### IT safety

Availability of systems and data is ensured by negating third-party criminal influence. Both personal and company data are handled responsibly

### Continued existence of the company

To manage risks to the continued existence of the company, we will:

- actively manage the financial situation of the company in accordance with the defined KPIs (e.g.: sales, net income) including liquidity targets
- monitor the sales and supply markets and react flexibly
- react flexibly to transport and storage risks
- develop concepts to mitigate risks such as natural disasters and force majeure

## Applicable Standards

- » The standards mentioned in MHT Annual & Sustainability Report 2020
- » ISO standards (ISO 9001, ISO 14001, ISO 45001, ISO 50001)
- » Eco-Management and Audit Scheme (EMAS)
- » OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas

- » REGULATION (EU) 2017/821 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2017 laying down supply chain due diligence obligations for Union importers of tin, tantalum, and tungsten, their ores, and gold originating from conflict-affected and high-risk areas
- » Modern Slavery Act
- » REACH, RoHS



## SUSTAINABILITY MANAGEMENT TEAM GOSLAR

As early as 1987, the United Nations World Commission on Environment and Development defined sustainability, stating: *“Humanity has the capacity to make development sustainable, i.e. to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs”*. Sustainability therefore affects all areas of our lives and economic activity and is therefore a task for society as a whole. This requires social development that is ecologically compatible, socially just, and economically efficient.

Since September 2022, our site in Germany has been validated in accordance with the criteria of the Eco-Management and Audit Scheme (EMAS), recognized as the world’s strictest environmental management system. This validation is based on certification in accordance with ISO 14001 (environmental management system), supplemented by the topics of “Energy”, “Social” and “Economy”. In addition to enhancing our image, we expect certification to facilitate relations with the authorities (fewer official inspections) and, above all, to simplify the authorisation process for new facilities, thereby reducing costs.

EMAS certification means separate certification in accordance with ISO 50001 (energy management system) is no longer necessary, as the topic of energy is included in EMAS. Consequently, we intend to combine the strengths of the previously separate sustainability and energy teams in 2024 and merge them into a new sustainability and energy team.

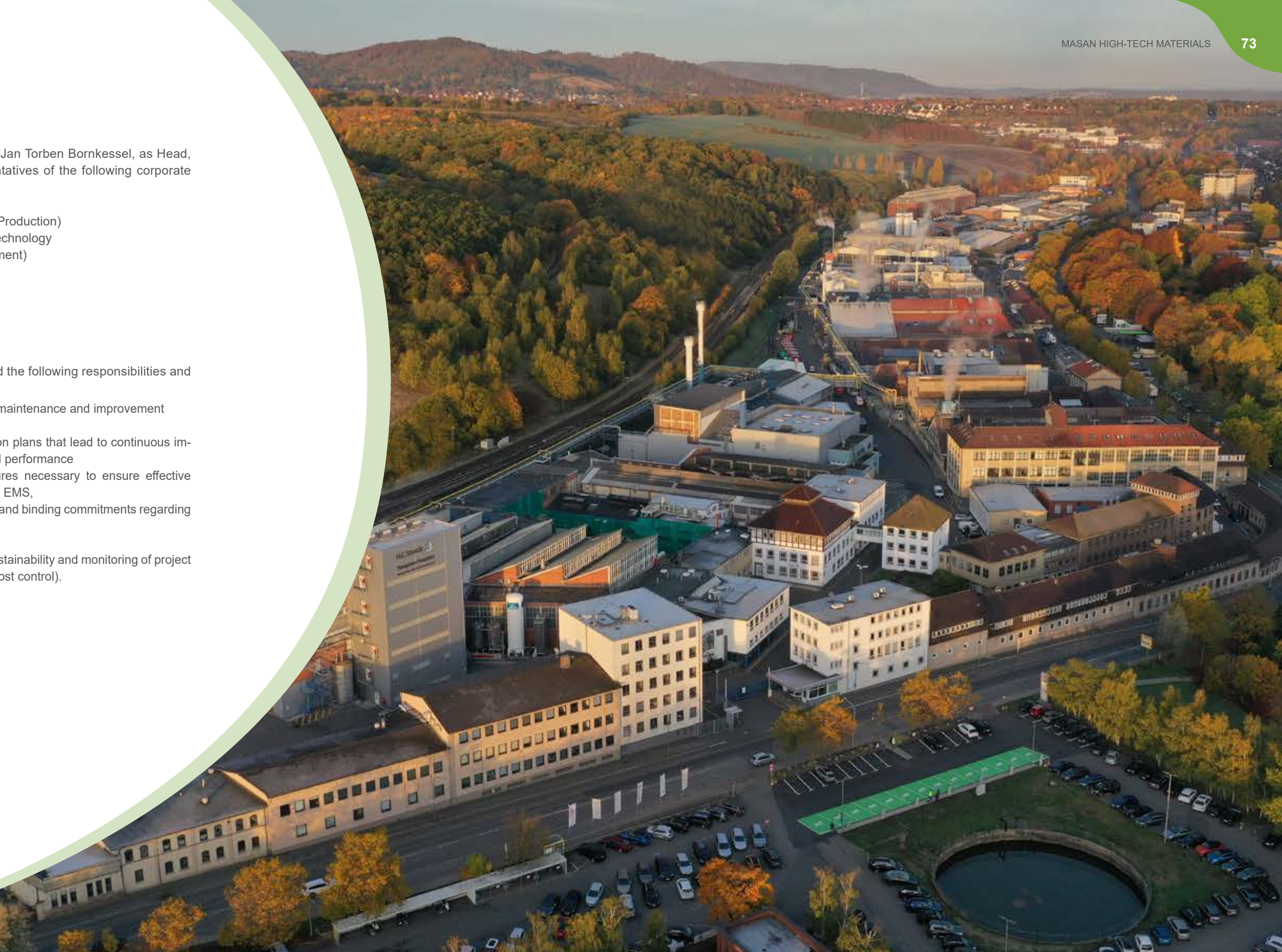
The focus of sustainability management at H.C. Starck Tungsten GmbH is on climate strategy (mainly CO<sub>2</sub> emissions and water consumption), emissions, wastewater, and waste. The area of energy was mapped via the energy management system (EnMS). External and internal issues as well as the requirements and expectations of interested parties were taken into account when defining the scope of the EnMS. However, social aspects are also incorporated, both for the company’s employees and for the community, such as various lectures on sustainability topics, including those held at the Rammelsberg World Heritage Site (a former multi-metal mine). The sustainability team essentially consists of people who know the environmentally relevant processes and technologies in our company. Their knowledge is to be used to positively influence the direct and indirect environmental aspects of our companies in a sustainable manner.

Sustainability Management Officer Jan Torben Bornkessel, as Head, is therefore supported by representatives of the following corporate divisions:

- Site Management
- Operations (Technical Services, Production)
- Maintenance; Process Control Technology
- Sales (Sales, Business Development)
- Procurement
- Technology & Innovation
- Controlling
- HSEQ Management
- Materials Management

The Sustainability Team is assigned the following responsibilities and authorities:

- Ensure effective implementation, maintenance and improvement of the EMS.
- Establishing and maintaining action plans that lead to continuous improvement in sustainability-related performance
- Establishing criteria and procedures necessary to ensure effective functioning and governance of the EMS,
- Promoting awareness of the EMS and binding commitments regarding the EMS across divisions.
- Delegation of tasks
- Planning of projects relevant to sustainability and monitoring of project implementation (schedule, time, cost control).





## ACTIONS IN 2023



Participation in the Goslar Old Town Run



Staff party at Lindenhof Goslar



Creation of a 50m<sup>2</sup> flowering meadow for wild bees and insects



Participation in a football tournament for disadvantaged children



Collection of used electrical appliances, giving employees the possibility of depositing appliances from their homes in the bins provided.



“Budenzauber” (Christmas get-together with punch, tea, and bratwurst).



## FOCUS 2024

Third-party verification of the CO<sub>2</sub>e calculation based on Scope 1&2

Implementation of the Scope 3 data determination project, to determine Product Carbon Footprint figures in 2024.

Materiality analysis to identify the data points to be included in the non-financial sustainability reporting (Corporate Social Reporting Directive, CSRD) mandated by the European Union from 2026.

# IMPROVED SUSTAINABILITY GOVERNANCE STRUCTURE

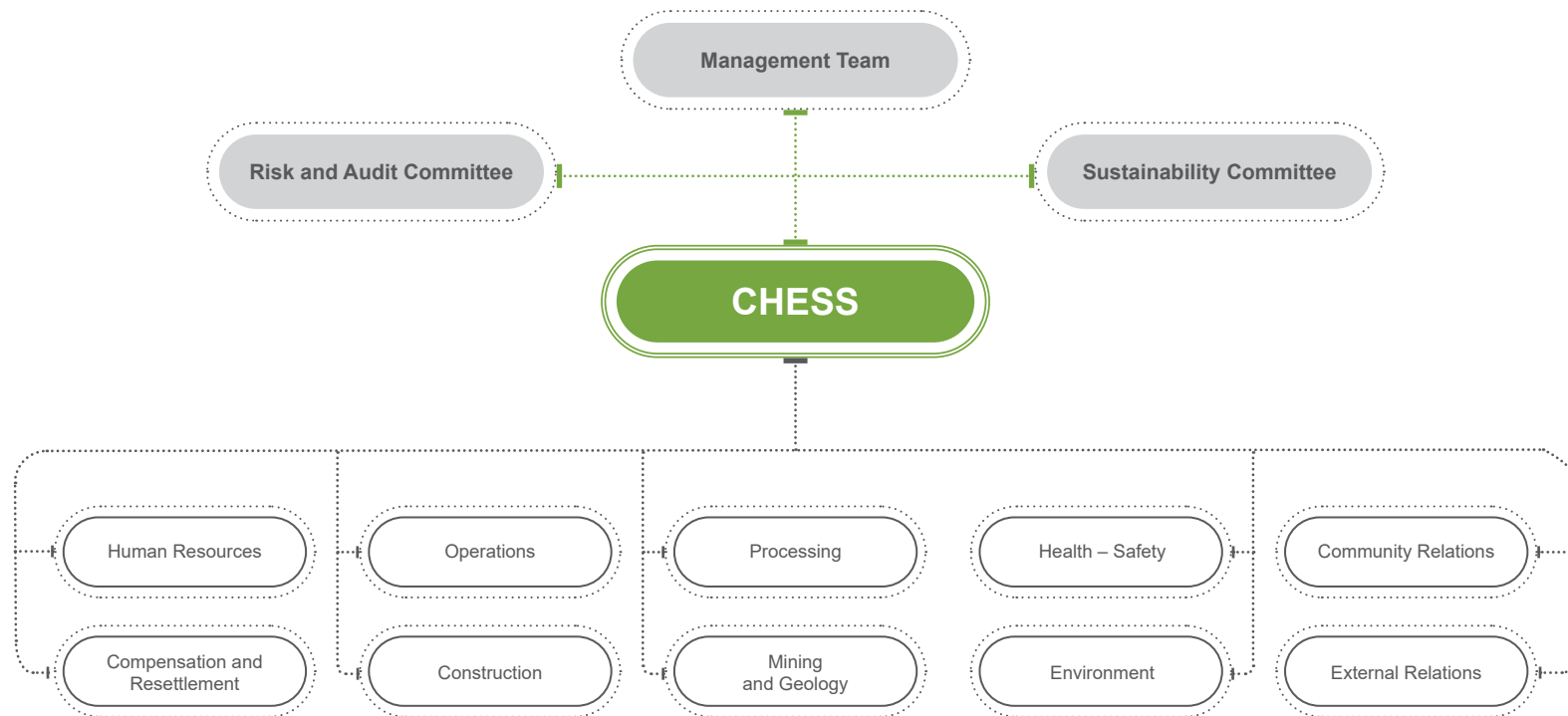
In 2023, the CHES Committee (Community, Health, Environment, Safety, and Sustainability Committee) continued to play its role in ensuring safety and hygiene in the workplace. Each member of the committee was actively engaged in various activities, including:

- Actively participating in area safety inspections
- Monitoring compliance.
- Organizing awareness activities on safety and occupational hygiene.
- Conducting monthly and quarterly meetings, where Management representatives shared insights and provided guidance on potential solutions for safety issues

On 26 September 2023, the CHES Committee was disbanded. In its place, the Occupational Health and Safety Network (OHS) was established to focus on implementing safety tasks in specific areas.

OHS will be dedicated to advocating, mobilizing, and persuading employees in work safety matters, listening to opinions, and suggesting ways to improve safety at work. The network will consistently perform assigned tasks to quickly detect and address safety issues in production, recommending measures to manage incidents and eliminate the risk of occupational accidents.

Additionally, OHS will rectify behaviors violating procedures and regulations regarding employee safety and occupational hygiene.



## MISSION FOR 2024

In 2024, OHS will continue to play its role in ensuring safety and hygiene in the workplace. The network aims to enhance the professional competence and skills of occupational safety officers.

- Each Occupational Safety officer will represent their respective departments in the area, highlighting significant safety issues for functional departments, along with the Labor Union and the Health & Safety department, to provide timely solutions to these issues.
- The network will apply digital transformation in data synthesis, work tracking, and communication. Regular meetings will be maintained to strengthen ties between network members.
- The year's outstanding Occupational Health and Safety Officers will be evaluated and voted on.



## ENERGY MANAGEMENT COMMITTEE

### Energy Management Committee at NPMC and MTC

The Energy Management Committee has been in operation since 2019 to develop and monitor energy management initiatives with the goal of saving and using energy efficiently and effectively. In 2023, the Energy Management Committee maintained its commitment to implementing the efficient and sustainable energy projects and meeting savings targets.

Throughout the year, various energy-saving solutions have been put into place at NPMC and MTC. It was projected that more than 1.3 million kWh of energy had been saved overall, exceeding the target by 16%.

### NPMC – Estimated savings reach 1.1 million kWh

NPMC's production, maintenance and repair operations for equipment and facilities were streamlined through the introduction of multiple solutions. Some ongoing measures have been implemented since 2022.

SOLUTIONS	ENERGY SAVING (kWh)
Reduce the capacity of the return decant pumps at STC by changing the size of the pulley to save power of pump operation because the reduced level of the float has increased from 75m to 117m, leading to a decrease in pressure demand.	293,501
Install and operate the power factor unit at Song Cong pumping station to improve the power factor, thereby reducing power loss.	153,085
Change the screen of the crusher from the size type of 23x35mm to 19x34mm to avoid equipment failure, decrease the regrinding times of ore, reducing energy consumption.	25,860
Reduce power consumption due to improvement of feed rate control of CR-001 crusher since March 30, 2023. Previously, the jaw crushers were not often fed by coil, resulting in reduced crushing energy efficiency and lower throughput rates.	198,463
Replace the internal and external solid foundry materials of rubber liners with steel-frame rubber liners to help reduce 5.7 tons for each crusher.	3,036
Reduce the thickness of upper cover liner of ML-001 mill in the grinding phase.	264
Install a particle size analyzer (PSI 500i) online to control the particle size in the grinding cycle, better control the mill operation to reduce the generation of fine particles (material -38 microns) and reduce electricity consumption by preventing over-operating the mill.	430,428
<b>TOTAL</b>	<b>1,104,637</b>

### MTC – Estimated energy savings reach more than 0.2 million kWh

In 2023, MTC continued to maintain the energy management system in accordance with ISO 50001:2018 and implemented a number of solutions as follows:

SOLUTIONS	ENERGY SAVING (kWh)
Install a pressure regulator before supplying air to the FF300 filter to reduce the input air pressure, decreasing the number of operating hours of the air compressor, and limiting the waste of compressed air.	174,579
Optimize the loading/unloading pressure setpoints to reduce unloading time of 3 air compressors.	68,791
<b>TOTAL</b>	<b>243,370</b>

## FOCUS 2024

Maintain energy management system according to ISO 50001:2018 at MTC.

Implement, test, and research solutions for energy saving: Control the crystallization point of equipment during production at MTC plant; Control the dryer temperature in MTC plant's Wastewater Evaporation and Crystallization system; Improve the performance of the water return pump from Oxide Tailings Cell (OTC) to the Nui Phao plant; Enhance the performance of the air compressor to reduce energy waste at Nui Phao plant, among others.

Reduce diesel consumption by managing better the diesel supply process for the Tungsten concentrate dryers at the Nui Phao plant.

## HCS ENERGY COMMITTEE

Since the end of 2022, H.C. Starck Tungsten GmbH Goslar has been validated in accordance with the Eco-Management & Audit Scheme (EMAS), covering energy, environmental and sustainability issues. We have therefore decided not to pursue ISO 50001 certification as part of the recertification of our Integrated Management System (IMS).

Nevertheless, even without certification, we continue to use an Energy Management System (EnMS) according to ISO 50001:2018 internally, as the continuous improvement of energy performance is one of the most important levers in terms of reducing the company's carbon footprint and improving competitiveness.

As part of the EnMS, all facilities and processes have been assessed, including those with significant energy use (SEUs). The 2021 work focused on standardizing SEU data to facilitate the continuous improvement of EnPIs ("Energy Performance Indicators"), taking into account the influences of relevant variables. Previously, an Energy team was founded in 2019, headed by the Energy Management System Officer Andreas König in order to meet the requirements of ISO 50001:2018.

The Energy Team is assigned the following responsibilities and authorities:

- (a) Ensuring effective implementation, maintenance and improvement of the EnMS;
- (b) Implementing and maintaining action plans that result in continuous improvement of energy-related performance;
- (c) Establishing criteria and procedures necessary to ensure effective operation and management of the EnMS, such as:
  - Promoting awareness of the EnMS and energy goals across divisions
  - Delegation of tasks
  - Planning energy efficiency projects and monitoring project implementation (schedule, time, cost control).

The inter-operation energy team led by the Energy Management System officer, together with department heads, are responsible for ensuring that all employees receive regular ongoing training.

The team members of Energy team represent diverse departments of the company. Each team member must have a significant influence on the energy efficiency of H.C. Starck Tungsten GmbH in Goslar. Their expertise shall be used to positively influence energy consumption within our subsidiaries in the long run.

In 2024, we will be joining forces in the field of sustainability and energy, setting up a team to work on the associated topics across all departments.

The Energy team's projects in 2023 were:

**R**aw materials preparation/ recycling: Heat recovery from building H51

**T**ungsten r reduction: Use of a triple helix on the GDR 6 rotary kiln

**T**ungsten carbide coarse grain and special carbides: Energy savings on the IW400 coil furnace using other insulation materials.

**T**ungsten carbide fine grain sector:

- Relining 4 carburizing furnaces
- Intelligently interconnecting of compressors.
- Replacing control air compressors.
- Installing a (fine grain) flow rate measurement system to reduce the pressure loss of one bar.

**R&D**: Optimization of the heating and ventilation system in the VTZ building

Thanks to the measures mentioned above among many others, specific energy consumption at the Goslar site in Germany has been reduced by around 7% in 2023. This far significantly exceeded the 2% target for specific energy savings.

Our operational and ISO 14001 environmental component targets emphasize Sarnia's efforts to conserve energy and reduce waste, specifically improving auxiliary gaseous streams and electricity use.

A significant improvement in energy consumption has been achieved by altering production scheduling to strategically optimize and balance power demands. All upgrades or replacements of current equipment, whether new or used, must take energy factors into account.

## FOCUS 2024

### Overall measures

- » Continue the measuring point concept in order to record energy consumption at all individual systems
- » Program and install dashboards to raise employee awareness.

### Raw material preparation area

Line Fulmina furnaces with bricks (replace tamping compound).

### Chemicals division

Separate stripping

### Reduction area

capacity expansion at the rotary kilns using larger feed screws. This project is supported by AI.

### Tungsten carbide fine grain area

- » Replacing flow meters
- » Heat recovery from the compressors to heat the training center.

### R&D and ChemiLytics

Replace lighting in the VTZ and central laboratory buildings with LEDs.

## INNOVATION SUSTAINABILITY

In 2023, a multitude of research and development activities were undertaken by Masan High-Tech Materials' Technology and Innovation division in continued support of Masan High-Tech Materials' efforts in the areas of overall sustainability and establishing green global circular economies for the materials it produces currently and into the future.

To this endeavour, the key focus areas for the global innovation team were:

- a Research and development of even more competitive, better performing and greener products;
- b Optimization of already existing processes and the development of new processes and or technologies with a CO<sub>2</sub> footprint as low as possible;

- c Optimization of existing equipment and the design of new equipment with higher production efficiencies, lower energy consumption and lower reagent consumption; and
- d Recycling or conversion of waste streams into new value-added products.

Innovation has always been crucial for making substantial advancements in corporate environmental performance and sustainability. Masan High-Tech Materials has recognized the significance of innovation in sustainability from its very beginning and, as a result, has developed a reliable platform for fostering a robust culture of technological innovation.



Core Technology and Innovation scientists together with MHT Board while attending the 2023 AGM

Masan High-Tech Materials operates two state-of-the-art research facilities, one located in Germany and the other in Vietnam. These facilities are focused on technology and innovation across the entire mineral and metal processing chain. They are recognized as a key pillar in Masan High-Tech Materials' success in the business arena and in maintaining long-term sustainability. With ongoing commitment and continuous high investment in technology and innovation all over the process chains, Masan High-Tech Materials secures the technology leadership position in the processing and production of Tungsten, Fluorite, Bismuth, Copper, and other materials. This also results in significant improvements in the company's sustainability, environmental impacts, and contribution to the green economy.

Substantial funding and person-hours are dedicated to the support and optimization of Masan High-Tech Materials' global network of processing facilities, in order to improve the consistency of product quality and production efficiency. Superior and more precise production processes result in increased product yields, reduced waste, and minimization of important environmental factors. Consumption of items such as energy, water, reagents, and other auxiliaries can all be reduced and the production of waste and by-product streams minimized, therefore improving the sustainability and environmental impact of the processes.

Masan High-Tech Materials is dedicated to advanced technological development and innovation. To produce its wide range of high-purity products, the company operates highly efficient and automated processing facilities around the world. It has also been granted Hi-Tech Enterprise status by the government of Vietnam for its MTC production facility. Additionally, the company has been issued over 105 patents for the manufacturing of innovative products.

To achieve and maintain its focus on research and development, Masan High-Tech Materials utilizes the latest in analytical laboratory technology in combination with extensive pilot plants that can mimic all parts of its own and customers manufacturing processes. With the ability to conduct systematic research and development activities for hydrometallurgical, pyrometallurgical, and classical physical metallurgical process technologies, these facilities are pivotal in refining and improving our products and processes.



## IMPROVING RECYCLING CAPABILITY

The recycling of tungsten scraps and wastes plays an important part and is one of the foundations of Masan High-Tech Materials sustainability within the industry. This enables not only access to low-cost tungsten units but also prevents these materials from being disposed into landfills preserving primary tungsten resources and establishing a circular economy. In this regard, below are some of the research and development activities undertaken by Masan High-Tech Materials in 2023 to increase the effectiveness and efficiency of its current and future recycling capabilities.

### Optimization and Expansion of Scrap Pyrometallurgical Digestion

From a business and sustainability perspective, the company is aiming to further expand our recycling capabilities with MHT's strong belief to the establishment of sustainable green circular economies. The company has decided to evaluate the construction of an additional tungsten scrap recycling facility in Vietnam. During 2023 basic engineering for the facility was completed along with the commencement of the necessary regulatory and environmental approvals processes.



*Design and Location of Tungsten Scrap Recycling Plant in Vietnam*

The recycling rate of different types of tungsten scrap is on the rise. However, there is still significant room for improvement if we want to increase the industry's overall sustainability. One of the main obstacles in increasing recycling rates of certain scrap materials is their contamination with other elements such as molybdenum and other metals, which are difficult to separate. Therefore, it is crucial to understand the chemical behaviour of these materials within the established process to improve the recycling rates.

The efficiency of the pyrometallurgical process for the digestion of tungsten hard and soft scrap continued to be improved in 2023. This year's focus was on developing a better understanding of the reactions related to the metals present in the hard metals and Tungsten carbide alloys. In close cooperation with the Technical University of Berlin, the current chemistry and reactions have been analyzed in detail and suitable solutions for improved processing were proposed and evaluated in lab scale in Goslar laboratories. Currently, these results are being transferred to the full-scale production process and will increase the overall efficiency as well as significantly reduce both the energy consumption and chemicals used in the process.

To further improve and accelerate research in this area MHT has started to develop a lab-scale and pilot-scale testing area within the MHT's Vietnam R&D facilities to complement those already in place in Goslar. This new equipment will further increase MHT's capabilities in performing advanced research in this area and recycling more diverse scrap materials.

### Further Processing of Low-grade Tailings and Waste Streams

As extraction and processing technologies advance over time, it makes the retreatment and recycling of historical low-grade tungsten mine tailings a significant opportunity to source additional primary tungsten units more sustainably.

Masan High-Tech Materials has not only completed extensive test work on its tailings to evaluate the economic extraction of additional Tungsten units in the future but was also participating in a joint research project investigating the recycling of low-grade tungsten-containing tailings in Brazil.

Masan High-Tech Materials is also investigating alternative uses for its tailings and waste streams within other industries such as cement manufacture. Detailed test work and trials were conducted in collaboration with Vietnamese government agencies and cement producers.

The investigation and evaluation of the supplementary refinement and processing of Sulphide tailing to produce sulphuric acid, steam, and a saleable iron material have also commenced in 2023. These three products are not only used extensively in the local region but also utilized by MHT's two Vietnamese production facilities. Their production from what is currently considered a waste stream would greatly improve the overall sustainability of both operations.



## MORE EFFICIENT PRODUCTION AND AUXILIARY CONSUMPTION

To maintain its competitiveness and sustainability, MHT must always explore and create innovative processes that lead to higher capacities, higher efficiencies, and consume fewer auxiliaries. As with previous years, MHT remains actively engaged in this area in 2023.

### Improving Raw Material Flexibility

In order to establish a sustainable business in the tungsten industry, it has become increasingly important to produce large quantities of high-quality tungsten products from various raw materials. Therefore, one of MHT's primary activities is to continually evaluate new and diverse raw materials, and either optimize existing processing parameters or develop new and innovative ways to efficiently treat these materials in the leaching and purification stages of the process. In 2023, several new complex feed materials were assessed, and the existing process was successfully optimized, or new methods were developed to enable the treatment of these materials on a production scale. This greatly expanded the range of feed materials used in the plant, and also prevented these complex materials from being disposed of in landfills.



### Significant Reduction in Caustic Consumption

Caustic soda is one of the key reagents in the extraction and refining of tungsten-containing raw feed materials into high-purity tungsten products. The nature of the feed material can also impact the amount of caustic needed with lower-grade or contaminated feed materials requiring higher caustic consumption. Higher caustic consumption not only increases production costs but also results in increased waste generation.

During 2023, many initiatives to not only ascertain and better understand the key drivers behind caustic consumption but also how to recover and recycle caustic were focused on. Through extensive laboratory experimentation, plant surveys, metallurgical modeling, and plant scale testing each of the theories and initiatives were evaluated in close collaboration with operational personnel. Through this process, several initiatives successfully proved their effectiveness in reducing caustic consumption. In combination, these initiatives resulted in a significant reduction in overall fresh caustic consumption in the order of 10-15% which will greatly reduce the effect on the environment and increase the sustainability of the business.



### Recycling Wastewater

Climate change continues to impact the globe as evidenced by some of the most extreme weather events occurring since the commencement of climate recording. In times of climate change, water continues to become scarcer throughout the world and become a very valuable commodity, especially given its necessity for sustaining all lifeforms on earth.

It is therefore important to reduce the use of fresh water in our production processes. In cooperation with renowned Vietnamese research institutes, the company is investigating opportunities for recycling process wastewater within our production processes. This is intended to create a closed loop for the water that is used in the process. In addition to reducing the amount of freshwater, it may be possible to use heat recovery through innovative technology and thereby reduce energy consumption as well. Furthermore, chemicals contained in the wastewater can be recovered and reused in the production process.



### Production Reliability in a Global Crisis Environment

The global political climate continued to greatly impact auxiliary supply chains and created issues with both availability and pricing. A significant portion of time was spent within the R&D departments focused on securing access to crucial auxiliaries and raw materials required to support our highly specialized production processes. The R&D work is comprised of evaluating new suppliers of the auxiliaries as well as the evaluation of potential new alternatives. This work enabled production and product quality to continue unhindered.

Additionally, efforts were combined with operational personnel to also focus on reducing the consumption of critical auxiliaries through the upgrading, fine-tuning, and automating of process control circuits and systems.



### Improved Efficiency in Developing High-Purity Sodium Tungstate (ST)

Customers have increasingly high requirements for ST products with higher purity levels. As a result, research activities have been conducted in the laboratory to develop alternative methods to produce high-quality ST products more efficiently. A research project was undertaken to evaluate the method of producing high-quality products using an internal byproduct tungsten stream, resulting in an innovative process alternative to retreat the material in just a few simple steps. The resultant product is sold directly as a final product with high quality to meet customer requirements. This eliminates the need to recycle the stream back to the start of the process. The new production process has been successfully implemented on a full-scale operational basis, offering benefits such as reduced reprocessing costs, increased overall plant capacity, and high-quality product production.



### Product Development of a New Blue Tungsten Oxide

Tungsten oxide products have a wide range of uses and so the customer's specification for tungsten oxide products depends on their application and their equipment. In 2023, a new blue tungsten oxide (BTO) was developed with unique qualities such as large surface area, high flowability, high tungsten grade, and low impurity levels. Product development was conducted on a pilot scale, as well as a plant scale trial, using the existing equipment within MHT's facilities with simple innovative modifications from R&D engineers rather than purchasing and installing additional equipment. During the product development, technical exchange between both MHT's R&D facilities and potential customers was routinely organized to improve the quality of the BTO. The new tungsten oxide product from the trial fulfilled the customer's standard and was added to the company's growing product suite.



## ENERGY EFFICIENCY

Masan High-Tech Materials is committed to researching and developing energy-efficient technologies. By focusing on this area, the company can reduce both its direct and indirect CO<sub>2</sub> emissions while also saving substantial costs. Some of the key areas of innovation in energy efficiency are discussed below:

### Verification of Membrane Technology in the AMT Production Process

The MHT R&D departments continued to support the ongoing operation and optimization of membrane concentration technology in the company's state-of-the-art Ammonium Meta-tungstate (AMT) production process in 2023. This process was developed in-house in close collaboration with an industrial equipment supplier utilising substantial funding granted by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

Besides debottlenecking the existing production plant and making it more efficient, the introduction of this innovative concentration approach using modern environmentally friendly membrane technology allows the company to significantly reduce the energy consumption within the AMT production line by up to 97%. The lower energy consumption results in the overall CO<sub>2</sub> footprint for the production process reducing by a massive 95%. Furthermore, the improved efficiency of the process also decreases the amount of waste generated and reduces the circuit's water consumption.



Reverse osmosis equipment in AMT production plant in Goslar/Germany

The long-term viability of the membrane technology within the AMT circuit is highly dependent on the stability of the membranes. In 2023, the plant was partly disassembled to evaluate the degradation of the membrane materials which have been in operation for over 2 years. As anticipated, no significant degradation of the membrane material was observed. This confirmed that the upgraded process will continue to run efficiently with very high reliability well into the future. The success of the project demonstrates the win-win that can be achieved for both company economics and the environment when new innovative technologies are developed and implemented.

### Participation in Global Energy Reduction Programs

As a responsible corporate citizen, Masan High-Tech Materials actively engages in government and industry programs to reduce energy consumption across its global footprint. This is not only done at each of its operating centres but also in a holistic approach covering the entire life cycle of the materials that it produces.

Following the effort to decrease the global energy footprint, Masan High-Tech Materials, in combination with other industry leaders, universities and research institutes continues to cooperate with the German government-sponsored "Innovation for Energy Revolution" program.

The project investigates innovative technology to increase the energy efficiency of the hard metal production process from ore/ scrap to finished tools.

Using enhanced computational methods, like computational fluid dynamics, MHT developed a modification of the Tungsten oxide reduction process that will allow a significantly higher energy efficiency during this energy-intensive process. This modification was implemented in late 2023 and is currently undergoing production scale tests. Given its successful completion, this modification will considerably reduce both energy consumption and CO<sub>2</sub>-footprint and puts Masan High-Tech Materials' Tungsten Carbide (WC) among the most sustainable on the market.

Both Energy Management and Sustainability Teams have been established at all of Masan High-Tech Materials' production sites which are in turn overseen by the company's Sustainability Committee. They undertake a combined effort to constantly increase the company's sustainability by reducing energy consumption, waste reduction, and developing new energy concepts. These teams also work in cooperation with external partners involved with sourcing, developing and implementing renewable energy strategies. In addition, Goslar Operations has not only been certified in the areas of ISO 50001:2018 and ISO 50003:2016 for energy management but also obtained the sophisticated certificate following the Eco-Management and Audit Scheme (EMAS).



## MORE SUSTAINABLE PRODUCTS AND PROCESSES

### Additive Manufacturing

Additive manufacturing (AM), also commonly known as 3D printing, continues to be an area of innovative development for the company. The advantage of the AM process lies in the very efficient use of raw material resources, where no chips or grinding wastes are produced during production, significantly improving the efficiency and sustainability of part production. Additional degrees of freedom regarding the geometric design of components also make it possible to produce components that cannot be manufactured using conventional machining processes.

For this purpose, MHT has already commercially developed tungsten metal powders within their dedicated product line called starck2print®. These two products, one dedicated to the Laser Powder Bed Fusion (LPBF) technique, and the other to the Electron Beam Melting (EBM technology), allow manufacturers to construct parts while generating less waste.

The further adaptation and development of specific Tungsten metal and Tungsten carbide powders for use in additive manufacturing technologies is an important, however basic, requirement for defect-free production of parts. Defined shrinkage, pore-free microstructures and a homogeneous grain structure are the main challenges and can currently only be achieved for small and undemanding parts. In particular, the development of Tungsten carbide powders tailor-made for AM application is still a significant challenge, for achieving higher hardnesses especially required for cutting tools. During 2023 MHT continued to focus on the research and development of suitable products in cooperation with different German top tier universities and institutes so that additional materials can be added to its starck2print® product suite.

### Material Development for Fusion Reactor Shielding

The secure supply of energy without harming the environment is a fundamental goal for all nations and is key to creating a sustainable planet for the future. Renewable energy generation and the safe production of energy from nuclear fission are significant stepping stones to this goal, however, additional energy sources will be required to meet the growing energy demands of the world.

One alternative is the generation of energy from nuclear fusion, especially given the recent success in this field of research at the US National Ignition Facility. This technique utilizes the heat energy which is released when two lighter atomic nuclei are combined to form a heavier nucleus. The fusion reaction can reach temperatures of up to 100 million °C and release many neutrons and therefore needs to be well contained within a suitable reaction chamber. The reaction chamber walls can only be made from materials that are extremely resistant to high temperatures and able to shield the external environment and equipment from fast-moving neutrons.

Tungsten, with the highest melting point of all elements of the periodic table as well as its other outstanding physical properties, is one of the most suitable materials for the construction of such a reaction chamber and therefore a key material for bringing fusion power generation into reality. Other elements can also be alloyed with tungsten to create new materials and improve its shielding capability.

For this reason, our research and development team has partnered with the Imperial College of London to develop and test new materials and alloys suitable for use in fusion power generation.



## TAKING PART IN THE GLOBAL MEGATRENDS

In the pursuit of sustainability, the world is striving towards an electric future, which involves the electrification of most technologies, including transportation. To achieve this, rechargeable batteries are used for energy storage. However, once these batteries reach the end of their useful life, they become battery waste, which along with the significant amounts of scrap generated during the manufacturing process, forms a new waste stream known as Black Mass. This waste contains valuable materials such as Nickel, Cobalt, Lithium, Manganese, etc., that must be recovered for resource security and environmental and legislative reasons.

Despite the recycling of black mass through the established pyrometallurgical and hydrometallurgical process routes having less of an en-



vironmental impact than mining and refining virgin material, they also have a considerable environmental impact either through high energy consumptions, high reagent, and auxiliary consumptions and/or low product yields.

Masan High-Tech Materials possesses extensive knowledge and expertise in developing and operating complex processing circuits, as well as vast experience in the recycling business. The company is also proficient in maintaining the rigorous HSE requirements for handling materials across the business chain. Additionally, ChemiLytics, a member of the Masan High-Tech Materials Group, is a knowledgeable and experienced analytical partner in black mass chemistries, providing direct support to its research and development facilities.

Masan High-Tech Materials has developed a new process for recycling black mass, which expands its recycling capability beyond tungsten. Our R&D team has come up with an innovative "Lithium-First" approach that removes lithium before other recycled elements. This not only reduces energy and reagent consumption, but also delivers higher recycling yields for the overall process.

Pilot testing and initial engineering continued during 2023 on the Black Mass Project along with further research into enhancement of the process by the inclusion of additional closed loops whereby exiting waste streams are used to regenerate reagents for use within the circuit further improving the efficiency and environmental impact of the process.

Additionally, MHT also continues to collaborate with government and other industry leaders representing the entire battery recycling value chain. As part of this, during 2023 a MOU was signed as the first cornerstone of a successful collaboration.



2023 Signing of Industry and Government collaboration MOU

## SUSTAINABLE INNOVATION

Innovation is crucial when it comes to achieving and enhancing a business's sustainability. It not only helps to improve environmental practices and performance but also leads to better social welfare and economic growth. Masan High-Tech Materials recognizes the importance of innovation and strives to foster a strong culture of innovation within the company. As a part of this effort, MHT's research and development department participated in Vietnam's first-ever International Innovation Expo in 2023. The 5-day event brought together about 300 leading domestic and international tech firms to showcase cutting-edge technologies and products from advanced corporations.

### Building Innovation from Within

To further build and develop the extensive innovation platform that exists within Masan High-Tech Materials, two key tasks were undertaken during 2023. The first was the merging and integration of the two research and development divisions into a singular global technology and innovation department. This not only creates a lean and efficient department to better tackle the research challenges ahead but also establishes a true companywide global innovation community focused on company and industry sustainability. As part of this multiple mutual site visits, technical training, and knowledge exchanges were conducted throughout the year.

Secondly, the first ever global Masan High-Tech Materials' Technology and Innovation workshop was held in Vietnam. The multi-day event brought together Masan High-Tech Materials' researchers and application technology staff from Vietnam, Germany, Canada, and China, significantly leveraging the cultural diversity of the company and the diversity of all the different production sites. The workshop enabled this open-minded and effective innovation community to focus research and development on sustainable customer-oriented solutions.

Additionally, ongoing engagement with other external technology and innovation leaders from the University of British Columbia in Canada and the University of Melbourne in Australia continued to enable knowledge exchange and up-skilling of MHT's personnel.



MHT participation in Vietnam International Innovation Expo 2023



1st MHT-wide Global Technology & Innovation Workshop in April 2023 in Thai Nguyen

### Nurturing New Innovators

To embrace a culture of technological development and innovation, a company needs support from directors and funding for strategic work programs. Masan High-Tech Materials cultivates close relationships with universities, scientific institutes, and local schools in Vietnam and Germany. We establish joint projects, provide access to resources, sponsor awards and events, and organize tours and site visits to nurture young academics and students in technological innovation. This ensures a sustainable supply of skilled individuals for the industry and the world.

### Supporting doctoral researchers

One such activity during 2023 was the sponsorship and awarding of the H.C. Starck Doctoral Prize. The award is a collaboration with the German Chemical Society which assesses and rewards PhD researchers in the field of solid-state chemistry and materials research. This year's prize was awarded to a researcher who innovatively developed specialized magnetic particles that can be integrated into objects during the manufacturing process. The embedded particles are then able to transmit important information about the object while it is in use without the need for electricity. This overcomes the obstacles of traditional external information-gathering techniques, enables new information, and is more energy efficient.



Co-operation meeting between MHT and professors at the Hanoi University of Science and Technology



Presentation of the H.C. Starck Doctoral Award

# SUSTAINABILITY MINING - RAW MATERIALS

The Mining and Geology (MG) Department's efforts are focused on producing sustainable mining outcomes by reducing costs, minimizing ore loss and dilution, providing sufficient fresh ore for the processing plant as well as recovering existing stockpiled material and exploring further revenue generating opportunities.

In 2023, the MG team mined roughly 3.093 million bank cubic metres (MBCM) of material, yielding 609 kilo tonnes (ktonnes) or 186,892 BCM of mineral ore, at a strip ratio of around 16.5 (BCM waste/BCM ore). The high strip ratio was due to a large amount of free dig soil mined (which did not expose ore). The primary focus of 2023 was on the recovery of existing stockpiles. All mining operations complied with required environmental and community standards.



**3.093 million**

bank cubic metres of material



**609 kilo tonnes**  
mineral ore



**186,892 BCM**

mineral ore

## MINING

- Complete drilling programs to monitor possible contaminants in the water table.
- Complete all required grade control drilling during fresh ore mining to allow accurate planning/input to the process plant system.
- Maintain consistent feed grade to the mill in line with the monthly updated plan.
- Continue to optimize waste dumping strategies by categorizing waste products based on sulfur content, soil parameters, etc. In the following years, High Sulphur (Potential Acid Generating – PAG) wastes will be dumped into mined out pits below the water table and encapsulated in surface waste dumps. Low Sulphur materials (Non Acid Generating – NAG) will be used in the Tailings Storage Facility development, for road construction, encapsulation and general dumping in surface waste dumps. Efforts will also be made to reduce the disturbed footprint and to ensure dumps are rehabilitated upon completion.
- Convert some PAG material to NAG material by considering the acid neutralizing capacity of the material, which will allow reduced dumping in PAG dumps.
- Introduce to the market waste products from the mining operation, including saprolite/soil and NAG rock for general civil works fill, crushed aggregate products, artificial sand and reclaimed Oxide Tailings Cell material.
- Continue to monitor and develop the contractor by improving the maintenance and operational strategies used.

## SUSTAINABILITY RAW MATERIALS

H.C. Starck Tungsten Powders' raw material sourcing is based on two principles: the continuous expansion of recycling activities and fair, ethical, and environmentally friendly raw material sourcing.

The stringent, globally applicable procurement guidelines detailed in the Responsible Supply Chain Management System (RSCM) guarantee that H.C. Starck Tungsten Powders buys raw materials only from suppliers who comply with strict requirements regarding environmental protection, occupational safety and social responsibility.

H.C. Starck Tungsten Powders condemns all activities in connection with the unlawful exploitation of mineral resources, regardless of their location. As part of this commitment, the company have implemented an on-going policy of only purchasing conflict-free raw materials that consistently meet OECD requirements (relevant version of the "OECD Due Diligence Guidance for Supply Chains of Minerals from Conflict-Affected and High-risk Areas"), and the "Regulation (EU) 2017/821 of the European Parliament and of the Council of 17 May 2017 laying down supply chain due diligence obligations for Union importers of tin, tantalum and tungsten, ores, and gold originating from conflict-affected and high-risk areas".

Before starting to work with a supplier, the Purchasing and Legal Departments conduct a detailed check to confirm that the potential vendor meets all legal and RSCM process requirements. This check is repeated on a regular basis during the whole time of the business relationship. Also, H.C. Starck Tungsten GmbH has incorporated due diligence requirements into legally binding agreements with direct suppliers. H.C. Starck Tungsten Powders has repeatedly been awarded the certificate for "conflict-free" processing Tungsten raw materials; the last audit was conducted in October 2021. All corresponding evaluations were carried out by independent auditors on behalf of the Responsible Minerals Initiative (RMI), a joint initiative of the Responsible Business Alliance (RBA) and the Global e-Sustainability Initiative (GeSI).

Both the H.C. Starck Tungsten Powders Raw Materials Procurement Statement and the current OECD 5-Step Report, audit report and certificate can be viewed and downloaded from the H.C. Starck Tungsten Powders website.

In January 2023, the German Act on Due Diligence in the Supply Chain "Lieferkettensorgfaltspflichtengesetz (LkSG)" came into force. Even though the Goslar site is not directly affected due to its size (less than 3,000 employees in Germany), some of the law's requirements must also be implemented by H.C. Starck Tungsten GmbH in Goslar.

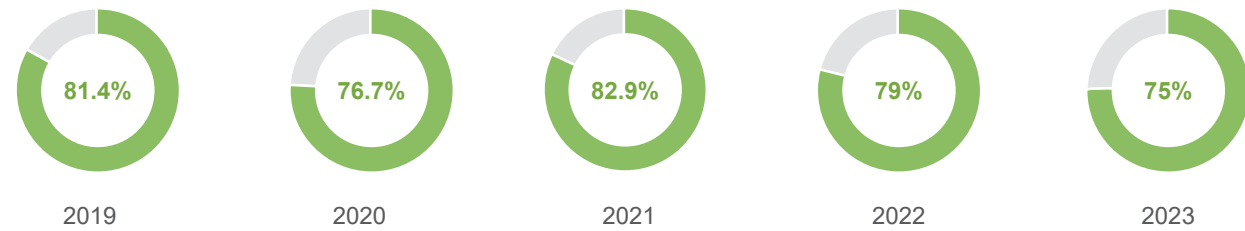
As this point was already largely covered by our existing RSCM, we commissioned TÜV NORD Cert to carry out a gap analysis. The extended risk analysis of our company and supply chain, as recommended by the auditors, is currently being implemented, along with the adaptation of the Code of Conduct. A separate supplier code of conduct has been drawn up, and the purchasing conditions have been adapted.

In the future we are expected to be affected by a corresponding European regulation on due diligence obligations in the value chain, which essentially sets out requirements similar to those of the LkSG.



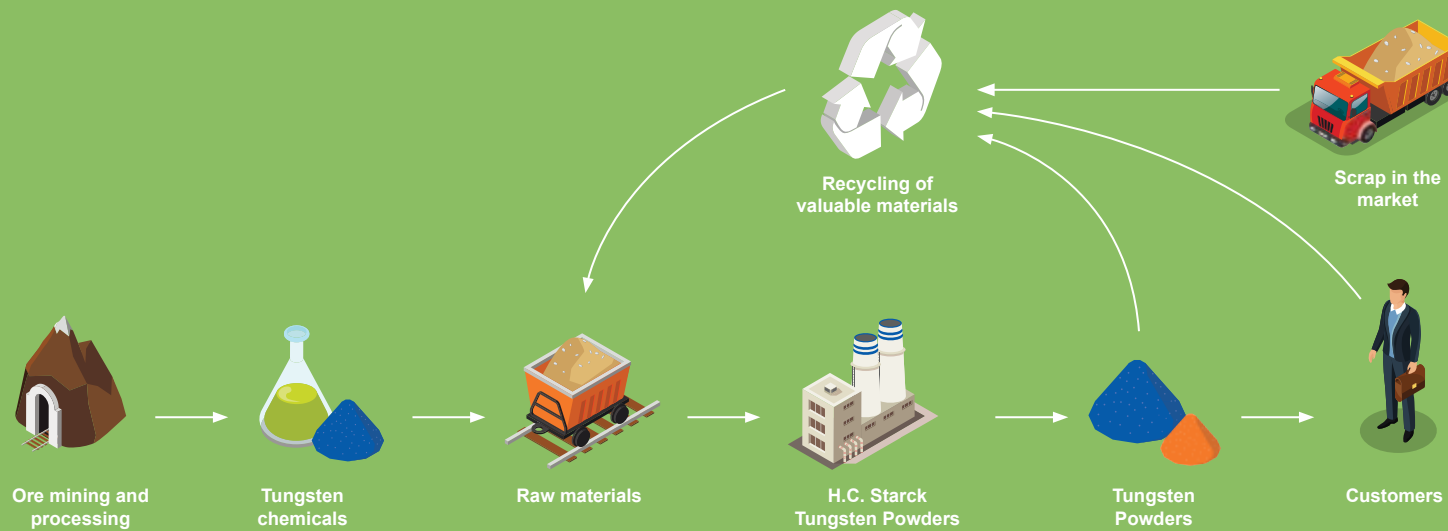
At the Goslar site, the focus is on the recycling of scrap metal as a raw material, which we obtain both on the free market and from our customers. Intermediates such as APT or tungsten oxides are mainly purchased from MHT. While the plant in Sarnia gets tungsten oxide from Masan High Tech Materials and within the scope of a swap from another, selected supplier, the site in Ganzhou is currently supplied by JV Partner in Ganzhou.

The global end-of-life recycling rate of tungsten is approximately 30% and, thus, belongs to the top third of the recycled metals. With our highly efficient recycling platform in Goslar, we cover approx. 80% of our raw material needs from scrap.



Recycling rate of raw materials - Goslar site

Backed by decades of experience we are able to recycle almost all our products and compounds after use



## FOCUS 2024

As a member of the Tungsten Industries - Conflict Minerals Council (TI-CMC), of which H.C. Starck serving as a Director of the Board since its foundation, the Goslar site is subject to a three-year audit cycle by the RMI due to recycling and a low-risk supply chain. Accordingly, the corresponding audit will be carried out by independent third parties until October 2024.

## SUSTAINABILITY PROCESSING

In 2023, Nui Phao Processing Operations (NPMC and MTC) has maintained and improved its sustainability performance across all functional areas, with the goal of contributing to the overall sustainability of Masan High-Tech Materials.

## MHT VIETNAM PROCESSING

### Producing More with Less

The Nui Phao Operation mines and processes around 3.5 million tons of ore per year, containing Tungsten, Bismuth, Fluorspar, and Copper. It is a polymetallic orebody, and given the nature of the minerals, we are continuously identifying opportunities and implementing them in a prioritized manner to extract more products from the resource and carry out all activities with a lower environmental impact.

In 2023, Masan High-Tech Materials continued to transition ore bodies from the East to the West pits, with lower head grades in the first quarter of the year, as well as processing lower-grade stockpiles during the rest of the year. The Oxide Expansion Project was commissioned ahead of schedule in the second quarter, ensuring sustained recoveries and throughputs while processing lower grade ore during the transition to the larger orebody in the Western pit. Design improvements to the Oxide Expansion Project to increase tungsten recovery from the bulk oxide flotation concentrate were completed during the year, with implementation scheduled for the second quarter of 2024. Additionally, commissioning of the Site Water Treatment Plant was completed ahead of schedule in the first quarter of the year, enabling the treatment of additional water flows from the mine expansion to comply with the environmental discharge license limits.



The Nui Phao Operation mines and processes around

**3.5 million**  
tons of ore

### Sustainable processing in MHT

Nui Phao Operations focused on reducing power consumption through multiple initiatives. These included optimizing jaw crusher power consumption by automating the crusher choke feed, reducing milling power by decreasing the weight of the mill liners, and decreasing water pumping requirements by using the Site Water Treatment Plant.

#### INITIATIVE Reduce power consumption

Automating the crusher  
choke feed

Reducing milling power by  
decreasing the weight of the mill  
liners

Using the Site  
Water Treatment  
Plant



MTC further optimized operational efficiency and its ability to process a wide variety of variable-grade and sustainably sourced feed materials. The ExTC Pre-treatment project began and was commissioned in the third quarter of 2023, enabling the processing of a wider variety of external tungsten concentrates primarily from recycled scraps sources. These alternative sources provide a greater variation in feed materials from sustainable sources to complement the mined high- and low-grade concentrates.

Furthermore, the Low-Grade Batch Tank project has been completed and put into operation in the second quarter of 2023, offering significant benefits by switching to a cheaper flake caustic instead of pearl caustic. Along with diversifying market supply sources, this also reduces production costs, as well as manual works and safety risks due to upgrading system for easier feeding of low-grade materials and caustic into the process.

Additional activities focused on improving boilers efficiency by chemical cleaning, descaling external radiation tubes, enhancing coal quality control and optimizing operating parameters. The outcomes revealed a 9.1% improvement in steam generation efficiency compared to 2022.



The outcomes revealed

**↑9.1%**

improvement in steam generation efficiency  
compared to 2022

## Advanced Management Software

MHT employs cutting-edge processing technology and all processed products, including Tungsten, Bismuth, Fluorspar, and other, are recognized by the Ministry of Industry and Trade as key industrial products. Especially, MHT remains the only mining company in Vietnam adopting the world's most advanced mining and processing management software and operating the Tungsten chemical production line based on German technology to minimize resource losses and optimize the value of mineral resources.



## HCS PROCESSING

### Sustainable Processing in Goslar in 2023

#### Sustainability from a maintenance perspective

Different and changing challenges have an impact on a company and therefore on the availability of the equipment. The machinery at H.C. Starck Tungsten GmbH consists of continuous, quasi-continuous and batch-operated machines. Therefore, it is essential that the maintenance program is flexible and specifically designed for each machine. For this reason, a strategy mix of reactive, preventive and condition-oriented maintenance is used and will be continuously improved. As a result, a Total Productive Management (TPM) was implemented in 2023. After a pilot project in the starting year, main bottle neck processes are now within the scope of TPM.

Every year, a maintenance and shut-down schedule is drawn up thanks to close collaboration between the sales, production planning and operations teams. Resources and materials can thus be used in specific areas, and unplanned downtimes as well as energy usage in the facilities have been significantly reduced.

Additionally, the process control systems were upgraded to prepare for new challenges in terms of IT security, availability and optimization of the equipment and processes. New standards in the programming of the control system were introduced for this task. The adoption of this modular system ensures standardized programming, which also helps reduce costs and effort.

As part of the restructuring and modification of the maintenance strategies, it was therefore possible to positively influence operating and maintenance costs.

The objective of our maintenance is to increase equipment availability and reliability over the long term, and we will continue working towards this goal.

### Sustainable processing in Sarnia in 2023

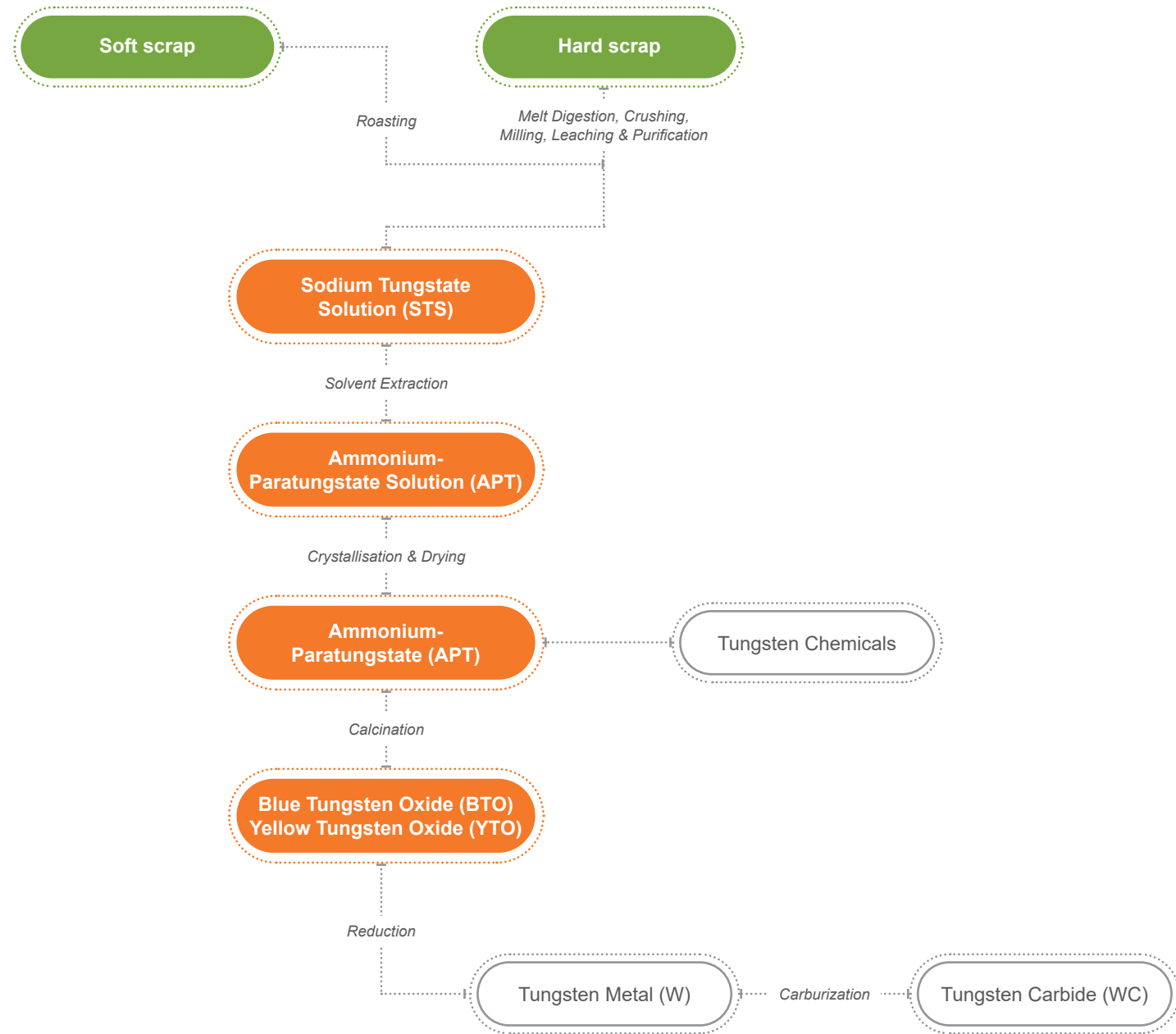
Sarnia (Canada) is focused on developing technological solutions for our current and future product portfolio. This includes a detailed analysis to introduce state of the art technology for advancements in efficiency, sustainability, and life cycle longevity.

Transitioning complex manufacturing processes to the latest technological SCADA control and automation has permitted immediate productivity improvements in troubleshooting and downtime, due to achieving real time process control. This also enables expanded understanding and knowledge from data acquisition to continuously improve long term efficiency and performance simultaneously across multiple disciplines.

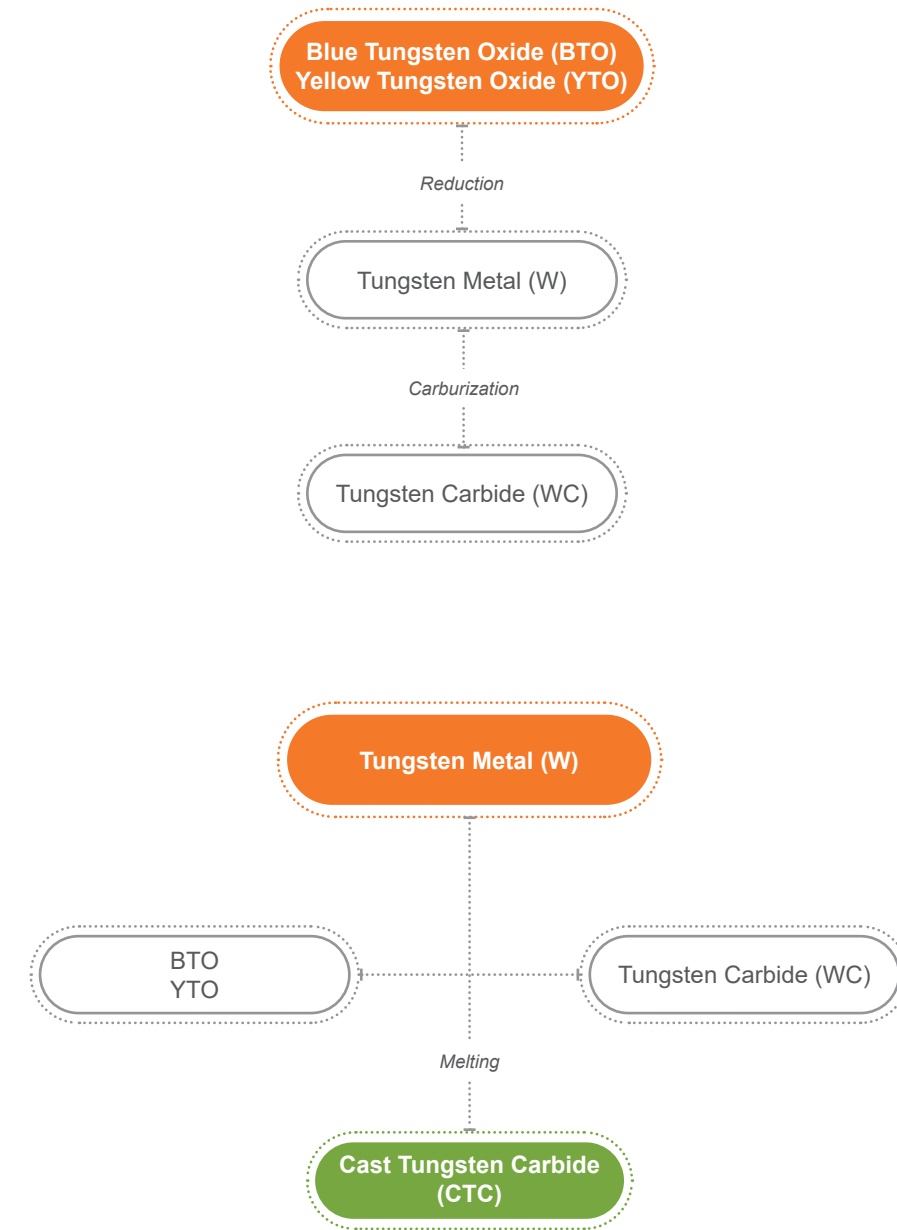
CTC efficiency was increased by implementation of several process water projects including automation of header cleanout, cleaning of dryer screens and internal drying of process water.



Process flow at the Goslar site



Process flow at the Sarnia site



## Sustainable processing in Ganzhou in 2023

### Sustainability processing

The Ganzhou plant has consistently adhered to the central tenet of sustainable development, achieving significant milestones in various aspects such as talent development, equipment management, maintenance planning, environmental protection, and emission reduction through sustained efforts. This philosophy permeates every level of the plant's operations and management, providing robust support for the company's leading position in the market and its sustained profitability.

First and foremost, the Ganzhou plant places a strong emphasis on talent cultivation and development. We have established a mature system for cultivating frontline talent, focusing on nurturing highly skilled operators and reliable mid-level workshop managers. This measure not only enhances the overall team's capabilities but also strengthens our ability to adapt to fluctuations in personnel. Extensive training programs for frontline managers provide a broader skill set and management perspective, laying a solid foundation for achieving lean production.

Secondly, the Ganzhou plant has instituted a standardization team to unify and standardize all management processes, operating procedures, and administrative systems. This gradual shift from a human-centric to a process-oriented production approach has significantly increased production efficiency and managerial effectiveness. Additionally, we have fully utilized idle production time to conduct comprehensive and in-depth maintenance on key equipment, addressing issues related to equipment aging and frequent breakdowns. The combination of planned maintenance, preventive measures, and daily repairs has successfully restored most equipment to optimal condition, establishing a robust foundation for sustainable production.

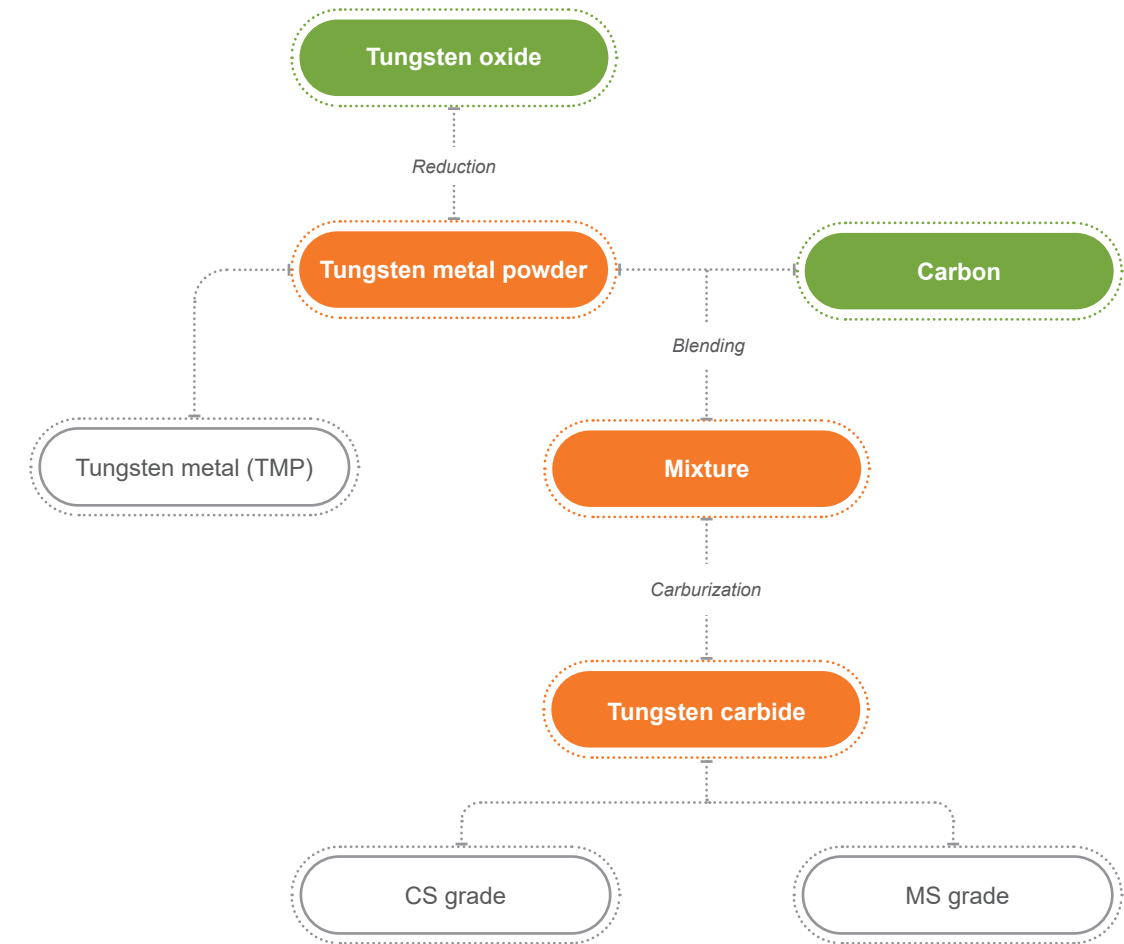
Environmental protection remains a continuous focus for the Ganzhou plant. Substantial investments in both financial and human resources

have been dedicated to reducing dust generation within the workshop. Through intensive maintenance of dust collectors to minimize dust generation at its source, we have successfully mitigated the impact of dust on production. The implementation of a new ventilation system in employee rest areas not only improves the working environment but also contributes to increased product recovery rates.

Simultaneously, the Ganzhou plant has invested efforts in reducing greenhouse gas emissions, earning recognition as a National Green Factory in 2023. Collaborating with third-party experts, a comprehensive analysis of greenhouse gas emissions was conducted, leading to the calculation of carbon dioxide emissions per unit of product. These relentless efforts have yielded significant achievements in environmental protection and sustainable development.



Process flow at the Ganzhou site





## SUSTAINABILITY SUPPLY CHAIN MANAGEMENT

MHT is committed to conducting operations responsibly and sustainably in all business areas of the Company, including initiatives aimed at strengthening the sustainable supply chain of the Supply Chain Management Department (SCM). The year 2023 presented significant challenges for MHT, marked by the necessity to utilize stockpiles as input materials, requiring a substantial increase in reagents and consumable spare parts volume compared to previous periods. Despite these challenges, our Supply Chain Management (SCM) team exhibited resilience and innovation in ensuring a stable supply chain. By leveraging strong relationships within our existing vendor pool and implementing a strategic vendor expansion approach, the SCM team worked diligently to overcome vulnerabilities in consumption levels.

A crucial supporting element during this period was the enhancement of our materials planning capabilities. This improvement played a pivotal role in augmenting our sourcing capabilities, giving us greater negotiating power in both commercial and technical aspects of supply chain operations.

The Supply Chain Department's unwavering efforts successfully managed the continuity of material supply to both NPMC and MTC processing plants, enabling them to operate at targeted production levels. This resilience reflects our commitment to maintaining operational stability even in challenging times.

Over the year, our SCM team initiated a number of innovative approaches, illustrating how we have risen to the challenges while respecting our commitment to environmental and social responsibility.

## KEY INITIATIVES AND ACHIEVEMENTS

### Ethical Sourcing

We recognize the importance of responsible sourcing in the mining industry. MHT ensures ethical sourcing through:



**Supplier Audits:** Regular audits are conducted to assess suppliers' adherence to ethical and responsible practices, ensuring compliance with international standards such as the OECD Due Diligence Guidance.



**Supplier Code of Conduct:** We have established a comprehensive Supplier Code of Conduct, outlining our expectations regarding labor practices, human rights, environmental stewardship, and anti-bribery & compliance practice.



**Supplier development and training on safety management & sustainability.**



### Environmental Impact Reduction

To minimize the environmental impact of our supply chain operations, MHT implements the following initiatives:

**Energy Efficiency:** We continually optimize energy consumption, strategically identifying opportunities to reduce carbon emissions throughout our operations. In 2023, many energy saving solutions have been implemented at both NPMC and MTC. Total energy savings are estimated at over 1.3 million kWh, exceeding the set target by 16%. 2024 forward, we shall maintain the energy management system according to ISO 50001:2018 standards at MTC and sustain other ongoing energy optimization projects.

**Water Conservation and Treatment:** Our approach involves the implementation of water conservation measures, such as the recycling and reuse of water in mining processes (76.6% recycling water). These practices contribute to a substantial reduction in overall water consumption.

**Waste Management:** MHT is dedicated to implementing comprehensive waste management practices. This includes robust recycling programs and the responsible waste disposal to significantly minimize our environmental footprint.

**Chemicals Management:** We dedicated to implementing comprehensive waste management practices. This includes robust recycling programs and the responsible waste disposal to significantly minimize our environmental footprint.

### Transparency and Traceability

Enhancing transparency and traceability in our supply chain involves:

**Supply Chain Mapping:** Continuously mapping and documenting our supply chain to identify key stakeholders, assess risks, and ensure visibility of the entire value chain.

**Verification:** Regularly verify and validate our supply chain practices, ensuring adherence to ethical and sustainable standards through internal audits.



Saved

**1.3 million kWh**  
of electricity

exceeding 16% of the set target



Reuse

**76.6%**

of water in mining processes

## Future Commitments



### Continuous Improvement

MHT is committed to continuous improvement through:

- Regular Assessments: Conduct regular assessments of our supply chain practice to identify areas for improvement and to incorporate latest technologies and industry best practices.
- Innovation and Research: Invest in research and development to adopt innovative solutions contributing to the sustainability of our supply chain.
- Inventory optimization projects to improve net working capital.
- Centralize logistics services sourcing under SCM to improve efficiency and save costs.



### Collaboration with cross-functional teams and external stakeholders

SCM enhances collaboration with cross-functional departments and external stakeholders involves:

- Internal collaboration Initiatives: Actively participate in cross-functional teams initiatives and partnerships to address shared challenges, leverage best practices, and secure seamless supply towards efficient and sustainable supply chains.
- Supplier Collaboration: Collaborate closely with suppliers to share expertise, set mutual sustainability goals, and address supply chain challenges.



### Reporting and Accountability

MHT SCM team will ensure transparency and accountability through:

- Regular Reporting on key sustainability indicators, including progress on ethical sourcing, environmental impact reduction, community engagement, and traceability.
- Regular Audits to independently assess and verify our sustainability performance, ensuring compliance with standards and goals.

## SUSTAINABILITY WITHIN MATERIALS MANAGEMENT HCS GLOBAL

After global economic recovery from the Covid-19 pandemic in 2021, H.C. Starck Tungsten faced rising energy costs, decreasing energy supply security and inflation due to Ukraine war. Recognizing the crisis, H.C. Starck Tungsten has invested in energy efficiency, process optimization and cost-cutting measures. Nevertheless, our commitment to sustainability remains

steadfast in this challenging context. This report highlights key achievements and challenges in Global Materials Management (Raw Material Planning & Inventory Management, Production Planning, Distribution, Shipping, International Trade Law & Customs), underscoring our dedication to environmental responsibility, ethical sourcing, and social impact.

### Logistics

Since January 1, 2023, a dedicated freight planning department has been established, allowing us to evaluate all aspects of logistics such as warehousing, internal logistics as well as inbound and outbound shipments. In its first year of operation, the shipment team has made a complete review of our freight forwarder portfolio. We strengthened invaluable partnerships with local freight forwarders committed to ethical practices and fair labor conditions, completed the onboarding of new (digital) freight forwarders proved more cost-effective, and committed to service quality and transparency. We also terminated existing partnerships not meet the expectations in terms of price, service, quality and availability.

2023 marked the 4th consecutive year of successful Carbon Footprint reduction. Our efforts to reduce carbon emissions in logistics operations through freight optimization resulted in an outbound airfreight shipments reduction of less than 1%.



### Production Planning

In 2023, the Production Planning team focussed on digitalizing and automating the scheduling and planning process. This led to the successful roll-out of a new ERP-based monitor which helps the team to control, simulate, and optimize production planning and scheduling processes, as well as increase resource utilization and improve overall energy efficiency.

### Conclusion

As we reflect on the sustainability initiatives undertaken in 2023, we recognize the requirements for improvement and commitment, especially during times of high-cost pressure that impacts managerial decision-making. By fostering collaboration, embracing technological advancements and continuously improving our processes, we strive to build a resilient and responsible supply chain.



### Supply Chain Management in Sarnia

- Pandemic challenges persisted for the Sarnia site in 2023, specifically concerning supply chain constraints and rapid inflation. This required robust materials management from the Sarnia team to leverage critical supply and delivery relations.
- The increasingly challenging environment was countered by significant improvements in logistics tracking, supplier negotiations, and inventory control. This includes achieving a successful and competitive long-term electricity and steam agreement, enabling Sarnia to meet future carbon neutrality targets.
- Long-term negotiated service level agreement for electricity and steam.
- New logistical channels and gateways developed to meet the challenges increasing European customer base.





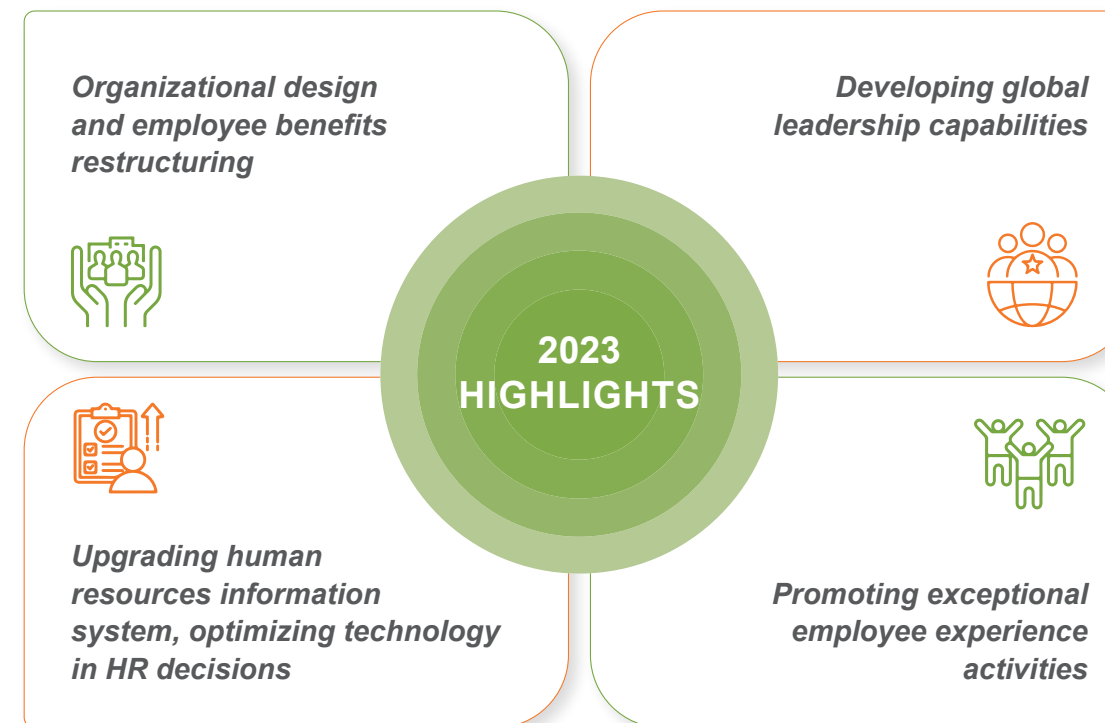
## SUSTAINABILITY HUMAN RESOURCES

The world is changing, influenced by various factors such as economic, political, social and technological developments. These rapid changes require expanding the organization, taking specific actions to adapt flexibly, maximize the power of human resources, and build internal capabilities to motivate growth and sustainable development. At MHT, human resources development is the guiding principal of all organizational actions, contributing to the company's success in today's global context.

MHT sets important and consistent goals, with a global focus, from strategy to execution. This includes designing organization and restructuring employee benefits, developing global leadership, upgrading Human Resources information system, optimizing technology in

HR decisions, and promoting outstanding employee experience activities. Aligned with our vision, mission, and core values of Respect - Innovation - Results, together we stay on track, pursuing the ambition of global sustainable development for Masan High-Tech Materials.

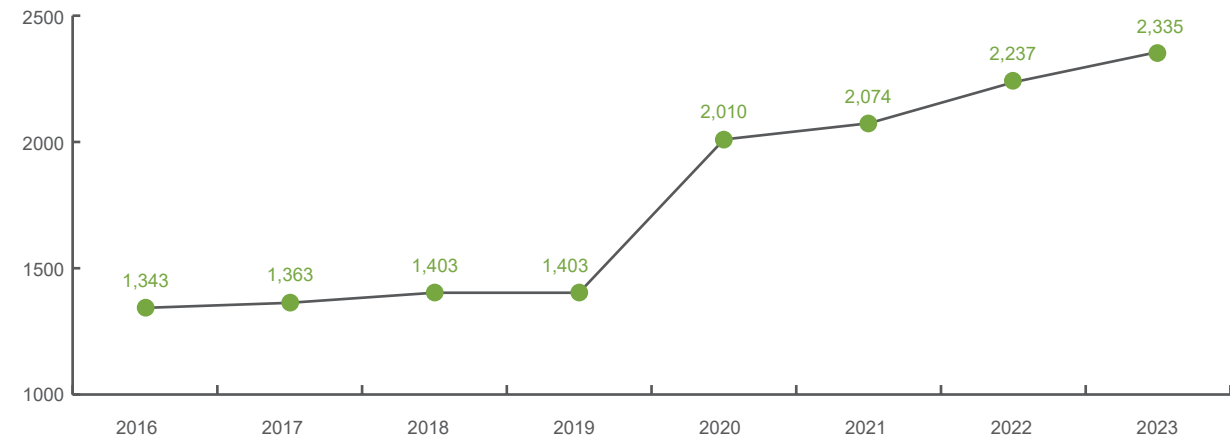
Thanks to the efforts of the dedicated staff and the Management Team's firm commitment to human resource management, combined with the promotion of production and business emulation movements and the development of outstanding benefit policies, Masan High-Tech Materials continues to be honored as "Enterprise for Employees" and is Vietnam's first manufacturing company to be recognized as "Great Place to Work in 2023".



### WORKFORCE STRUCTURE

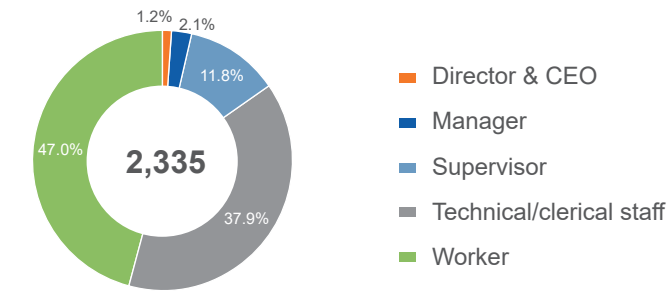
We believe that promoting a diverse and inclusive organizational structure, along with an efficient system, allows us to implement equitable policies, programs, orientations, and experiences that nurture a sense of belonging among our employees.

The total number of employees in MHT globally is provided in the chart below:



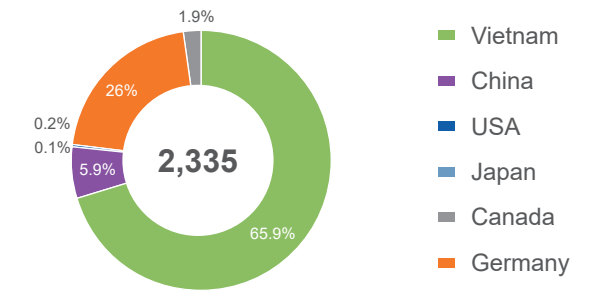
### BY RANK

Direct operators represent the highest percentage of MHT's workforce structure, at 47%, followed by technicians and supervisors accounting for 37.9% and 11.8% respectively. Board members and middle management account for 1.2% and 2.1% respectively. The commitments set out by the management team as part of the human resources strategy are aligned with the organization's overall strategy, helping the company move forward through inclusion, interference, and cooperation.



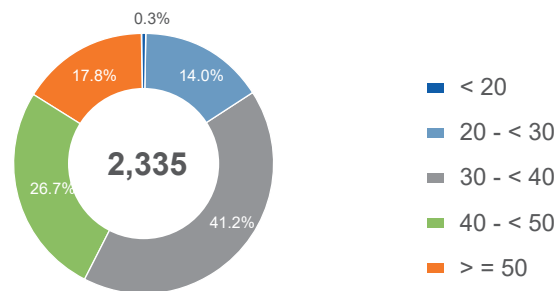
### BY COUNTRY

With six processing plants as well as many business operations and marketing offices located in many countries around the world, the workforce percentage of MHT by workplace is 65.9%, 26%, 5.9%, 1.9% in Vietnam, Germany, China and Canada respectively, with the remainder in USA and Japan.



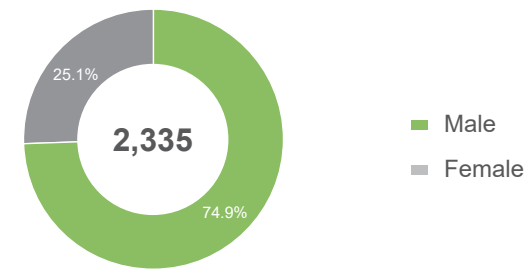
### BY AGE

The Company's employee age ranges are in the golden working age, primarily between 30 and 40 years old, representing 41.2%. This age range gives us a competitive advantage in the market, thanks to remarkable contribution of Golden Agers.



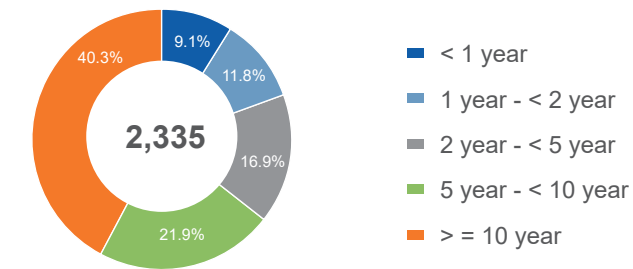
### BY GENDER

Due to the characteristics in a mining and high-tech material company with special working roster, good physical health, the number of female employees has remained stable, accounting for 25.1% of the total workforce in 2023.



### BY LENGTH OF SERVICE

Our welcoming, motivating work environment and employee initiatives help to attract and retain employees. The seniority indicator in 2023 showed that 40.3% of employees had been working at MHT for more than 10 years; 21.9% and 16.9% of employees had been working for 5 to 10 years and 2 to 5 years respectively; the percentage of newly-hired employees increased by 20.9%.



Total number of employees and average income at MHT Vietnam

YEAR	2016	2017	2018	2019	2020	2021	2022	2023
<b>Total employees</b>	1,343	1,363	1,403	1,403	1,403	1,454	1,575	1,539
NPMC	1,027	1,072	1,150	1,157	1,096	1,133	1,219	1,199
MTC	316	291	253	246	307	321	356	340
<b>Of which</b>								
Vietnamese	1,236	1,261	1,303	1,309	1,329	1,394	1,516	1,503
Expatriates	107	102	100	94	74	60	59	36
<b>Average income (VND million per month) for Vietnamese employees</b>	<b>10.3</b>	<b>111</b>	<b>11.4</b>	<b>11.8</b>	<b>11.9</b>	<b>11.9</b>	<b>12.3</b>	<b>12.6</b>

(\* In compliance with the information security policy, the detailed information of employees working in other countries shall not be provided)

## GLOBAL LEADERSHIP DEVELOPMENT

Consistent from strategy to execution in human resource development, we are committed to investing in talent attraction and development activities at all organizational levels to create sustainable competitive advantages and a solid foundation for business innovation in the age of globalization.

We understand this to be a continuous and cross-functional process, involving the exchange, enhancement and consolidation of professional knowledge, the development of global leadership capacity and the creation of learning opportunities to operate effectively in a multicultural, diverse and innovative environment. Our global leaders should be able not only to set strategic direction, manage resources, create value and make a positive impact on stakeholders, but also to have a global vision, respect diversity, adapt to change and engage in continuous learning process.

In 2023, we have developed and retained employees through diverse and flexible learning solutions by optimizing internal resources.

**D**iverse subjects to improve professional competency, promote leadership, focus on training budget optimization, and human resource localization.

**F**lexible internal learning programs include on-the-job training, mentoring/coaching; competency training program for the Processing Department, tradesman skill test for the Maintenance Department and new leader assimilation program, etc., as well as the training courses held by Growth Center of Masan Group. The programs are implemented with a variety of creative teaching methods and integrated multimedia materials making the learning process interesting and effective.

**S**ystem standardization with the revision and re-issuance of the Training Policy with the aim of managing diversity within the aligned policy of mutual development and in the new context of the organization. To support the more effective implementation of this policy, guidelines for internal Trainers and M-Point Earning program have been developed and applied since November 2023.

In addition, the training matrix for compulsory and safety programs is also adjusted and updated to comply with legal regulations as well as better manage a safe working environment.

**B**uilding a supportive working environment where our employees are encouraged to learn and share knowledge openly and proactively. We also encourage employees to contribute ideas, suggestions and input to the learning process through pre-and post-training surveys, direct interviews with trainers and trainees, discussions with managers and activities implementation coordination.

**E**ncouraging “SELF-LEARNING” via e-learning platforms and learning communities to share knowledge and experience; making use of “PEER LEARNING” from colleagues and superiors and subordinates - those with solid expertise who are willing to share and help others. By providing online learning resources, books, lectures, websites, tools and other useful resources, employees will progressively develop a learning mindset.

**S**haring personal experience through activities and periodic short meetings from daily work; learning from failure and share experience together. From this, initiatives, and improvements (Kaizen, Star Awards) have been implemented, many of them have been successfully applied, contributing to the process improvement, performance optimization, creating a safe working environment, minimizing waste

and cost saving. This demonstrates the team’s capacity to overcome difficulties, turn challenges to opportunities and the outstanding creative thinking of employees, reinforcing the “Innovation” in the Company’s core values.

**B**uilding a culture of respect for learning and learning networks by recognizing learning activities, including participation in company-organized learning and teaching, non-company-organized self-learning activities through the M-Point application, to receive benefits in terms of work performance, promotions, personal brand, honors, rewards and valuable gifts from the company. There are also learning opportunities to develop personal competencies and skills. Free or low-cost learning platforms are also shared such as LinkedIn, Viva Engage (a Microsoft application).

**C**reating hands-on training opportunities where 70% of learning activities are on-the-job training courses, expanding scope of work, assigning small projects, job rotation and challenging tasks in new positions.

**S**upporting learning by digitizing some training contents on OCSafe software use, Communication about Commitment of transparency, non-competition, non-disclosure, declaration of relatives and related organizations; Guideline for Conflict-of-Interest Declaration; Codes of Conduct; and IT Security Training Campaign. Training programs are deployed in combination with Microsoft Teams and Zoom applications; Several forms, surveys, and assessments are conducted via Microsoft form tool to further enhance experience and convenience during the implementation, collection, analysis, and processing of data.

**E**very manager, with or without a title, is committed to leading by example and providing ongoing feedback. We maintain the feedback system “MHT Listening” to continuously receive, quickly process and promptly respond to information, as well as maintain the information channel from the internal Trade Union for the employees. Especially, regular employee dialogue meetings, employee surveys, coordination mechanisms between the Company and internal Trade Union, and functional committees open opportunities of exchange for all. We’ve implemented employee feedback survey for their managers via 360-degree assessment or directly through the “Leader Assimilation” meetings, as well as encouraging the leaders to face multidimensional reality and outline a self-development plan in harmony with the team.

By December 31, 2023, 42,230 hours had been logged for learning activities with 21,710 attendees in these activities, similar to 2022 despite common challenges. Each MHT learner spent on average 30 hours on learning per year.

Particularly in Germany, China, and Canada, we strive every day to implement training programs in harmony with the MHT flow to create an excellent workplace, offering employees the opportunity to learn and develop skills to support the company’s growth. Over 3,000 hours of training have been implemented in these countries, and thousands of online courses have been organized.



**Your Voice Matters**

Confidential Theft Pro...  
Misconduct Health Corruption Unethical Be...  
Policy Fraud  
Trusted  
Harassment  
Conflict of Int...  
Breach of Procedure  
Bullying Bribe  
Breach of Policy  
Discrimination  
Supplier Misconduct Environment  
Independent Bribery Harassment  
Secure



## UNDERSTANDING AND SUPPORTING EMPLOYEE ASPIRATIONS

## ORGANIZATIONAL DESIGN AND EMPLOYEE BENEFITS RESTRUCTURING

During 2023, a year marked by economic instability, MHT faced many challenges. Yet we are proud to have maintained our core values: RESPECT - INNOVATION - RESULTS. Thanks to flexible and innovative organizational adjustments aimed at improving performance and reducing costs, fostering better communication and interaction, and investing in the development of human resources, we have succeeded in maintaining a stable workforce, building a lean and efficient organization.

One significant step forward was the restructuring of several of the company's departments, particularly Supply Chain Management, Finance and Accounting, Human Resources, and Health and Safety. This restructuring facilitated the development of a more adaptable organizational framework, streamlining operations and minimizing unnecessary complexity. It also favored a centralized management approach, enhancing the experience of internal and external stakeholders on a larger scale.

In 2023, in order to optimize reward and commendation programs and ensure its consistency & transparency, the company decided to combine MTC's Kaizen Awards and NPMC's Star Awards to create the Star Award Policy applied for MHT Vietnam. In addition, a new voting method using rank-based coefficients improved the fairness and objectivity of voting results. Thereby, 68 individuals and teams received Star awards for their efforts and achievements. Overall, 364 employees were honored Star Awards, representing a 60% increase on 2022. This clearly shows the collective strength of the teams creating significant achievements for company's development.

Despite facing economic challenges, we made it a priority to listen to employee feedback and constantly adjusted policies, guidelines and procedures in order to improve and diversify MHT's compensation policies, with a focus on maintaining employee satisfaction. In 2023, we

achieved our goal of designing "Total Rewards" to gain competitive advantage by optimizing organizational resources and understanding employee needs. We introduced various new benefits programs, such as talent retention bonus program, area bonus program, trades skill bonus or newly issued or re-issued policies, featuring travel support, meal and accommodation benefits, etc. These initiatives have maintained MHT's commitment to equity and consistency, as well as generated greater employee satisfaction and understanding.

The turnover rate is tightly controlled at 13.9%, with no significant reduction compared to 2022 (14%); however, the voluntary turnover rate in 2023 decreases by 1% compared to 2022, clearly a bright spot in this challenging period. Furthermore, the workforce localization and knowledge transmission in 2023 increased the involuntary turnover rate. This process has proved cost-effective, improved workforce productivity and motivated local employees who now hold crucial roles in the organization. Alongside this, the number of labor discipline violations has significantly decreased compared to previous years, thanks to effective communication to raise employee awareness, in compliance with the Company's regulations. In particular, the Labor Discipline Council consistently defines the judge's role in resolving labor discipline issues, takes permanent measures for employee welfare, offers employees the opportunity to correct their mistakes, and remains attentive to improving procedures to support employees in their tasks, thus guaranteeing optimal performance at work.

Our commitment to continuous process improvement, robust policy systems and the application of technology to production and business optimization, together with our attention to organizational structure and benefits redesign, have significantly enriched our employee career paths, making them more meaningful every day. We are delighted to be recognized as an "Enterprise for employees".

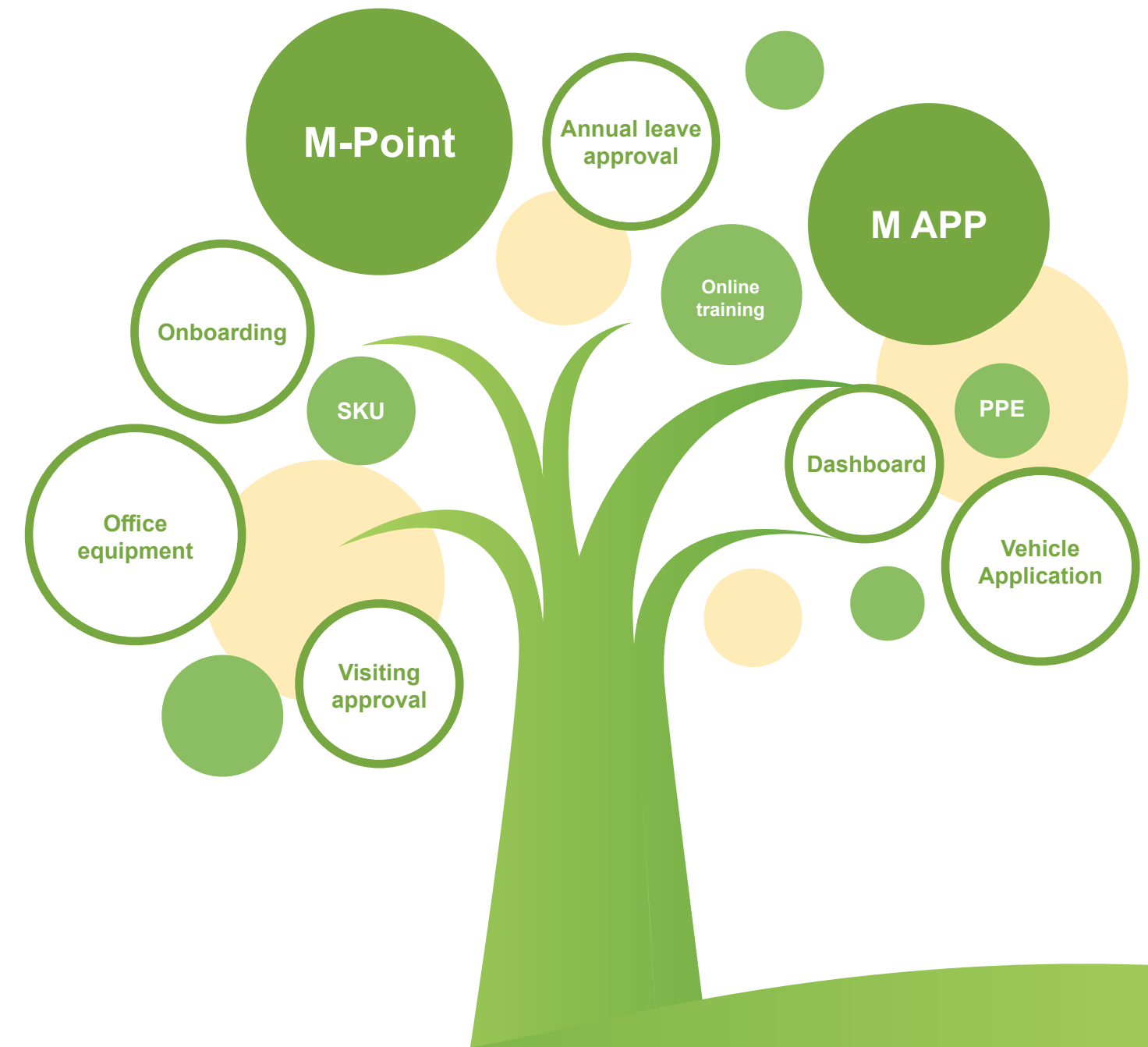


## HR TECH - HUMAN RESOURCES INFORMATION SYSTEM UPGRADE, TECHNOLOGY OPTIMIZATION IN HR DECISIONS

Effective human resources management is integral to business operations and growth. As the Fourth Industrial Revolution widespread digital transformation across industries, we at MHT have quickly embraced the HR Tech as a powerful tool in our human resources management strategies in 2023.

Thanks to HR Tech, we have improved our HR management system, using tools to automate, standardize and streamline all processes. As a result, we have enhanced operational efficiencies, improved employee and internal partner experiences, and achieved significant time and cost savings.

Highlighted achievements include:





## ONLINE TRAINING AND E-CERTIFICATES

Digital transformation in training is a process of change from awareness to action aimed at building an active learning culture for businesses, thereby achieving a breakthrough in elevating knowledge and enhancing professional qualifications for employees. In addition to conventional training methods, we have established online training by creating instructional videos, which are then integrated into the Microsoft Office digital platform. The system automatically scores and sends certificates for employees successfully completed training courses. We provide an exchange environment to facilitate employee participation in short-term internal sessions, offering flexibility in terms of time and work. This enables participants to access training anytime, anywhere, with the simple support of electronic tools. Furthermore, this consolidation of data on the Company's human resource training into one system supports training activities by simplifying recording, measurement and planning processes.



## APPROVAL OF ANNUAL LEAVE REQUEST

In response to the inefficiencies encountered in the manual recording and approval of operator annual leave, we have introduced a digital leave recording and approval platform. Employee registration data is securely stored in the system, enabling local supervisors to monitor workforce availability and leave status on a daily basis. This enables managers to quickly approve vacation requests and organize the workforce needed to support the company's production activities. Streamlining the leave recording process not only improves employee satisfaction, but also makes it easier to synchronize, consolidate and calculate payroll figures accurately and efficiently within our software system.



## APPROVAL OF VISITS TO EMPLOYEES

In addition to providing token policy guidelines for funerals, weddings, and illness support, we have created online forms allowing employees to submit relevant information. Once the information has been submitted, the system quickly notifies the relevant departments for processing. This ensures timely care and support from the company and its union, improving the overall experience for employees and their families.



## M-POINT EARNING PROGRAM USING THE CHATBOT APPLICATION

The M-Point earning program provides an engaging and proactive experience for employees, allowing them to capture their personal development and engagement activities independently. Using the Chatbot app, employees can easily inquire about activities and points accumulated, giving them the opportunity to redeem valuable gifts through the M-Point accumulation program. In addition, the Chatbot is integrated with the ChatGPT application, giving employees access to work-related information, such as company policies, guidelines, labor regulations and collective labor agreements. By 2024, we plan to enhance the Chatbot into a more intelligent and versatile application, serving as a reliable and close companion to employees in their daily tasks.

## Application in administrative management

### Office equipment management with Dashboard and SKU applications

Office equipment plays a crucial role in ensuring productivity and quality of work. By using the Dashboard application's exceptional automatic reporting functions, we gain a comprehensive overview of office equipment and assets, complemented by SKU, a valuable inventory management tool. This simplified approach facilitates the efficient and cost-effective use of office assets, enabling us to track data from entry to handover, movement to other areas, recovery, and repair. As a result, office equipment management is carried out systematically and smoothly.

### M APP - Application for benefit-in-kind delivery and gift giving to employees

We are constantly improving by applying the delivery management functions, such as benefit-in-kind and holidays gift programs, via M APP application. The app can recognize user's face, automatically export daily delivery reports, and easily track data on a single platform, saving time, costs, and resources, as well as increasing work performance.

### Internal vehicle booking

We launched an internal vehicle booking application to improve the transport service for employees and enhance their experience in quick and flexible reserve action of MHT's internal vehicles.

In addition to the human resource management applications already developed, we continue to create new applications for testing purposes, including:

### Technology integration in Onboarding process

At MHT, we established a candidate database and strengthened employee connections throughout the entire job application process, from submission to interview, their first day of work, and probationary period. Developing a trial application for an automated onboarding process will reduce manual tasks, automatically scheduling and assigning specific tasks to individuals during the onboarding phase. Additionally, we created an internal website to manage training content and related documents throughout the onboarding process. We recognize that the quicker new employees adapt, the better they perform, resulting in positive benefits for the organization.

### Personal protective equipment management

Personal protective equipment (PPE) is essential to ensure the safety at work and increase productivity. At MHT, we have developed a PPE management application for all company employees to monitor and allocate personal protective equipment in line with the company's policies and regulations, to synthesize provision data for monthly statistical data process, both that employee PPE needs are met and effective management of PPE costs within the company. The application is scheduled for deployment in 2024, during which time we will continue to make necessary adjustments to improve PPE provision management.

HR-Tech has been a useful and meaningful tool in human resources management. In the coming year, we will continue to apply various digital transformation technologies to build strong human resources and adapt to changes.

We leveraged new technology and techniques to enhance the flexibility of the organization. Application of automation solutions and operating procedure improvement through digital technology enable employees to work effectively in challenging economic situations. Thanks to our considerable efforts, we have significantly increased performance, reduced waste, improved the quality of work as well as enhanced employee experience.

In the future, we continue our journey towards innovation and improvement. We believe that these efforts will help us not only to maintain our market position, but also build a sustainable future. We are committed to optimize our organization to adapt to market and economic fluctuations. We keep investing in technology and adjusting human resource policies to ensure company's stability.



## EMPLOYEE EXPERIENCE THE KEY TO BUILD AN ENGAGED AND SUCCESSFUL TEAM

While customers contribute revenue to expand the company, employees play a pivotal role in attracting and retaining customers. Referred to as “internal customers,” employees significantly impact the business’s competitive strength. Therefore, each MHT employee serves as a brand ambassador, emphasizing our focus on fostering a committed team through the promotion of exceptional employee experience activities. The year 2023 marked notable achievements in cultivating an engagement culture, ensuring that every MHT team member feels valued, supported, and operates in an environment of respect and happiness. This environment fosters continuous contributions to the sustainable development of Masan High-Tech Materials. MHT serves as a second home for every employee, where we collaborate daily with RESPECT and INNOVATION to achieve outstanding RESULTS collectively. It’s a place where we share, learn, overcome challenges, and fully engage in activities to enhance ourselves continuously.

Join us on a journey of engagement activities demonstrating the **DEDICATION, EFFORT** and **COMMITMENT** in 2023:

### INNOVATION AND CONTINUOUS IMPROVEMENT

The 3rd Trade Union Congress for the 2023-2028 was successfully held, with a new Trade Union Executive Committee consisting of outstanding union members. The Trade Union consistently serves as a solid bridge between employees and the Company, working closely with the organization to plan engagement activities, and implementing meaningful employee programs and events throughout 2023.

The understanding, empathy, and sharing of the employees are the source of motivation that drives us constantly improve welfare programs. Together we build, and adjust policies and guidelines to enhance well-being of employees. These include the Travel support policy; Guideline for accommodation benefits, shift meal allowances; Guideline for funeral, wedding, and sickness support; Guidelines for mobile phone provision and mobile charge support; Online training course on Code of Conduct for employees, etc. In addition, we organized labor dialogues to share, listen to opinions, exchange ideas and address employees’ concerns, thereby fostering mutual understanding to build stable and transparent labor relations. In particular, the “Your Voice Matters” whistleblowing service, was launched as a platform for receiving constructive, and transparent feedback with the goal of creating a great place to work for all employees based on the core values.





**PROUD OF  
WHERE WE  
BELONG**



### Series of activities celebrating 13th Anniversary of the Company

To mark Masan High-Tech Materials' 13 years of development and global expansion, many exciting celebratory activities were organized in China, Canada, Germany, and Vietnam under the theme "LIVE GREEN TO SHINE".

At MHT Vietnam, the "Highlights of the 13th Anniversary" program unfolded in a refreshing green space. These include memorable moments of celebratory songs during birthday festivities, delightful moments of refreshing drinks from our Leaders, including the CEO, department heads and supervisors, embodying the spirit of "Servant Leadership" at the bright green "Beloved Stations", imbued with the essence of "Live Green to Shine". In addition, they take part in joyful, intimate lunches, as well as team-building games stimulated by determination to win, among other enjoyable experiences.

The "MHT I Love" contest was implemented across MHT, offering an opportunity for all MHTers to express their feelings for the Company through poetry, singing, photos or stories from their daily work.

The "Green Friday" program, promoting a green lifestyle – offered all MHTers opportunity to participate in sports activities such as yoga, table tennis, badminton, football, walking, running, etc. very Friday. Essential equipment for training are supported by the company. This program provided an interesting playground for MHTers after work to relieve stress, relax, spread positive energy, stay healthy and build a sport-loving culture within the MHT family.

In Germany, a cozy party attended by 400 members raised a glass and celebrated the Company's birthday, marking 3 years of integration of HCS into Masan High-Tech Materials.

In Canada, a meaningful lunch and memorable birthday cakes were enjoyed.

In China, the team gathered to cut birthday cake together, organized team-building games to connect the members, demonstrating the spirit of solidarity among employees to make a strong, successful team.

## HEALTHY LIVING FOR MORE HAPPINESS

### Summer tour program 2023

Under the theme “Live Green to Shine”, MHT members and their families embarked on excursions to famous tourist destinations across Vietnam, ranging from mountains to beaches. Destinations included Cat Ba Island, Hoa Binh Serena Resort, Ninh Thuan Province, and Da Nang City. Each trip was a journey of exploration that not only marveled at stunning natural landscapes, but also fostered companionship, laughter and joy among family members and colleagues. These trips offered deeply meaningful moments to each MHTer’s family, as well as to the wider MHT community, contributing to improved physical and mental well-being and the cultivation of shared values for a more positive and fulfilling life together.



### MHT Amazing Race - Seasons 2 & 3

Thanks to the thousands of tokens of loves sent to the Masaners Care for Masaners Fund, MHT Amazing Race - Seasons 2 & 3 continue to leave our footprints on the journey of millions of strong, resilient MHTers’ footsteps who are willing to break all limits. Each MHTer carries with him or her a sporting spirit, a desire to reach further, and a commitment to living a healthy life serving the Company and their families. As fathers, mothers, wives, husbands, or children in their respective families, they collectively cultivate a daily exercise habit. At MHT, we are proud to have built a culture of physical training with continuous persistence, and we continue to expand not only the Masan Group’s internal online and offline running competitions, but also external competitions.

In 2023, a total of 5,002.8 km equivalent to the amount of VND 10,005,600 from the MHT Amazing Race were donated to “Masaners Care for Masaners” Fund.



### Mental well-being and employee engagement programs

The company and its union organize annual events dedicated to employees’ mental well-being. These efforts are aimed at gaining an in-depth understanding of employee needs and developing highly effective engagement programs. These include Blog Radio - a place to share the stories and emotions of MHT employees every day, with plenty of hot news delivered to evoke deeper emotions; Beloved Shutdown programs, Children’s Day, Mid-Autumn Celebration or Workers’ Month gifts focused on health and family ties, caring more deeply about every employee; or the moments to laugh, hold hands, play games on International Women’s Day (March 8), Vietnamese Women’s Day (October 20), and especially the little gifts sent to loved ones who are the mothers, wives and lovers of MHT men. All the programs not only look after the well-being of employees, but also address their families, parents, spouses and children, offering them material and spiritual values. Recognizing that a solid support system fosters reassurance, MHTers are better positioned to work and contribute.

In 2023, the occupational health management in Germany has launched a mental health first aid project. The aim is to listen to colleagues who are affected by mental health issues and help them regain their mental balance. Since September 2023, 12 employees have been available on the intranet as contacts for mental health first aid. Early support through talking has a preventive impact on mental health and can prevent chronic conditions. This is why we attach importance not only to offering prevention for physical health, but also to being active in a holistic way. In addition, a 24-hour professional hotline for mental health crises was made available to employees and their relatives.

As a preventive measure before mental health is being affected, we carried out a risk assessment in 2023 to minimize mental stress at work and improve working conditions. The survey results were determined in an initial analysis and the next step was to filter out the main areas of stress. Internally trained moderators then work with employees in workshops to find ideas and solutions.

The moderators are interested employees who have undergone training from the trade supervisory office specifically for the implementation of the workshops. The workshops will start in the first half of 2024 so that the subsequent measures can be planned and/or implemented in the course of 2024.

### Masaners care for Masaners Fund

The spirit of “No one left behind” is a guiding principle for us to accompany, take care of each other through “Masaners care for Masaners Fund” (established on 18 June 2021). Employees and the Company contribute annually to the Fund, supporting meaningful activities. To date, the Fund plays an important role in facilitating timely visits and assistance to those facing disadvantaged conditions, as well as scholarships to the students with outstanding academic performance.





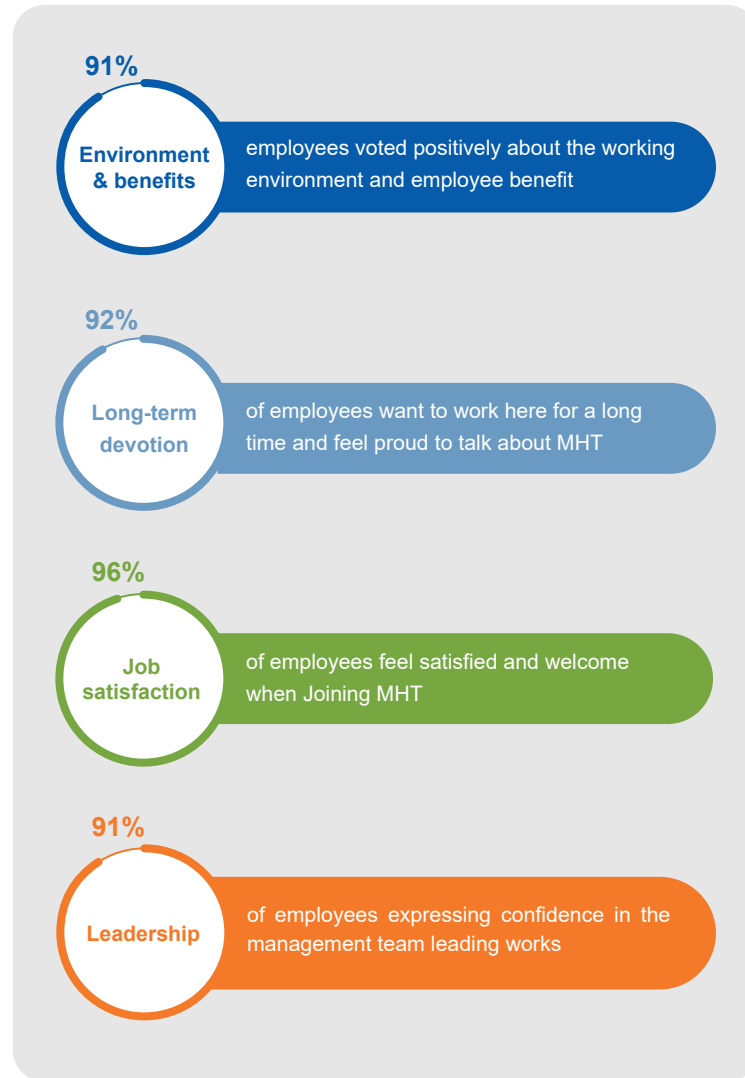
## AS WE DESERVE

MASAN HIGH-TECH MATERIALS IS CERTIFIED  
“GREAT PLACE TO WORK 2023”

Masan High-Tech Materials is Vietnam’s first manufacturing company to be recognized as “Great Place to Work in 2023”. This achievement is based on the feedback from over 1,000 employees in the Great Place to Work Trust Index Survey - one of the most prestigious global organizations in corporate culture certification.

We are so proud of this achievement because it not only reflects Management’s commitment to creating a positive, supportive, and collaborative environment for employees, but it also says our people validated and contributed a lot to MHT being a certified great workplace. We believe that corporate culture is one of our greatest assets, which helps us deliver high-quality products and services to global customers.

Each activity has a significant impact on employee engagement at MHT subsidiaries. Together we cultivate a friendly working environment where everyone can learn from one another, interact, unite and be determined to moving MHT forward. Changes in management, establishment and adjustment of the business, adaptation of production plans to the actual situation, organizational restructure and strengthening employees’ experience, etc. are important efforts made by MHT over the past years. In 2024, we continue to set out consistent goals to clearly determine the strategy, develop a plan following the right track of global sustainable development for Masan High-Tech Materials.



## SUSTAINABILITY HEALTH AND SAFETY

### HEALTH AND SAFETY AT MHT VIETNAM

**D**evelop a training matrix for each employee in relevant departments.

**C**oordinate with the People's Committee and Public Security of Ha Thuong commune to carry out the "Green Summer" campaign. The campaign aims to raise awareness about internal traffic regulations at the intersection in front of the Company's main entrance. This crossroads is frequented by high volumes of people and vehicles, particularly during rush hour, posing a potential risk of traffic accidents.

**I**ssue Guidelines for Contractor Health and Safety Management.

**O**rganize safety presentations and discussion sessions with the participation of company directors and managers.

**A**llocate personnel to set up an office for safety inspections of vehicles at the main gate.

**A**pply an individual training data storage system and develop the QR codes to monitor the employee training status easily.

**C**onduct risk assessments for projects with high risks and involve relevant parties.

**I**dentify and mitigate hazards to ensure safe and efficient operation of new projects using the Hazard and Operability Study (HAZOP).

**C**oordinate with the Legal Department and Compliance Control to promote legal regulations on Occupational Safety and Health, Chemicals, Radiation, Training, etc. in the business areas of the Company.

**E**nhance training in incident investigation and reporting methods for departments.

**I**mplement a program to monitor working environments with a 44% increase in samples of people and working areas compared to 2022.

**C**onduct overall assessment of personal protective equipment.

**S**trengthen coordination with the Community Department to participate in community health screening programs, organize communication sessions, and share information with students in surrounding schools on safety and first aid topics.



## HEALTH

### Our Clinic

11 healthcare workers are providing 24-hour support in the MHT Vietnam Clinic, consisting of three doctors having general practitioner degrees and medical specialty certificates, four nurses, two physicians, and one medical assistant with full equipment and facilities to take over daily healthcare services for employees as well as response to emergency cases.

Our medical staff works closely with the Emergency Response Team (ERT) to participate in various emergency drills. This helps us ensure that our rescue equipment is operated proficiently and that we are well-prepared to handle emergencies. We also collaborate closely with local authorities and hospitals to provide quick and efficient emergency care.

In 2023, training activities were maintained to upskill medical staff and meet the legal requirements. These training courses include occupational diseases, occupational health, radiation safety, chemical safety, etc.



#### 1 Health care for employees

In 2023, the Clinic provided health checks to 4,339 employees, including medical examinations, medicine dispensation, advice on nutrition, exercise, rest appropriate to health, and medication usage, especially for employees with chronic diseases.

#### 2 Periodic health checkups and occupational disease prevention

Pre-employment health screening and routine health checkups are organized in parallel to the planned occupational health examination twice a year. In 2023, the Clinic examined and gave medical advice to 832 employees in batch 1 and 1484 employees in batch 2.

As part of our health checkup process, the Clinic has been collecting samples from employees at the Company, including the Hanoi office, before their scheduled examinations at the hospital. This approach helps us save costs and is well-suited for the nature of our work and production activities. By doing so, employees can receive their health examination results within the day and get timely medical advice, which has been greatly appreciated by our staff.

In 2023, the Health and Safety Department also advised contractors to arrange health checks for their employees working at MHT, based on the company's recommended list, to ensure compliance and suitability for the working environment.

### 3 Training, health communication & community support

Community support, health communication, and training activities have continued to be stepped up, as shown below:

Conduct mandatory training programs on occupational health prevention for employees before starting work, and other occupational health training sessions.

Release health guidelines such as prevention of sunstroke, heat-stroke, and heat stroke, first aid for foreign objects in the eye, flu prevention, hypertension prevention, foot care, etc.

Collaborate with the Community Department to implement programs providing guidance and sharing on safety and first aid topics for over 4,000 students and teachers in neighboring primary and secondary schools.

44 first aid training courses for 430 employees in Vietnam with a total of 1,720 training hours.

Support safety and medical care at company events.

In addition, the medical staff were highly appreciated for their professional behavior and skills while collaborating with local medical facilities to carry out medical examinations, health consultations, and the free distribution of medicines to 160 policy beneficiaries and individuals with meritorious service to the revolution in Phuc Linh commune, Binh Thuan on July 27. Furthermore, they were commended for their participation in emergency support and the provision of healthcare services to neighboring communities.



Communications on safety and first aid topics at school



Internal first aid training



Annual drill activity



Sharing at the blood donation program



Free health examination and consultation for people with meritorious services to the revolution on July 27



First aid is provided to the injured person on Nation Highway No. 37

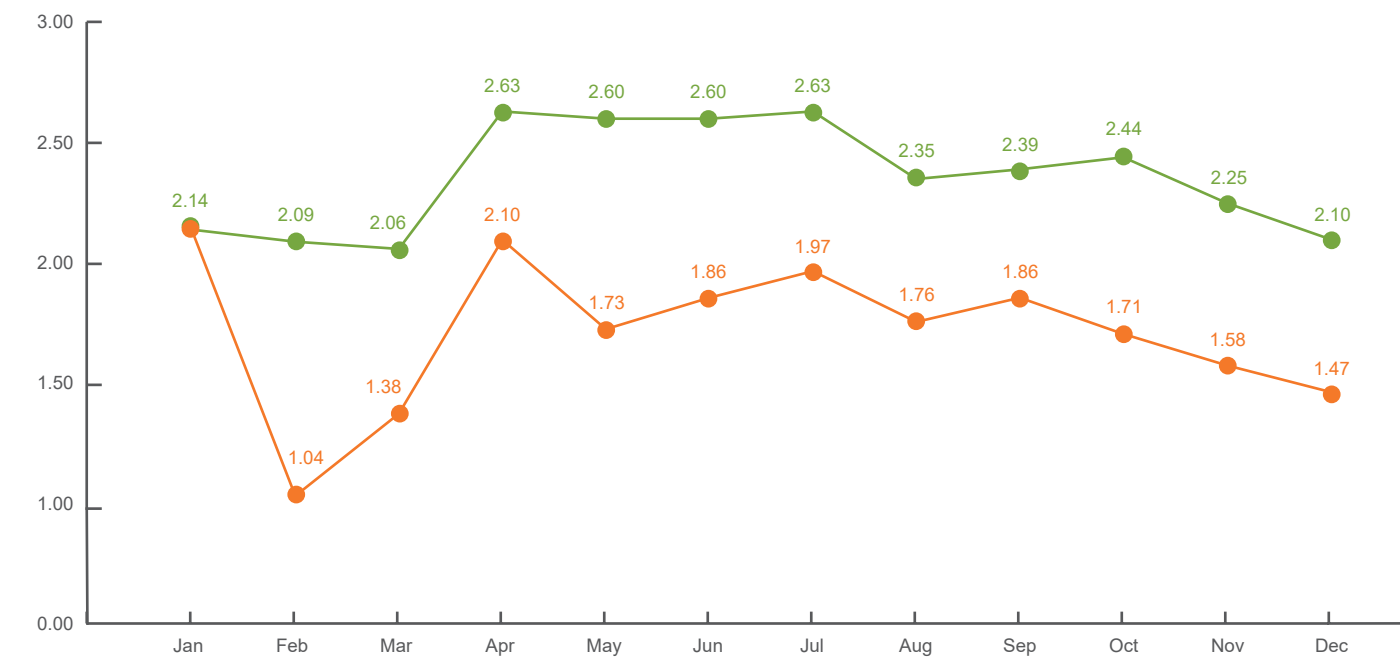


## SAFETY

### Accident and Incident

In 2023, the accident rate was within the company's safety target, reflecting in part our efforts to reduce accidents and encourage incident reporting. Most incidents were related to traffic, chemicals, and equipment maintenance.

● *LTIFR: Lost Time Injury Frequency Rate*  
 ● *TRIFR: Total Recordable Injuries Frequency Rate*



YTD Injury Frequency Rate in 2023

## Management system

- » Update procedures, instructions, and internal regulations in line with work requirements and the mine's expansion.
- » Assign safety officers to operations departments to promote the implementation of the Safety Management System and strengthen direct on-site supervision.
- » Conduct statistics on improper points of the internal Safety & Health Management System with the ISO 45001:2018 Occupational Health and Safety standard. At the same time, provide training to department representatives, smoothing MHT's Health and Safety Management System before application.
- » Apply an individual training data storage system and develop the QR codes to check the employee training status.
- » Issue 8 brief golden safety principles including safety instructions, notes, and regulations for high-risk work.
- » Identify and mitigate hazards to ensure safe and efficient operation of new projects using the Hazard and Operability Study (HAZOP).
- » Issue Contractor Health and Safety Management Guidelines adding Safety & Health criteria in the selection of Contractors.
- » Conduct an overall assessment of personal protective equipment to optimize costs while ensuring safety standards and employees' working conditions.
- » Update the Radiation Incident Response Plan and apply for the licensing of 11 new radioactive sources.

### 8 SAFETY PRINCIPLES



SAFETY DEVICES



LIFTING



WORKING AT HEIGHT



CHEMICALS



CONFINED SPACE



VEHICLE



EXCAVATION



ENERGY

## Hazard identification and risk management at the workplace



### Risk assessment

- Work with departments in the processing sector to develop a safety risk assessment checklist for processing and maintenance activities. At the same time, monitor and update the progress of agreed remedial and preventive measures.
- Implement risk assessment for new projects: Oxide Expansion Project (OEP), pit water pumping system, copper grinding line, parking area of mining trucks, etc.
- Review and modify the Job Hazard Analysis Procedure, edit forms, develop online Take5, and conduct training to ensure work suitability.



### Occupational hygiene and working environment

- In 2023, MHT Vietnam implemented the work environment monitoring program with the number of samples of people and working areas increased by 44% compared to 2022. The company continued to assess working conditions to classify and register an additional list of arduous, hazardous, and dangerous occupations. At the same time, job titles were modified in line with legal requirements.
- Conduct monthly food safety and hygiene quality assessments at canteens and kitchens. Issue food safety and hygiene documents and provide training to employees.
- Upgrade the domestic water filtration system in processing areas, offices, and emergency showers at the plant to improve water quality, ensure domestic water standards, and be prepared for emergencies.
- Water haul roads twice a day to reduce dust dispersion.



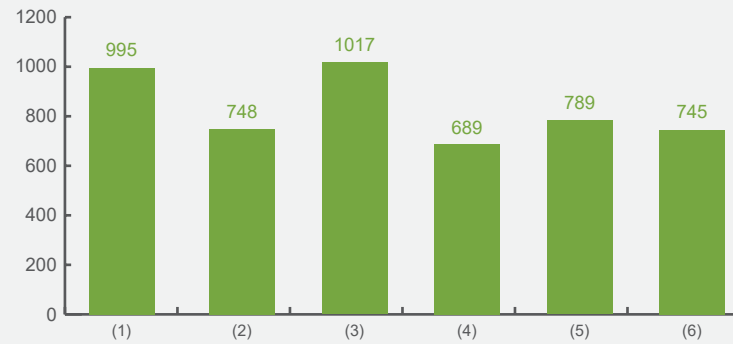
**Vehicles and equipment safety**

- Work with Maintenance Department to establish a management system for machinery and equipment with strict occupational safety and health requirements, ensuring timely monitoring, inspection, declaration, and disposal in accordance with legal requirements.
- Ensure 100% of equipment and machinery are inspected for legal adequacy and technical safety before issuing operating permits.
- Build legal documents for personnel and vehicles fleet of suppliers and product delivery contractors to request compliance before granting access to the company.
- Set up an office and assign permanent staff to optimize safety instructions and inspect legal registers and vehicle technical and safety conditions at the company's main gate.
- Carry out inspections to ensure professional competence before authorizing to drive as well as control vehicles and machines on site. Draw up a refresher training plan for unqualified personnel...



**Safety supervision and inspection**

- Each employee is encouraged to self-identify hazards, assess risk before and during task implementation through Take5, and report hazards on the OCSafe system to provide incident and accident preventive measures for themselves and their colleagues.



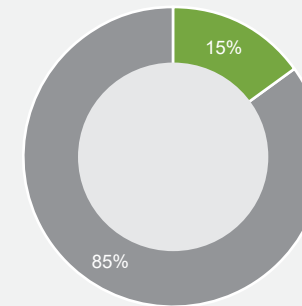
Hazards mainly identified through Online Take5 in Quarter 4, 2023

**Note:**

- |                           |                       |
|---------------------------|-----------------------|
| (1) Slippery, strip, fall | (4) Emitted gas/fumes |
| (2) Pinch points          | (5) Noise/vibration   |
| (3) Repeated actions      | (6) Dust/smoke        |

- Strengthen workplace safety inspections with the participation of management team, health and safety, and other relevant departments. Safety inspections and observations enable existing risks and problems to be identified, monitored, and fully addressed, with the support of top management.
- Representatives of the Health and Safety Department worked with other departments to develop plans and conduct monthly inspections at the processing areas. Especially during the plant shutdown for maintenance and service activities.
- Safety observation reports are issued after each inspection, with recommendations and proposals for improvement in terms of management and effective implementation of safety work.

■ Completed action      ■ On-going action



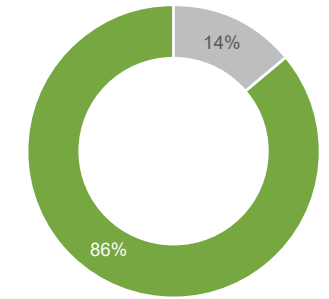
Completion rate of recommendations from safety observation report



**Contractor safety assessment**

- Coordinate with departments to evaluate the compliance of Contractors operating in the Company on OSH twice a year. Improper identified through assessment, supporting contractors to complete the Health and Safety Management System.

■ Improving      ■ Improved



Improvement of improper points by contractors

## Building a safety culture

In 2023, MHT conducted various action programs to raise awareness of safety culture, specifically:

- Organize discussion sessions on safety-related topics with the participation of the General Manager, Department Managers/Deputy Managers, and employees to enhance proactiveness in risk identification and assessment and incident prevention.
- Develop short clips on chemical safety, food safety, traffic safety, etc. to raise awareness of compliance with occupational health and safety in all activities.
- Implement an awareness-raising communication on using seat belts while driving.
- Remind employees to pay attention and not to use smartphones while walking.
- Release information on occupational health and safety reflecting outstanding safety issues at the Company.
- Monitor and control the speed of vehicles on the haul roads.



Sharing on safety by the General Manager

Implement the Green Summer campaign to improve traffic flow at the intersection area of the main entrance of the Company. During the campaign, the Community, Health and Safety Department, Public Security, and volunteers of Ha Thuong commune collaborated to control traffic, preventing congestion, while reminding people to respect traffic rules: to wear helmets, follow signs and markings, maintain the prescribed speed, use the correct lanes, park correctly, and avoid phone use while driving, avoid distracted behaviors, aggressive driving, and driving drunk.

Maintain the Rank Your Day (R.Y.D) program to reinforce everyone's active role in safety matters, to keep the management informed and to provide rectification for the identified hazards. The program is well received by departments and will continue to be communicated to all contractors.

Continuing to implement the "Safety Rewards" program to encourage employees to be proactive in identifying hazards and applying appropriate control measures to maintain a safe working environment.

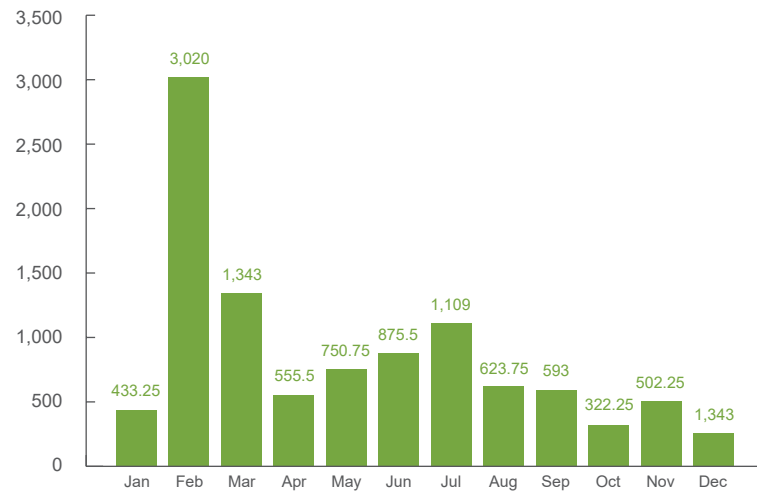


### Enhancing the capability and awareness of occupational health & safety (OHS)

- Continuously organize training classes on OHS, chemical safety, radiation safety, and operation of machinery and equipment with strict OHS requirements according to provisions of law.
- Weekly internal safety training on various topics.
- Coordinate with suppliers to organize training programs on personal protective equipment such as respirators, cartridges, and masks.
- Build a training matrix for departments under the scope of work, based on the implementation of training plans following company's and law requirements.

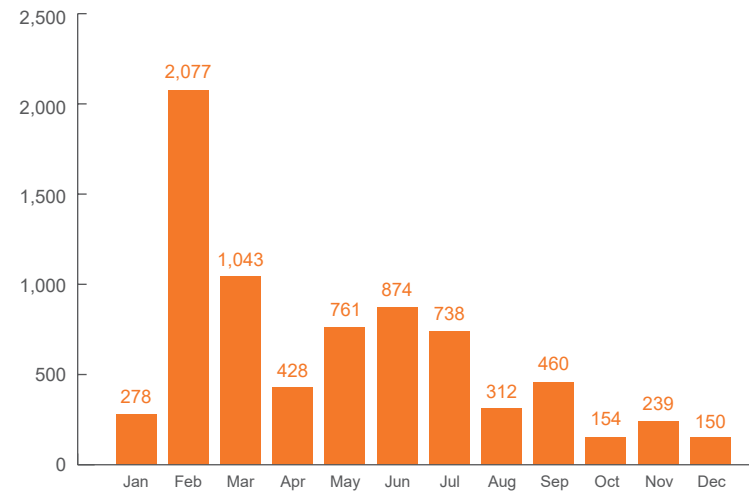
SAFETY TRAINING HOURS - 2023

10,385.5



SAFETY TRAINING ATTENDEE - 2023

7,514



Statistics of internal safety training in 2023

## FOCUS 2024

- Continue to improve the Health & Safety Management System in line with company development and law requirements.
- Strengthen safety inspections, hazard identification, and risk assessment in working areas. Propose improvement measures to ensure a safe working environment.
- Improve the quality of health care and maintain the quality of pre-employment and periodic health check-ups.
- Improve the quality of investigations and incident reports; control the time and quality of implementing corrective and preventive actions.
- Strengthen the communication of health and safety topics with the participation of top management.
- Implement health & safety management as well as control programs for Contractors to ensure compliance and uniformity in implementation.
- Maintain safety training and guidance activities to raise employee awareness, according to law and company requirements.
- Encourage employees to participate in strengthening company's safety culture.



## HEALTH AND SAFETY AT HCS

### SAFETY

#### Maintain a Zero Harm Working Environment

The safety and health of all employees, both those employed by the company and external companies on the factory premises, are top priority for H.C. Starck Tungsten Powders. This commitment is further documented by the certification of the Goslar and Ganzhou sites according to ISO 45001 “Management Systems for Safety and Health at Work”; the Sarnia site is pursuing the goals of a Toxic Reduction Plan.

In order to achieve the “zero accidents” target set in the company’s objectives, both accidents and near-hits are handled according to a defined process. The incidents, along with the resulting measures and lessons learned, are presented at the monthly management meetings and partly (fatal accidents and accident with days off) at the Critical Incident Report. A further publication takes place on the information screens. Additionally, components of the monthly reporting are also the reported safety deficiencies, which are discussed in the companies at the daily morning meeting.

After the main cause of accidents in Goslar in previous years was due to a lack of attention, a trend was observed here in 2023. Compared to 2022, the number of accidents in Goslar fell from 5 to 2 in 2023. In order to achieve a permanent reduction in the number of accidents at this site, work will continue to focus on near misses and safety deficiencies and to intensify regular rounds and inspections.

No accidents occurred at the Sarnia and Ganzhou sites in 2023.

### 2023 ACHIEVEMENTS

**I**n 2023, 24 inspections and safety tours were carried out (19 in 2022 and 18 in 2021), which are supplemented by regular tours of the company’s safety officers.

**T**o determine and assess the concentrations of hazardous substances in the air in working areas, 7 work area analyses/ control measurements were carried out in 2023 in accordance with the Technical Rules for Hazardous Substances 402 (TRGS 402) (2021: 10 / 2022: 15). In a few areas, limit values were found to have been exceeded, requiring measures to be taken and forming the basis for the procurement of blower respiratory protection.

**C**ommittee meetings for occupational safety (2021: 4 / 2022:4 / 2023: 4), with the security safety officers (2021: 7 / 2022: 4 / 2023: 5), and with the masters (2021: 2 / 2022: 2 / 2023: 3) were held.

**51** first aid trainings were offered (2021: 24 participants / 2022: 52), whereby H.C. Starck Tungsten GmbH already clearly exceeds the required minimum of 10% of all employees to be trained as first aiders.

**F**urther safety training courses were organized by the trade association BGRCI (2021: 12 courses / 2022: 31 / 2023: 24).

#### Ensuring a Secure Plant

Work in chemical industry plants is associated with specific risks. In addition to the described measures and training for H.C. Starck Tungsten employees, we also feel responsible for the safety of employees of external companies who perform services on our behalf. Before starting work at H.C. Starck Tungsten, employees of external companies must complete and pass a Tungsten-specific safety training course in addition to receiving a preliminary safety briefing from plant security upon entering the premises.

We have implemented a system of coordinators, H.C. Starck Tungsten Engineers, who are responsible for the execution of work by third parties and discuss the risks with them on site. The coordinators serve as the contractors’ contact persons and, as required, carry out inspections of equipment that the contractors bring in. The coordinator is responsible for the security of “his” construction site.

The plant area in Goslar is fenced in and monitored 24/7 by factory security via CCTV and regular inspection tours. Visitors and external companies are registered in advance by the receiver/ requester at H.C. Starck Tungsten and must identify themselves at the access control. Vehicles belonging to outside companies are weighed at the entrance and exit to and from the factory premises, bag checks (also for H.C. Starck Tungsten employees) are carried out at random. PPE will be made available to visitors by plant security if required. Private cars and bicycles are not allowed on the entire fenced-in factory premises, parking spaces are located outside.

### GOSLAR PLANT

#### Fire Brigade

To combat fires and chemical accidents, a plant fire department with two full-time firefighters and volunteer firefighters from the plants is available 24/7 in Goslar. Regular training with the fire departments surrounding the plant ensures smooth cooperation between the fire departments in the event of major damage. The plant fire department can be called in from outside if necessary due to their experience in fighting chemical accidents.

	2021	2022	2023
Fire operations	1	3	1
False alarm (Fire alarm system)	29	27	17
Technical assistance	41	58	15
Other missions (on-call service)	104	280	52
<b>Total</b>	<b>175</b>	<b>368</b>	<b>85</b>

Responders performed a total of 534 response hours in 2023, of which approximately 52 hours were performed by the On-call service alone.

No official fire prevention inspections were carried out by the district of Goslar in 2023. These are carried out every 3 years. In addition, 6 unannounced evacuation exercises took place at H.C. Starck Tungsten GmbH.

## FOCUS 2024

4 Days of Safety  
for Operations

Day of safety  
Tungsten  
Innovation Global

Training on  
mental health  
emergencies for  
first responders

Further  
education and  
training for safety  
officers

### SARNIA PLANT

The Sarnia location supports involvement and participation in a local large multi-industrial cooperative that promotes a safety culture which has provided Sarnia site with world class management tools that have enabled continued achievement of safety objectives, including zero reportable injuries for 2023.

HS&E leadership is prevention-based which includes a Joint Health and Safety Committee that is committed to improvement through proactive workplace inspections, personal and group training, and risk prevention.

The ongoing health and fitness benefit program was very well utilized by employees in 2023. The participation in this program promotes employee health and wellness.

Employees engage in a mandatory annual two day training program. This program includes health and safety training pertaining to their job functions, regulatory recertifications, and emergency site and field drills.



Training program in Sarnia

### GANZHOU PLANT

#### Traffic Safety

As motorcycle and electric motorcycle are the major transportation for employees to get work. To improve their traffic safety awareness and reduce the traffic accidents, in September, we held the specialized traffic safety training by analysis of traffic accidents. The correct operation, maintenance would reduce the trouble of motorcycle and keep its best capability, and is also the advance of safety driving motorcycle, we checked employees' motorcycle and required them maintenance their vehicle timely.



Traffic training

**Health and Safety**

In June, we made a chemical poisoning and rescuing drill in our application and Centre lab, which aim to enhance safety awareness and improve emergency rescue skills.

**Fire Drill**

Fire drills are set to be a regular occurrence today as China hope to raise awareness of fire prevention techniques. We make the formulate pre-proposal on firefighting and emergency evacuation and organize the fire drill in November. All employees, especially the new ones, are taking an active part in the fire drill.

**Training about Health/ Safety/ Environment**

HSEQ engineers organized several regular rolling trainings and analyzed the relevant cases to learn the measurements for improvement. These trainings include the occupational health and operation skills, their test result will be recorded accordingly after the training.



Firefighting training



Safety production

**FOCUS 2024**

Evaluation of occupational disease hazard factors

Firefighting skill training for 8 employees applying for the intermediate operator of fire facilities devices

**INCIDENT DATA MANAGEMENT**



	Unit	2023	2022	2021	2020	2019	2018
Fatal Accidents (FA)	Number	0	0	0	0	0	0
DAWC with 1-3 Days Away From Work	Number	1	3	0	2	2	0
DAWC with >3 days away from work (BGC)	Number	1	2	2	4	2	2
Days Away From Work Cases (DAWC)	Number	2	5	2	6	4	2
Total Recordable Cases (TRC)	Number	2	5	2	6	4	2
Days Away From Work (Total DAW)	d	30	12	75	67	33	16
Lost Calendar Days (incl. Weekend)	d	45	12	21	83	43	18
Headcount (HC)	HC	388	352	358	349	332	249
Total Hours Worked (THW)	h	530,840	532,918	524,927	493,289	492,143	336,575
Number of Regular Occupational Health Checkups	Number	858	539	600	520	397	562
First Aid trained employees	Number	51	61	24	52	36	24
Number of Days Away from Work Cases of third party Contractors (DAWC 3)	Number	0	127	0	0	0	0
Health and Safety training for HCST employees. (Number of training courses completed)	Number	80	44	52	38	37	32
German Accident Rate (MAQ)	Number	3.77	9.38	3.81	12.16	8.13	5.94
German Accident Rate (BG-MAQ)	Number	1.88	3.75	3.81	8.11	4.06	5.94
German Severity Rate (USQ)	Number	56.51	22.52	142.88	135.82	67.05	47.54
German 1,000 employee Rate (1000-Mann-Quote)	Number	2.58	5.68	5.59	11.46	6.02	8.03
Total Recordable Cases Rate (TRCR)	Number	0.75	1.88	0.76	2.43	1.63	1.19
Days Away From Work Cases Rate (DAWCR)	Number	0.75	1.88	0.76	2.43	1.63	1.19
Severity Rate (according to OSHA)	Number	11.30	4.50	28.58	27.16	13.41	9.51


**In Ganzhou**

	Unit	2023	2022	2021	2020	2019	2018
Fatal Accidents (FA)	Number	0	0	2	0	0	0
DAWC with 1-3 Days Away From Work	Number	0	1	0	1	1	0
DAWC with >3 days away from work (BGC)	Number	0	0	2	4	3	3
Days Away From Work Cases (DAWC)	Number	0	1	2	5	4	3
Total Recordable Cases (TRC)	Number	0	1	4	5	4	3
Days Away From Work (Total DAW)	d	0	1	39	92	57	135
Lost Calendar Days (incl. Weekend)	d	0	1	53	106	69	189
Headcount (HC)	HC	130	135	136	128	132	122
Total Hours Worked (THW)	h	298,554	310,014	289,428	285,487	287,834	274,252
Number of Regular Occupational Health Checkups	Number	115	145	109	141	145	122
First Aid trained employees	Number	22	25	25	25	20	30
Number of Days Away from Work Cases of third party Contractors (DAWC 3)	Number	0	0	0	0	0	0
Health and Safety training for HCST employees. (Number of training courses completed)	Number	257	248	220	207	356	345
German Accident Rate (MAQ)	Number	0	3.23	13.82	17.51	13.90	10.94
German Accident Rate (BG-MAQ)	Number	0	0	13.82	14.01	10.42	10.94
German Severity Rate (USQ)	Number	0	3.23	134.75	322.26	198.03	492.25
German 1,000 employee Rate (1000-Mann-Quote)	Number	0	0	29.41	31.25	22.73	24.59
Total Recordable Cases Rate (TRCR)	Number	0	0.65	2.76	3.50	2.78	2.19
Days Away From Work Cases Rate (DAWCR)	Number	0	0.65	1.38	3.50	2.78	2.19
Severity Rate (according to OSHA)	Number	0	0.65	26.95	64.45	39.61	98.45


**In Sarnia**

	Unit	2023	2022	2021	2020	2019	2018
Fatal Accidents (FA)	Number	0	0	0	0	0	0
DAWC with 1-3 Days Away From Work	Number	0	0	1	0	1	0
DAWC with >3 days away from work (BGC)	Number	0	0	0	0	0	1
Days Away From Work Cases (DAWC)	Number	0	0	1	0	1	1
Total Recordable Cases (TRC)	Number	0	0	1	0	1	1
Days Away From Work (Total DAW)	d	0	0	2	0	2	4
Lost Calendar Days (incl. Weekend)	d	0	0	2	0	2	4
Headcount (HC)	HC	45	50	46	42	48	49
Total Hours Worked (THW)	h	97,982	103,534	89,012	87,210	99,421	101,172
Number of Regular Occupational Health Checkups	Number	5	8	6	4	15	18
First Aid trained employees	Number	22	25	32	0	0	22
Number of Days Away from Work Cases of third party Contractors (DAWC 3)	Number	0	0	0	0	0	0
Health and Safety training for HCST employees. (Number of training courses completed)	Number	23	25	24	19	54	18
German Accident Rate (MAQ)	Number	0	0	11.23	0	10.06	9.88
German Accident Rate (BG-MAQ)	Number	0	0	0	0	0	9.88
German Severity Rate (USQ)	Number	0	0	22.47	0	20.12	39.54
German 1,000 employee Rate (1000-Mann-Quote)	Number	0	0	0	0	0	20.41
Total Recordable Cases Rate (TRCR)	Number	0	0	2.25	0	2.01	1.98
Days Away From Work Cases Rate (DAWCR)	Number	0	0	2.25	0	2.01	1.98
Severity Rate (according to OSHA)	Number	0	0	4.49	0	4.02	7.91



## SUSTAINABILITY SECURITY

### Security

The Security and Emergency Response team stays focused on completing all assigned tasks with excellence, safeguarding the Company's assets, employees' lives and health, maintaining the plant security, contributing to the development of the business, strengthening workplace integrity and transparency and promoting the culture of voluntary compliance among all employees. In 2023, the Security and Emergency Response team strengthened a far-reaching role in various aspects:

**Product security:** Prevent theft and loss within the entire plant and operating areas of the Company; closely monitor goods entering and leaving the plant, develop and implement cross-check procedures between departments (Security, Processing and Supply Chain Management); strengthening personnel responsible for escorting the Company's goods to the point of purchase to guarantee the safety and integrity of goods and products.

**Supply chain security:** Ensure safe logistics and procurement activities, reduce the risks of loss. Provide counsel and facilitate the resolution of complex issues that arise with business partners to prevent risks of financial and legal fraud and to guarantee the win-win cooperation with contractors and suppliers.

**Internal security:** Ensure a spotless and strong human resources team, advise on the purging or not hiring of individuals with complicated backgrounds, participate in the strategy for HR development. Investigate and handle fraudulent, negative acts and violations of employees, gradually develop and form a culture of voluntary compliance.

**Community security:** Contribute to the resolution of existing issues and relationship conflicts between the company's business expansion and community interests by preventing, addressing and harmonizing them. Especially, sign and maintain a Coordination Regulation with the Public Security of Ha Thuong commune and Hung Son town, effectively assist in the resolution of emerging issues and ensure security for blasting activities.

### Fire Fighting and Rescue

- In 2023, the Security and Emergency Response team held more than 18 emergency response drills on fire prevention and fighting, chemical spill response, and rescue. Among these, a range of the notable activities are listed below.
  - » On April 26, 2023, coordinate with Thai Nguyen Police Department of Firefighting and Rescue to practice the firefighting and rescue operations.
  - » On September 12, 2023, conduct a drill to respond to chemical spill (STS) and rescue victims experiencing H<sub>2</sub>S poisoning under the supervision of Thai Nguyen Department of Industry and Trade.
  - » On November 30, 2023, conduct a response drill to chemical spill (H<sub>2</sub>SO<sub>4</sub>) under the supervision of Thai Nguyen Department of Industry and Trade.
  - » On December 6, 2023, coordinate with Hoa Binh Building Management Board to conduct an internal drill of firefighting and rescue on a building-wide scale.
  - » On December 23, 2023, conduct a firefighting and rescue drill at Think Cuong contractor's office (within Nui Phao mine).
- Conduct basic fire prevention and fighting trainings for 298 employees of MHT Vietnam and 75 employees of its contractors on how to recognize fire, correctly use on-site fire extinguishers and firefighting equipment, and escape instructions.
- Support the locality in responding to 11 fire-fighting and rescue cases in Dai Tu district, especially serious road accidents that occur on National Highway No. 37.
- Sign the coordination regulation No. 706/QCPH-CAT(PC07) dated January 18, 2023, with Thai Nguyen Provincial Police and agencies and businesses with fire engines, rescue vehicles in the province to coordinate in the fire prevention and rescue operations in Thai Nguyen province.



## SUSTAINABILITY ENVIRONMENTAL MANAGEMENT

In 2023, while the world is focusing its efforts on economic recovery after the Covid-19 pandemic, the Earth continues to suffer many losses with a “winter without cold weather” and increasing global temperature.

At MHT, 2023 is also a year full of economic, production and environmental challenges. Despite difficult conditions, steadfast management policies as well as commitment to sustainable development goals are still maintained and continued by the Management Team. With recognized efforts, MHT Vietnam has been recognized by the Vietnam Chamber of Commerce and Industry (VCCI) to be among “Top 100 Sustainable Businesses in Vietnam” for the 6th consecutive year.

## WATER RESOURCE AND WASTE-WATER MANAGEMENT

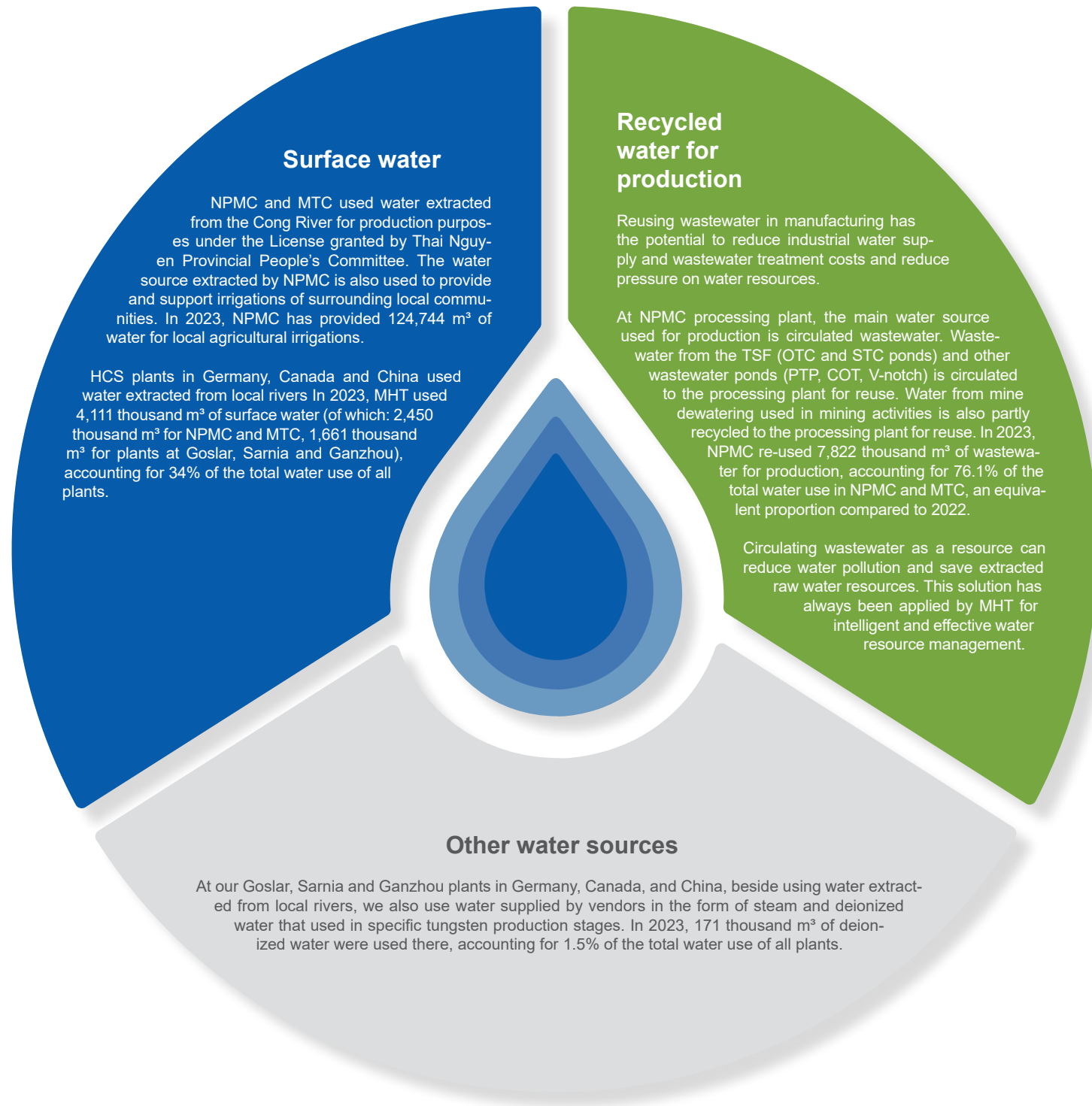
Water is a vital resource for life and the key to sustainable development. At MHT, solutions to circulate, reuse and treat wastewater to ensure quality will continue to be sustained in 2023 to preserve and protect water sources.

### Water consumption

The water sources for production in recent years at MHT include surface water and groundwater (self-extracted or provided from suppliers), deionized water and recycled water. In 2023, the total water volume used by MHT was 12,105 thousand m<sup>3</sup>.

YEAR	2019	2020	2021	2022	2023
<b>Total volume of water use (thousand m<sup>3</sup>)</b>	<b>12,482</b>	<b>12,136</b>	<b>12,740</b>	<b>11,797</b>	<b>12,105</b>
<b>NPMC and MTC</b>	<b>10,683</b>	<b>10,231</b>	<b>10,986</b>	<b>10,024</b>	<b>10,273</b>
Surface water	2,576	2,517	2,355	2,346	2,450
Ground water for domestic	36	31	8	0	0
Ground water for production	0	0	0	0	0
Recycle water	8,071	7,682	8,623	7,677	7,822
• Water from OTC	2,574	2,163	2,286	2,254	3,069
• Water from STC	4,613	4,415	5,474	4,987	3,096
• Water from PTP	275	443	137	48	386
• Recycled from Cut-off trench	609	662	726	388	666
• Recycled water from V-notch (OTC downstream)	0	0	0	0	604
<b>HCS (Goslar, Sarnia and Ganzhou)</b>	<b>1,799</b>	<b>1,906</b>	<b>1,754</b>	<b>1,774</b>	<b>1,832</b>
Surface water	1,648	1,742	1,599	1,598	1,661
Water from suppliers	142	157	148	167	162
Deionized water	8	7	7	8	9

More water was needed for the mineral extraction procedures at NPMC than for the operations in MTC, Goslar, Sarnia, and Ganzhou, accounting for 85% of the total water usage in the entire MHT. However, 76.1% of the water was reused. At NPMC, the amount of water used in 2023 increases slightly compared to the amount in 2022 due to the Company's additional installation of oxide flotation line and upgrade of the tungsten processing.



**Wastewater discharge quality and quantity**

MHT plants are all licensed to discharge wastewater according to the laws of the host-country or have contractual agreements with an approved third party (Industrial Zone Management Board) to treat our wastewater before discharging into the environment.

In 2023, the total amount of wastewater discharge was 8,624 thousand m<sup>3</sup>. NPMC and MTC's operations accounted for 94% of the total wastewater volume with 8,149 thousand m<sup>3</sup>. Wastewater was treated and monitored to meet the standards of the host country before being discharged into the environment.

At NPMC and MTC, our wastewater sources (production wastewater, domestic wastewater) and contaminated rainwater are collected into reservoirs, then pumped for treatment at the wastewater treatment plant with a capacity of 36,000 m<sup>3</sup>/day. At the discharge points, NPMC operates automatic monitoring stations to monitor the wastewater quality before being discharged into the environment. The wastewater after treatment always ensure under the allowable limit according to the discharge permit issued to NPMC by the Ministry of Natural Resources and Environment. In the second quarter of 2023, NPMC completed

construction and installation of an additional chemical treatment system No.2 with a capacity of 9,600 m<sup>3</sup>/day to strengthen and support the existing wastewater treatment plant. The chemical treatment system No.2 was built for treatment of water from pit dewatering and part of the water from STC pond. The completed additional treatment system has helped resolve and treat the previous backlog of wastewater at STC pond, reducing pressure on the pond and ensuring safe operation. Therefore, the amount of water treated in 2023 increased by 1.2 times compared to 2022.

Chemitas and the Goslar plant have an agreement for the treatment and release of wastewater and Chemitas has the authorization to directly dump wastewater and rainwater through the central wastewater treatment facility. For indirect discharge into the sewerage system, there is a contract between HCS Tungsten GmbH, HCS Infrastructure GmbH and Chemitas, which performs the operator duties. Preparations are presently underway for the formal exemption from the indirect discharge permit. The amount of wastewater is computed by purchasing chemicals and fresh water instead of being measured directly.



## WASTE MATERIAL MANAGEMENT

Topsoil, waste rock from mining operations, and tailings from processing operations are the three main forms of waste materials produced by the mine. The Company manages and classifies these materials in accordance with the procedure to prevent environmental hazards and guarantee that aesthetics is not compromised.

YEAR	2019	2020	2021	2022	2023
<b>Renewable materials (m<sup>3</sup>)</b>	<b>1,319,299</b>	<b>987,051</b>	<b>960,883</b>	<b>501,079</b>	<b>390,189</b>
Waste rock for construction of TSF wall-dam	1,135,775	482,233	699,031	72,157	270,947
Soil for TSF dam construction	111,552	112,675	129,694		81,046
Waste soil and rock for other civil projects	71,972	392,143	132,158	428,922	38,196
<b>Non-renewable materials (m<sup>3</sup>)</b>	<b>4,813,180</b>	<b>3,963,178</b>	<b>2,439,943</b>	<b>3,121,620</b>	<b>2,840,245</b>
Non-potentially acid generating waste rock dumped into Waste Dump	3,821,551	3,312,552	1,718,013	1,165,685	2,228,903
Potentially acid generating waste rock is submerged in STC	991,629	650,626	721,930	1,955,935	610,101
Waste rock with high arsenic content (As > 1000 ppm)	-	-	-	-	1,241
<b>Tailings (ton)</b>	<b>3,490,988</b>	<b>3,566,034</b>	<b>3,442,556</b>	<b>3,503,484</b>	<b>3,291,211</b>
OTC tailings	2,166,363	2,154,965	2,104,799	2,439,290	2,605,905
STC tailings	1,324,625	1,411,069	1,337,757	1,064,194	685,306

### Renewable materials (m<sup>3</sup>)

Some waste soil and rock is used as building materials for internal mine works (TSF wall-dam construction, road repairs, leveling, etc.), and the remaining material is disposed into designated waste dumps. In 2023, the Company reused 390,189 m<sup>3</sup> of waste soil and rock for construction of TSF wall-dam and other civil projects.

### Non-renewable materials (m<sup>3</sup>)

At the Nui Phao mine site, unused waste rock that doesn't have the potential to produce acid is stockpiled in the dedicated Northern and Southern waste dumps of the open pit. Acid-generating waste rock is immersed in a sulfide tailing cell (STC) to prevent oxidation of the sulfide that generates acid.

In 2023, mining activities generated 2,840,245 m<sup>3</sup> of waste soil and rock. 2,228,903 m<sup>3</sup> of non-potentially acid generating waste rock was dumped into the waste dumps; 1,241 m<sup>3</sup> of waste rock with high Arsenic content (>1000ppm) was isolated at the waste dumps and 610,101 m<sup>3</sup> of potentially acid generating waste rock dumped in STC for submerge. Nui Phao mine's processing plant produced 685,306 tons of sulfide tailings which were submerged in the STC, and 2,605,905 tons of oxide tailings stored in the OTC.

At Goslar, Sarnia and Ganzhou sites, which are well established manufacturing sites where site disturbance occurs less frequently, the issue of renewable and nonrenewable materials is much more limited and is still managed by local regulations as and when ground activities occur.

### Recycle of OTC tailings

OTC tailings from NPMC's post-concentrate processing offer a lot of potential applications as construction materials. OTC tailings, however, are regarded as garbage and can only be moved to facilities that have the ability to treat waste. Every year, a functional contractor assists the Company in determining OTC tailings based on hazardous waste ("HW") thresholds in accordance with QCVN 07:2009/BTNMT. The results has so far indicated that OTC tailings are not hazardous waste.

The Company collaborated with the Institute for Building Materials under the Ministry of Construction to do research, test, and evaluate whether OTC tailings are suitable for producing building materials such as substitute materials to replace iron ore for cement clinker production, leveling materials for civil and traffic construction projects, and aggregate for concrete and adobe bricks. These actions are in accordance with the government's policy on encouraging and enhancing waste recycling mentioned in the Law on Environmental Protection No. 72/2020/QH14 dated November 17, 2020, and Decision No. 450/QD-TTg dated April 13, 2022 by the Prime Minister approving the national environmental protection strategy until 2030 with a vision to 2050.

By now, the study has been completed with positive results, revealing that OTC tailings can be put to use as building materials. The results have opened up great opportunities for the Company in providing raw materials for the industry of building materials. Recycled OTC tailings will minimize environmental problems and reduce pressure on the pond compared to the Company's current situation of OTC pond storage. Procedures have been put in place to ensure that OTC tailings meet basic standards and receive certification of regulatory compliance, making them appropriate for use as construction materials. When OTC tailings are transferred to clients for use as construction materials, their physiochemical and chemical qualities must be properly monitored. The company will also need to set strict technical criteria in the coming time.

## WASTE MANAGEMENT

In 2023, MHT continues to maintain measures for the waste to be collected, classified and recycled in accordance with the Law.

YEAR	2019	2020	2021	2022	2023
<b>Total of waste volume (ton)</b>	<b>38,451</b>	<b>14,873</b>	<b>18,808</b>	<b>26,537</b>	<b>27,405</b>
<b>Recycling rate total</b>	92%	81%	84%	68%	73%
<b>NPMC and MTC</b>	<b>36,395</b>	<b>13,600</b>	<b>17,030</b>	<b>24,607</b>	<b>26,027</b>
Non-hazardous waste	34,202	11,655	15,010	17,285	20,117
Hazardous waste	2,193	1,945	2,002	7,322	5,910
Recycled waste	33,711	11,149	14,486	16,892	19,317
Recycling rate	93%	82%	85%	69%	74%
<b>HCS (Goslar, Sarnia and Ganzhou)</b>	<b>2,056</b>	<b>1,274</b>	<b>1,778</b>	<b>1,930</b>	<b>1,378</b>
Non-hazardous waste	1,784	975	1,444	1,124	924
Hazardous waste	271	298	334	805	454
Recycled waste	1,703	893	1,334	1,042	740
Recycling rate	83%	70%	75%	54%	54%

At Nui Phao mine, trainings on waste classification are always given to new employees of the Company and contractors in advance of work. In 2023, 173 new employees of the Company and contractors received training on environmental policies and waste classification before working at the Company. In addition, 284 employees of the Company have been re-instructed on the regulations on waste classification and resources saving in 2023. Personnel training and instruction are always focused on improvements in waste classification and recycling performance.

At Goslar and Sarnia, the byproducts of the processing are often rich in metals. Therefore, they are recycled and used by other companies as raw materials. The waste recycling rates at Goslar and Sarnia plants are very high for an average of 56% from both. At MTC plant, the rate of waste recycling is also very high, more than 80%, mainly coming from the use of primary leach residue (PLR) that meets low grade limestone standards to provide for pH neutralizing operations at Nui Phao Mining.

At Sarnia, recycling and waste reduction opportunities are continuously monitored. In 2023, the company continued to reduce the amount of packing materials by using reusable containers for customers and implemented dunnage of goods diverted from the waste stream.

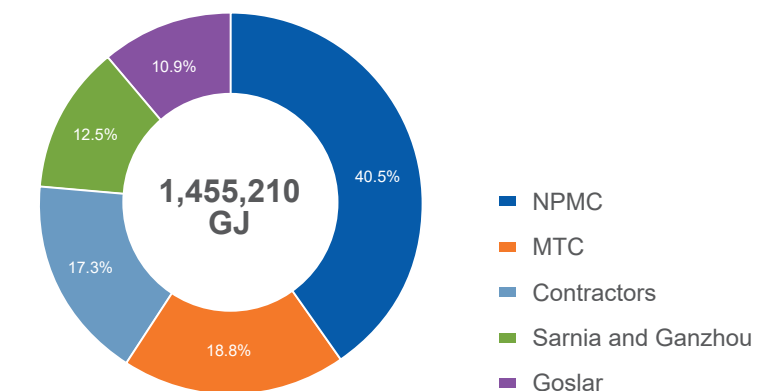
In November, our H.C. Starck plant in Germany participated in the European Week for Waste Reduction. The company had a great chance to actively promote environmental conservation and sustainable practices through this program. We launched a special initiative allowing our colleagues to responsibly dispose of and recycle electronic waste. This service not only offered convenience but also contributed to minimizing the environmental impact of electronic waste.

## ENERGY AND GREENHOUSE GAS EMISSION

### Energy consumption

Using energy economically and efficiently is a practical solution to help protect the environment and reduce greenhouse gas emissions. This is not only vital in the production and operations of business, but also for the socio-economic development of the country.

The energy consumed in NPMC and MTC plants in 2023 is 862,025 GJ; in contractors operating at the mine is 251,534 GJ; in HCS's Sarnia and Ganzhou is 341,651 GJ. In which, NPMC, MTC and contractors at the mine are the most energy intensive plants with consumption rates of 40.5%, 18.8% and 17.3% respectively. In Sarnia and Ganzhou, energy consumption is quite low, accounting for about 12.5% while the Goslar's consumption level accounts for 10.9% of overall energy use of MHT and its contractors.



YEAR	2019	2020	2021	2022	2023
<b>NPMC (GJ)</b>	<b>575,776</b>	<b>568,721</b>	<b>645,832</b>	<b>607,887</b>	<b>589,031</b>
Power	534,569	534,576	608,549	564,202	556,176
DO	39,021	32,596	35,583	41,670	31,122
Gasoline	2,186	1,549	1,700	2,014	1,734
<b>Contractors working at the mine (GJ)</b>	<b>425,365</b>	<b>385,645</b>	<b>415,154</b>	<b>453,562</b>	<b>251,534</b>
DO	425,331	385,641	415,087	453,419	251,534
Gasoline	34	4	67	143	-
<b>MTC (GJ)</b>	<b>225,997</b>	<b>185,197</b>	<b>261,314</b>	<b>277,323</b>	<b>272,993</b>
Power	74,960	60,158	66,262	70,270	70,316
DO	3,664	12,458	17,796	23,837	6,077
Gasoline	-	-	-	3	-
Coal	147,373	112,581	177,256	183,213	196,600
<b>Goslar, Sarnia and Ganzhou (GJ)</b>	<b>363,613</b>	<b>330,406</b>	<b>402,280</b>	<b>375,262</b>	<b>341,651</b>
Power	156,887	150,583	174,856	160,172	150,933
Natural Gas	186,735	161,543	207,493	195,830	172,031
DO	19,020	17,282	18,783	1,087	929
FO	971	998	1,148	18,173	17,757

In 2023, MTC has successfully sustained the certification for its energy management system according to ISO 50001:2018. The inspection assessment to maintain certification was conducted by a third party (TUV NORD Vietnam Co., Ltd.) and none of the non-conformities was recorded, only improvement opportunities for MTC to consider. Although in 2023, the economic situation is difficult, the number of orders has decreased, and energy measuring equipment for each stage has not been installed, but MTC's Energy ISO Board has been proactive and making efforts to maintain system maintenance.

At Goslar, Sarnia and Ganzhou, energy targets were also set and continuous improvements were made to demonstrate a commitment to improving energy performance.

At Sarnia, operating an ISO 14001:2015 environmental management system includes not only specific environmental aspects and compliance goals, but also implementing improvements to reduce energy consumption to reduce emissions. Carbon emissions and improve the dust collection ability of air-borne particles.



## Greenhouse gas emission

At the end of 2023, negotiators from nearly 200 countries participating at the 28th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP28) approved the final agreement of the conference, agreeing to considerably reduce greenhouse gas emissions and increase financial commitment to response efforts to climate change. By establishing foundations for a transition of rapidity, equity and justice, the COP28 agreement is believed to be a sign of "the beginning of the end" of the fossil fuel era. From this agreement, MHT, as well as other businesses around the world, will face various challenges and need significant intelligence to research and implement solutions for greenhouse gas emission reduction and energy source conversion. For the time being, MHT continues the practice of greenhouse gas emission calculation. At the same time, energy saving solutions are also studied and promoted.

### Direct GHG emissions (scope 1)

Direct greenhouse gas emissions are generated from the use and consumption of gasoline, natural gas, diesel, fuel oil and coal for vehicles, equipment, boilers and backup generators, blasting activities and refrigerants using. In 2023, NPMC and MTC directly emitted 24,861 tons of CO<sub>2</sub>eq; HCS's Goslar, Sarnia and Ganzhou plants emitted 10,913 tons of CO<sub>2</sub>eq.

### Indirect GHG emissions (scope 2)

Indirect greenhouse gas emissions are generated from the use of power for all production and operational activities of factories. In 2023, NPMC and MTC indirectly emitted 125,664 tons of CO<sub>2</sub>eq, contractors operating at the mine emitted 18,359 tons of CO<sub>2</sub>eq; HCS's Goslar, Sarnia and Ganzhou plants emitted 10,314 tons of CO<sub>2</sub>eq.

YEAR	2019	2020	2021	2022	2023
<b>NPMC (ton of CO<sub>2</sub>eq)</b>	<b>128,605</b>	<b>128,090</b>	<b>145,865</b>	<b>130,974</b>	<b>114,456</b>
Total of direct GHG	3,011	2,495	2,889	4,954	2,897
• From gasoline, diesel, coal	3,011	2,495	2,889	3,247	2,401
• From blast	-	-	-	1,565	278
• From refrigerants	-	-	-	142	218
Total of indirect GHG	125,954	125,596	142,975	126,021	111,560
<b>Contractors working at the mine (ton of CO<sub>2</sub>eq)</b>	<b>31,047</b>	<b>28,148</b>	<b>30,945</b>	<b>33,807</b>	<b>18,359</b>
Total of indirect GHG	31,047	28,148	30,945	33,807	18,359
<b>MTC (ton of CO<sub>2</sub>eq)</b>	<b>34,011</b>	<b>27,367</b>	<b>35,981</b>	<b>36,556</b>	<b>36,069</b>
Total of direct GHG	16,400	13,233	20,413	20,867	21,965
Total of indirect GHG	17,612	14,134	15,568	15,689	14,104
<b>HCS (Goslar, Sarnia &amp; Ganzhou - ton of CO<sub>2</sub>eq)</b>	<b>25,466</b>	<b>23,599</b>	<b>24,853</b>	<b>21,957</b>	<b>21,227</b>
Total of direct GHG	12,222	10,624	13,384	12,110	10,913
Total of indirect GHG	13,244	12,976	11,469	9,847	10,314

At plant Sarnia, in 2023 specific advancements were implemented for both energy consumption to reduce our carbon footprint as documented in Scope 1 & Scope 2 activities, and improved dust capture of air borne particulates.

**Indirect GHG emissions (scope 3)**

Scope 3 emissions includes all other indirect emissions arising from related value chain activities, originating from sources that we do not own or control. This type of emission includes both upstream activities (related to products purchased as raw materials for production) and downstream activities (related to products sold to customers for

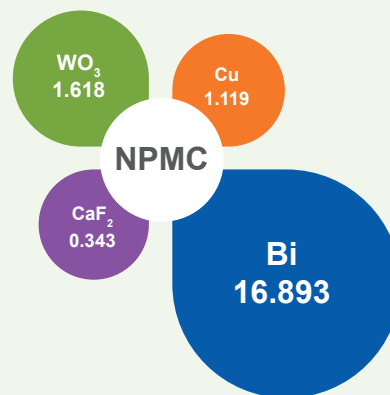
use). Measuring scope 3 emissions is a complex process, requiring a great deal of effort, commitment and cooperation from all stakeholders but is crucial in shaping an effective emission management strategy. In 2023, MHT began to collect necessary information from stakeholders for the goal of calculating scope 3 emission in the following years.



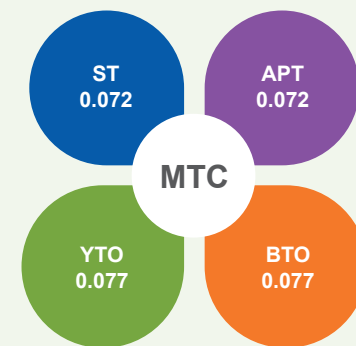
**CARBON FOOTPRINT**

Carbon Footprint is the total amount of greenhouse gas emissions that come from the production, use and end of life of a product or service. At NPMC and MTC, we initially calculated greenhouse gas emissions for each product line according to IPCC guidelines. This will be the premise for MHT to find solutions to control greenhouse gas emissions for each product when exporting to foreign countries.

The results of calculation of total greenhouse gas emissions for each product at NPMC and MTC are as follows:



Unit: tCO<sub>2</sub> eq/tons



Unit: tCO<sub>2</sub> eq/mtu

**ENVIRONMENTAL REHABILITATION**

In 2023, NPMC continued to conduct the rehabilitation plan in the areas where soil disturbance occurred, and take care of trees planted from previous years in order to reduce erosion, improve soil and improve ecosystems.

We completed the environmental rehabilitation of approximately 1.15 hectares in waste dumps and other areas where the soil has been disturbed during the mining and production process. Various types of plants and materials are used to increase efficiency in environmental rehabilitation.

In 2023, NPMC planted about 15,067 Acacia trees; sowed 350 kg of grass seeds and used 5,442 kg of fertilizer for the new planting and care of planted trees in previous year. The total area that has been rehabilitated by the end of 2023 is 63.9ha.

**CPEP – Climate Protection Project through the Energy crops planting**

From 2016 to 2018, NPMC participated in the Climate Protection Project through Energy crops Planting (CPEP) through a cooperation agreement program with UFU (Institute for Independent for Environmental Affairs - Germany). The project obtained positive results when finding a suitable type of Acacia to serve the process of environmental rehabilitation of Nui Phao mine. Continuing the obtained results, from 2020 to 2023, NPMC will continue to collaborate with UFU to implement the CPEP phase 2 project with two purposes: Research on the resilience and reclamation of the area's land planted energy crops in phase 1; and Calculation of biomass of Acacia after harvesting. Phase 2 of the project will last until February 2025.

Within the framework of phase 2 of the CPEP project, UFU organized a trip for Vietnamese stakeholders to Germany in July 2023. Representatives of Nui Phao mine participated in the trip for working and studying, and obtained positive results. The delegation visited the brown coal mine in Lusatia, the power plant using brown coal, and participated and discussed environmental rehabilitation in mining in Germany. In particular, during the business trip, UFU connected the German Government's funding organizations (International Climate Initiative - IKI) to green energy projects in Vietnam. This opened up various opportunities for Nui Phao mine to seek cooperation and sponsorship opportunities during the implementation process of green energy projects in the future.



## ENVIRONMENT COMPLIANCE AND TRANSPARENCY

### Environmental monitoring

In 2023, NPMC and MTC took 7,550 environmental samples for monitoring and wastewater quality control. These includes 401 surface water samples, 614 groundwater samples, 6,368 wastewater samples, 114 solid waste and sediment samples, 26 emission gas samples, 12 ambient air samples and 15 noise measurements.

Automatic monitoring stations for wastewater, ambient air and vibrations are also continuously operated to always ensure timely provision of data for environmental quality control and assessment.

In Goslar, the wastewater is monitored by online analytics in the area of the central wastewater treatment plant. In addition, the limit values are monitored by the responsible water supervisory authority. In 2021, 25 samples were taken by the authority, 28 in 2022, and 22 samples in 2023. In a few cases, limit values were nearly reached. These were analyzed and, where necessary, measures were taken to handle the situation.

For monitoring the emissions, Chemitas operates a total of 16 measuring points to monitor the situation at the entire Goslar site (MPO) and to intervene if necessary if anomalies or exceedances should be detected, as the official measurements are not published promptly. Of these, 9 are located on the MPO site and 7 off-site in the immediate vicinity. The limit values (annual mean values) according to TA-Luft (4.5.1 TA-Luft 2021) apply to all assessment areas that are located outside the plant premises (MPO). Sampling and analysis are carried out on a monthly cycle (monthly averages).

### Reporting and information transparency

In 2023, NPMC and MTC submitted a total of 6 reports to regulators, in which: 4 annual environmental reports, 2 reports on annual water resources.

The Ministry of Natural Resources and Environment continued to conduct periodic environmental protection inspection at Nui Phao mine. Through the inspections, the Supervision Team complimented on the company's positive efforts in actively implementing solutions for better environmental protection, and its regular reports on the implementation of requirements from competent state agencies. At the same time, they pointed out a number of remaining issues that needs further action. This is an opportunity for the Company to review and improve according to the recommendations of the Ministry of Natural Resources and Environment for better environmental protection performance. For the study of TSF seepage, the Company has actively implemented research cooperation with international and domestic consultants to identify challenges in technical engineering. These studies will continue to be performed in the upcoming time.

In Germany, HCS submitted numerous reports to the various Federal and State Ministries covering Hazardous waste, emissions, inspections, and accidents. Further reports are required on a 3-4-year cycle as per the applicable regulations again covering emissions, waste or inspections.

Compliance with laws in the field of environment is always a top priority for MHT. At MTC, Goslar, Sarnia and Ganzhou, the EMS according to ISO 14001:2015 standard continues to be maintained as a tool to measure, monitor and improve the environment. The Goslar site continue to maintain the Eco Management and Audit Scheme (EMAS), the world's strictest environmental standard and validated to the plant in 2022.

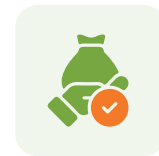
At NPMC, the environmental management system according to ISO 14001:2015 standards has also begun to be built and established from mid-2022.

At NPMC, we are also establishing and developing the EMS according to ISO 14001:2015 standard from mid-2022. At the end of 2022, the first evaluation was conducted and many inadequacies were discovered. To overcome these defects requires a lot of time and great investment and NPMC is currently continuing to make efforts to overcome the difficulties and complete ourselves for the upcoming evaluations.



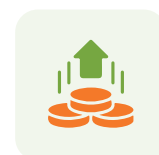
# SUSTAINABILITY COMMUNITY

## HIGHLIGHTS



### Economic Recovery Fund

- In 2023, 41 households were eligible to receive loan capital with a total amount of VND 2,050 million through household economic development models. 456 households had benefited from the Economic Recovery Fund with a total capital of VND 6,397 million and a total disbursed turnover of VND 16,149 million.
- 100% of households improved their income and economic conditions.



### Economic Development Model

- **Beekeeping model:** Supported Tan Linh commune's beekeeping cooperative to establish Tan Linh Agricultural Cooperative. Held three discussion sessions to share beekeeping techniques, visited and studied beekeeping models and advised on product packaging and label design.
- **Tea production model:** Accompanied Nhat Thuc Tea Cooperative in raising brand recognition by developing website, supported packaging design and printing for "Thuc Tam Tea" which is registered 3-star OCOP.
- **Product consumption support:** Registered Nhat Thuc Tea Cooperative and Tan Linh Beekeeping Cooperative as product suppliers to the Company.



### Health, Water and Sanitation

- Organized a team of doctors and medical staff to provide free health examination & consultations, free medication distribution for 160 policy beneficiaries and meritorious individuals in 2 communes of Phuc Linh and Binh Thuan, with a total amount of VND 20 million.
- Provided domestic water to 75 households in Suoi Cat hamlet, Ha Thuong commune, with a total amount of VND 575 million.



### Social security & community development

- 200 Tet gifts delivered to poor and disadvantaged households on the occasion of the Lunar New Year with a total value of VND 100 million.
- Coordinated with Dai Tu district Red Cross Association to successfully organize the Exam Season Support program, providing 320 free meals for over 300 students during the 2-day national high school graduation exam, with the support amount of VND 10 million.
- 40 gift sets brought to meritorious individuals and families of government-policy beneficiaries on the occasion of Remembrance Day, July 27th, and offered incense and flowers in the martyrs cemetery and the 27/7 National Historic Relic Site.
- 10 gift sets delivered to disadvantaged students in the program of "Bringing Vietnamese products to mountainous region".
- 40 scholarships for disadvantaged students in the program "Igniting Confidence, Supporting Students to School - For the Sake of Learning" for the 11th time, with a total amount of VND 40 million.
- VND 10 million donated to the Mining and Geology University scholarship fund, supporting disadvantaged students with excellent achievements in scientific research, entrepreneurship and innovation.
- Collaborated with Tea Talk Vietnam and the Counseling, Research & Community Development Center to successfully organize the Project "Let's PAL - Companion", a values-based and life skills training program for 60 students from Tan Linh Primary School.
- Coordinated with Education & Times Newspaper, along with philanthropists to support upgrading and repairing infrastructure for teachers and students at Lung Hoai School under Thuong Nung Primary School, Vo Nhai district, Thai Nguyen province.
- Supported the repair of 3 Great Solidarity houses with a total expense of VND 50 million.
- Organized 9 training programs for nearly 4,000 students and teachers from 8 schools and the Women's Union in 4 project-affected communes on diverse topics such as appropriate use of smartphones, environmental protection, climate change prevention, first aid, drowning prevention, etc.



## 'LET'S PAL – COMPANION': SOWING THE SEEDS FOR THE FUTURE GENERATION

Enriching life skills, building self-esteem as well as preventing mental health issues are the main topics of the program "Let's PAL - Companion 2023". This marks the first collaboration between MHT, Tea Talk Vietnam, and Counseling, Research & Community Development Center, in co-organizing an interactive soft skill training program for students in Tan Linh, Thai Nguyen province.

Through six sessions of the Life Values - Life Skills Club, 60 students in grades 4 and 5 of Tan Linh Primary School learned the language of love and how to express care and affection to others. They immersed in a multidimensional and engaging journey of learning and experience, through interactive games and hands-on activities, stimulating curiosity and creativity.

From learning about waste classification and recycling, each student not only gains knowledge about environmental protection but also learns to classify waste at home. Anger and stress management sessions helped them maintain calm and find positive ways to resolve conflicts in daily relationships. Furthermore, there are sessions on preventing sexual harassment, helping students consolidate important knowledge and acquire tools to protect themselves.



**Teacher Bui Thi Kim Lien**

Principal of Tan Linh Primary School, Dai Tu shared



*"Let's PAL - Companion" is more than just an educational support program, it also provides full care for the souls and minds of the younger generation. With the support of Nui Phao Mining, a leading enterprise with significant contributions to social welfare in the area, we hope there will be more opportunities for more students to participate in programs like this."*



## ECONOMIC RECOVERY FUND

MHT worked with the Dai Tu district Social Policy Bank, Ha Thuong commune trust associations, Hung Son town, Phuc Linh commune, and Tan Linh commune to verify loan applications and disburse for 41 households eligible for loan capital with an amount of VND 2,050 million to implement the household economic development models, including 16 households producing tea, 4 households planting trees, 20 households raising cattle, one household providing business services. By the end of the year, 456 households have benefited from the fund with a total turnover amount of VND 16,149 million.



# 16

Households producing tea



# 04

Households planting trees



# 20

Households raising cattle



# 1

Household providing business services

By the end of the year

# 456

households have benefited from the fund with a total turnover amount of

# VND 16,149 million



## Economic efficiency from semi-grazing horse raising model

### Ngo Van Truong household

Hamlet 8, Tan Linh commune

Mr. Truong is a member of the Youth Union and the Farmers' Association of Tan Linh commune. His family consists of 6 members, including 3 main laborers and 2 young children of school age. In 2023, after receiving a loan of VND 50 million from the Economic Recovery Fund of Nui Phao Mining, Mr. Truong boldly bought 2 more horses, increasing the total herd to 6, to implement the semi-grazing horse-raising model. Mr. Truong breeds horses for reproduction and fattening for meat. He expected to earn a profit of VND 10 million after 3 months of feeding 2 horses. Natural conditions suitable for the cattle-raising model, along with his hard work and enthusiasm, his family now builds a sustainable economic development model. The effectiveness of this model opens new directions for the local economic development, for Mr. Truong's family and other households in the commune. The Communal Farmers' Association also encouraged other farmers to learn from Mr. Truong and widely replicate the model. This promotes the development of co-operation, linkage in agricultural production and consumption, and the movement of "Farmers strive for good production and business, solidarity to enrich themselves and reduce poverty". Mr. Truong shared:



“

*I am grateful to Nui Phao Mining for providing my family with a loan during difficult times, with preferential interest rates to develop the economy and support my children's education. I am also very happy and ready to share my experience in horse breeding with young people, and members of the Farmers' Association to replicate this economic development model.”*



## ECONOMIC RECOVERY

### Agricultural Extension

#### Support Nhat Thuc Tea Cooperative in product consumption

Over the past years, the Company has supported Nhat Thuc Tea Cooperative in developing a raw tea zone based on organic tea and Viet-GAP standards, as well as in accessing the Economic Recovery Fund to expand business. Up to now, the Cooperative has provided various products meeting the OCOP standards and created a stable income of VND 5 to 5.5 million/person/month for more than 15 disadvantaged employees (ethnic minority, elderly people and single women). In 2023, the Company continued to support the Cooperative, in website development, packaging and product consumption as a service supplier of the Company.



#### Linkage in beekeeping

To develop beekeeping model, households in Tan Linh commune with the guidance of the Farmers' Association and Nui Phao Mining, established Tan Linh Beekeeping Cooperative in 2020. This group not only exploited the potential of the locality but also fostered self-reliance within the collective economic model, contributing to increasing their incomes. Since its creation with 170 beekeeping colonies, the Cooperative has grown by 600 colonies of beekeepers, with a production of over 12 tons of honey per year.



In 2023, the company continued to help the cooperative reach a higher level by establishing the Tan Linh Agricultural Cooperative and organized three sharing sessions on beekeeping techniques, learning tours, as well as product packaging and label design. In particular, the company also signed up the Tan Linh agricultural cooperative to become a supplier to Nui Phao Mining and purchased 600 liters of honey from the cooperative as gifts for employees, customers and business partners.



### Local service supply business

#### Anh Duong Packaging Company

In 2013 Anh Duong Packaging Company was founded with MHT's support and has become our Jumbo bag supplier ever since. After more than 10 years of development, till now with a fully equipped production line, from tape stretching to finished packaging, Anh Duong Company has received numerous orders from local manufacturers, and has also exported its bags overseas to Japan, South Korea and China. Anh Duong Company employs a total of 130 workers, with an average monthly income of VND 6 million/person/month. In 2023, due to the impact of the global economic recession, Anh Duong Company also reduced the prices of its products for Nui Phao Mining, demonstrating its backing in this difficult period.



#### Khanh Hien Tailor

Khanh Hien Tailor was established in 2014 with MHT's support and has now become a renowned protective clothing supplier in Thai Nguyen. Khanh Hien Tailor has expanded beyond making uniforms, primarily serving Nui Phao Mining, to also provide protective apparel to other businesses as well as clothing for the local community. The company currently employs 9 women with average income of VND 5 million per month. Most of them have been working here since the company was founded and are regularly trained to improve their professional skills to enhance product quality and meet customer requirements. In 2023, due to the impact of the global economy, Khanh Hien Tailor shared its difficulties with MHT by reducing product prices.



#### Nui Phao catering services

Catering kiosks were established in 2015 as part of the economic recovery program for households affected by the Nui Phao project. By 2023, these kiosks had delivered meals complying with food safety and hygiene standards for over 1,000 MHT employees. The Nui Phao catering service employs 10 people, each earning an average monthly income of VND 5 million/person/month.



## CORPORATE SOCIAL RESPONSIBILITY ACTIVITIES

### Environmental protection activities

To mark Water Day, Earth Hour and World Environment Day, the company organized communication sessions to raise awareness of water conservation facing pressure from economic development activities and climate change, on the theme of “Accelerating Change”, and of waste classification.

For the Tet 2023 tree-planting festival, the company donated shade-bearing trees and planted them at Tan Linh elementary school. To mark the opening of the new school year, the company also donated shade-bearing shade trees and planted them at Doi Can secondary school in Ha Thuong commune.

As part of its response to the “Clean Up the World” campaign, the company organized communication sessions on waste classification with female members of the Phuc Linh Women’s Union, and donated 20 240-litre trash bins, worth VND30 million, to be placed in the fields of Phuc Linh commune. The commune is one of the communes with the largest area of fields in Dai Tu district and is also a place with the highest amount of waste generated by agricultural activities.

To mark the 70th anniversary of the creation of Ha Thuong commune and the award of the “Advanced new rural area” certification on July 20, Nui Phao Mining also donated 1,500 trash bins to households and schools in Ha Thuong commune, at a total cost of over VND300 million. The company also organized communication and training sessions on the classification, collection and treatment of waste in line with regulations.

### Mid-Autumn Festival for children

On the occasion of Mid-Autumn Festival 2023, the Company gave gift sets to the children in 4 affected communes with a total value of VND 20 million. This is one of the Company’s annual social responsibility activities to strengthen long-term relationship with the local people and authorities, as well as to care for the children in the project area.

### Tribute to policy-beneficiary families meritorious individuals

On the occasion of the 76th anniversary of Vietnam’s War Invalids and Martyrs Day (July 27, 1947 - July 27, 2023), the company organized meaningful, hands-on activities to honor the families and individuals who had rendered meritorious service to the revolution in Dai Tu district. On July 27, 2023, representatives of Nui Phao Mining offered incense



and flowers in memory of martyred heroes at the 27/7 National Historic Site and presented 40 gifts to family beneficiaries in Ha Thuong, Tan Linh, Phuc Linh and Hung Son Town communes. Earlier, on July 13 and 14, Nui Phao Mining, in collaboration with the Dai Tu District Red Cross Association and the Dai Tu Health Care Center, organized medical examinations and consultations, as well as free medicines distribution for over 160 policy beneficiaries who had rendered meritorious services to the revolution of Binh Thuan and Phuc Linh communes.

### Educational support

National high school graduation exam assistance program in 2023: The company coordinated with the Dai Tu District Red Cross Association to organize “Supporting Exam Season”, providing 320 free meals to over 300 students during the two days of the national high school graduation exam, with a support amount of 10 million VND.

9 training programs were organized for nearly 4,000 students and teachers from 8 schools and the Women’s Union in 4 communes affected by the project, on communication and skills, including appropriate use of smartphones, environmental protection, climate change prevention, first aid, drowning prevention, etc.

We donated VND 10 million to the University of Mining and Geology’s Scholarship Fund, to support underprivileged students with excellent results in studies, scientific research, entrepreneurship and innovation.

40 scholarships were awarded to disadvantaged students as part of the 11th “Igniting Confidence, Supporting Students to School - For the Sake of Learning” program, for a total amount of VND 40 million.

We sponsored a VND30 million swimming course for 100 students at Phuc Linh primary and secondary school.

On the occasion of the New School Year ceremony, representatives of Nui Phao Mining presented significant gifts to schools in the district, including library shelves, sports equipment, schoolyard umbrellas, etc., with a total value of almost VND 90 million. This social responsibility activity demonstrated the company’s commitment to supporting the country’s future generation and the sustainable, prosperous development of the community.



## Infrastructure development

In the context of a changing global economy, the company's business operations faced many challenges, but Nui Phao Mining continued to prioritize the budget to support infrastructure development in Dai Tu district and its communes.

In 2023, the company actively supported outdoor sports equipment for 8 cultural houses in Phuc Linh commune; extending lighting systems for villages in Ha Thuong, Tan Linh and Phuc Linh communes; supporting the construction of "Great Solidarity" houses for 3 disadvantaged households in Phuc Linh and Tan Linh communes. The total value of support for these activities amounts to over VND 500 million. These contributions have promoted physical training and improved health, ensured security and social order, and helped these communes to gradually achieve the objectives of building a new advanced rural zone.

In particular, following resolution 07-NQ/HU of May 10, 2023 of the Standing Committee of the Dai Tu Party Committee regarding the 6-meter road extension movement, Nui Phao Mining financed 3,000 tons of PCB30 cement from Quan Trieu for a total value of VND3.4 billion, helping Dai Tu district meet the criteria for new rural areas, including wide and sustainable rural roads, and contributing significantly to improving residents' quality of life and the locality's socio-economic development.

## Supporting local social-cultural activities

Following Thai Nguyen province's Tet Week for the Poor in 2023, the company provided VND100 million in support, equivalent to 200 gift sets (VND500,000 per set) for the underprivileged in Dai Tu district. In addition, the company financed 40 gifts-in-kind that were given directly to disadvantaged households by our leaders, in the hope of helping them reduce their difficulties, celebrate the New Year, progressively stabilize their lives and overcome poverty.

The company also actively participated in social and cultural events such as: the celebration of the 70th anniversary of Ha Thuong Commune and the recognition of the "advanced new rural area"; support for the improvement of the cultural exhibition corner of the Cao Lan ethnic minority in Suoi Cat hamlet, Ha Thuong Commune; participation in the Great National Unity Day in residential areas; participation in and celebration of the founding anniversaries of political and social organizations and annual review meetings in communes, as well as other religious and belief activities, etc. The total value of support for these activities was around VND 500 million.



## PRESERVING THE CULTURAL BEAUTY OF THE CAO LAN ETHNIC COMMUNITY

The Cao Lan people are one of the largest ethnic minorities living in Ha Thuong commune, Dai Tu district. Thanks to the development of the farming economy, animal husbandry and commerce, there are practically no underprivileged households left in Ha Thuong. However, many traditional cultural traits and characteristics of this ethnic group are at serious risk of disappearing.

As a company deeply rooted in the region and driven by social responsibility, MHT has been actively collaborating with the authorities, local governments, and the Cao Lan community to implement various solutions aimed at supporting the population, focusing on economic development as well as ethnic group's traditional culture preservation. More specifically, it involves the creation of a cultural corner for Cao Lan ethnic community at the cultural house in Suoi Cat hamlet, Ha Thuong commune, which was inaugurated and put into operation in March 2014.

The tangible and intangible cultural heritage of the Cao Lan ethnic group is preserved and exhibited at the cultural house in Hamlet 6. The heritage is varied from production tools, daily activities, cultural tools, clothing, and maps of the Cao Lan habitat to information, rituals, beliefs, and cultural activities.

Over the years, the cultural exhibition corner has deteriorated. In July 2023 Nui Phao, in collaboration with the local authorities, investigated the current situation, then further financed the renovation and improvement of the exhibition area. The company also sent officials to accompany the hamlet throughout the process of repairing and restoring the spot. The renovation was completed in October 2023, coinciding with the celebration of the 70th anniversary of the creation of Ha Thuong commune.

The cultural corner of the Cao Lan ethnic group helps the community preserve their culture while giving the younger generation, neighboring communities, and tourists a better understanding of the traditional beauty and cultural values of ethnic minorities, inspiring future generations to be proud of the cultural essence nurtured by thousands of years of history.



## ACHIEVEMENTS 2023



Continued to support Nhat Thuc Tea Cooperative in production and product consumption and brand development.



Supported Beekeeping Cooperative to establish Tan Linh Agricultural Cooperative.



Successfully held the "Let's PAL – Companion" project, fostering life values and skills for 60 students at Tan Linh Primary School.



41 households accessible to loans with a total value of VND 2,050 million, 100% of households increased their income and improved family economic conditions.



1,500 trash bins to households and schools in Ha Thuong commune, with a total amount of VND 300 million, enabling Ha Thuong commune to achieve environmental criteria and "Advanced new rural area".



Supported 3,000 tons of cement to Dai Tu district to implement the movement of "6-meter road expansion".



Organized 9 training sessions to raise awareness for 4,000 students, teachers and women.



Preserved national cultural values through upgrading the cultural exhibition corner of Cao Lan ethnic minority people in Suoi Cat hamlet, Ha Thuong commune.



Actively participated in social-cultural, humanity and charity activities in Dai Tu district and Thai Nguyen province.



Supported to complete social-economic infrastructure works in the locality.

## COMMUNITY TRANSPARENCY

### Highlights 2023

At Masan High-Tech Materials, the transparency mechanism has always been maintained, improved and developed to exchange in both directions between the Company and the stakeholders, particularly the local communities.

Therefore, the community-related activities are conducted in a transparent manner in the spirit of cooperation and result-oriented development in 2023 as follows:



# 916

information items published with 136 related contents



# 75

meetings, field inspections and community discussions with 625 participants



# 39

written complaints resolved

## DIVERSIFIED INFORMATION DISCLOSURE CHANNELS

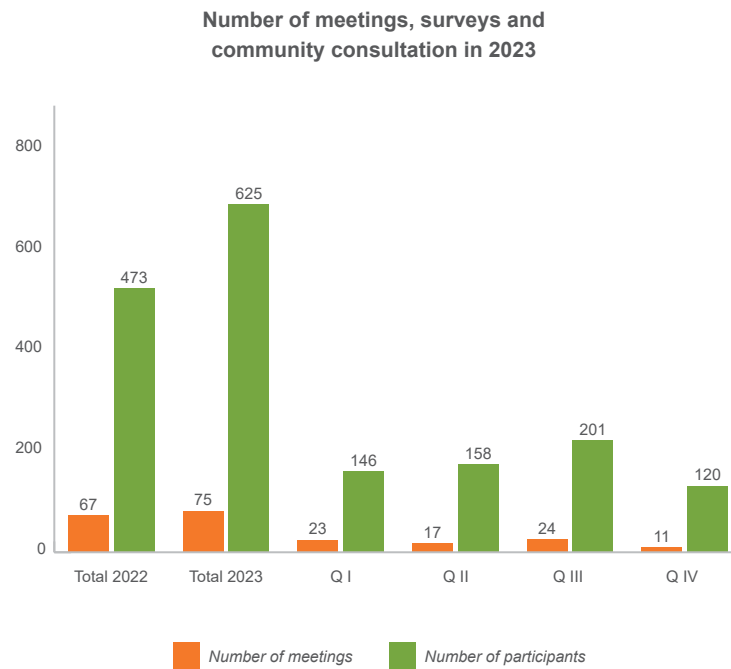
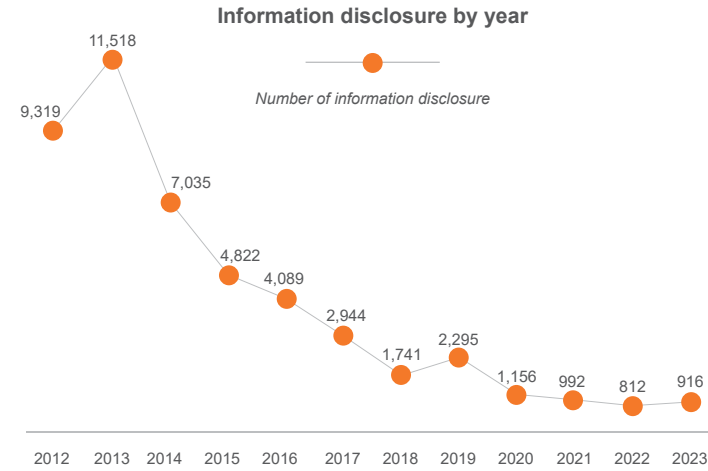
At MHT, various information channels have been set up to provide information to the community and stakeholders. Two-way communication was implemented through channels such as the Public Consultation and Disclosure Plan (PCDP), the complaint and grievance mechanism, community information corners, meetings, surveys, mine visits and meetings with the local population at the information center. These channels have also delivered the community and stakeholders valuable information regarding company's activities.

## PCDP - AN APPROACHABLE COMMUNICATION CHANNEL FOR COMMUNITIES

The Public Consultation and Disclosure Plan (PCDP) is an effective way of communicating between the company and its stakeholders, particularly local communities. The community relations team actively engages with internal and external stakeholders to maximize opportunities for local people to access information and respond to their concerns promptly.

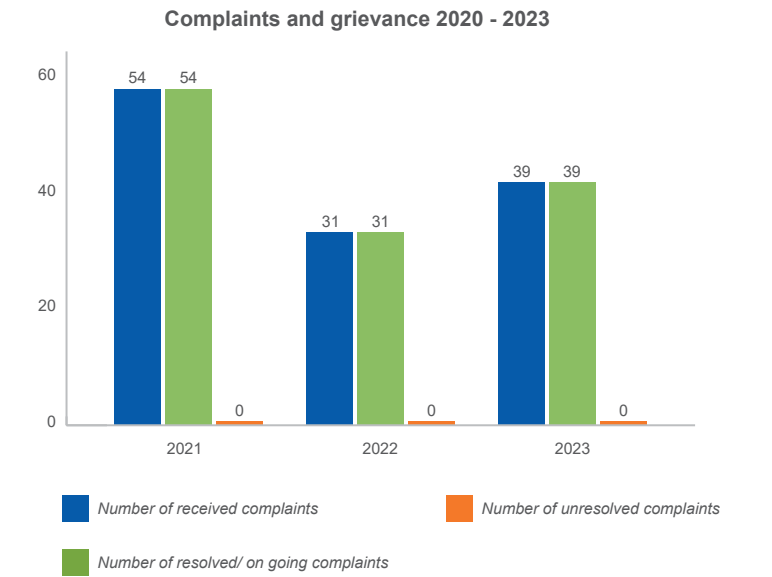
In 2023, information was mainly exchanged and communicated to the community via written documents, cell phones and the Zalo app, rather than visiting the information center. There were 916 information documents disclosed with 136 related contents, 8 direct visits and hundreds of phone calls to the company's information center.

The community relations team organized a total of 75 meetings, surveys and community consultations with 625 participants. This is the result of community consultation and on-site surveys to determine the infrastructure improvement, economic development, environmental restoration and health care needs of the neighboring communities. These meetings and surveys also help the company to better understand community needs and concerns to provide warning measures for the timely mitigation of environmental impacts and response to their concerns.



## COMPLAINT AND GRIEVANCE RESOLUTION

In 2023, we received 39 written complaints, which were all transferred to the relevant departments within the company and required the involvement of local authorities to respond. To reduce community complaints and grievances, the community relations team proactively engages with relevant departments to regularly inspect project areas and neighboring communities to provide timely measures and minimize community impacts. Consultation is also reinforced by the involvement of local populations to respond to their concerns or questions on time.



## H.C. Starck

The Goslar site borders on an area with mixed development including residential areas and industrial plants. Therefore, the neighborhood is equally as important stakeholders of H.C. Starck Tungsten GmbH as its own employees or employees of other companies on the site of the Metallurgical Park Oker (MPO). In 2023, only 2 incidents attributable to H.C. Starck Tungsten GmbH were reported by residents from the neighborhood or employees on the plant premises:

- Complaint about noise in the vicinity of the roasting area for recycling.
- Complaint about smoke and fumes from the smelter area.

In both cases, the causes were identified, and appropriate measures were taken. This was reported back to the respective complainants.

As in previous years, very small number of complaints were received. Following four complaints in 2021 and two in 2022, the number remained constant in 2023. This is partly due to the consistent follow-up of complaints.

The other two plants, in Sarnia and Ganzhou, are located in purely industrial areas. In both cases, there were no complaints from neighbors or other third parties.



## HCS COMMUNITY DEVELOPMENT

### In Goslar, Germany

H.C. Starck Tungsten GmbH, as an important and well-known company in the region, is aware of its social responsibility while competing with other companies in the labor market for skilled workers.

#### Educational support

To get young people interested in chemistry from an early age, we use our own equipment to support chemistry lessons at schools on “discovery days”, invite school classes and student groups to the plant, and sponsor the Chemistry Olympics at university. We also actively participate in “Future Days”, where school children can spend a day getting a taste of business areas. Regarding academia, HCS sponsors the H.C. Starck Tungsten Award for outstanding theses in the fields of solid-state chemistry and materials research. The dissertation award is granted biennially by the German Chemical Society’s “Solid-State Chemistry & Materials Research” Division. These activities are supplemented by regular excursions by student groups to our research center at the Goslar site.



### Apprentice competition “We love Food”

The second-year apprentices from HCS Tungsten and ChemiLytics took part in a competition called “We love Food”. The aim of this Germany-wide competition is to promote workplace health and strengthen the trainees’ team spirit.

During four-month competition, the 7 participants were given the freedom to create a concept responding all the required criteria, such as sustainability. Over this time, they learned plenty about tea and herbs and discovered Vietnam as one of the oldest tea-growing countries in the world.

The activities included in this project were an herbal walk, tea tasting in the company restaurant and the distribution of tea in the common areas. This project was supported as part of the company health management program and was so successful that the trainees achieved 3rd place out of 24 participating teams.

### Charity football tournament

The tournament was specifically designed for amateur football players, for whom fun, enjoyment, fairness and mutual respect are more important than winning prices.

Proceeds from the tournament will again be used to help Goslar primary school pupils to take part in the “KICK OFF Football School on the Road” with former professional footballers.



### Establishing a bee-friendly flower meadow

As part of our commitment to environmental sustainability, we’ve created a vibrant wildflower meadow on our premises to support essential pollinators, particularly bees. This initiative not only beautifies our surroundings but also preserves bee habitats, essential for their vital role in global ecosystems.



### Connecting with the local community

We regularly inform the local community on our sustainable practices, particularly in the area of tungsten and battery recycling. As a company deeply rooted in the region, our responsibility is to engage and inform our community about our environmental stewardship. For example, we shared information about the industry’s contribution to climate protection at the regional citizen participation center.

### Sponsorship in youth development

Convinced that well-educated and committed young people are the foundation of a world worth living in, we have been supporting local youth development activities for years. For example, we have financed a car for young firefighters, integrated disabled young people into the world of work, and supported the local children’s festival.



### Employees celebrations

After the COVID-19 pandemic, we were finally able to hold our traditional Goslar staff parties in 2023. These include a party for employees, a children's party in summer and a Christmas celebration in December. Each event creates special memories, both for our colleagues and their families, which strengthens team spirit.



### In Sarnia, Canada

Below are the several projects and activities H.C. Starck in Sarnia supported and/or sponsored in the city and the region in 2023.

**Inn of the Good Shepherd** – A local organization whose mission is to provide services with dignity to those in need of food, shelter, and other essential services. Sarnia site has been a longtime supporter of this organization and continues to find additional ways to support, along with our peer organizations in the local Sarnia area.

#### “Adopt-a-Family” Christmas Gifts

Adopt-a-Family is a project where local businesses, families, churches, service clubs and individuals are paired with a family who can't afford Christmas gifts for their children. The children give a “wish list” for Santa and receive their gifts on Christmas morning.

In 2023, H.C. Starck in Sarnia provided gifts for underprivileged children in the community, including two children. Through this act, we provide employees with an opportunity to be actively involved in supporting local charity.

#### Christmas Food Drive

The Christmas Food Drive is an annual collection of essential food items for families in need during the holiday season. The employees of H.C. Starck donate food items, which are collected by the Inn of the Good Shepherd and distributed to families during the holiday season.

#### Soup Kitchen

The Inn of the Good Shepherd operates a daily food distribution service in the form of a soup kitchen where volunteers prepare a meal over 100 persons and serve it to community members in need. 2023 was our first opportunity to support this initiative which was very successful.

#### Celebration of Lights

The Celebration of Lights is a spectacular winter festive display in which the Sarnia-Lambton County is illuminated under a blanket of lights. Held annually, the event attracts thousands of people from Sarnia and surrounding areas. Ongoing sponsorship of the event and set up of our own exhibition serves to enhance the company's image in the local community.



### Sponsorship

Employees are given the opportunity to apply to H.C. Starck for sponsorship to benefit their local team or club. The name of the company becomes more widely known in the community, both as a sponsor of local sporting activities and a potential employer. This also enables children to participate in competitive sports including Little League hockey and baseball.

Continuing in 2023, H.C. Starck Sarnia sponsored the indigenous youth summer sports camp held at the Aamjiwnaang First Nation



### Employee Events

Sarnia site's culture committee organized several events in 2023.

The annual Golf tournament was a highlight on the social calendar and is well attended by employees and retirees alike. 2023 was a special year which celebrated the 25th anniversary of this popular event.

Other events included boat cruise on local river, retirement celebration, company BBQ and a summer family picnic.



# FINANCE REPORT

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## CORPORATE INFORMATION

### Enterprise Registration Certificate No.

**0309966889 - 27 April 2010**

The Company's Enterprise Registration Certificate has been amended several times, the most recent of which was dated 20 November 2023. The Certificate and its amendments were issued by the Department of Planning and Investment of Ho Chi Minh City.

### Board of Directors

Mr. Danny Le	Chairman
Mr. Nguyen Thieu Nam	First Vice Chairman, Non-executive Member
Mr. Craig Richard Bradshaw	Executive Member
Mr. Tadakazu Ohashi	Non-executive Member (from 18/4/2023)
Mr. Akira Osada	Non-executive Member (until 31/3/2023)
Ms. Nguyen Thu Hien	Independent member

### Board of Management

Mr. Craig Richard Bradshaw	Chief Executive Officer
Mr. Hady Seyeda	Deputy General Director
Ms. Dinh Le Hang	Deputy General Director (from 20/2/2023)
Mr. Nguyen Huy Tuan	Chief Financial Officer (from 18/1/2024) Acting Chief Financial Officer (until 17/1/2024)

### Audit Committee

Ms. Nguyen Thu Hien	Chairman
Mr. Nguyen Thieu Nam	Member

### Registered Office

Suite 802, 8<sup>th</sup> Floor, Central Plaza Building  
No. 17 Le Duan, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam.

### Auditor

KPMG Limited  
Vietnam

## STATEMENT OF THE BOARD OF MANAGEMENT

The Board of Management of Masan High-Tech Materials Corporation ("the Company") presents this statement and the accompanying consolidated financial statements of the Company and its subsidiaries (collectively referred to as "the Group") as of and for the year ended 31 December 2023.

The Board of Management is responsible for the preparation and presentation of the consolidated financial statements in accordance with Vietnamese Accounting Standards, the Vietnamese Accounting System for Enterprises and the relevant statutory requirements applicable to financial reporting. In the opinion of the Board of Management:

- the consolidated financial statements set out on pages 193 to 257 give a true and fair view of the consolidated financial position of the Group as at 31 December 2023, and of its consolidated results of operations and consolidated cash flows for the year then ended in accordance with Vietnamese Accounting Standards, the Vietnamese Accounting System for Enterprises and the relevant statutory requirements applicable to financial reporting; and
- at the date of this statement, there are no reasons to believe that the Group will not be able to pay its debts as and when they fall due. The consolidated financial statements have included adequate disclosure of matters relevant to the management's assessment of the validity of the going concern assumption.

The Board of Management has, on the date of this statement, authorized these accompanying consolidated financial statements for issue.

On behalf of the Board of Management

Craig Richard Bradshaw  
General Director

Ho Chi Minh City, 1 March 2024

## INDEPENDENT AUDITOR'S REPORT

### To the Shareholders

#### Masan High-Tech Materials Corporation

We have audited the accompanying consolidated financial statements of Masan High-Tech Materials Corporation ("the Company") and its subsidiaries (collectively referred to as "the Group"), which comprise the consolidated balance sheets as at 31 December 2023, the related consolidated statements of income and cash flows for the year then ended and the explanatory notes thereto which were authorised for issue by the Company's Board of Management on 1 March 2024, as set out on pages 209 to 273.

### Management's Responsibility

The Company's Board of Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with Vietnamese Accounting Standards, the Vietnamese Accounting System for Enterprises and the relevant statutory requirements applicable to financial reporting, and for such internal control as the Board of Management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

### Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with Vietnamese Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Company's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the Company's Board of Management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### Auditor's Opinion

In our opinion, the consolidated financial statements give a true and fair view, in all material respects, of the consolidated financial position of the Group as at 31 December 2023 and of its consolidated results of operations and its consolidated cash flows for the year then ended in accordance with Vietnamese Accounting Standards, the Vietnamese Accounting System for Enterprises and the relevant statutory requirements applicable to financial reporting.

### KPMG Limited

Vietnam

Audit Report No. 23-02-00206-24-1



Tran Dinh Vinh

Practicing Auditor Registration Certificate No. 0339-2023-007-1

Deputy General Director

Hanoi, 1 March 2024

Pham Thi Thuy Linh

Practicing Auditor Registration Certificate

No. 3065-2024-007-1

## CONSOLIDATED BALANCE SHEET

Masan High-Tech Materials Corporation and its subsidiaries  
Consolidated balance sheet as at 31 December 2023

Form B 01 – DN/HH  
(Issued under Circular No. 202/2014/TT-BTC  
dated 22 December 2014 of the Ministry of Finance)

	Code	Note	31/12/2023 VND'000	1/1/2023 VND'000
<b>ASSETS</b>				
<b>Current assets</b> (100 = 110 + 120 + 130 + 140 + 150)	<b>100</b>		<b>10,603,675,497</b>	<b>12,228,222,738</b>
<b>Cash and cash equivalents</b>	<b>110</b>	<b>7</b>	<b>974,184,354</b>	<b>1,502,879,248</b>
Cash	111		974,184,354	802,638,824
Cash equivalents	112		-	700,240,424
<b>Short-term financial investments</b>	<b>120</b>		<b>8,110,000</b>	<b>8,110,000</b>
Held-to-maturity investments	123	8(a)	8,110,000	8,110,000
<b>Accounts receivable – short-term</b>	<b>130</b>		<b>2,757,111,564</b>	<b>2,940,659,090</b>
Accounts receivable from customers	131	9	1,668,813,631	2,170,552,039
Prepayments to suppliers	132		206,875,846	371,552,598
Other receivables	136	10	890,086,488	413,428,141
Allowance for doubtful debts	137		(8,664,401)	(14,873,688)
<b>Inventories</b>	<b>140</b>	<b>11</b>	<b>5,997,555,598</b>	<b>6,858,167,780</b>
Inventories	141		6,191,668,845	6,905,038,000
Allowance for inventories	149		(194,113,247)	(46,870,220)
<b>Other current assets</b>	<b>150</b>		<b>866,713,981</b>	<b>918,406,620</b>
Short-term prepaid expenses	151		61,872,986	74,887,091
Deductible value added tax	152		780,061,010	807,301,517
Taxes and others receivable from State Treasury	153		24,779,985	36,218,012

The accompanying notes are an integral part of these consolidated financial statement

Masan High-Tech Materials Corporation and its subsidiaries  
Consolidated balance sheet as at 31 December 2023 (continued)

Form B 01 – DN/HN  
(Issued under Circular No. 202/2014/TT-BTC  
dated 22 December 2014 of the Ministry of Finance)

	Code	Note	31/12/2023 VND'000	1/1/2023 VND'000
<b>Long term assets</b> (200 = 210 + 220 + 230 + 240 + 250 + 260)	<b>200</b>		<b>29,768,680,616</b>	<b>29,292,777,451</b>
<b>Accounts receivable – long-term</b>	<b>210</b>		<b>1,447,156,838</b>	<b>1,403,254,299</b>
Other long-term receivables	216	10	1,447,156,838	1,403,254,299
<b>Fixed assets</b>	<b>220</b>		<b>20,129,893,349</b>	<b>20,185,726,072</b>
Tangible fixed assets	221	12	16,776,735,480	16,864,317,888
• Cost	222		30,595,841,261	29,389,675,393
• Accumulated depreciation	223		(13,819,105,781)	(12,525,357,505)
Finance lease tangible fixed assets	224		-	-
• Cost	225		67,300,000	67,300,000
• Accumulated depreciation	226		(67,300,000)	(67,300,000)
Intangible fixed assets	227	13	3,353,157,869	3,321,408,184
• Cost	228		4,709,348,611	4,419,260,782
• Accumulated amortisation	229		(1,356,190,742)	(1,097,852,598)
<b>Investment property</b>	<b>230</b>	<b>14</b>	<b>702,920,163</b>	<b>722,403,002</b>
• Cost	231		1,197,720,562	1,129,619,792
• Accumulated depreciation	232		(494,800,399)	(407,216,790)
<b>Long-term work in progress</b>	<b>240</b>		<b>2,510,877,620</b>	<b>2,081,826,883</b>
Construction in progress	242	15	2,510,877,620	2,081,826,883
<b>Long-term financial investments</b>	<b>250</b>	<b>8(b)</b>	<b>1,637,975,255</b>	<b>1,532,527,099</b>
Investments in associates, joint ventures	252		211,552,770	190,164,060
Equity investment in other entity	253		1,426,422,485	1,342,363,039
<b>Other long-term assets</b>	<b>260</b>		<b>3,339,857,391</b>	<b>3,367,040,096</b>
Long-term prepaid expenses	261	16	3,283,693,831	3,346,160,818
Deferred tax assets	262	22(a)	56,163,560	20,879,278
<b>TOTAL ASSETS (270 = 100 + 200)</b>	<b>270</b>		<b>40,372,356,113</b>	<b>41,521,000,189</b>

The accompanying notes are an integral part of these consolidated financial statement

Masan High-Tech Materials Corporation and its subsidiaries  
Consolidated balance sheet as at 31 December 2023 (continued)

Form B 01 – DN/HN  
(Issued under Circular No. 202/2014/TT-BTC  
dated 22 December 2014 of the Ministry of Finance)

	Code	Note	31/12/2023 VND'000	1/1/2023 VND'000
<b>RESOURCES</b>				
<b>LIABILITIES (300 = 310 + 330)</b>	<b>300</b>		<b>26,747,864,250</b>	<b>26,273,561,415</b>
<b>Current liabilities</b>	<b>310</b>		<b>11,020,687,246</b>	<b>17,154,059,090</b>
Accounts payable to suppliers	311		1,085,062,959	1,574,455,591
Advances from customers	312	17	757,161,635	489,804,070
Taxes payable to State Treasury	313	18	187,859,233	160,206,536
Payables to employees	314		18,584,094	14,841,657
Accrued expenses	315	19	832,650,231	818,655,883
Other short-term payables	319	20	235,424,612	980,622,553
Short-term borrowings and bonds	320	21(a)	7,896,118,080	13,105,475,407
Provisions – short-term	321		7,826,402	9,997,393
<b>Long-term liabilities</b>	<b>330</b>		<b>15,727,177,004</b>	<b>9,119,502,325</b>
Other payables – long-term	337		1,466,595	-
Long-term borrowings and bonds	338	21(b)	8,760,544,403	2,979,108,965
Deferred tax liabilities	341	22(a)	1,457,520,209	1,517,611,217
Provisions – long-term	342	23	5,507,645,797	4,622,782,143

The accompanying notes are an integral part of these consolidated financial statement

Masan High-Tech Materials Corporation and its subsidiaries  
Consolidated balance sheet as at 31 December 2023 (continued)

Form B 01 – DN/HN  
(Issued under Circular No. 202/2014/TT-BTC  
dated 22 December 2014 of the Ministry of Finance)

	Code	Note	31/12/2023 VND'000	1/1/2023 VND'000
<b>EQUITY (400 = 410)</b>	<b>400</b>		<b>13,624,491,863</b>	<b>15,247,438,774</b>
<b>Equity</b>	<b>410</b>	<b>24</b>	<b>13,624,491,863</b>	<b>15,247,438,774</b>
Share capital	411	25	10,991,554,200	10,991,554,200
• Ordinary shares with voting rights	411a		10,991,554,200	10,991,554,200
Share premium	412	25	1,098,259,892	1,098,259,892
Other capital	414		(295,683,347)	(295,683,347)
Foreign exchange differences	417		(233,846,997)	(419,419,764)
Other equity funds	420		396,305,033	675,544,001
Retained profits after tax	421		1,455,345,029	3,031,229,349
• Retained profits brought forward	421a		3,031,229,349	2,962,204,732
• (Loss)/retained profit for the current year	421b		(1,575,884,320)	69,024,617
Non-controlling interest	429		212,558,053	165,954,443
<b>TOTAL RESOURCES (440 = 300 + 400)</b>	<b>440</b>		<b>40,372,356,113</b>	<b>41,521,000,189</b>

1 March 2024

Prepared by



Nguyen Thi Thanh Mai  
Chief Accountant

Reviewed by:



Nguyen Huy Tuan  
Chief Financial Officer

Approved by:



Craig Richard Bradshaw  
Chief Executive Officer

The accompanying notes are an integral part of these consolidated financial statement

## CONSOLIDATED STATEMENTS OF INCOME

Masan High-Tech Materials Corporation and its subsidiaries  
Consolidated statement of income for the year ended 31 December 2023

Form B 02 – DN/HN  
(Issued under Circular No. 202/2014/TT-BTC  
dated 22 December 2014 of the Ministry of Finance)

	Code	Note	2023 VND'000	2022 VND'000
<b>Revenue from sales of goods and provision of services</b>	<b>01</b>		<b>14,107,033,218</b>	<b>15,562,992,329</b>
<b>Revenue deductions</b>	<b>02</b>		<b>13,779,731</b>	<b>13,444,675</b>
<b>Net revenue (10 = 01 - 02)</b>	<b>10</b>	<b>27</b>	<b>14,093,253,487</b>	<b>15,549,547,654</b>
<b>Cost of sales</b>	<b>11</b>		<b>13,308,967,243</b>	<b>13,172,693,544</b>
<b>Gross profit (20 = 10 - 11)</b>	<b>20</b>		<b>784,286,244</b>	<b>2,376,854,110</b>
Financial income	21	28	485,311,318	470,233,836
Financial expenses	22	29	2,195,843,856	1,917,493,323
• In which: Interest expense	23		1,503,015,894	1,119,988,084
Share of profit in associates	24		9,709,924	13,938,538
Selling expenses	25	30	377,179,568	452,974,941
General and administration expenses	26	31	499,572,488	587,976,843
<b>Net operating loss</b> <b>{30 = 20 + (21 - 22) + 24 - (25 + 26)}</b>	<b>30</b>		<b>(1,793,288,426)</b>	<b>(97,418,623)</b>
Other income	31	32	181,078,732	171,642,933
Other expenses	32	33	41,803,130	96,870,711
<b>Results of other activities</b> <b>(40 = 31 - 32)</b>	<b>40</b>		<b>139,275,602</b>	<b>74,772,222</b>

Masan High-Tech Materials Corporation and its subsidiaries  
Consolidated statement of income for the year ended 31 December 2023 (continued)

Form B 02 – DN/HN  
(Issued under Circular No. 202/2014/TT-BTC  
dated 22 December 2014 of the Ministry of Finance)

	Code	Note	2023 VND'000	2022 VND'000
Accounting loss before tax (50 = 30 + 40)	50		(1,654,012,824)	(22,646,401)
Income tax expense – current	51	34	56,989,769	45,262,566
Income tax benefit – deferred	52	34	(181,391,892)	(173,060,025)
<b>Net (loss)/profit after tax (60 = 50 - 51 - 52)</b>	<b>60</b>		<b>(1,529,610,701)</b>	<b>105,151,058</b>
<b>Net (loss)/profit attributable to:</b>				
Shareholders of the Company	61		(1,575,884,320)	69,024,617
Non-controlling interest	62		46,273,619	36,126,441
<b>(Losses)/earnings per share</b>			<b>VND</b>	<b>VND</b>
Basic (losses)/earnings per share	70	35	(1,434)	63

1 March 2024

Prepared by



Nguyen Thi Thanh Mai  
Chief Accountant

Reviewed by:



Nguyen Huy Tuan  
Chief Financial Officer

Approved by:



Craig Richard Bradshaw  
Chief Executive Officer

The accompanying notes are an integral part of these consolidated financial statement

## CONSOLIDATED STATEMENTS OF CASH FLOWS

Masan High-Tech Materials Corporation and its subsidiaries  
Consolidated statement of cash flows for the year ended 31 December 2023  
(Indirect method)

Form B 03 – DN/HN  
(Issued under Circular No. 202/2014/TT-BTC  
dated 22 December 2014 of the Ministry of Finance)

	Code	Note	2023 VND'000	2022 VND'000
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>				
Loss before tax	01		(1,654,012,824)	(22,646,401)
<b>Adjustments for</b>				
Depreciation and amortisation	02		1,310,149,393	1,501,892,563
Negative goodwill on acquisition of subsidiary		32	(117,106,706)	-
Allowances and provisions	03		321,512,295	108,590,016
Exchange losses/(gains) arising from revaluation of monetary items denominated in foreign currencies	04		46,840,188	(59,317,383)
Profits from investing activities	05		(20,806,022)	(25,200,709)
Interest expense and borrowing fees	06		1,556,868,673	1,194,553,796
<b>Operating profit before changes in working capital</b>	<b>08</b>		<b>1,443,444,997</b>	<b>2,697,871,882</b>
Change in receivables and other assets	09		461,814,748	(338,066,179)
Change in inventories	10		755,677,928	(946,685,853)
Change in payables and other liabilities	11		(1,387,835,277)	772,041,277
Change in prepaid expenses	12		55,823,645	84,860,443
			<b>1,328,926,041</b>	<b>2,270,021,570</b>
Interest paid	14		(1,410,640,810)	(1,096,550,489)
Income tax paid	15		(74,314,082)	(47,148,344)
<b>Net cash flows from operating activities</b>	<b>20</b>		<b>(156,028,851)</b>	<b>1,126,322,737</b>

The accompanying notes are an integral part of these consolidated financial statements

Masan High-Tech Materials Corporation and its subsidiaries  
Consolidated statement of cash flows for the year ended 31 December 2023  
(Indirect method - continued)

Form B 03 – DN/HN  
(Issued under Circular No. 202/2014/TT-BTC  
dated 22 December 2014 of the Ministry of Finance)

	Code	Note	2023 VND'000	1/1/2022 VND'000
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>				
Payments for additions to fixed assets and other long-term assets	21		(849,402,409)	(1,330,036,496)
Proceeds from disposals of fixed assets and other long-term assets	22		554,545	3,194,364
Placement for term deposits at banks	23		(8,110,000)	(8,110,000)
Term deposits received and receipts from collecting loans	24		8,110,000	7,400,000
Business combination, net of cash acquired			(11,811,687)	-
Payments for investments in other entities	25		-	(1,342,363,039)
Receipt of interest	27		12,336,020	11,632,392
<b>Net cash flows from investing activities</b>	<b>30</b>		<b>(848,323,531)</b>	<b>(2,658,282,779)</b>

The accompanying notes are an integral part of these consolidated financial statement

Masan High-Tech Materials Corporation and its subsidiaries  
Consolidated statement of cash flows for the year ended 31 December 2023  
(Indirect method - continued)

Form B 03 – DN/HN  
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	Code	Note	2023 VND'000	2022 VND'000
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>				
Proceeds from borrowings and bonds issued	33		16,720,366,704	9,447,891,713
Payments to settle loan principals and bond issuance related costs	34		(16,247,151,257)	(7,450,091,614)
<b>Net cash flows from financing activities</b>	<b>40</b>		<b>473,215,447</b>	<b>1,997,800,099</b>
<b>Net cash flows during the year (50 = 20 + 30 + 40)</b>	<b>50</b>		<b>(531,136,935)</b>	<b>465,840,057</b>
<b>Cash and cash equivalents at the beginning of the year</b>	<b>60</b>		<b>1,502,879,248</b>	<b>1,043,789,572</b>
<b>Effect of exchange rate fluctuation on cash and cash equivalents</b>	<b>61</b>		<b>2,442,041</b>	<b>(6,750,381)</b>
<b>Cash and cash equivalents at the end of the year (70 = 50 + 60 + 61)</b>	<b>70</b>	<b>7</b>	<b>974,184,354</b>	<b>1,502,879,248</b>

1 March 2024

Prepared by



Nguyen Thi Thanh Mai  
Chief Accountant

Reviewed by:



Nguyen Huy Tuan  
Chief Financial Officer

Approved by:



Craig Richard Bradshaw  
Chief Executive Officer

The accompanying notes are an integral part of these consolidated financial statements

# NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Masan High-Tech Materials Corporation and its subsidiaries  
Notes to the consolidated financial statements for the year ended 31 December 2023

Form B 09 – DN/HN  
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These notes form an integral part of and should be read in conjunction with the accompanying consolidated financial statements.

## 1. Reporting entity

### a Ownership structure

Masan High-Tech Materials Corporation (“the Company” or “MHT”) is incorporated as a joint stock company in Vietnam. The consolidated financial statements comprise the Company and its subsidiaries (collectively referred to as “the Group”) and the Group’s interest in associate.

### b Principal activities

The principal activity of the Company is investment holding.  
The principal activities of the subsidiaries and associate are described as follows:

#### Subsidiaries:

Name	Address	Principal activity	Percentage of economic interests at	
			31/12/2023	1/1/2023
<b>Direct subsidiary</b>				
Masan Thai Nguyen Resources Company Limited (“MRTN”)	(i) Ho Chi Minh City	Investment holding	100%	100%
<b>Indirect subsidiaries</b>				
Thai Nguyen Trading and Investment Company Ltd (“TNTI”)	(i) Ho Chi Minh City	Investment holding	100%	100%
Nui Phao Mining Company Limited (“NPM”) (*)	(i) Thai Nguyen Province	Exploring and processing mineral	100%	100%
Masan Tungsten Limited Liability Company (“MTC”)	(i) Thai Nguyen Province	Deep processing of nonferrous metals and precious metals (Tungsten)	100%	100%
H.C. Starck Holding (Germany) GmbH (“HCS”) (**)	(i) Goslar, Germany	Investment holding	100%	100%
ChemiLytics Beteiligungs GmbH	(ii) Goslar, Germany	Investment holding	100%	100%
H.C. Starck GmbH	(ii) Goslar, Germany	Investment holding	100%	100%
Chemische Fabriken Oker und Branschweig AG	(ii) Goslar, Germany	Producing chemicals utilized in the manufacturing of paper and additives for the absorptive materials industry	100%	100%
H.C. Starck Infrastructure GmbH & Co. KG	(ii) Munich, Germany	Asset management and provision of related services	100%	100%

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Name	Address	Principal activity	Percentage of economic interests at	
			31/12/2023	1/1/2023
ChemiLytics GmbH & Co. KG	(ii) Goslar, Germany	Chemical analysis and physical measurement data	100%	100%
H.C. Starck Tungsten GmbH	(ii) Munich, Germany	Deep processing of nonferrous metals and precious metals (Tungsten)	100%	100%
H.C. Starck Nonferrous Metals Trading (Shanghai) Co. Ltd.	(ii) Shanghai, PRC	Trading and distribution	100%	100%
H.C. Starck Canada Inc.	(ii) Sarnia, Ontario, Canada	Deep processing of nonferrous metals and precious metals (Tungsten)	100%	100%
H.C. Starck Tungsten GK	(ii) Tokyo, Japan	Trading and distribution	100%	100%
H.C. Starck Tungsten LLC	(ii) Newton, USA	Trading and distribution	100%	100%
Chemitas GmbH (***)	(ii) Goslar, Germany	Energy supply, waste management and logistics services	100%	-
H.C. Starck Jiangwu Tungsten Specialities (Ganzhou) Co., Ltd.	(ii) Ganzhou, China	Deep processing of nonferrous metals and precious metals (Tungsten)	60%	60%

#### Associates

Name	Address	Principal activity	Percentage of economic interests at	
			31/12/2023	1/1/2023
<b>Indirect associates</b>				
Jiangwu H.C. Starck Tungsten Products Co., Ltd.	(ii) Ganzhou, China	Deep processing of nonferrous metals and precious metals (Tungsten)	30%	

(i) HCS is subsidiary of MTC. MTC is a subsidiary of NPM. TNTI and NPM are subsidiaries of MRTN. MRTN is a subsidiary of the Company.

(ii) These entities are direct and indirect subsidiaries and associate of HCS.

(\*) NPM’s principal activities are to explore, exploit, mine and process tungsten, fluorite, bismuth, copper under the “Nui Phao Mining Project” in Ha Thuong Commune, Dai Tu District in Thai Nguyen Province for export and domestic sales. The “Nui Phao Mining Project” is under Investment Certificate No. 17121000026 which expires on 2 February 2034.

(\*\*) HCS is a leading manufacturer of high-tech tungsten metal powders and carbides (midstream tungsten products). HCS has production hubs in Europe, North America, and China serving customers across the globe. HCS and its subsidiaries mainly specialize in the development, manufacture and sale of high-performance powders based on the technology of metal tungsten and its compounds, tailored to individual customer needs.

(\*\*\*) On 5 July 2023, H.C. Starck GmbH, an indirect subsidiary of the Company, completed the acquisition of a 100% of shares in Chemitas GmbH.

The percentage of economic interests represents the effective percentage of economic interests of the Company both directly and indirectly in the subsidiaries. The percentage of voting right equals the percentage of economic interests, unless otherwise indicated.

As at 31 December 2023, the Group had 2,342 employees (1/1/2023: 2,269 employees).

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## 2. Basis of preparation

### a Statement of compliance

The consolidated financial statements have been prepared in accordance with Vietnamese Accounting Standards, the Vietnamese Accounting System for Enterprises and the relevant statutory requirements applicable to financial reporting.

### b Basis of measurement

The consolidated financial statements, except for the consolidated statement of cash flows, are prepared on the accrual basis using the historical cost concept. The consolidated statement of cash flows is prepared using the indirect method.

### c Going concern assumption

The consolidated financial statements have been prepared on a going concern basis. At the balance sheet date, current liabilities exceeded current assets by VND417,012 million (1/1/2023: current liabilities exceeded current assets by VND4,925,836 million). Furthermore, the Group has significant loans and bonds issued that will require refinancing within the next 12 months (Note 21(a)). The validity of the going concern assumption fundamentally depends on the ultimate parent company continuing to provide such financial assistance as is necessary to enable the Group to meet its liabilities as and when they fall due and to maintain the Group in existence as a going concern for the foreseeable future.

At the time of this report, there is no reason for the management to believe that the ultimate parent company will not continue its support.

### d Annual accounting period

The annual accounting period of the Company and its subsidiaries are from 1 January to 31 December.

### e Accounting and presentation currency

The Group's accounting currency is Vietnam Dong ("VND"), which is also the currency used for financial statement presentation purpose. All amounts have been rounded to the nearest thousand ("VND'000"), unless otherwise indicated.

## 3. Summary of significant accounting

The following significant accounting policies have been adopted by the Group in the preparation of these consolidated financial statements.

### a Basis of consolidation

#### (i) Business combinations

Business combinations are accounted for using the purchase method as at the acquisition date, which is the date on which control is transferred to the Group. Control exists when the Group has the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities. In assessing control, the Group takes into consideration the potential voting rights that currently are exercisable.

Under the purchase method, the assets and liabilities of the acquired entity are consolidated using their fair values. Cost of a business combination (cost of the acquisition) is the aggregate amount of the fair values, at the date of exchange, of assets given, liabilities incurred or assumed, and equity instruments issued by the acquirer in the acquisition in exchange for control of the acquiree and any costs directly attributable to the business combination. Identifiable assets acquired, identifiable liabilities and contingent liabilities assumed in a business combination are recognised at fair value at the acquisition date.

Any goodwill that arises representing the excess of the cost of the acquisition over the Group's interest in the net fair value of the identifiable assets, liabilities and contingent liabilities of the acquiree is recognised in consolidated balance sheet, then amortised through to the consolidated statement of income. When the excess is negative (gain from bargain purchase), it is recognised in the consolidated statement of income for the current year after a reassessment has been performed to ensure that the measurement of identifiable assets acquired, liabilities and contingent liabilities assumed and the cost of the business combination appropriately reflects consideration of all available information as of the acquisition date.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs as the result of fair values of the acquiree's identifiable assets, liabilities or contingent liabilities or the cost of the combination being only provisionally determined, the Group shall account for such business combination at

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provisional amounts. During twelve months from the acquisition date (i.e. the measurement period), the Group shall retrospectively adjust the provisional amounts recognised at the acquisition date.

Transaction costs, other than those associated with the issue of debt or equity securities, that the Group incurred in connection with business combinations included any costs directly attributable to the combination, such as professional fees paid to accountants, legal advisers, valuers and other consultants to affect the combination. Transaction costs are capitalised into the cost of business combination. General administrative costs and other costs that cannot be directly attributed to the particular combination being accounted for are not included in the cost of the combination; they are recognised as an expense when incurred.

#### (ii) Subsidiaries

Subsidiaries are entities controlled by the Group. Control exists when the Group has the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities. In assessing control, potential voting rights that currently are exercisable are taken into account. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases.

#### (iii) Non-controlling interests

Non-controlling interests ("NCI") are measured by their proportionate economic interest in the acquiree's identifiable net assets at date of acquisition.

Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as transactions with owners. In accordance with Circular No. 202/2014/TT-BTC issued by the Ministry of Finance providing guidance on preparation and presentation of consolidated financial statements ("Circular 202"), the difference between the change in the Group's share of net assets of the subsidiary and any consideration paid or received is recorded directly in retained profits under equity.

#### (iv) Associates

Associates are those entities in which the Group has significant influence, but not control, over the financial and operating policies. Significant influence is presumed to exist when the Group holds between 20 and 50 percent of the voting power. Associates are accounted for using

the equity method. They are initially recognised at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit and loss of an associate, after adjustments to align the accounting policies with those of the Group, from the date that significant influence commences until the date that significant influence ceases. The carrying amount of investments in associates is also adjusted for the alterations in the investor's proportionate interest in the associates arising from changes in the associate's equity that have not been included in the income statement (such as revaluation of fixed assets, or foreign exchange translation differences, etc.).

When the Group's share of losses exceeds its interest in an associate, the carrying amount of that interest (including any long-term investments) is reduced to nil and the recognition of further losses is discontinued except to the extent that the Group has an obligation or has made payments on behalf of the investee.

#### (v) Transactions eliminated on consolidation

Intra-group transactions, balances, and any unrealised income and expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements. However, foreign currency difference arising on intra-group monetary items, whether short-term or long-term are recorded in the consolidated statement of income. Unrealised gains and losses arising from transactions with associates are eliminated against the investment to the extent of the Group's interest in the investee.

#### (vi) Goodwill

Goodwill arises on the acquisition of subsidiary. Goodwill is measured at cost less accumulated amortisation. Cost of goodwill represents the excess of the cost of the acquisition over the Group's interest in the net fair value of the identifiable assets, liabilities and contingent liabilities of the acquiree in exchange for control of the acquiree, plus any costs directly attributable to the acquisition.

When the excess is negative (gain from bargain purchase), it is recognised immediately in the consolidated statement of income.

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## b Foreign currency

### (i) Foreign currency transactions

Transactions in currencies other than VND during the year have been translated into VND at rates approximating actual rates of exchange ruling at the transaction dates.

Monetary assets and liabilities denominated in currencies other than VND are translated into VND at the account transfer buying rate for assets and account transfer selling rate for liabilities at the end of the annual accounting period quoted by the commercial bank where the Company or its subsidiaries most frequently conducts transactions.

All foreign exchange differences are recorded in the consolidated statement of income.

### (ii) Foreign operations

For the purpose of presenting the consolidated financial statements, the assets and liabilities of foreign operations are translated to VND as follow:

- Assets and liabilities including fair value adjustments arising on acquisition, are translated to VND at the account transfer buying rate (for assets) and the account transfer selling rate (for liabilities) at the end of the accounting period quoted by the commercial bank where the Company most frequently conducts transactions;
- Revenues, income, expenses and cash flows of foreign operations are translated to VND at exchange rates at which approximate actual exchange rates ruling on the dates of transactions;
- Retained profits/accumulated losses, funds and reserves are derived from the translated net profits/movements from which they were appropriated.

Foreign currency differences arising from the translation of foreign operations' financial statements to VND are recognised in the balance sheet under the caption "Foreign exchange differences" in equity. When the foreign currency differences relate to a foreign operation that is consolidated but not wholly owned, accumulated exchange differences arising from translation and attributable to non-controlling interests are allocated to, and recognised as part of, non-controlling interests in the consolidated balance sheet.

## c Cash and cash equivalents

Cash comprises cash balances and call deposits. Cash equivalents are short-term highly liquid investments that are readily convertible to known amount of cash, are subject to an insignificant risk of changes in value and are held for the purpose of meeting short-term cash commitments rather than for investment or other purposes.

## d Held to maturity investments

### (i) Held to maturity investments

Held-to-maturity investments are those that the Group's management has the intention and ability to hold until maturity. Held-to-maturity investments include term deposits at bank. This investment is stated at cost less allowance for doubtful debts.

### (ii) Investments in equity instruments of other entities

Investments in equity instruments of other entities are initially recognized at cost which include purchase price plus any directly attributable transaction costs. Subsequent to initial recognition, these investments are stated at cost less allowance for diminution in value.

An allowance is made for diminution in investment values if the investee has suffered a loss which may cause the Group to lose their invested capital, unless there is evidence that the value of the investment has not been diminished. The allowance is reversed if the investee subsequently made a profit that offsets the previous loss for which the allowance had been made. An allowance is reversed only to the extent that the investment's carrying amount does not exceed the carrying amount that would have been determined if no allowance had been recognised.

## e Accounts receivable

Accounts receivable from customers and other receivables are stated at cost less allowance for doubtful debts.

### Factoring

Depending on market conditions and liquidity requirements, the Group enters into factoring agreements to transfer trade receivables. For factoring transactions, the Group assesses whether trade receivables can be derecognised in their entirety or not, basing on the extent to which it retains the risks and rewards of ownership of the trade receivables.

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## g Tangible fixed assets

### (i) Cost

Upon completion of the mine construction phase, the assets are transferred into "building and structures", "machinery and equipment" or "other mining assets" in tangible fixed assets. Tangible fixed assets are stated at cost less accumulated depreciation. The initial cost of a tangible fixed asset comprises its purchase price or construction cost, including import duties, non-refundable purchase taxes and any directly attributable costs of bringing the asset to its working condition and location for its intended use, and the costs of dismantling and removing the asset and restoring the site on which it is located. Expenditure incurred after tangible fixed assets have been put into operation, such as repairs and maintenance and overhaul costs, is normally charged to the consolidated statement of income in the year in which the costs are incurred. In situations where it can be clearly demonstrated that the expenditure has resulted in an increase in the future economic benefits expected to be obtained from the use of tangible fixed assets beyond their originally assessed standard of performance, the expenditure is capitalised as an additional cost of tangible fixed assets.

If the self-constructed tangible assets have been completed and are put into used but their cost is not finalised, their historical cost will be recorded at a temporarily estimated value and they shall be adjusted with the difference after the finalised cost are approved.

Other mining assets comprise mine rehabilitation costs; and fair value of mineral reserves and mineral resources from business combination.

### (ii) Depreciation

*NPM: Machinery and equipment directly related to mineral processing activities and fair value of mineral reserves from business combination*

Machinery and equipment ("M&E") which are directly related to mineral processing activities and fair value of mineral reserves from business combination are depreciated on a unit-of-production method. Under this method, the depreciation bases are derived from proved and probable mineral reserves, which are estimates of the volume of ore (in tons) that can be economically and legally extracted from the Group's mining properties, and a portion of mineral resources expected to be converted into reserves. Specifically, the depreciation bases for mining-related assets are calculated using:

If the Group:

- transfers substantially all the risks and rewards of ownership of the receivables, the Group derecognises the receivables and recognises separately as asset or liability any rights and obligations created or retained in the transfer;
- retains substantially all the risks and rewards of ownership of the receivables, the Group continues to recognise the receivables;
- neither transfers nor retains substantially all the risks and rewards of ownership of the receivables, the Group determines whether it has retained control. If the Group does not retain control, it derecognises the receivables and recognises separately as assets or liabilities any rights and obligations created or retained in the transfer. If the Group retains control, it continues to recognise the receivables to the extent of its continuing involvement in the receivables.

The extent of continuing involvement in the transferred assets is the extent to which it is exposed to changes in the value of the transferred assets, which is the lower of the carrying amount of assets and the maximum amount of the consideration that the Group could be required to pay ("the guarantee amount").

When the Group continues to recognise an asset to the extent of its continuing involvement, the Group also recognises an associated liability. The associated liability is initially measured at the guarantee amount plus the fair value of the guarantee. Subsequently the initial fair value of the guarantee is recognised in the consolidated income statement on a time proportion basis.

## f Inventories

Inventories are stated at the lower of cost and net realisable value. Cost is determined on a weighted average basis and includes all costs incurred in bringing the inventories to their present location and condition. Cost in the case of finished goods and work in progress includes raw materials, direct labour and attributable mining and manufacturing overheads. Net realisable value is the estimated selling price of inventory items, less the estimated costs of completion and estimated costs to sell.

The Group applies the perpetual method of accounting for inventories.

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- (a) mineral reserves and the amount of mineral resources expected to be converted into reserves under mining specialist's technical assessments within Nui Phao project area; and  
(b) Further mineral resources that can be reprocessed from the NPM's oxide tails cell ("OTC").

Application of depreciation base to each mining asset class is as follows:

M&E relating to only mineral processing activities;	<b>(a)</b>
M&E relating to mineral processing activities, and being used in OTC retreatment	<b>(a) and (b)</b>
Fair value of mineral reserves from business combination	<b>(a) and (b)</b>

Effective from 1 January 2023, NPM updated its estimates of mineral reserves and resources, using (i) the result of mining specialists' technical assessments on mineral reserve within Nui Phao project area, and (ii) a portion of resources expected to be converted into mineral reserves. These updates are estimates of the amount of production volume that can be economically and legally extracted from NPM's mining properties.

Detail of changes in the remaining ore equivalent quantity served as depreciation basis as at 1 January 2023 are as follows:

M&E only relating to mineral processing activities	<b>9,941,325</b>
M&E relating to mineral processing activities and used in OTC retreatment	<b>9,941,325</b>
Fair value of mineral reserves from business combination	<b>9,941,325</b>

Increased by  
tonnes of ore

As at 31 December 2023 and for the year then ended, these changes in estimates of mineral reserves and resources lead to a decrease by the same amount of VND152 billion in the tangible fixed assets – accumulated depreciation and depreciation charge.

*MTC: Machinery and equipment directly related to production activities*

Machinery and equipment which are directly related to the deep processing of tungsten products of MTC are depreciated over its estimated useful lives on a units of production basis. The estimated total production quantity output which the tangible fixed assets are depreciated on a unit-of-production basis are as follows:

ST (Sodium Tungstate) plant	<b>171,865 tonnes of tungsten</b>
APT (Ammonium Paratungstate) plant	<b>166,990 tonnes of tungsten</b>

*Others*

Depreciation is computed on a straight-line basis over the estimated useful lives of tangible fixed assets. The estimated useful lives are as follows:

- buildings and structures **5 – 40 years**
- machinery and equipment **3 – 22 years**
- office equipment **3 – 10 years**
- motor vehicles **3 – 25 years**
- other mining assets **26 years**

Construction asset which are completed and put into use before construction costs being finalised, are stated at provisional cost. On the date the construction costs are finalised and approved, provisional cost shall be adjusted to finalised cost and accumulated depreciation shall not be adjusted. The subsequent depreciation charge is determined as the approved value minus the accumulated depreciation made for the period up to the approval of finalisation of fixed asset divided by the remaining depreciation period of the fixed asset according to relevant regulations.

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## h Intangible fixed assets

### (i) Land

Lands comprise those acquired in a legitimate transfer. Lands are stated at cost and are not amortised.

### (ii) Software

Cost of software includes:

- Cost of acquisition of new software, which is not an integral part of the related hardware, is capitalised and treated as an intangible asset. Acquired software costs are amortised on a straight-line basis over three (3) to eight (8) years;
- Cost incurred during software development phase when following conditions are met:
  - ▶ Respective costs are attributable directly to the software development stage;
  - ▶ There is well-founded expectation – verifiable by program designs, models, or the like that the Group has intention to complete the development project and use or sell it;
  - ▶ The Group will be able to implement and use the software after its development;
  - ▶ Adequate technical, financial and human resources should be available to complete the software development successfully;
  - ▶ The Group is able to measure expenditures attributable to the software development project reliably.

Developed software is amortised on a straight-line basis over period of up to four (4) years starting from the date on which the respective modules are completed.

### (iii) Mining rights

The mining rights are calculated based on the remaining exploitable reserves multiplied with the price as announced by the provincial authorities in accordance with Decree No. 67/2019/ND-CP dated 31 July 2019 ("Decree 67") which became effective from 15 September 2019, replacing Decree No. 203/2013/ND-CP dated 28 November 2013. Cost of mining rights was stated at an amount equal to the present value of mining rights fee and was capitalised and treated as an intangible asset. Amortisation of mining rights is computed on a straight-line basis over the economic life of the proved and probable mineral reserve and a portion of resources expected to be converted into reserves.

### (iv) Development costs

Development costs include:

- Expenditure on development activities, whereby research findings are applied to a plan or design for the production of new or substantially improved products and process, is capitalised if the product or process is technically and commercially feasible and the Group has sufficient resources to complete development. The expenditure capitalised include the costs of materials, direct labour and an appropriate portion of overheads. Other development expenditure is recognised in the consolidated statement of income as an expense as incurred;
- Development costs that are acquired by the Group through business combinations are capitalised and presented as an intangible fixed asset. The fair value of development costs are amortised on a straight-line basis over period from 10 to 16 years.

The fair value of development costs acquired through business combinations is determined using the incremental cash flow method, whereby the subject assets are valued after deducting a fair return on all other assets that are part of creating the related cash flows.

### (v) Brand name

Cost of acquisition of brand name is recognised as an intangible asset.

The fair value of brand name acquired in a business combination is based on the discounted estimated royalty payments that have been avoided as a result of the brand name being owned. The fair value of brand name acquired in a business combination is recognised as an intangible asset and is amortized on a straight-line basis over periods ranging from 20 to 30 years.

### (vi) Customer relationship

Customer relationships that are acquired by the Group through business combinations are capitalised and presented as an intangible fixed asset. The fair value of customer relationships is amortised on a straight-line basis over period of 36 years.

The fair value of customer relationships acquired through business combinations is determined using the multi-period excess earnings method, whereby the subject assets are valued after deducting a fair return on all other assets that are part of creating the related cash flows.

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#### (vii) Technologies

Technologies that are acquired by the Group through business combinations are recognised as intangible fixed assets and are initially measured at fair value. Technologies are amortised on a straight-line basis over their useful lives ranging from 16 to 31 years.

The fair value of technologies acquired through business combinations are determined using the multi-period excess earnings method whereby the subject assets are valued after deducting a fair return on all other assets that are part of creating the related cash flows and/or based on the discounted estimated royalty payments that have been avoided as a result of the technologies being owned.

#### i Investment property

##### Investment property held to earn rental

##### Cost

Investment property held to earn rental is stated at cost less accumulated depreciation. The initial cost of an investment property held to earn rental comprises its purchase price, cost of land use rights and any directly attributable expenditures of bringing the property to the condition necessary for it to be capable of operating in the manner intended by the Board of Management. Expenditure incurred after the investment property held to earn rental has been put into operation, such as repairs and maintenance, is charged to the consolidated statement of income in the year in which the expenditure is incurred. In situations where it can be clearly demonstrated that the expenditure has resulted in future economic benefits in excess of the originally assessed standard of performance of the existing investment property held to earn rental, the expenditure is capitalised as an additional cost of the investment property.

##### Depreciation

Depreciation is computed on a straight-line basis over the estimated useful lives of investment property. The estimated useful lives are as follows:

Buildings	40 – 60 years
-----------	---------------

Lands are recognized by historical cost and are not amortised.

#### j Construction in progress

Construction in progress mainly represents mineral assets under development and cost of construction and machinery which have not been fully completed, installed and commissioned. It also comprises land compensation, development expenditure for mineral reserves and mineral resources, and related development expenditure. These assets qualify for capitalisation when the mineral reserves to which they relate is proven to be commercially and technically viable. They are capitalised net of proceeds from the sale of commissioning products during the development phase. On completion of construction defined as the time when the assets are brought into the condition of its intended use, all assets are reclassified to tangible fixed assets as either “buildings and structures”, “machinery and equipment” or “other mining assets”; or long-term prepaid expenses as “other mining costs”.

No depreciation is provided for construction in progress during the period of development, construction, installation and commissioning stages.

#### k Long-term prepaid expenses

##### (i) Prepaid land costs

Prepaid land costs comprise prepaid land lease rentals, including those for which the Group obtained land use rights certificate but are not qualified as intangible fixed assets under prevailing laws and regulations and other costs incurred in conjunction with securing the use of leased land. These costs are recognised in the consolidated statement of income on a straight-line basis over the term of the leases from 17 to 24 years.

##### (ii) Land compensation costs

Land compensation costs comprise prepaid land lease rentals, compensation, resettlement and other costs incurred in conjunction with securing the use of leased land for its mining activities. These costs are recognised in the consolidated statement of income on a straight-line basis over the term of the related leases.

##### (iii) Other mining costs

Other mining costs comprise:

- Exploration, evaluation and development expenditure (including development stripping); and
- Production stripping (as described below in ‘Deferred stripping costs’).

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#### Deferred stripping costs

In open pit mining operations, it is necessary to remove overburden and other waste materials to access ore body. Stripping costs incurred in the development phase of a mine (development stripping costs) are recorded as part of the cost of construction of the mine. All development stripping expenditure incurred during construction phase are transferred to other mining costs.

The costs of removal of the waste material during a mine’s production phase (production stripping costs) are deferred where they give rise to future benefits:

- (a) It is probable that the future economic benefits will flow to the Group;
- (b) The component of the ore body for which access has been improved can be identified; and
- (c) The costs incurred can be measured reliably.

Production stripping costs are allocated between inventory and long-term prepaid expenses in accordance with the life of mine strip ratio of the identified components of the ore bodies.

The life of mine strip ratio represents the estimated total volume of waste, to the estimated total quantity of economically recoverable ore, over the life of the mine of the identified components of the ore bodies. These costs are recognised as long-term prepaid expenses where the current period actual stripping ratio is higher than the average life of mine strip ratio.

The development and production stripping costs are amortised systematically based on the mineral reserves and mineral resources expected to be converted to mineral reserves of the relevant components. During the year, NPM, a subsidiary of the Group, has updated its estimate of mineral reserves and resources which serves as basis for calculation and amortisation of development and production stripping costs. The revision was based on the result of mining specialists’ technical assessments on mineral reserve within Nui Phao project area and the portion of resources expected to be converted into reserves as disclosed in Note 3(g)(ii). As at 31 December 2023 and for the year then ended, these changes in estimates of mineral reserves and resources lead to an increase of VND58 billion in stripping costs awaiting amortisation and a decrease of VND32 billion in amortised stripping costs.

#### (iv) Incremental costs of obtaining a contract

The incremental costs of obtaining a contract are those costs that the Group incurs to obtain a contract with a customer that the Group would not have incurred if the contract had not been obtained. The Group shall capitalize incremental costs of obtaining a contract if such costs meet the following criteria:

- Only the incremental costs incurred as a result of obtaining a contract should be capitalized;
- The cost must be recoverable.

The recognised asset shall be amortised on a systematic basis matched with the transfer of the goods or services to the customer to which the asset relates.

#### (v) Other prepaid expenses

Other prepaid expenses include service fees which are initially stated at cost and amortised on a straight-line basis over the term of the contracts for services fees.

#### l Accounts payable and other payables

Accounts payable to suppliers and other payables are stated at their cost.

#### m Provisions

A provision is recognised if, as a result of a past event, the Group has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability.

#### (i) Mining rights

In accordance with the Law on Minerals 2010, a subsidiary of the Company has an obligation to pay the Government fees for mining rights grant. Mining rights is calculated based on the remaining exploitable reserves and the price to calculate the charge for granting mining rights which is defined as the prices to calculate the resource royalty in accordance with the law on resource royalty (Decree 67), at the time of

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determining the charge for granting mining rights.

The prices to calculate the resource royalty are the prices applicable for the subsidiary's products which are determined by the provincial People's Committee. The conversion method is based on various parameters of the conversion coefficient under guidelines of Decree 67.

#### (ii) Mine rehabilitation

The mining, extraction and processing activities of the Group normally give rise to obligations for site closure or rehabilitation. Closure and rehabilitation works can include facility decommissioning and dismantling; site and land rehabilitation. The extent of work required and the associated costs are dependent on the requirements of Ministry of Natural Resources and Environment ("MONRE") and the Group's environmental policies stipulated in the Environment Impact Report.

Provisions for the cost of each closure and rehabilitation program are recognised at the time that environmental disturbance occurs. When the extent of disturbance increases over the life of an operation, the provision is increased accordingly. Costs included in the provision encompass all closure and rehabilitation activities expected to occur progressively over the life of the operation proportional to the degree of influence on the environment existing at the end of the annual accounting period.

Where rehabilitation is conducted systematically over the life of the operation, rather than at the time of closure, provision is made for the estimated outstanding continuous rehabilitation work at each reporting dates and the cost is charged to the consolidated statement of income. Routine operating costs that may impact the ultimate closure and rehabilitation activities, such as waste material handling conducted as an integral part of a mining or production process, are not included in the provision. Costs arising from unforeseen circumstances, such as the contamination caused by unplanned discharges, are recognised as an expense and liability when the event gives rise to an obligation which is probable and capable of reliable estimation.

The timing of the actual closure and rehabilitation expenditure is dependent on the life of the mine. Closure and rehabilitation provisions are measured at the expected value of future cash flows, discounted to their present value and determined according to the probability of alternative estimates of cash flows occurring for each operation. Significant

judgments and estimates are involved in forming expectations of future activities and the amount and timing of the associated cash flows. Those expectations are formed based on existing environmental and regulatory requirements which give rise to a constructive obligation.

When provisions for closure and rehabilitation are initially recognised, the corresponding cost is capitalised as an asset if the related obligations for closure and rehabilitation are unavoidable to the construction of the asset. The capitalised cost of closure and rehabilitation activities is recognised in other mining assets and depreciated accordingly. The value of the provision is progressively increased over time as the effect of the discounting unwinds, creating an expense recognised in financial expenses.

Closure and rehabilitation provisions will also be adjusted for changes in estimates. These adjustments will be accounted for as a change in the corresponding capitalised cost, except where a reduction in the provision is greater than the under-depreciated capitalised cost of the related assets, in which the capitalised cost is reduced to nil and the remaining adjustment is recognised in the consolidated statement of income. Changes to the capitalised cost result in an adjustment to future depreciation. Adjustments to the estimated amount and timing of future closure and rehabilitation cash flows are a normal occurrence in light of the significant judgements and estimates involved.

#### (iii) Pension liabilities

Pensions are retirement benefits and are classified as either defined contribution plans or defined benefit plans.

Under a defined contribution plan, the Group pays fixed contributions into a separate fund. The amount of an employee's future retirement benefit is only based on the contributions paid and the income earned from the investment. The Group has no legal or constructive obligations to pay further contributions if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods. The Group's contributions are to be recognised as expenses in the periods in which they were to be contributed.

Under a defined benefit plan, employees will receive a defined amount of pension benefit on retirement, usually dependent on one or more factors such as age, years of service and compensation. The provision to be recognised for a defined benefit plan is calculated as the present

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value of the defined benefit obligations at the end of the accounting period. The defined benefit obligation is calculated annually by independent actuaries. The present value of the defined benefit obligation is determined by discounting estimated future cashflow using interest rates of high-quality AA-corporation bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximation to the terms of the related pension liability. The Group determines the net interest expense on the net defined benefit liability (asset) for the year by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual accounting period to the then-net defined benefit liability, taking into account any changes in the net defined benefit liability during the period as a result of contributions. Net interest expense and other expenses related to defined benefit plans are recognised in consolidated statement of income. The remeasurement of defined benefit obligation involves estimation of future cashflow, employee turnover, mortality and future increase in salaries.

Gain or loss arising from remeasurements of the net defined benefit obligation, which comprise actuarial gains and losses and the relevant deferred tax, are recognised in equity under the caption "Other equity funds" in accordance with a ruling from the Ministry of Finance ("MOF").

#### n Bonds issued

At initial recognition, straight bonds are measured at cost which comprises proceeds from issuance net of issuance costs. Any discount, premium or issuance costs are amortised on a straight-line basis over the term of the bond.

#### o Equity

##### (i) Ordinary shares

Ordinary share capital is classified as equity. The excess of proceeds contributed over the par value of shares issued is recorded as share premium. Incremental costs directly attributable to the issue of ordinary shares are recognised as a deduction from share premium.

##### (ii) Other capital

Equity movements resulting from acquisition or disposal to non-controlling interests and transactions involving equity instruments were recorded in "Other capital" prior to the prospective application of Circular 202 from 1 January 2015 (Note 3(a)(iii)).

#### p Taxation

Income tax on the profit or loss for the year comprises current and deferred tax. Income tax is recognised in the statement of income except to the extent that it relates to items recognised directly to equity, in which case it is recognised in equity.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted at the end of the annual accounting period, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided using the balance sheet method, providing for temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amounts of assets and liabilities using the tax rates enacted or substantively enacted at end of the annual accounting period. Deferred tax is recognised in the consolidated statement of income except to the extent relating to item recognised directly in equity.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the temporary difference can be utilised. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

#### q Revenue

##### (i) Goods sold

Revenue from the sale of goods is recognised in the consolidated statement of income when significant risks and rewards of ownership have been transferred to the buyer. No revenue is recognised if there are significant uncertainties regarding recovery of the consideration due or the possible return of goods. Revenue on sales of goods is recognised at the net amount after deducting sales discounts.

In cases where the terms of the executed contractual sales agreement allow for an adjustment to the sales price based on a survey of the goods by the customer, assay results issued by a third party are preferable, unless customer's survey is within executed contractual tolerance, then sales recognition is based on the most recently determined product specifications agreed by parties.

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#### (ii) Revenue from tolling services

Tolling services are offered to the Group's worldwide customers of the metal powder business, in which customers deliver used material or metal scraps to the Group for recycling into finished products i.e. metal powder, in exchange for a tolling fee. Revenue from tolling services is recognised in the consolidated statement of income when the goods have been processed and accepted by the buyer. Revenue from tolling services is measured based on the consideration to which the Group expects to be entitled to in the contract, which is tolling fee. No revenue is recognised if there are significant uncertainties regarding recovery of the consideration due.

### r Financial income and financial expenses

#### (i) Financial income

Financial income comprises interest income from deposits and foreign exchange gains. Interest income from deposits is recognised as it accrues in the consolidated statement of income.

#### (ii) Financial expenses

Financial expenses comprise interest expenses on borrowings, bonds, facility fees, financing costs, transaction costs and foreign exchange losses.

Borrowings costs comprise interest expenses on borrowings, facility fees, financing costs and transaction costs. Borrowing costs are recognised as an expense in the year in which they are incurred, except where the borrowing costs relate to borrowings in respect of the construction of qualifying assets, in which case the borrowing costs incurred during the year of construction are capitalised as part of the cost of the fixed assets concerned.

### s Leases

#### (i) Leased assets

Leases in terms of which the Group, as lessee, assumes substantially all the risks and rewards of ownership are classified as finance leases. Tangible fixed assets acquired by way of finance leases are stated at an amount equal to the lower of fair value and the present value of the minimum lease payments at inception of the lease, less accumulated depreciation.

Depreciation on finance leased assets is computed on a straight-line basis over the shorter of the lease term and the estimated useful lives of the leased assets unless it is reasonably certain that the Group will obtain ownership by the end of the lease term. The estimated useful lives of finance leased assets are consistent with the useful lives of tangible fixed assets as described in Note 3(g)(ii).

Assets held under other leases are classified as operating leases and are not recognised in the Group's balance sheet.

#### (ii) Lease payments

Payments made under operating leases are recognised in the statement of income on a straight-line basis over the term of the lease. Lease incentives received are recognised in the statement of income as an integral part of the total lease expense over the term of the leases.

Lease payments made under finance leases are apportioned between the finance expense and the reduction of the outstanding liability. The finance expense is allocated to each period during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability.

### t Earnings per share

The Group presents basic and diluted, if any, earnings per share ("EPS") for its ordinary shares. Basic EPS is calculated by dividing the profit or loss attributable to the ordinary shareholders of the Group by the weighted average number of ordinary shares outstanding during the year. To determine the profit or loss attributable to ordinary equity holders, profit or loss for the year is allocated to the ordinary shares and participating equity instruments. This allocation is made in accordance with the rights of the other class of shares to participate in distributions if the entire profit or loss were distributed.

Diluted EPS is determined by adjusting the profit or loss attributable to the ordinary shareholders and the weighted average number of ordinary shares outstanding for the effect of all dilutive potential ordinary shares.

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### u Segment reporting

A segment is a distinguishable component of the Group that is engaged either in providing related products or services (business segment), or in providing products or services within a particular economic environment (geographical segment), which is subject to risks and rewards that are different from those of other segments. The Group's primary and secondary format for segment reporting is based on business segments and geographical segments respectively.

### v Related parties

Parties are considered to be related to the Group if one party has the ability, directly or indirectly, to control the other party or to exercise significant influence over the other party in making financial and operating decisions. Parties are also considered to be related if they are subject to common control or common significant influence. Related parties may be individuals or corporate entities and include close family members of any individual considered to be a related party. Related parties that are individuals refer to key management personnel who have authority and responsibility for planning, directing and controlling the activities of the Company, including directors and officers of the Company. Related companies refer to the immediate parent company, the high-level parent company, the ultimate parent company and their subsidiaries and associates.

### w Comparative information

Comparative information in these consolidated financial statements is presented as corresponding figures. Under this method, comparative information for the prior year is included as an integral part of the current year financial statements and are intended to be read only in relation to the amounts and other disclosures relating to the current year. Accordingly, the comparative information included in these consolidated financial statements is not intended to present the Group's consolidated financial position, consolidated results of operation or consolidated cash flows for the prior year.

## 4. Changes in accounting estimates

In preparing these annual consolidated financial statements, the management has made several accounting estimates. Actual results may differ from these estimates.

Effective from 1 January 2023, the Board of Management updated its estimates of mineral reserves and resources, using (i) the result of mining specialists' technical assessments on mineral reserve within Nui Phao project area, and (ii) a portion of mineral resources expected to be converted into reserves. The effect of this change on the depreciation and amortization charges of the affected assets is presented in Note 3(g)(ii) and Note 3(k)(iii). Other than these changes, no significant changes in accounting estimates have been made as of the end of the previous annual accounting period.

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## 5. Segment reporting

### a Business segments

The Group comprises the following business segments:

	Copper VND'000	Fluorspar VND'000	Tungsten VND'000	Others VND'000	Total VND'000
<b>2023</b>					
Segment net revenue	1,043,540,141	1,419,520,569	11,429,312,414	200,880,363	<b>14,093,253,487</b>
Segment gross profit/(loss)	486,168,904	886,403,707	(593,894,393)	5,608,026	<b>784,286,244</b>
Unallocated expenses					<b>(876,752,056)</b>
Financial income					<b>485,311,318</b>
Financial expenses					<b>(2,195,843,856)</b>
Share of profit in associates					<b>9,709,924</b>
Results from operating activities					<b>(1,793,288,426)</b>
Other income					<b>181,078,732</b>
Other expenses					<b>(41,803,130)</b>
Income tax benefit					<b>124,402,123</b>
Net profit after tax					<b>(1,529,610,701)</b>
<b>2022</b>					
Segment net revenue	48,416,484	1,758,590,684	13,465,667,192	276,873,294	<b>15,549,547,654</b>
Segment gross profit	25,930,926	1,139,099,632	1,145,139,540	66,684,012	<b>2,376,854,110</b>
Unallocated expenses					<b>(1,040,951,784)</b>
Financial income					<b>470,233,836</b>
Financial expenses					<b>(1,917,493,323)</b>
Share of profit in associates					<b>13,938,538</b>
Results from operating activities					<b>(97,418,623)</b>
Other income					<b>171,642,933</b>
Other expenses					<b>(96,870,711)</b>
Income tax benefit					<b>127,797,459</b>
Net profit after tax					<b>105,151,058</b>

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	Copper VND'000	Fluorspar VND'000	Tungsten VND'000	Others VND'000	Total VND'000
<b>As at 31 December 2023</b>					
Segment assets	120,738,052	636,460,125	7,791,061,067	1,480,157,965	<b>10,028,417,209</b>
Unallocated assets					<b>30,343,938,904</b>
Total assets					<b>40,372,356,113</b>
Total liabilities					<b>26,747,864,250</b>
<b>As at 1 January 2023</b>					
Segment assets	129,621,803	672,067,232	7,338,027,143	1,546,123,623	<b>9,685,839,801</b>
Unallocated assets					<b>31,835,160,388</b>
Total assets					<b>41,521,000,189</b>
Total liabilities					<b>26,273,561,415</b>

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	Copper VND'000	Fluorspar VND'000	Tungsten VND'000	Others VND'000	Total VND'000
<b>2023</b>					
Capital expenditure	3,941,759	-	9,611,114	-	<b>13,552,873</b>
Unallocated capital expenditure					<b>835,849,536</b>
Segment depreciation and amortisation	8,883,751	35,607,108	381,758,148	99,618,406	<b>525,867,413</b>
Unallocated depreciation and amortisation and investment property					<b>784,281,980</b>
Unallocated amortization of prepaid expenses					<b>351,977,830</b>
<b>2022</b>					
Capital expenditure	150,046,047	-	651,625,175	-	<b>801,671,222</b>
Unallocated capital expenditure					<b>528,365,274</b>
Segment depreciation and amortisation	11,892,120	45,295,587	551,863,213	130,225,998	<b>739,276,918</b>
Unallocated depreciation and amortisation and investment property					<b>762,615,645</b>
Unallocated amortization of prepaid expenses					<b>377,236,703</b>

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## b Geographical segments

The Group comprises the following geographical segments:

	Vietnam VND'000	Belgium VND'000	Germany VND'000	Japan VND'000	USA VND'000	China VND'000	Luxembourg VND'000	Others VND'000	Total VND'000
<b>2023</b>									
External revenue	1,014,454,613	48,893,597	2,389,630,183	668,071,851	2,543,256,314	2,960,525,219	1,344,266,403	3,124,155,307	<b>14,093,253,487</b>
Segment assets	29,832,107,903	-	5,778,317,854	205,438,621	707,550,110	1,478,763,125	239,183,131	2,130,995,369	<b>40,372,356,113</b>
Capital expenditure	723,972,060	-	93,299,974	-	-	22,086,722	-	10,043,653	<b>849,402,409</b>
<b>2022</b>									
External revenue	62,729,553	161,866,133	2,536,010,744	1,365,710,654	3,394,402,865	2,792,535,048	1,709,453,626	3,526,839,031	<b>15,549,547,654</b>
Segment assets	30,980,230,857	-	4,512,600,316	284,784,080	1,579,649,622	1,636,333,070	480,097,514	2,047,304,730	<b>41,521,000,189</b>
Capital expenditure	1,211,261,643	-	76,692,387	-	-	18,310,495	-	23,771,971	<b>1,330,036,496</b>

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## 6. Business combination

On 5 July 2023, H.C. Starck GmbH, an indirect subsidiary of the Company, completed the acquisition of a 100% of shares in Chemitas GmbH (“Chemitas”), an entity providing energy supply, waste management and logistics services based in Goslar, Germany.

The acquisition had the following effect on the Group’s assets and liabilities on acquisition date:

	Pre-acquisition carrying amounts VND’000	Fair value adjustments VND’000	Recognised value on acquisition VND’000
Cash and cash equivalents	338,149,189	-	338,149,189
Inventories – net	42,308,773	-	42,308,773
Other current assets	265,015,024	-	265,015,024
Tangible fixed assets – net	73,526,033	341,267,272	414,793,305
Intangible fixed assets – net	19,718,057	30,183,740	49,901,797
Construction in progress	21,070,721	-	21,070,721
Other long-term assets	-	32,524,204	32,524,204
Current liabilities	(232,519,072)	-	(232,519,072)
Long-term liabilities	(450,773,420)	(13,402,939)	(464,176,359)
<b>Total net identifiable assets and liabilities</b>	<b>76,495,305</b>	<b>390.572.277</b>	<b>467,067,582</b>
Negative goodwill (gain from bargain purchase) from business combination			(117,106,706)
<b>Total cost of business combination</b>			<b>349,960,876</b>
<b>Net cash used for business combination</b>			
Total cost of business combination			349,960,876
Cash increase from business combination			338,149,189
<b>Net cash outflow</b>			<b>11,811,687</b>

From the date of acquisition to 31 December 2023, the acquired business contributed VND291,361 million in revenue and VND1,063 million in net profit to the Group’s operating results, excluding the gain from bargain purchase mentioned above.

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## 7. Cash and cash equivalents

	31/12/2023 VND’000	1/1/2023 VND’000
Cash on hand	41,167	36,096
Cash in banks	974,143,187	802,602,728
Cash equivalents	-	700,240,424
	<b>974,184,354</b>	<b>1,502,879,248</b>

At 31 December 2023 a part of cash with an amount of VND6,789 million (1/1/2023: a part of cash and cash equivalents with an amount of VND52,507 million) was pledged with banks as security for short-term loans granted to subsidiaries (Note 21(a)).

## 8. Investments

### a Held-to-maturity investments

	31/12/2023 VND’000	1/1/2023 VND’000
Short-term deposits	8,110,000	8,110,000

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## b Long-term financial investments

	Quantity	% of equity owned	Carrying value VND'000	Allowance for diminution in value VND'000	Fair value VND'000
<b>31/12/2023</b>					
<b>Equity investments in Associates</b>					
Jiangwu H.C. Starck Tungsten Products Co. Ltd. (China)		30%	211,552,770	-	(**)
<b>Equity investments in Others</b>					
Nyobolt Limited (*) (Cambridge, UK)	755,161	21.5%	1,426,422,485	-	(**)
			<b>1,637,975,255</b>	<b>-</b>	
<b>1/1/2023</b>					
<b>Equity investments in Associates</b>					
Jiangwu H.C. Starck Tungsten Products Co. Ltd. (China)		30%	190,164,060	-	(**)
<b>Equity investments in Others</b>					
Nyobolt Limited (*) (Cambridge, UK)	755,161	21.5%	1,342,363,039	-	(**)
			<b>1,532,527,099</b>	<b>-</b>	

(\*) Equity investments in other entities as at 31 December 2023 represent investment in 755,161 shares of Nyobolt Limited ("Nyobolt"). As at 31 December 2023 the investment represents 21.5% of equity owned or 15% equity interest on a fully diluted basis. The management assessed that the Group does not have significant influences over Nyobolt and thus account for this investment as investments in equity instruments of other entities.

(\*\*) The Group has not determined the fair values of the equity investments for disclosure in the consolidated financial statements because information about their market prices are not available and there is currently no guidance on determination of fair value using valuation techniques under Vietnamese Accounting Standards or the Vietnamese Accounting System for Enterprises. The fair values of the equity investments may differ from their carrying amounts.

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## 9. Accounts receivable from customers - short-term

### Accounts receivable from customers detailed by significant customers

	31/12/2023 VND'000	1/1/2023 VND'000
<b>Third parties</b>		
Tungsten customers	1,299,986,401	1,390,396,738
Fluorspar customers	256,183,028	611,534,261
Bismuth customers	67,259,118	110,699,668
Copper customers	41,780,462	55,412,375
Other customers	3,604,622	2,508,997
	<b>1,668,813,631</b>	<b>2,170,552,039</b>

At 31 December 2023 and 1 January 2023, a part of short-term receivables was pledged with banks as security for short-term loans granted to subsidiaries (Note 21(a)).

## 10. Other short-term and long-term receivables

	31/12/2023 VND'000	1/1/2023 VND'000
<b>Other short-term receivables</b>		
Receivable for mining rights fee (a)	810,796,587	244,772,921
Environmental protection fee prepayment	-	114,239,595
Receivable from factoring transaction	18,987,603	15,744,595
Receivable for insurance claim (b)	9,132,771	14,873,688
Import tax receivable	1,988,552	1,431,323
Interest income	357,284	394,574
Others	48,823,691	21,971,445
	<b>890,086,488</b>	<b>413,428,141</b>

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	31/12/2023 VND'000	1/1/2023 VND'000
<b>Other long-term receivables</b>		
Land compensation receivable from Thai Nguyen People's Committee (c)	1,228,946,611	1,230,754,171
Deposit paid to Environment Protection Fund (d)	95,560,756	86,764,016
Net defined benefit assets	122,066,644	85,153,285
Others	582,827	582,827
	<b>1,447,156,838</b>	<b>1,403,254,299</b>

(a) Receivables for mining rights fee ("MRF") as at 31 December 2023 represents additional mining rights fee of the Nui Phao Mining Company Ltd ("NPM"), a subsidiary of the Company, for years from 2015 and relevant administrative charges that NPM paid to the authorities based on a temporary calculation by General Department of Geology and Minerals ("GDGM") under the Official Letter No. 3724/DCKS-KTDCKS dated 28 December 2018 ("Official Letter 3724") and subsequently a calculation by the Ministry of Natural Resources and Environment ("MONRE") under the Decision No. 1640/QD-BTNMT dated 23 August 2021 ("Decision 1640").

NPM does not agree with the amounts and basis of the Official Letter 3724 as the management of NPM is of the opinion that it is unreasonable and does not comply with current regulations because the price used to calculate the charge for granting mining rights (or mining right fee) ("G-price") is based on the resource royalty taxable price applicable to mineral resource products instead of royalty taxable price applicable to industrial products. In accordance with regulations of the Government's Decree No. 12/2015/ND-CP dated 12 February 2015 and guidance of the Ministry of Finance's Circular No. 152/2015/TT-BTC dated 2 October 2015 on Royalties, if resources that have to be processed before being sold, resource royalty taxable price equals (=) selling price of the industrial products minus (-) processing costs but not

lower than the taxable price imposed by the People's Committee of the province. NPM's products are industrial products, for which the resource royalty taxable price is determined on the basis of the higher of selling price minus (-) processing costs and the taxable price imposed by the Provincial People's Committee ("PPC"). GDGM did not use the royalty taxable price applicable to industrial products; instead they used the royalty taxable price applicable to mineral resource products – tungsten ore (0.1% < WO3 < 0.3%). Before the effective date of Official Letter 3724, NPM made payment for MRF in accordance with Decision No. 500/QD-BTNMT ("Decision 500") issued by the Ministry of Natural Resources and Environment ("MONRE") on 4 March 2015, which used estimated royalty taxable price applicable to industrial products.

On 23 August 2021, MONRE has issued Decision No. 1640/QD-BTNMT or ("Decision 1640") to determine the MRF of Nui Phao Mine, replacing the temporary MRF calculation in Decision 500 and Official Letter 3724 despite that the royalty taxable price applicable to NPM's industrial products has not yet been determined. In issuing this Decision 1640, MONRE continued using the royalty taxable price applicable to tungsten ore (0.1% < WO3 < 0.3%) instead of the royalty taxable price applicable to industrial products, which had been highlighted by NPM before. According to Decree 67, Article 15, Point 3, in case MRF is paid on a temporary basis, if the taxable prices for calculating resource royalties announced by Provincial People's Committees are valid and compliant with regulations on prices of minerals for determining mining

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right fee, those prices shall be officially applied and replace the prices used in the previous temporary payments. The management of NPM assessed that because the royalty taxable prices applied to NPM's industrial products have not yet been determined by Thai Nguyen PPC, the G price that serves as the basis for computation of MRF under Decision 1640 is not in accordance with the prevailing laws and regulations.

NPM has also sent many letters to different levels of authorities to highlight the issues and seek proper resolutions for NPM's MRF issue. As instructed by the Prime Minister under Letter No. 978/VPCP-KTTH dated 28 February 2021, Letter No. 5987/VPCP-KTTH dated 28 August 2021 and subsequently as further instructed by the Deputy Prime Minister under Notification No. 226/TB-VPCP dated 16 June 2023 ("Notification 226"), NPM's MRF issue is under review by Ministry of Finance ("MOF"), MONRE and Thai Nguyen PPC. Accordingly, MRF for the Nui Phao Mining Project will be re-determined by MONRE after (1) the royalty taxable price applicable to NPM's industrial products is finalised and officially issued by Thai Nguyen PPC; and (2) the royalty taxable price bracket for tungsten ore is issued by MOF and the royalty taxable price applicable to NPM's tungsten ore is issued by Thai Nguyen PPC.

As disclosed in Note 37 to these consolidated financial statements, Thai Nguyen PPC, Thai Nguyen Department of Finance and relevant functional agencies are currently working together to determine the royalty taxable price applicable to NPM's industrial products.

Management believes that NPM have adequately provided for its liabilities for MRF and that above amount temporarily paid is entitled to be refunded or off-set against future MRF liabilities based on its interpretation of relevant legislation, including regulations on the charge for granting mining rights and regulations on natural resources tax, i.e., using the price as determined in Decision 500. Accordingly, the Group accounted for the additional MRF payments and relevant administrative charges as receivables and has not recognised the additional MRF specified in Decision 1640 as liabilities. NPM's management expects that it will be able to claim back this receivable after the royalty taxable price applicable to NPM's industrial products is officially determined.

(b) This amount represents claim due from insurers for loss of profit arising from business interruption of NPM from July to October 2021. The amount of claim was finalized by the lead insurers and was partially received in 2022 and 2023.

(c) These represented receivables from State Treasury for the land compensation cost of the Nui Phao Mining Project which was paid to the affected residents at Ha Thuong Commune, Dai Tu District, Thai Nguyen Province. The amount can be netted off against annual land rental fee of future years.

(d) NPM has obligation to deposit to Environment Protection Fund for mine closure and environment rehabilitation. In accordance with Decision No. 1536/QD-BTMMT issued by MONRE on 20 June 2019, the mine rehabilitation plan requires deposit amount to be increased to VND123,460 million. On this date, the remaining deposit of VND87,692 million are approved for annual instalment over 10 years from 2019. The future deposit instalment will be based on the annual CPI fluctuation in accordance with Circular No. 38/2015/TT-BTNMT dated 30 June 2015.

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## 11. Inventories

	31/12/2023		1/1/2023	
	Cost VND'000	Allowance VND'000	Cost VND'000	Allowance VND'000
Goods in transit	187,237,570	-	151,170,551	-
Raw materials	589,383,393	(25,751,564)	717,276,611	(5,182,267)
Tools and supplies	878,801,429	(21,945,506)	854,292,798	(9,008,193)
Work in progress	910,523,951	(50,955,174)	941,592,425	(10,362,219)
Finished goods	3,605,256,752	(94,732,782)	4,077,328,752	(22,317,541)
Merchandise inventories	9,010,766	-	21,880,799	-
Goods on consignment	11,454,984	(728,221)	141,496,064	-
	<b>6,191,668,845</b>	<b>(194,113,247)</b>	<b>6,905,038,000</b>	<b>(46,870,220)</b>

Included in inventories at 31 December 2023 was VND461,522 millions of raw materials, VND861,832 millions of work in progress and VND1,546,888 millions of finished goods and VND11,455 millions of goods on consignment (1/1/2023: VND96,285 millions of raw materials, VND626,698 millions of work in progress, VND1,101,051 millions of finished goods) carried at net realisable value.

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## 12. Tangible fixed assets

	Buildings and structures VND'000	Machinery and equipment VND'000	Office equipment VND'000	Motor vehicles VND'000	Other mining assets VND'000	Total VND'000
<b>Cost</b>						
Opening balance	6,874,514,849	17,354,900,335	42,933,174	21,400,899	5,095,926,136	<b>29,389,675,393</b>
Increase due to business combination	170,957,300	314,027,279	-	-	-	<b>484,984,579</b>
Additions	5,462,119	84,563,819	-	-	-	<b>90,025,938</b>
Transfer from construction in progress (Note 15)	196,934,359	143,528,964	-	905,712	-	<b>341,369,035</b>
Disposals	(42,802)	(4,898,371)	-	(4,818,262)	-	<b>(9,759,435)</b>
Currency translation differences	76,740,265	222,805,486	-	-	-	<b>299,545,751</b>
Closing balance	7,324,566,090	18,114,927,512	42,933,174	17,488,349	5,095,926,136	<b>30,595,841,261</b>
<b>Accumulated depreciation</b>						
Opening balance	2,297,475,364	8,524,100,940	41,677,958	17,377,047	1,644,726,196	<b>12,525,357,505</b>
Increase due to business combination	12,529,456	57,661,818	-	-	-	<b>70,191,274</b>
Charge for the year	290,772,824	638,008,232	574,786	2,008,932	120,458,665	<b>1,051,823,439</b>
Disposals	(11,558)	(3,741,916)	-	(4,818,262)	-	<b>(8,571,736)</b>
Currency translation differences	21,671,374	158,633,925	-	-	-	<b>180,305,299</b>
Closing balance	2,622,437,460	9,374,662,999	42,252,744	14,567,717	1,765,184,861	<b>13,819,105,781</b>
<b>Net book value</b>						
Opening balance	4,577,039,485	8,830,799,395	1,255,216	4,023,852	3,451,199,940	<b>16,864,317,888</b>
Closing balance	4,702,128,630	8,740,264,513	680,430	2,920,632	3,330,741,275	<b>16,776,735,480</b>

Included in the cost of tangible fixed assets of the Group were assets costing VND744,402 million which were fully depreciated as at 31 December 2023 (1/1/2023: VND574,283 million), but which are still in active use.

At 31 December 2023, tangible fixed assets with carrying value of VND10,058 billion were pledged with banks as security for short-term and long-term loans and long-term bonds, issued by subsidiaries and the Company (1/1/2023: VND10,423 billion) (Notes 21(a) and Note 21(b)).

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### 13. Intangible fixed assets

	Land	Software	Mining rights	Development cost (*)	Brand name	Customer Relationship	Technologies	Other intangible assets	Total
	VND'000	VND'000	VND'000	VND'000	VND'000	VND'000	VND'000	VND'000	VND'000
<b>Cost</b>									
Opening balance	30,896,140	394,777,454	792,655,211	608,152,402	993,568,946	204,053,250	1,370,528,592	24,628,787	<b>4,419,260,782</b>
Increase due to business combination	8,178,240	29,550,416	-	-	-	-	-	26,089,889	<b>63,818,545</b>
Additions	4,441,033	3,048,980	-	-	-	-	-	-	<b>7,490,013</b>
Transfer from construction in progress (Note 15)	-	2,378,738	-	-	-	-	-	-	<b>2,378,738</b>
Currency translation differences	(2,586,500)	18,547,076	-	38,082,808	62,217,785	12,777,917	85,823,187	1,538,260	<b>216,400,533</b>
Closing balance	40,928,913	448,302,664	792,655,211	646,235,210	1,055,786,731	216,831,167	1,456,351,779	52,256,936	<b>4,709,348,611</b>
<b>Accumulated amortisation</b>									
Opening balance	-	381,715,882	282,798,144	153,431,976	86,208,719	14,831,190	172,414,472	6,452,215	<b>1,097,852,598</b>
Increase due to business combination	-	13,916,748	-	-	-	-	-	-	<b>13,916,748</b>
Charge for the year	-	9,879,509	37,767,190	35,321,464	34,773,458	5,982,362	69,545,719	2,578,065	<b>195,847,767</b>
Currency translation differences	-	18,800,142	-	10,264,859	6,045,114	1,039,990	12,090,019	333,505	<b>48,573,629</b>
Closing balance	-	424,312,281	320,565,334	199,018,299	127,027,291	21,853,542	254,050,210	9,363,785	<b>1,356,190,742</b>
<b>Net book value</b>									
Opening balance	30,896,140	13,061,572	509,857,067	454,720,426	907,360,227	189,222,060	1,198,114,120	18,176,572	<b>3,321,408,184</b>
Closing balance	40,928,913	23,990,383	472,089,877	447,216,911	928,759,440	194,977,625	1,202,301,569	42,893,151	<b>3,353,157,869</b>

Included in the cost of intangible fixed assets were assets costing VND348,897 million which were fully amortised as at 31 December 2023 (1/1/2023: VND257,035 million), but which are still in use.

At 31 December 2023, intangible fixed assets with carrying value of VND502 billion were pledged with banks as security for short-term and long-term loans and long-term bonds issued by a subsidiary and the Company (1/1/2023: VND542 billion) (Note 21(a) and Note 21(b)).

(\*) Development cost includes completed projects related to troubleshooting used in the production process of the subsidiaries.

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### 14. Investment properties

	Buildings and structures VND'000	Land VND'000	Total VND'000
<b>Cost</b>			
Opening balance	1,096,335,605	33,284,187	<b>1,129,619,792</b>
Currency translation difference	66,016,497	2,084,273	<b>68,100,770</b>
Closing balance	1,162,352,102	35,368,460	<b>1,197,720,562</b>
<b>Accumulated depreciation</b>			
Opening balance	407,216,790	-	<b>407,216,790</b>
Charge for the period	62,478,187	-	<b>62,478,187</b>
Currency translation difference	25,105,422	-	<b>25,105,422</b>
Closing balance	494,800,399	-	<b>494,800,399</b>
<b>Net book value</b>			
Opening balance	689,118,815	33,284,187	<b>722,403,002</b>
Closing balance	667,551,703	35,368,460	<b>702,920,163</b>

Cost of investment property is determined at fair value of assets at HCS's acquisition date.

At 31 December 2023, investment properties with carrying value of VND627 billion were pledged with banks as security for short-term borrowing of a subsidiary (1/1/2023: VND649 billion) (Note 21(a)).

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## 15. Construction in progress

	2023 VND'000	2022 VND'000
Opening balance	2,081,826,883	1,157,484,188
Increase due to business combination	21,070,721	-
Additions during the year	752,584,087	1,187,411,479
Transfer to tangible fixed assets (Note 12)	(341,369,035)	(239,993,822)
Transfer to intangible fixed assets (Note 13)	(2,378,738)	(94,079)
Transfer to long-term prepaid expenses (Note 16)	(7,428,168)	(3,359,516)
Disposals	(569,478)	-
Other movements	-	(17,676,315)
Currency translation differences	7,141,348	(1,945,052)
Closing balance	<b>2,510,877,620</b>	<b>2,081,826,883</b>

During the year, borrowing costs capitalised into construction in progress amounted to VND103 billion (2022: VND67 billion).

As at the reporting date, construction in progress of NPM with carrying amount of VND2,227 billion has been pledged with banks as security for short-term borrowings and long-term bonds issued by the Group (Notes 21(a) and 21(b)).

Major constructions in progress were as follows:

	31/12/2023 VND'000	1/1/2023 VND'000
Plant, machinery and equipment	1,609,459,652	1,152,691,994
Land compensation	412,261,236	388,080,883
Site clearance, relocation infrastructure and others	216,434,930	205,963,050
Tailing dams	92,810,066	168,661,925
Other assets	179,911,736	166,429,031
	<b>2,510,877,620</b>	<b>2,081,826,883</b>

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## 16. Long-term prepaid expenses

	Prepaid land cost and land compensation costs VND'000	Other mining costs VND'000	Incremental costs of obtaining contract (*) VND'000	Others VND'000	Total VND'000
Opening balance	1,297,902,046	1,770,217,100	130,853,798	147,187,874	<b>3,346,160,818</b>
Additions	1,807,559	208,507,283	-	71,767,833	<b>282,082,675</b>
Transfer from construction in progress (Note 15)	-	-	-	7,428,168	<b>7,428,168</b>
Amortisation for the year	(72,422,962)	(157,607,425)	(18,606,248)	(103,341,195)	<b>(351,977,830)</b>
Closing balance	1,227,286,643	1,821,116,958	112,247,550	123,042,680	<b>3,283,693,831</b>

(\*) In September 2020, a subsidiary incurred costs to terminate its long-term offtake agreement with an existing customer in order to obtain a more favourable contract with another. This cost is incremental costs of obtaining contract, thus is capitalised and amortised on a systematic basis consistent with the transfer of the goods under the new contract.

## 17. Advance from customers - short-term

	31/12/2023 VND'000	1/1/2023 VND'000
<b>Third parties</b>		
Fluorspar customers	732,742,579	476,200,000
Bismuth customers	251,506	251,506
Others	24,167,550	13,352,564
	<b>757,161,635</b>	<b>489,804,070</b>

Advance for sales of Fluorspar and Bismuth shall be discharged through monthly instalments through subsequent deliveries. Advance for sales of Fluorspar bears prepayment fee based on agreed term and is guaranteed by an intermediate parent company and ultimate parent company.

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## 18. Taxes payable to State Treasury

	1/1/2023	Increase due to business combination	Incurred	Paid/Offset	Reclassification	Currency translation differences	31/12/2023
	VND'000	VND'000	VND'000	VND'000	VND'000	VND'000	VND'000
<b>Tax payables to Vietnamese State Treasury</b>							
Value added tax	-	-	411,614,712	(411,614,712)	-	-	-
Import-export tax	-	-	164,027,833	(162,837,310)	-	-	1,190,523
Corporate income tax	21,753,841	-	9,625,282	(22,159,259)	-	-	9,219,864
Environment protection tax	-	-	18,006,570	(18,006,570)	-	-	-
Personal income tax	9,023,967	-	102,753,728	(105,149,924)	-	-	6,627,771
Natural resource tax	-	-	293,387,879	(293,387,879)	-	-	-
Other taxes	778,914	-	23,855,077	(24,379,119)	-	-	254,872
	31,556,722	-	1,023,271,081	(1,037,534,773)	-	-	17,293,030
<b>Tax payables to foreign tax authorities</b>							
Corporate income tax	57,871,246	62,302,829	47,364,487	(66,520,793)	(28,769,522)	5,477,075	77,725,322
Other taxes	70,778,568	6,161,844	167,309,547	(184,852,108)	28,769,522	4,673,508	92,840,881
	128,649,814	68,464,673	214,674,034	(251,372,901)	-	10,150,583	170,566,203
	160,206,536	68,464,673	1,237,945,115	(1,288,907,674)	-	10,150,583	187,859,233

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## 19. Accrued expenses

	31/12/2023	1/1/2023
	VND'000	VND'000
Operating costs	252,189,471	250,115,192
Accrued interest payable	346,890,886	254,515,802
Accrual for land leases costs	112,468,333	104,361,498
Natural resource taxes and fees	15,690,196	138,872,954
Bonus	48,421,167	46,335,612
Consultant fee	21,698,007	15,851,304
Accrual for construction work	20,494,038	3,597,485
Accrual for other financing costs	1,550,261	1,550,261
Others	13,247,872	3,455,775
	<b>832,650,231</b>	<b>818,655,883</b>

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## 20. Other short-term payables

Other payables included the following amounts:

	31/12/2023 VND'000	1/1/2023 VND'000
<b>Amounts due to Masan Horizon Corporation (“MH”) – the immediate parent company</b>		
Non-trade (a)	2,511,785	2,511,785
<b>Other payables to other parties</b>		
Usance LC payable at sight (UPAS LC) (b)	198,592,554	935,610,039
Other payables – short-term	34,320,273	42,500,729
	<b>235,424,612</b>	<b>980,622,553</b>

(a) Amounts due to related parties were unsecured, interest-free and repayable based on agreement between the parties.

(b) Amounts due to local banks that issued UPAS LC to subsidiaries of Group. The outstanding balances bear fixed rates over the deferred payment period from 6 to 11 months and are secured by certain receivables, inventories, part of assets of NPM project, and shares of the Company held by a related party.

Movement of these UPAS LC during the year are as follows:

	2023 VND'000	2022 VND'000
Opening balance	935,610,039	316,570,655
Addition	277,084,598	1,464,668,400
Payments	(1,016,521,246)	(843,306,103)
Unrealised foreign exchange losses/(gains)	2,419,163	(2,322,913)
Closing balance	<b>198,592,554</b>	<b>935,610,039</b>

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## 21. Borrowings and bonds

### a Short-term borrowings and bonds

	1/1/2023	Movement during the year				31/12/2023
	Carrying amount and amount within repayment capacity (*) VND'000	Additions VND'000	Payments VND'000	Unrealised foreign exchange differences VND'000	Converted foreign exchange differences VND'000	Carrying amount and amount within repayment capacity (*) VND'000
Short-term borrowings	5,818,241,451	8,823,305,992	(8,908,691,556)	48,100,725	25,543,145	5,806,499,757
Current portion of long-term bonds (Note 21(b))	7,287,233,956	2,008,049,961	(7,300,000,000)	-	-	1,995,283,917
Current portion of long-term borrowings (Note 21(b))	-	102,812,381	(6,929,605)	-	(1,548,370)	94,334,406
	<b>13,105,475,407</b>	<b>10,934,168,334</b>	<b>(16,215,621,161)</b>	<b>48,100,725</b>	<b>23,994,775</b>	<b>7,896,118,080</b>

(\*) The above amounts within repayment capacity were estimated based on the assumption that the ultimate parent company will continue to provide the necessary supports to enable the Group to pay its debts as and when they fall due as described in Note 2(c)

Terms and conditions of short-term borrowings at respective reporting dates were as follows:

		31/12/2023		1/1/2023	
	Currency	Annual interest %	VND'000	Annual interest %	VND'000
Secured bank loan (*)	USD	8.20 - 8.50	809,136,075	4.00 - 9.50	394,465,896
Secured bank loan (*)	VND	7.20 - 9.50	801,338,773	6.20 - 8.50	957,259,857
Secured bank loan (*) (**)	USD	5.50 - 10.43	717,955,303	3.92 - 10.43	563,751,156
Secured bank loan (*)	USD	7.40 - 7.80	495,768,864	3.00 - 7.80	533,739,324
Secured bank loan (*)	EUR	3.50 + Margin	274,300,000	3.23	779,220,000
Secured bank loan (*)	USD	8.07 - 8.12	200,673,054	-	-
Secured bank loan (*) (**)	USD	7.90	140,944,470	3.92 - 10.24	185,404,032
Secured bank loan (*)	USD	8.50 - 10.00	102,387,309	6.50 - 9.50	11,756,448
Secured bank loan (*) (**)	VND	7.10 - 7.87	86,445,473	4.10 + margin	333,714,270

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	31/12/2023			1/1/2023		
	Currency	Annual interest %	VND'000	Annual interest %	VND'000	
Secured bank loan (*)	USD	4.50 - 7.80	59,120,436	4.50 - 6.95	117,278,387	
Secured bank loan (*)	USD	7.46	21,075,900	-	-	
Secured bank loan (*) (**)	VND	6.90 - 7.20	7,720,500	-	-	
Secured bank loan (*)	USD	-	-	5.10 - 5.90	25,727,972	
Secured bank loan (*)	USD	-	-	4.60 - 7.70	206,931,566	
Secured bank loan (*)	VND	-	-	9.30	151,947,330	
Secured bank loan (*)	USD	-	-	5.00 - 7.80	7,547,532	
Secured bank loan (*)	VND	-	-	8.40 - 9.30	305,413,750	
Unsecured bank loan	VND	4.10 - 5.40	221,224,465	4.30 - 9.20	50,911,992	
Unsecured bank loan	USD	6.60 - 7.50	84,784,587	5.20 - 6.45	58,834,403	
Unsecured bank loan	CNY	4.35	34,938,669	4.35	35,299,394	
Unsecured bank loan	CNY	4.15	34,938,669	-	-	
Unsecured bank loan	USD	8.06 - 8.28	19,359,510	3.05 - 7.42	301,798,142	
Unsecured bank loan	CNY	3.80	17,468,838	-	-	
Unsecured bank loan	USD	6.60	418,862	-	-	
Unsecured loan from related party	VND	8.00	616,500,000	5.00 - 7.00	197,240,000	
Unsecured loan from related party	VND	8.00	600,000,000	6.50 - 7.30	600,000,000	
Unsecured loan from related party	VND	8.00	460,000,000	-	-	
			<b>5,806,499,757</b>		<b>5,818,241,451</b>	

(\*) As 31 December 2023, these short-term loans are secured by the following collaterals:

- part of a subsidiary's bank accounts (Note 7); and/or
- part of short-term receivables of a subsidiary (Note 9); and/or
- a number of shares issued by the Company held by a related company; and/or
- part of investment property (Note 14); and/or
- part of tangible and intangible fixed assets and construction in progress of subsidiaries (Note 12, Note 13 and Note 15).

(\*\*) These are loans from local bank which is an associate company of the ultimate parent company.

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## b Long-term borrowings and bonds issued

	31/12/2023 VND'000	1/1/2023 VND'000
Long-term borrowings and bonds issued	10,850,162,726	10,266,342,921
Bonds repayable within twelve months (Note 21(a))	(1,995,283,917)	(7,287,233,956)
Loan repayable within twelve months (Note 21(a))	(94,334,406)	-
Repayable after twelve months	<b>8,760,544,403</b>	<b>2,979,108,965</b>

Terms and conditions of long-term borrowings and bonds were as follows:

			31/12/2023 VND'000	1/1/2023 VND'000
Secured bond issued (*)	(ii)	VND	1,500,000,000	-
Secured bond issued (*)	(ii)	VND	995,831,913	989,579,782
Secured bond issued (*)	(i)	VND	719,376,000	-
Secured bond issued (*)	(i)	VND	698,395,833	-
Secured bond issued (*)	(i)	VND	639,445,333	-
Secured bond issued (*)	(i)	VND	629,454,000	-
Secured bond issued (*)	(i)	VND	609,471,333	-
Secured bond issued (*)	(i)	VND	548,739,583	-
Secured bond issued (*)	(i)	VND	499,718,671	498,874,684
Secured bond issued (*)	(ii)	VND	499,733,333	498,933,333
Secured bond issued (*)	(i)	VND	499,550,000	-
Secured bond issued (*)	(i)	VND	499,550,000	-
Secured bond issued (*)	(i)	VND	498,854,167	-
Secured bond issued	(i)	VND	498,333,333	497,833,333
Secured bond issued (*)	(i)	VND	448,968,750	-
Secured bond issued (*)	(i)	VND	287,235,333	286,481,333
Secured bond issued (*)	(i)	VND	207,952,500	207,406,500
Secured bond issued (*)	(i)	VND	-	499,509,872
Secured bond issued (*)	(i)	VND	-	998,000,000

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			31/12/2023 VND'000	1/1/2023 VND'000
Secured bond issued (*)	(i)	VND	-	1,596,800,000
Secured bond issued (*)	(i)	VND	-	998,666,667
Secured bond issued (*)	(i)	VND	-	998,357,417
Secured bond issued (*)	(i)	VND	-	697,900,000
Secured bond issued (*)	(ii)	VND	-	1,498,000,000
Secured bank loan	(iv)	VND	475,218,238	-
Unsecured bank loan	(iii)	CNY	94,334,406	-
			<b>10,850,162,726</b>	<b>10,266,342,921</b>

- (i) These are non-convertible bonds issued by NPM – a subsidiary, which have interest rate to be adjusted every six months and calculated as the average twelve-month saving deposit rate of related reference banks plus 3.3% to 4.6% per annum.
- (ii) These are non-convertible bonds issued by the Company, which have interest rate to be adjusted every six months and calculated as the average twelve-month saving deposit rate of related reference banks plus 3.3% to 5.1% per annum.

As at 31 December 2023, these VND denominated non-convertible bonds are secured by the following collaterals:

- a part of certain long-term assets of a subsidiary (Note 12, Note 13 and Note 15); and/or
- a number of shares issued by the Company owed by a related company; and/or
- portion of contributed capital owned by a subsidiary; and/or
- guaranteed by the ultimate parent company.

These secured bonds were reported net of bond arrangement fees.

- (iii) This represents an unsecured bank loan of a subsidiary with an interest rate of 4.7%/year.
- (iv) These are loans from local bank which is an associate of the ultimate parent company with interest rates of 12.0% - 13.5%/year. These loans were secured by a portion of short-term receivables of a subsidiary, certain shares issued by the Company and owned by a related company, and a portion of assets of a subsidiary.

(\*) The representative of the bondholders of these bonds is Techcom Securities JSC – the ultimate parent company's associate.

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## 22. Recognised deferred tax assets and liabilities

### a Recognised deferred tax assets and liabilities

	Tax rate	31/12/2023 VND'000	1/1/2023 VND'000
<b>Deferred tax assets:</b>			
Remeasurement of provision for pension liabilities	30%	297,826,332	225,806,679
Tax losses carry-forwards	7.5% - 30%	446,264,329	278,547,539
Unrealized gain on intra-group transactions	5% - 30%	22,140,757	2,861,558
Pre-existing relationship - Benefit from contract with NPM	30%	8,018,272	12,027,409
Allowance for inventories	15%	19,128,896	-
Accruals, provisions and others (*)	30%	36,677,793	38,057,534
Net-off		(773,892,819)	(536,421,441)
Total deferred tax assets		<b>56,163,560</b>	<b>20,879,278</b>
<b>Deferred tax liabilities:</b>			
Mineral reserves and mineral resources	15%	489,936,081	507,508,721
Long-term assets	7.5% - 20%	151,833,739	82,201,035
Unrealized loss on intra-group transactions	10% - 30%	42,441,627	35,604,296
Newly identified intangible assets from business combination	25% - 30%	824,760,181	818,635,499
Newly identified tangible assets from business combination (*)	15% - 30%	688,334,476	583,281,891
Investment in associates	25%	53,271,287	49,629,963
Others (*)	10% - 30%	3,289,488	176,599
Net-off		(796,346,670)	(559,426,787)
Total deferred tax liabilities		<b>1,457,520,209</b>	<b>1,517,611,217</b>

(\*) Deferred tax assets and liabilities includes items mainly arose from HCS and its subsidiaries. These items were presented on a net basis because the subsidiaries have a legally enforceable right to set off current tax assets against current tax liabilities and the deferred tax assets and the deferred tax liabilities relate to income taxes levied by the same taxation authorities on the same taxable entities.

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### b Movement in temporary differences during the year

	1/1/2023	Increase due to business combination	Recognised in consolidated statement of income	Recognised in equity	31/12/2023
	VND'000	VND'000	VND'000	VND'000	VND'000
Mineral reserves and mineral resources	(507,508,721)	-	17,572,640	-	(489,936,081)
Long-term assets	(82,201,035)	-	(69,632,704)	-	(151,833,739)
Unrealized (loss)/profit on intra-group transactions	(32,742,738)	-	17,183,730	(4,741,862)	(20,300,870)
Pre-existing relationship asset	12,027,409	-	(4,009,137)	-	8,018,272
Remeasurement of provision for pension liabilities (**)	225,806,679	28,617,266	(11,192,439)	54,594,826	297,826,332
Tax losses carry-forwards	278,547,539	-	147,539,575	20,177,215	446,264,329
Identified intangible assets from business combination	(818,635,499)	(4,528,723)	42,111,643	(43,707,602)	(824,760,181)
Identified tangible assets from business combination	(583,281,891)	(113,385,422)	38,937,556	(30,604,719)	(688,334,476)
Investment in associates	(49,629,963)	-	(2,427,481)	(1,213,843)	(53,271,287)
Allowance for inventories	-	-	19,128,896	-	19,128,896
Accrual, provisions and others	60,886,281	3,906,938	(13,820,387)	4,869,324	55,842,156
	<b>(1,496,731,939)</b>	<b>(85,389,941)</b>	<b>181,391,892</b>	<b>(626,661)</b>	<b>(1,401,356,649)</b>

(\*\*) Deferred tax recognised in equity also included the relevant deferred tax of the remeasurement of the net defined benefit obligation - provision for pensions. As explained in Note 3(m)(iii), these amounts are recognised in equity under the caption "Other equity funds" in accordance with a ruling from the Ministry of Finance.

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### 23. Provisions – long-term

Movements of long-term provisions during the year were as follows:

	Mine rehabilitation	Mining rights	Pensions and others	Total
	VND'000	VND'000	VND'000	VND'000
Opening balance	113,830,515	370,322,195	4,138,629,433	<b>4,622,782,143</b>
Increase due to business combination	-	-	324,134,521	<b>324,134,521</b>
Increase during the year	5,372,800	8,936,436	168,340,310	<b>182,649,546</b>
Remeasurement of provision for pensions (*)	-	-	344,951,548	<b>344,951,548</b>
Provision used during the year	-	-	(237,638,163)	<b>(237,638,163)</b>
Currency translation differences	-	-	270,766,202	<b>270,766,202</b>
Closing balance	119,203,315	379,258,631	5,009,183,851	<b>5,507,645,797</b>

(\*) As explained in Note 3(m)(iii), the remeasurement of the net defined benefit obligation - provision for pensions and the relevant deferred tax are recognised in equity under the caption "Other equity funds" in accordance with a ruling from the Ministry of Finance.

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## 24. Changes in equity

	Share capital	Share premium	Other capital	Foreign exchange differences	Other equity funds	Retained profits	Equity attributable to equity holders of the Company	Non-controlling interest	Total equity
	VND'000	VND'000	VND'000	VND'000	VND'000	VND'000	VND'000	VND'000	VND'000
<b>Balance at 1/1/2022</b>	10,991,554,200	1,098,259,892	(295,683,347)	(365,829,110)	(170,252,387)	2,962,204,732	14,220,253,980	120,925,344	<b>14,341,179,324</b>
Net profit for the year	-	-	-	-	-	69,024,617	69,024,617	36,126,441	<b>105,151,058</b>
Remeasurement of provision for pensions	-	-	-	-	845,796,388	-	845,796,388	-	<b>845,796,388</b>
Foreign exchange differences	-	-	-	(53,590,654)	-	-	(53,590,654)	8,902,658	<b>(44,687,996)</b>
<b>Balance at 1/1/2023</b>	10,991,554,200	1,098,259,892	(295,683,347)	(419,419,764)	675,544,001	3,031,229,349	15,081,484,331	165,954,443	<b>15,247,438,774</b>
Net (loss)/profit for the year	-	-	-	-	-	(1,575,884,320)	(1,575,884,320)	46,273,619	<b>(1,529,610,701)</b>
Remeasurement of provision for pensions	-	-	-	-	(279,238,968)	-	(279,238,968)	-	<b>(279,238,968)</b>
Foreign exchange differences	-	-	-	185,572,767	-	-	185,572,767	329,991	<b>185,902,758</b>
<b>Balance at 31/12/2023</b>	10,991,554,200	1,098,259,892	(295,683,347)	(233,846,997)	396,305,033	1,455,345,029	13,411,933,810	212,558,053	<b>13,624,491,863</b>

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## 25. Share capital

The Company's authorised and issued share capital comprised:

	31/12/2023 & 1/1/2023	
	Number of shares	VND'000
<b>Authorised share capital</b>	1,099,155,420	10,991,554,200
<b>Issued share capital</b>		
Ordinary shares	1,099,155,420	10,991,554,200
<b>Shares in circulation</b>		
Ordinary shares	1,099,155,420	10,991,554,200
<b>Share premium</b>	-	1,098,259,892

All ordinary shares have a par value of VND10,000. Each share is entitled to one vote at meetings of the Company. Shareholders are entitled to receive dividends as declared from time to time. All ordinary shares are ranked equally with regard to the Company's residual assets.

Share premium represents the excess of the proceeds on issuance of shares over the par value.

Included in the shares in circulation are 109,915,542 of ordinary shares issued to Mitsubishi Material Corporation (the Investor) on 26 October 2020 for the consideration of VND2,094,330,737,268. In relation to this issuance, the Company also granted a put option to the Investor. According to the supplemental and amending agreements, the most recent of which was dated 21 December 2023, parties agreed that in the put option event that (i) the Company and the Investor (or their affiliate) fail to establish a joint operation of midstream tungsten business up to 29 February 2024 or (ii) if there is a change in control in the Company or (iii) such other period agreed in writing between the parties, the Investor will have an irrevocable right to request the Company or its nominee to purchase all shares issued above at the amount equal to consideration of VND2,094,330,737,268 less the aggregate of any proceeds received by the Investor from disposing the Company's shares, dividends and distributions paid by the Company subject to customary adjustments from dilutive events. The deadline to take actions necessary to effect the completion of the put option is 18 months from the date that the Company receives put option exercise notice from the Investor. The exercise of the put option will be subject to approval of Board of Directors, shareholders and Vietnamese regulators.

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## 26. Off balance sheet items

### a Lease

The future minimum lease payments under non-cancellable operating leases were:

	31/12/2023 VND'000	1/1/2023 VND'000
Within one year	3,165,820	17,090,495
Within two to five years	29,125,572	11,877,804
	<b>32,291,392</b>	<b>28,968,299</b>

### b Foreign currencies

	31/12/2023		1/1/2023	
	Original currency	VND'000 equivalent	Original currency	VND'000 equivalent
USD	27,623,650	665,729,977	35,832,904	838,848,291
EUR	5,043,070	133,414,409	9,992,102	248,763,383
JPY	272,215,588	46,156,875	463,833,343	81,653,222
CNY	7,473,826	25,119,528	13,688,957	41,614,429
CAD	1,810,973	32,684,442	1,058,111	18,116,985
AUD	3,606	58,614	-	-

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### c Bad debts written off

	31/12/2023 VND'000	1/1/2023 VND'000
Bad debts written off	30,294,111	30,294,111

### d Capital expenditure commitments

As at 31 December 2023 the Group had the following outstanding capital commitments approved but not provided for in the consolidated balance sheet:

	31/12/2023 VND'000	1/1/2023 VND'000
Approved but not contracted	2,921,356,599	3,287,792,135
Approved and contracted	68,050,399	413,393,152
	<b>2,989,406,998</b>	<b>3,701,185,287</b>

## 27. Revenue from sales of goods and provision of services

Total revenue represents the gross value of goods sold and services rendered exclusive of value added tax and export tax.

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## 28. Financial income

	2023 VND'000	2022 VND'000
Foreign exchange gains	470,918,507	458,371,098
Interest income from deposit	12,298,730	11,124,304
Other financial income	2,094,081	738,434
	<b>485,311,318</b>	<b>470,233,836</b>

## 29. Financial expenses

	2023 VND'000	2022 Nghin VND
Interest expense	1,503,015,894	1,119,988,084
Borrowing fees	53,852,779	74,565,712
Foreign exchange losses	367,730,633	560,326,339
Others	271,244,550	162,613,188
	<b>2,195,843,856</b>	<b>1,917,493,323</b>

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## 30. Selling expenses

	2023 VND'000	2022 VND'000
Freight charges	175,270,055	270,781,317
Outside services	43,742,358	73,086,068
Depreciation expenses	8,400,657	7,596,042
Salary expenses	62,256,008	56,762,081
Others	87,510,490	44,749,433
	<b>377,179,568</b>	<b>452,974,941</b>

## 31. General and administration expenses

	2023 VND'000	2022 VND'000
Salary expenses	324,611,957	342,206,820
Outside services	84,100,080	85,684,145
Depreciation expenses	57,652,334	59,939,337
Office supplies	3,209,345	1,270,669
Others	29,998,772	98,875,872
	<b>499,572,488</b>	<b>587,976,843</b>

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### 32. Other income

	2023 VND'000	2022 VND'000
Gain from bargain purchase from business combination (Note 6)	117,106,706	-
Insurance claims	-	42,221,376
Gain on scrap sales	13,933,366	12,430,944
Gain on disposal of fixed assets	554,545	137,866
Income from asset rental	-	57,919,402
Reversal of VAT input written-off in previous years	-	25,158,904
Others	49,484,115	33,774,441
	<b>181,078,732</b>	<b>171,642,933</b>

### 33. Other expenses

	2023 VND'000	2022 VND'000
Tax penalties	18,015,494	15,000
Asset rental expenses	-	57,590,091
Loss from disposal of fixed assets	-	3,096,997
Others	23,787,636	36,168,623
	<b>41,803,130</b>	<b>96,870,711</b>

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### 34. Income tax

#### a Recognised in the consolidated statement of income

	2023 VND'000	2022 VND'000
<b>Current tax expense</b>		
Current year	56,633,077	47,666,207
Under/(over) provision for prior years	356,692	(2,403,641)
	<b>56,989,769</b>	<b>45,262,566</b>
<b>Deferred tax benefit</b>		
Origination and reversal of temporary differences	(169,185,142)	(9,336,031)
Benefit of tax losses recognised	-	(97,182,841)
Reversal of write-down of deferred tax assets	(12,206,750)	(66,541,153)
	<b>(181,391,892)</b>	<b>(173,060,025)</b>
	<b>(124,402,123)</b>	<b>(127,797,459)</b>

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## b Reconciliation of effective tax rate

	2023 VND'000	2022 VND'000
Accounting loss before tax	(1.654.012.824)	(22.646.401)
Tax at the Company tax rate	(330,802,565)	(4,529,280)
Non-deductible expenses	3,538,801	1,074,771
Tax incentives	(9,205,132)	(20,022,083)
Effect of different tax rates in subsidiaries	(7,739,568)	(62,717,172)
Effect of different tax rate in other income and recognized deferred tax	4,514,359	(19,607,289)
Tax losses utilised	(55,336)	(13,005,112)
Under/(over) provision for prior years	356,692	(2,403,641)
Reversal of write-down of deferred tax assets	(12,206,750)	(66,541,153)
Deferred tax assets not recognised in respect of tax losses	68,577,140	-
Change in unrecognised deferred tax assets arise from temporary differences	158,620,236	59,953,500
	<b>(124,402,123)</b>	<b>(127,797,459)</b>

## c Applicable tax rates

The Company has an obligation to pay the government corporate income tax at the rate of 20% of taxable profits. The Company's subsidiaries have obligation to pay the government income tax in accordance with the prevailing regulations. The Company's subsidiaries enjoy various tax incentives which provide subsidiaries with further tax exemption and reductions as follow:

- MTC – a subsidiary enjoys income tax incentives (with corporate income tax rate of 10%) applicable for high-tech investment project under Vietnamese current tax regulations.
- NPM – a subsidiary enjoys income tax incentives (with corporate income tax rate of 15%) applicable for mining and processing activities for mineral products other than gold in areas with extremely difficult socio-economic conditions under Vietnamese current tax regulations.

All of the above tax exemption and reduction are not applicable to other income which is taxed at the standard income tax rate applicable to enterprises before any incentives of 20%.

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HCS and its subsidiaries are based mainly in Germany, Canada, China.

- Companies based in Germany with legal form of corporation are subject to corporation tax of 15% and are then subject to a surcharge of 5.5% (solidarity surcharge). This results in a total tax rate of 15.825%. These companies are also subject to the Trade tax which is a combination of a uniform tax rate of 3.5% (base rate) multiple with municipal tax rate depending on where the companies' permanent establishment located. The corporate income tax rate are the sum of total rate and the trade tax, which is approximately 30% on average;
- H.C. Starck Jiangwu Tungsten Specialities (Ganzhou), Co., Ltd is subject to corporate income tax of 15% applicable to foreign investment production enterprise and established in Ganzhou, Jiangxi Province of People's Republic of China;
- H.C. Starck Canada Inc. is subject to corporate income tax rate applicable to Canadian enterprise of approximately 25%.

## d Tax contingencies

The taxation laws and their application in some countries where the Company and its subsidiaries operate were subject to interpretation and may change over time. The final tax position may be subject to review and investigation by a number of authorities, who are enabled by law to impose severe fines, penalties and interest charges. These facts may create tax risks for the Company and its subsidiaries. Management believes that it had adequately provided for tax liabilities based on its interpretation of tax and legislation, including on transfer pricing requirements and computation of corporate income tax and deferred tax liabilities. However, the relevant authorities may have different interpretations.

## 35. Basic (losses)/earnings per share

The calculation of basic losses per share for the year ended 31 December 2023 was based on the loss attributable to ordinary shareholders of VND1,575,884 million (2022: the profit attributable to ordinary shareholders of VND69,025 million) and a weighted average number of ordinary shares outstanding of 1,099,155,420 shares (2022: 1,099,155,420 shares), calculated as follows:

### a Net profit attributable to shareholders

	2023	2022
Net (loss)/profit for the year (VND'000)	(1,529,610,701)	105,151,058
Non-controlling interest (VND'000)	46,273,619	36,126,441
Net (loss)/profit attributable to ordinary shareholders (VND'000)	(1,575,884,320)	69,024,617
Weighted average number of ordinary shares (shares)	1,099,155,420	1,099,155,420
Basic (losses)/earnings per share (VND/share)	(1,434)	63

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### b Weighted average number of shares

	2023	2022
Weighted average number of ordinary shares for the year ended 31 December	1,099,155,420	1,099,155,420

### c Diluted earnings per share

The Company has no dilutive potential ordinary shares.

## 36. Significant transactions with related parties

In addition to related party balances and transactions disclosed in other notes to these consolidated financial statements, the Group had the following significant balances and transactions with related parties during the year.

### a Related party balances

As at and for the year ended 31 December 2023, the Group has current and term deposit accounts at Vietnam Technological and Commercial Joint Stock Bank (“TCB”) at normal commercial terms, an associate of the ultimate parent company, at normal commercial terms.

As at 31 December 2023, the ultimate parent company, a high-level parent company, the immediate parent company, its subsidiaries, its associates held VND0 million (1/1/2023: VND70,000 million), VND100,000 million (1/1/2023: VND0 million), VND1,601,800 million (1/1/2023: VND63,578 million), VND4,898,200 million (1/1/2023: VND743,615 million) and VND389,094 million (1/1/2023: VND443,951 million), respectively, of the issued bonds of the Group.

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### b Related party transactions

Related Party	Nature of transactions	2023 VND'000	2022 VND'000
<b>Ultimate parent company</b>			
Masan Group Corporation (“MSN”)	Borrowings received	842,500,000	797,240,000
	Borrowings repaid	423,240,000	181,676,000
	Borrowings interest expense	83,193,934	26,195,625
	Purchase of services	1,055,783	3,724,293
<b>High-level parent company</b>			
Zenith Investment Company Limited	Bond interest (i)	3,895,890	-
<b>Immediate parent company</b>			
Masan Horizon Company Limited (“MH”)	Borrowings received	501,000,000	-
	Borrowings repaid	41,000,000	-
	Interest expense	20,200,548	-
	Bond interest (i)	99,621,488	508,059
<b>Ultimate parent company's subsidiaries</b>			
Masan Consumer Corporation	Purchase of goods	1,227,248	1,351,022
	Purchase of services	122,030	122,030
Wincommerce General Commercial Services Joint Stock Company	Bond interest (i)	173,591,303	24,127,446
	Purchase of goods	460,199	-
Masan Brewery Distribution One Member Company Limited	Purchase of goods	267,209	-
Masan Meatlife Corporation	Bond interest (i)	-	5,748,164
The SHERPA Company Limited	Bond interest (i)	38,386,553	-

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Related Party	Nature of transactions	2023 VND'000	2022 VND'000
<b>Ultimate parent company's associate</b>			
TCB and its subsidiaries	Interest expense	127,699,211	97,888,171
	Bond interest (i)	27,047,001	29,119,749
	Borrowings received	2,176,950,040	1,688,168,551
	Borrowings repaid	1,848,003,968	1,961,417,271
	Bonds issued (TCB is the issuance consultant)	5,800,000,000	290,000,000
	Bonds paid (TCB is the issuance consultant)	5,800,000,000	45,176,200
<b>Key management personnel</b>			
	Salary, bonus and other benefits (ii)	23,378,841	23,084,039

- (i) The bonds are listed and sold to a broader group of investors pursuant to arrangement agreements.
- (ii) No board fees were paid to Board of Directors members for the year ended 31 December 2023 and 31 December 2022.

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### 37. Contingent liabilities

As disclosed in Note 10(a), on 23 August 2021, MONRE has issued Decision 1640 to determine the MRF of Nui Phao Mine, replacing the temporary MRF calculations in Decision 500 and Official Letter 3724 despite that the royalty taxable price applicable to NPM's industrial products has not yet been determined. In issuing this Decision 1640, MONRE continued using the royalty taxable price applicable to mineral resources - tungsten ore (0.1% < WO<sub>3</sub> < 0.3%) instead of the royalty taxable price applicable to industrial products, which had been highlighted by NPM, a subsidiary, before. The official price used to calculate MRF - G-price according to Decision 1640 is VND1,831,085 per ton whereas the temporary G-price according to Decision 500 is VND775,026 per ton. On 6 October 2021, NPM received Notification No. 3937/TB-CTTNG on payment of MRF issued by the Thai Nguyen Tax Department ("TNTD"). This notification was to inform NPM of additional MRF payable following Decision 1640 in which the additional MRF due to application of different G-prices for the period from 2015 to 2021 is VND394.5 billion. On 8 December 2021, TNTD issued Official Letter No. 4883/CTTNG-QLN requesting NPM to make payment of MRF of VND125.8 billion equivalent to the shortage of MRF payment for 2021, together with interest on late payment of VND4.1 billion.

After the issuance of Decision 1640, NPM submitted several petition letters to the Prime Minister, MONRE to request for delaying the implementation of Decision 1640 and re-determining the MRF price which is applicable to NPM's industrial products.

Management believes that NPM had adequately provided for its liabilities for MRF based on its interpretation of relevant legislation relating to mining rights and natural resources tax. NPM's management has, therefore, also sent letters to different levels of authorities to highlight the issues and seek proper resolutions for NPM's MRF issue.

In 2021, as instructed by the Prime Minister under Letter No. 978/VP-CP-KTTH dated 8 February 2021 and Letter No. 5987/VPCP-KTTH dated 28 August 2021, the case is under review by MOF, MONRE, Thai Nguyen PPC and Thai Nguyen Department of Finance ("TN DOF"), subject to report to the Prime Minister and National Assembly Committee on Economy. In 2022, relevant central and provincial authorities, through a meeting chaired by GDGM, have agreed that there is

an inadequacy in the royalty taxable price which serves as a basis to calculate mining rights fee for Nui Phao Mining Project. On that basis, Thai Nguyen PPC has been working with MOF and MONRE to source a technical advisor, and also instructed the Thai Nguyen Department of Finance to coordinate with relevant local departments to complete the procedures for selecting an appropriate technical advisor to develop a mechanism to determine the royalty taxable price applicable to NPM's industrial products. NPM received further instructions from the Deputy Prime Minister under Notification No. 226/TB-VPCP, according to which, MRF for the Nui Phao Mining Project will be re-determined by MONRE after (1) the royalty taxable price applicable to NPM's industrial products is finalised and officially issued by Thai Nguyen PPC; and (2) the royalty taxable price bracket for tungsten ore is issued by MOF and the royalty taxable price applicable to NPM's tungsten ore is issued by Thai Nguyen PPC. By the issuance date of this report, Thai Nguyen PPC and Department of Finance, relevant functional agencies at different levels have been still working together to determine the royalty taxable price applicable to the NPM's industrial products.

NPM's management assessed that because the royalty taxable price applicable to NPM's industrial products has not yet been determined by Thai Nguyen PPC, the G price which serves as the basis for computation of MRF under Decision 1640 is not in accordance with the prevailing laws and regulations. NPM, therefore, believes that once the royalty taxable price applicable to NPM's industrial products are available, the official MRF for Nui Phao Mine from 2015 to 2024 will be re-determined, replacing the MRF amount that stated in Decision 1640. This view of the management has been confirmed in Notification 226.

The ultimate outcome of this MRF matter is presently not determined and may be subject to the determination of the royalty taxable price applicable to NPM's industrial products and whether MONRE agrees to recalculate the MRF in Decision 1640 using that royalty taxable price when it is determined. Accordingly, the Group has not recognised the additional MRF as stated in Decision 1640 as liabilities in the consolidated financial statements.

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**38. Comparative information**

Comparative information as at 1 January 2023 was derived from the balances and amounts reported in the Group's consolidated financial statements as at and for the year ended 31 December 2022.

1 March 2024

Prepared by

Reviewed by:

Approved by:

Nguyen Thi Thanh Mai  
Chief Accountant

Nguyen Huy Tuan  
Chief Financial Officer

Craig Richard Bradshaw  
Chief Executive Officer



# GENERAL INFORMATION

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Shareholders Information



## VISION AND MISSION



### VISION

To be the leading integrated supplier of high-tech advanced materials critical to global innovation.



### MISSION

We aim to be the partner of choice to high-tech industries where our products are a key component in evolving and shaping the future of our world. Through the application of our materials, we will create unparalleled solutions to drive innovation and productivity which will deliver superior outcomes for all our partners and stakeholders.



### OUR VALUES

#### Respect

We believe caring for people, environment and community results in mutually beneficial relationships.

#### Innovation

We strive for excellence in everything we do.

#### Results

We are passionate about exceeding expectations.



## COMPANY PROFILE

### Name of the company

Masan High-Tech Materials Corporation (MHT)

### English name

Masan High-Tech Materials Corporation

### Abbreviated name

Masan High-Tech Materials

### Address

Suite 802, 8th Floor, Central Plaza, 17 Le Duan, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam

### Telephone

+84 28 6256 3862

### Fax

+84 28 3827 4115

### Website

[www.masanhightechmaterials.com](http://www.masanhightechmaterials.com)

### Enterprise registration certificate

No. 0309966889 issued by the Department of Planning and Investment of Ho Chi Minh City on April 27, 2010, amended for the 19th time on February 11, 2022

### Charter capital

VND 10,991,554,200,000

Stock code on HNX-Unlisted Public Company market (UPCOM): MSR

## STRATEGIC PILLARS FOR GROWTH



## COMPANY HISTORY

The Company was established on April 27, 2010, focused on mining and resources extraction activities as part of the Masan Group. Significant events in the Company's business are set out below.

- In February, MOIT's official approval of the Nui Phao Project's basic mine design was obtained.

### › 2012



### › 2013

- In August, the Company received Investment Certificate No. 41122000131 from the People's Committee of Ho Chi Minh City.

### › 2014



### › 2015



- Record production achieved for all four commodities. NHTCM applied for and obtained the Certificate of High Tech issued by the Ministry of Science and Technology on April 24.
- Achieved design capacity and successfully commissioned the NHTCM Tungsten Chemical factory. Initiatives in committing to further development in processing and increasing performance efficiency.
- In September, the Company successfully completed its listing on Hanoi's UPCOM exchange.
- In September, the Company hosted the 28th International Tungsten Association (ITIA) annual meeting, attended by over 120 global delegates.

### › 2016

- Successfully held the first AGM after listing on April 22; ranked as premium on the UPCOM Board of the Hanoi Stock Exchange.
- Commercial production of Bismuth Cement started on July 1.
- Continued innovation and investment in new processes and technology, cost saving, change in business process, developed cooperation with NHTCM and significantly advanced the production volume and revenue of the value-added tungsten chemical products; In December, Masan Group, through its wholly-owned subsidiaries, successfully completed the tender offer for shares of the Company, thereby providing an exit to Mount Kellett and increasing its ownership in the Company to 93.78%, paving the way for the next round of strategic capital and growth.

### › 2011

- Acceleration of project development for the Nui Phao Project.
- In December, the National Mineral Reserves Assessment Council acknowledged the results of the Nui Phao Project's resources and reserve grade conversion.

## › 2017

- Upgrades undertaken on the tungsten circuit have resulted in tungsten recovery increasing to 67% with room for further improvement through optimization measures.
- A significant price increase across all commodities of the Company coupled with increased operational efficiency allowed the Company to achieve record results in all aspects of production, revenue, and net profit.
- The Company's global brand recognition, underpinned by high-quality and reliable products, resulted in oversubscribed order book with new customers.
- Commenced procuring third-party tungsten raw materials for processing in the NHTCM factory.

## › 2018

- 2018 Acquired H.C. Starck GmbH's 49% stake in NHTCM for total cash consideration of USD29.1 million. Subsequent to acquisition, the name of NHTCM has been changed to Masan Tungsten Limited Liability Company ("MTC").
- Increased the third-party raw material procurement by 300% in order to maximize utilization at the MTC as well as to satisfy the growing demand for tungsten chemical products.
- Achieved record annual results in all aspects of production, revenue, and net profit.

## › 2019

- Entered into an agreement to purchase the tungsten business of H.C. Starck Group GmbH – a leading manufacturer of high-tech tungsten metal powder and carbides in the world.
- In December 2019, MTC obtained the Decision of Thai Nguyen People's Committee on amendment of the Investment Certificate which registered capacity of ST, APT and BTO/YTO are 1,067 tonnes; 8,278 tonnes; 5,000 tonnes per year respectively depending on the production plan and grade.
- In December 2019, the Ministry of Science and Technology issued "High-Tech Enterprise Certificate" to MTC.

## › 2020

- In June, MSR through its wholly owned subsidiary MTC completed the acquisition of H.C. Starck GmbH's global Tungsten business.
- In June, the Company's name was approved to be changed to Masan High-Tech Materials Corporation (MHT) at the Company's Annual General Meeting of Shareholders. This name change was officially effective from 6 August 2020 after the Department of Planning and Investment of Ho Chi Minh City issued the Enterprise Registration Certificate amended for the 17th time.
- In December 2020, the Company completed a private placement of shares to Mitsubishi Materials Corporation ("MMC"), making MMC the second largest shareholder owning 10% of the Company's total fully diluted shares.

## › 2021

- Approved the new maximum ratio of foreign ownership of the Company at 2021 Annual General Meeting of Shareholders of the Company.
- The integration of H.C. Starck's Tungsten business into MHT has vindicated its effectiveness, the Company achieved net revenue of VND 13,564 billion in 2021.

## › 2022

- Organized the International Fluorine Forum in collaboration with IMFORMED (Industrial Minerals Forum & Research Ltd). This is the first time the Forum has been held in Vietnam.
- In July, H.C. Starck Tungsten Powders ("HCS"), announced the signing of definitive agreements to invest £45m (approx. €52m) into Nyobolt Limited ("Nyobolt"), a fast-charging Li-ion battery solutions company that leverages HCS's advanced tungsten materials in its anode, for a 15% equity interest on a fully diluted basis. This investment is expected to accelerate HCS's vision of becoming a high-tech, value-added business by developing new tungsten applications critical for future technologies.

## › 2023

- In July, H.C. Starck Tungsten Powders (H.C. Starck), a subsidiary of Masan High-Tech Materials, completed the acquisition of Chemitas, a services provider in energy supply, waste management, and logistics based in Goslar, Germany. This strategic move enables H.C. Starck to better manage the entire tungsten supply chain, enhancing manufacturing and logistics capabilities, while aligning with MHT's commitment to delivering comprehensive solutions for worldwide customers.
- In December, State Securities Commission of Vietnam approved the maximum ratio of 100% of foreign ownership submitted by the Company.
- Nui Phao Mining Co. Ltd., a subsidiary of Masan High-Tech Materials, prepared necessary procedures for underground mining of 28 million tonnes of ore reserve out of the total reserves of 83 million tonnes at Nui Phao mine, and exploration of the Nui Chiem tungsten-polymetallic mineral area.
- Masan Tungsten LLC, a subsidiary of Masan High-Tech Materials, prepared necessary procedures for the construction of the largest Tungsten scrap recycling plant in Southeast Asia.

## FLAGSHIP ASSETS

### Nui Phao Mining Company Ltd (NPMC)



The Nui Phao mine, which is operated by Nui Phao Mining Company Ltd. ("NPMC"), a wholly owned subsidiary of Masan High-Tech Materials, is situated within three communes (Hung Son, Ha Thuong, and Tan Linh) of Dai Tu district in Thai Nguyen province. The site is approximately 80 km from Hanoi and is accessible via highway. Road and rail links connect the mine to the nearest ports of Hai Phong and Quang Ninh province, from where the products can be shipped to international customers.

#### The major project components are:

- Open pit poly-metallic mine, waste rock disposal facilities;
- Modern mine plant and facilities, including crushing, grinding, thickening, flotation, leaching and gravity recovery facilities;
- A suite of commercial product streams including Tungsten, Copper, Bismuth and Fluorspar concentrates which are either processed into value added products onsite (Tungsten and Bismuth) or sold as high-end commodities;
- A Tailings Storage Facility (TSF) with water and tailings management ponds;
- Buffer zones, relocation sites, haul roads, and mine services.

Products from Nui Phao are shipped to worldwide markets (including well established customer networks) from Quang Ninh Port (in Ha Long City, 197 km to the southeast of the Project site). The port is also used to receive equipment and materials required to run the mine.

NPMC operates at the cutting edge of production of its product suite. Investment in research and development continues to deliver processing, equipment, and chemical improvements. Processing operations are supported by advanced mining and processing management software to maximize recovery and minimize costs and resource losses.

### Masan Tungsten Limited Liability Company (MTC)



Masan Tungsten Limited Liability Company was established in 2014 as a Joint Venture with H.C. Starck GmbH, a leading worldwide manufacturer of technological metals and one of the biggest companies in the global Tungsten industry. The objective of the company is to enable advanced processing of Vietnam's strategic tungsten resources into higher value tungsten chemicals, thus enabling further value extraction from the Vietnamese strategic resources.

In August 2018, NPMC acquired the 49% capital contribution by H.C. Starck GmbH in the Joint Venture. The Joint Venture then changed its name to Masan Tungsten Limited Liability Company. In September 2019, MSR announced the acquisition of H.C. Starck's global Tungsten Division ("HCS"). In 2021 the MTC plant underwent an optimization program which has seen a significant capacity expansion to include processing of a wide range of lower grade feed materials. The treatment of low to marginal tungsten grades greatly improves the ability to utilize more of the Nui Phao tungsten ore resources.

MTC produces high purity, world-competitive tungsten products while operating in Vietnam using local and international technical knowledge. This places it among the few tungsten suppliers outside of China who are directly connected to a resource base. The four main products of the MTC facility used in production of Tungsten and Tungsten Carbides are:

- **APT**(Ammonium Paratungstate);
- **BTO** (Blue Tungsten Oxide);
- **YTO** (Yellow Tungsten Oxide);
- **ST** (Sodium Tungstate).

The MTC factory has the advantages of:

- Secured long term supply source (NPMC) with modern production facilities to produce high quality products tailored to specific requirements of individual customer;
- Positive market reputation by affiliation with a technology and skills provider – H.C. Starck which has 100 years of experience and is a leading premium supplier of Tungsten products;
- Processing technology transfer from H.C. Starck Germany, Enhanced processing capacity in line with tungsten market and customer demands;
- Low grade tungsten sources treated into high end specific products, Opportunities for further development of in-country tungsten recycling process;
- Low conversion costs and preferential tax policies.

These factors have accelerated the integration of a Vietnamese business to the world's Tungsten producer map, as well as contributed to improved sales performance.



## H.C. Starck Tungsten Powders (HCS)

H.C. Starck Tungsten Powders (HCS) is a member of the Masan High-Tech Materials Group and one of the world's leading manufacturers of high-performance powders of tungsten and its compounds. H.C. Starck Tungsten Powders offers a complete range of products along the tungsten powder value chain, processing both primary and secondary raw materials into high-quality tungsten chemicals, metal powders and carbides, tailored to individual customer needs.

The company combines a century of experience in tungsten processing with high innovative power and technological expertise. Highly qualified teams in research development and in technology applications are dedicated to tomorrow's solutions.



Sustainability is a significant part of the company strategy. A large proportion of raw materials are obtained through recycling. Security of supply is an important issue in today's world. H.C. Starck Tungsten Powders has access to primary and secondary raw materials and is therefore independent of sources in China, for example.

H.C. Starck Tungsten Powders employs around 550 people at three production sites in Germany, Canada, and China, plus sales offices in the U.S. and Japan. The company is headquartered at its largest production site in Goslar, Germany.



## ChemiLytics

ChemiLytics is a company of the Masan High-Tech Materials Group and is one of the largest states of the art industrial scale laboratories in Germany for inorganic elemental analysis and powder characterization. With 70 highly qualified personnel working in teams operating 7 days a week, ChemiLytics offers analytical services in all market segments from the sunset industries of traditional manufacturing through to sunrise industries such as Additive Manufacturing, Aerospace Applications or E-Mobility. Typical samples analyzed include Tungsten ores, Tantalum and Niobium ores, all refractory powders and scrap,  $\text{Si}_3\text{N}_4$ , battery precursors etc.

## ChemiLytics

ChemiLytics collaborates with customers allowing customization in service provision from traditional samples submissions through to developing individually customized solutions that can allow for the provision of on-line operational control sample analysis through to having the capability to develop specific analytical and technology applications for customers based on ChemiLytics unique service portfolio such as in the recycling industry.



## Chemitas GmbH



Chemitas GmbH, as a member of Masan High-Tech Materials Cooperation, is a service provider to the chemical industry. The company with approximately 150 employees is located at two locations in Goslar: Goslar production site “Metallurgic production area Oker” and Chemitas logistics center, located in the “Baßgeige” area approx. 4 kilometers northwest of the production site. Chemitas offers key services alongside the entire industry supply chain, predominantly but not limited to customers located at the Goslar site, ensuring safe, compliant, and reliable business operations.

Chemitas owns and operates assets to provide services such as energy and power supply, steam generation and supply services, gas and chemical supplies including storage facilities, water supplies and wastewater treatment, waste management and industrial maintenance as well as a broad range of EH&S related offerings, including operating permit management and employee training facilities and courses.

Site security, site access management and on-site fire brigade unit are also part of the Chemitas service portfolio to ensure legally compliant operation of the Goslar site and act as first responder in case of emergency.

Additionally, Chemitas provides logistics services plus on-site transport activities for inbound and outbound movements of raw materials, intermediates, and finished goods. Warehouse and storage facilities are offered at the Goslar production site and at Chemitas logistics center. The storage facilities hosts >10,000 m<sup>2</sup> warehouse area, with over 11,000 storage spots and 4,000 m<sup>2</sup> warehouse area for spare parts and consumables. Material movements in 2023 accounted to approximately 25,000 tons shipped to 55 countries by air, sea or road. The company is registered as a regulated agent for air traffic transport (LBA). Chemitas operates and maintains a more than 5 kilometers spanning railroad network at the Goslar site, ensuring efficient bulk material supply using railroad containers.

The company holds a variety of ISO certificates to guarantee high quality of services provided. Sustainability is a core value of the Chemitas business model, as the majority of services offered are active controls and barriers to avoid environmental pollution. Since 2021 Chemitas sources and supplies CO<sub>2</sub> neutrally produced electrical power to its customers. An energy management certification (ISO50001) ensures that energy efficiency of its operation is continuously improved.



## OUR PRODUCTS

Nui Phao mine is a unique polymetallic deposit with a co-occurrence of Tungsten, Fluorspar, Copper, and Bismuth mineralization. These metals are considered strategic to industry and find myriad uses across a broad portfolio of high-tech applications.

### Tungsten (W)

Tungsten is a unique element having the highest melting point of all metals (3422°C), a density (19.3g/cm<sup>3</sup>) almost twice that of lead, and a hardness close to that of diamond when in tungsten carbide form.

The name Tungsten is attributed to Axel Frederik Cronstedt who upon discovering a tungsten-containing ore combined the Swedish words tung (heavy) and sten (stone) noting its density, but credit for the separation of the metal goes to Karl Wilhelm Scheele, an impoverished pharmacist with a modest pension from the Stockholm Academy of Science, who in the mid-1700's discovered more new chemical compounds than perhaps any scientist before or since.

The intrinsic properties of tungsten make it a critical component across all major heavy industries, including manufacturing, energy generation and transmission, construction and infrastructure, and mining, and many light industrial and high-tech industries as well such as automotive, aerospace, electronics, catalysis, medical and pharmaceutical. Tungsten first found a growth market as an alloying addition in tool steels and steel alloys where its ability to contribute high hardness and high-temperature resistance was greatly valued; an application that it still finds use in today. The subsequent discovery and development of Cemented Carbide (a composite of Tungsten and Carbon) in the 1920s completely revolutionized the metal cutting and metal forming industries and tungsten carbide quickly found myriad uses across the industry as its properties enabled rapid increases in process efficiency and part life. Cemented Carbides account for over 60% of tungsten use globally today, and engineers continue to find new applications for



tungsten on a regular basis; in the last decade Tungsten has found new commercial use in high-purity semiconductor gasses for the production of integrated circuits and as a high-performance anode material or dopant in specific Li-Ion battery chemistries.

Marketable Tungsten materials come in a variety of forms such as tungsten chemicals, tungsten metal, and tungsten carbide with each form having different characteristics and applications.



### Tungsten Metal

Tungsten Metal is used directly as an alloying addition in steel making or for superalloy melts, and otherwise finds use in mill products; solid sintered or deep processed forms such as rods, wires, sheets, etc. The unique metallurgical and physical properties of Tungsten Metal find applications in lighting, defense, aerospace, radiation shielding, electrical contacts amongst many others.



### Tungsten Carbide

Tungsten carbide (WC) is a compound of tungsten and carbon. The outstanding characteristic of this material is its hardness, which approaches that of diamond. Tungsten carbide is used primarily in the production of industrial tools and wearing parts that are subject to significant stress. Tungsten carbide usage in carbide tools allows for much higher cutting speeds and rate of material removal which in turn improves the efficiency and economy of the manufacturing process. Tungsten carbide usage in wear parts such as pump seals, bearing faces, knives, punches, nozzles, etc. dramatically improves the useful life of the part and is ubiquitous across the energy and materials processing industries.



### Tungsten Chemicals

Include ammonium paratungstate, ammonium metatungstate, tungstic acid, tungsten oxide, and sodium tungstate with various properties which would be made to fit consumers' required specifications.

Ammonium paratungstate is a white, crystalline powder with very high chemical purity. It is needed primarily as a universal intermediate product in the production of tungsten oxides, tungstic acid, ammonium metatungstate, and organometallic components. The compound is also used directly in catalysis and fine chemistry.

Ammonium Metatungstate, Tungstic acid, and Sodium Tungstate are all tungsten salts that are soluble in water, alcohol, and ammonia. They have excellent chemical purity, high reactivity, and a uniform morphology. The unique properties of these salts allow for special applications in homogeneous and heterogeneous catalysis, fine chemistry, and surface coating technology, as well as in the production of organometallic tungsten compounds.

## Fluorspar (CaF<sub>2</sub>)

Fluorspar also known as Fluorite is an industrial mineral from which the element Fluorine is liberated, with two major downstream uses; the production of Hydrofluoric Acid (HF) which is used as a building block for Fluorine Chemicals, and the production of Aluminium Fluoride (AlF<sub>3</sub>) which is an important additive to produce Aluminium by electrolysis. Hydrofluoric acid is used as a precursor to a wide range of products including fluorocarbons, fluoropolymers, and fluorine process gasses; perhaps the most known application is as PTFE a non-stick fluoropolymer coating used in household cookware and patented by DuPont in the 1930's as 'Teflon'. Fluorocarbons are used globally as the most common refrigerant found in household white goods and air-conditioning systems, and fluorine-based process gases are used extensively in the semiconductor and uranium processing industries. An emerging application for Fluorine with significant growth potential is as an electrolyte additive and polymer separator material in Lithium-Ion rechargeable batteries.



## Bismuth (Bi)

Bismuth is a minor metal with consumer and industrial applications.

For the consumer, bismuth-based chemicals are used in the health and pharmaceutical sector as a radiation protection material and as the active ingredient in medicines for the treatment of nausea, indigestion, and ulcer diseases. Due to its non-toxicity, it has also found use in cosmetics. Industrially, Bismuth is used as a nontoxic pigment in the production of certain paints and the manufacture of electrical components. Bismuth is also used as a catalyst for vehicular emissions control, as well as in the production of low melting point alloys for the reliable work holding of irregularly shaped parts for machining and as a plain bearing alloying addition.



## Copper (Cu)

Copper is a soft, malleable, and ductile metal and finds wide use industrially due to its exceptional thermal and electrical conductivity. Copper is also relatively inert and corrosion-resistant and has been shown to have antimicrobial properties.

The largest application for copper is in the manufacture of electrical cables and wiring. The construction industry is also a major consumer of copper through electrical systems as well as copper piping in plumbing. Its corrosion resistance as well as its aesthetic appeal have made it popular in roofing, and it is commonly found in the construction of domes, spires, and doors. Copper has nutrient qualities and is used as a fungicide in the protection of crops and plants as well as enriching the soil. When copper is mixed with zinc it produces brass, which is also used in a variety of industrial applications.



PROPERTY	INDUSTRY/ TYPE OF APPLICATION
<b>Aesthetics</b>	Architecture, sculpture, jewelry, clocks, cutlery
<b>Bactericide</b>	Door hardware, marine internal combustion engines, crop treatments
<b>Biofouling resistance</b>	General, hydraulic and marine engineering, metalworking, aerospace, power generation, shipbuilding, off-shore oil and gas platforms
<b>Corrosion resistance</b>	Plumbing tubes and fittings, roofing, general and marine engineering, shipbuilding; chemical engineering, industrial processes including pickling, etching and distilling; domestic plumbing, architecture, desalination, textiles, papermaking
<b>Ease of fabrication</b>	All of the above plus printing
<b>Electrical conductivity</b>	Electrical power generation, transmission and distribution, communications, resistance welding, electronics
<b>Environmental friendliness</b>	Essential for health of humans, animals, and crops
<b>Fungicide</b>	Agriculture, preservation of food and wood
<b>Low temperature properties</b>	Cryogenics, liquid gas handling, superconductors
<b>Mechanical strength/ ductility</b>	General engineering, marine engineering, defense, aerospace
<b>Non-magnetic</b>	Instrumentation, geological survey equipment, minesweepers, offshore drilling
<b>Non-sparking</b>	Mining and other safety tools, oxygen distribution
<b>Elasticity</b>	Electrical springs and contacts, safety pins, instrument bellows, electronic packaging
<b>Thermal conductivity</b>	Heat exchangers and air-conditioning/refrigeration equipment, automotive radiators, internal combustion engines, mining

## TUNGSTEN PRODUCTION

Masan High-Tech Materials' MTC plant is designed to process the total amount of NPMC tungsten concentrate, along with externally sourced tungsten-containing raw materials, into high-grade ammonium paratungstate (APT) via chemical digestion followed by physical and chemical purification and, finally, crystallization. APT is packaged for external sale or otherwise undergoes calcination to produce blue tungsten oxide (BTO) and yellow tungsten oxide (YTO) for sale to external customers or for further downstream processing within the MHT Group.

H.C.Starck Tungsten's Goslar plant is designed to process intermediate tungsten chemicals produced at MTC as well as being a globally significant recycling operation for most types of tungsten-containing scrap and secondary material. Scrap is processed into high-grade ammonium paratungstate (APT) via chemical digestion followed by physical and chemical purification and, finally, crystallization. APT and tungsten oxides produced at HCS are further processed into tungsten metal powder, tungsten carbide powder, and cast tungsten carbide powder for sale into relevant industrial segments.

**Roasting / Grinding / Leaching:** Milled ore concentrates and roasted soft scrap are leached at high pressure to form a sodium tungstate solution.

**Salt Melting / Dissolution:** Hard scrap is dissolved in a salt melt under supply of air. Molten sodium tungstate is casted into crucibles and cooled down before being crushed and dissolved in water under formation of a sodium tungstate solution.

**Purification:** A continuous technical process to remove the remaining impurities.

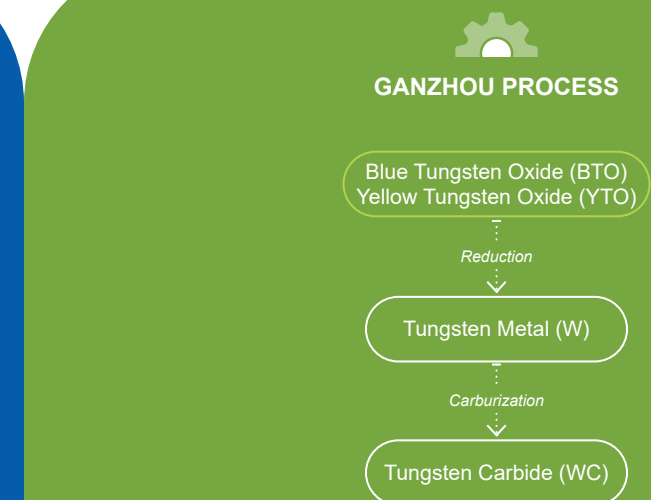
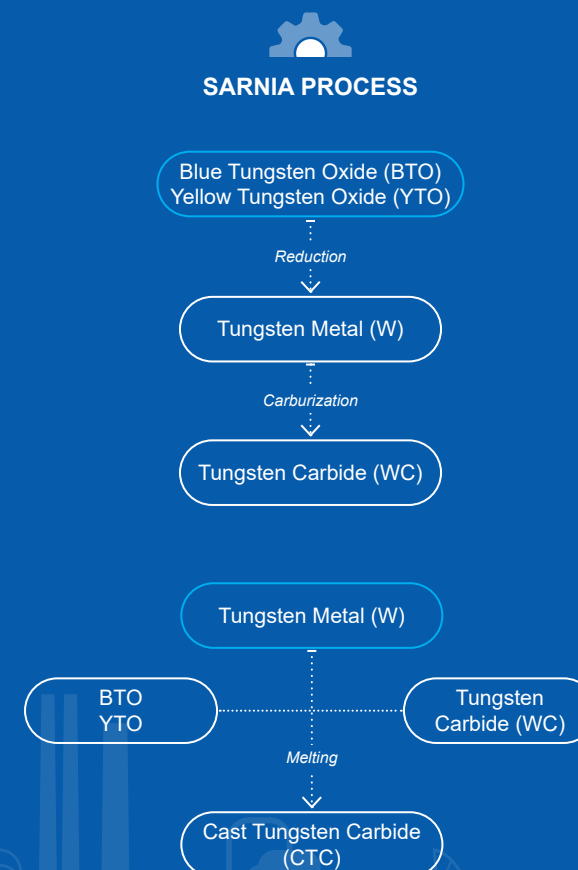
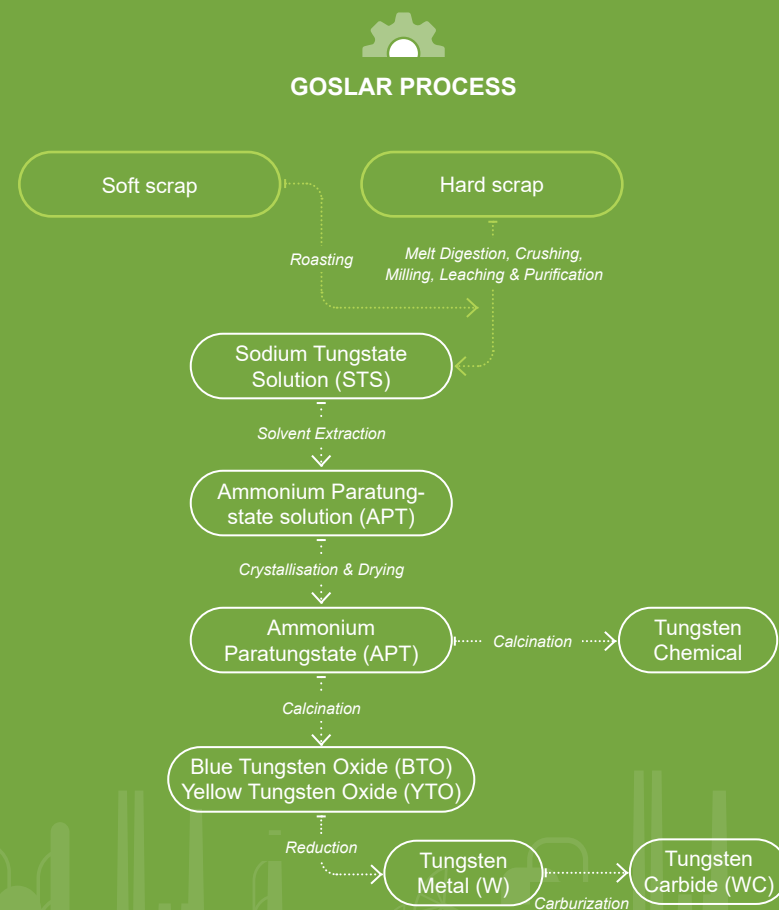
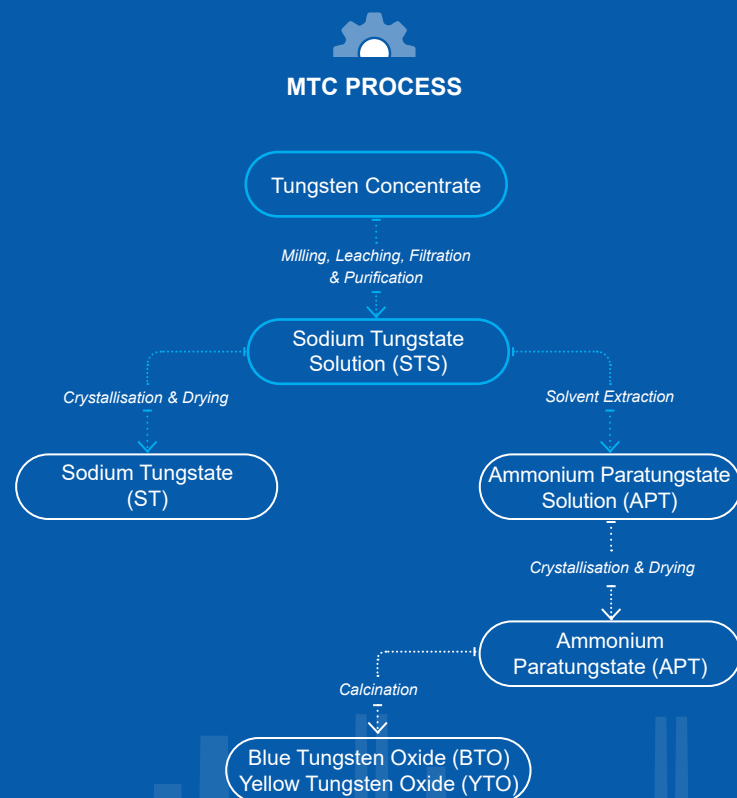
**Solvent Extraction:** Using organic compounds and sedimentation vessels, sodium tungstate solution is transformed into ammonium tungstate solution in a continuous, closed-loop process.

**Crystallization:** Ammonia and water are evaporated from the ammonium tungstate solution. Crystalline ammonium paratungstate (APT) is formed from the solution.

**Calcination:** Tungsten oxides are produced by the calcination of APT.

**Reduction:** Reduction of tungsten oxides to tungsten metal is carried out in pusher and rotary furnaces. Hydrogen acts as a reducing agent.

**Carburization:** Tungsten metal powder is converted into tungsten carbide powder through a reaction with pure carbon powder in a high-temperature furnace.



## TUNGSTEN AS A CRITICAL MATERIAL

Tungsten is classified as a critical mineral by both those in industry and government because it is a relatively rare metal with unique properties that are highly valued in many high-tech, and defense applications. The demand for tungsten has increased significantly in recent years due to the growing demand for high-tech products and the expansion of the aerospace and defense industries.

However, tungsten is a scarce resource with a limited geographic dispersion of crustal abundance; more than 56% of global reserves are located in China, and currently more than 82% of tungsten production occurs in China, which has led to concerns about supply chain security and the potential for price volatility. There is a need for greater investment in sustainable tungsten mining and recycling, as well as diversification of supply sources to ensure the long-term availability and affordability of this important metal.



### Common tungsten uses include, for example



#### Mechanical engineering and toolmaking

Today's industrial tools and wear parts must withstand extreme loads while offering durability and long tool life. Exceptionally hard and resistant tungsten carbide is the material of choice to produce cutting-edge cemented carbides used in tools.



#### Oil and gas industry

Tungsten finds myriad applications in the extreme environments encountered in O&G. It is used in high-performance drill heads, valves, wear parts, and functional coatings, and in shaped charges that perforate the rock around the well to allow oil and gas to flow out.



#### Medical technology

Precision components made of tungsten metal are used in modern X-ray diagnostics and therapy. For example, to shield and focus hard X-rays or gamma radiation.



#### Aerospace

In aviation, tungsten or tungsten alloys are used because of their high density and strength in balance weights, vibration protection parts for landing flaps or for balancing rotor blades.



#### Chemical industry

In the chemical industry, tungsten is used for many applications, especially in the field of catalysts, such as oxidation catalysts.



#### Electrical industry

A high thermal load capacity of tungsten-copper materials in combination with very good thermal and electrical conductivities predetermine these materials for applications in electrical high-performance switching contacts, as heat sinks in the electrical industry, or for use as erosion electrodes.



#### Mining

Tungsten's exceptional hardness and thermal resilience make it critical for modern mining. Drill bits and inserts forged from this metal tear through rock with unwavering efficiency, conquering excavation and rock breaking. From tunneling through mountains to carving out critical infrastructure, tungsten stands out as the indispensable hero in these operations.

## HIGH-TECH MATERIALS FOR A CLEANER ENVIRONMENT

Given the versatility and criticality of Masan High Tech Materials' product portfolio, it is anticipated that our metals will play their part in meeting today's and tomorrow's challenges, such as the need for a more efficient use of resources and the reduction of emissions.

Whilst there is certainly a great opportunity for tungsten, fluorspar, copper, and bismuth in future applications, these materials have been contributing to a cleaner environment for many years.

### Tungsten

#### Energy Efficiency

Tungsten is used in energy-efficient lighting such as LED bulbs, which require much less energy for the same emission of light and have a longer lifespan than traditional incandescent bulbs.

#### Renewable Energy

Tungsten is used in the production of renewable technologies such as wind turbines, and solar panels, which help to reduce the reliance on fossil fuels and decrease carbon emissions.



#### Lightweighting

Tungsten Carbide tools enable extreme material removal rates and the ability to machine abrasive or challenging materials such as polymer composites and titanium alloys; therefore, tungsten is directly linked to the lightweighting of components and structures. New WC tool technologies such as submicron powder grades, and advanced coatings enable high feed machining which see increasing use across automotive and aerospace to reduce weight and increase the fuel efficiency of vehicles.

#### Recycling

Tungsten has a significant End-of-Life recycling input rate sharing the 5th position in the EOL ranking of all raw materials. This high recycling rate is due to its high economic importance and the fact that most of its end-use applications are for industrial use rather than retail trade.

#### Lead substitution

Lead has been identified as an environmentally hazardous and toxic metal that ranks second on the US Government's Top 100 Hazardous substances priority list. Tungsten has a similar density to lead and is completely non-toxic making it a safer and greener alternative, particularly in applications where there is a risk of lead exposure such as in ammunition, fishing weights, ballast weights, and radiation shielding.

#### Catalysis

Tungsten is a critical addition in Hydrotreating catalysts used in the oil refining and processing industries. These catalysts help to increase the yield of gasoline and other light hydrocarbons in crude oil processing on the one hand. On the other hand, they make transportation fuels more environmentally friendly by reducing the contents of aromatic hydrocarbons, sulphur, and nitrogen compounds. As global fuel standards become more stringent to protect the environment, their importance has risen and is expected to continue doing so in the coming years. Tungsten is also prevalent in DeNOx catalysts that remove nitrogen oxides from stack gases of combustion power plants, chemical plants, cement plants, or diesel engines by selective catalytic reduction with ammonia or urea.

### Fluorspar

#### Renewable Energy

Fluorine is a chemical element that has several uses in the field of renewable energy. It is commonly used in the production of solar panels as an etching gas during the manufacturing of silicon wafers. It is also utilized as an anti-reflective surface coating to help increase the efficiency of photovoltaic. Additionally, fluorine finds application in wind energy generation as a coating and insulation material for wind turbine blades.

#### Energy Transition

Fluorine chemistries are beginning to gain traction as electrolytes for Lithium-Ion batteries and Fuel cells where Fluorine's high ionic conductivity results in a faster charge and discharge cycle, and its thermal and electrochemical stability results in a stable and longer life product. The current forecast is for explosive growth in the usage of Fluorine.

### Copper

Copper is an important component in the shift towards a cleaner and more sustainable energy system. This is because it boasts high electrical conductivity, making it a crucial material for producing and distributing electricity. Copper is present in various forms of renewable power generation such as wind, hydro, and nuclear, where it is used as windings on electric motors, generators, and transformers. Copper is also vital for electrical transmission and is relatively irreplaceable. The expansion of electrical grid infrastructure is likely to be the bottleneck for the rollout of new energy vehicles and energy storage solutions.



Solar panels



Lithium-Ion battery



# SHAREHOLDERS INFORMATION

## Shareholder structure

The shareholder structure of the Company as of December 31, 2023 is as follows:

No.	Shareholder structure	December 31, 2023			
		Number of shareholders	Number of shares held	Value (by par value) (VND)	Shareholding percentage
<b>1</b>	<b>Domestic shareholders</b>	<b>3,940</b>	<b>987,762,725</b>	<b>9,877,627,250,000</b>	<b>89.86%</b>
	Institutional shareholders	11	949,698,882	9,496,988,820,000	86.4%
	Individuals	3,929	38,063,843	380,638,430,000	3.46%
<b>2</b>	<b>Foreign shareholders</b>	<b>76</b>	<b>111,393,695</b>	<b>1,113,936,950,000</b>	<b>10.13%</b>
	Institutional shareholders	2	109,947,542	1,099,475,420,000	10.00%
	Individuals	74	1,445,153	14,451,530,000	0.13%
<b>Total</b>		<b>4,016</b>	<b>1,099,155,420</b>	<b>10,991,554,200,000</b>	<b>100%</b>

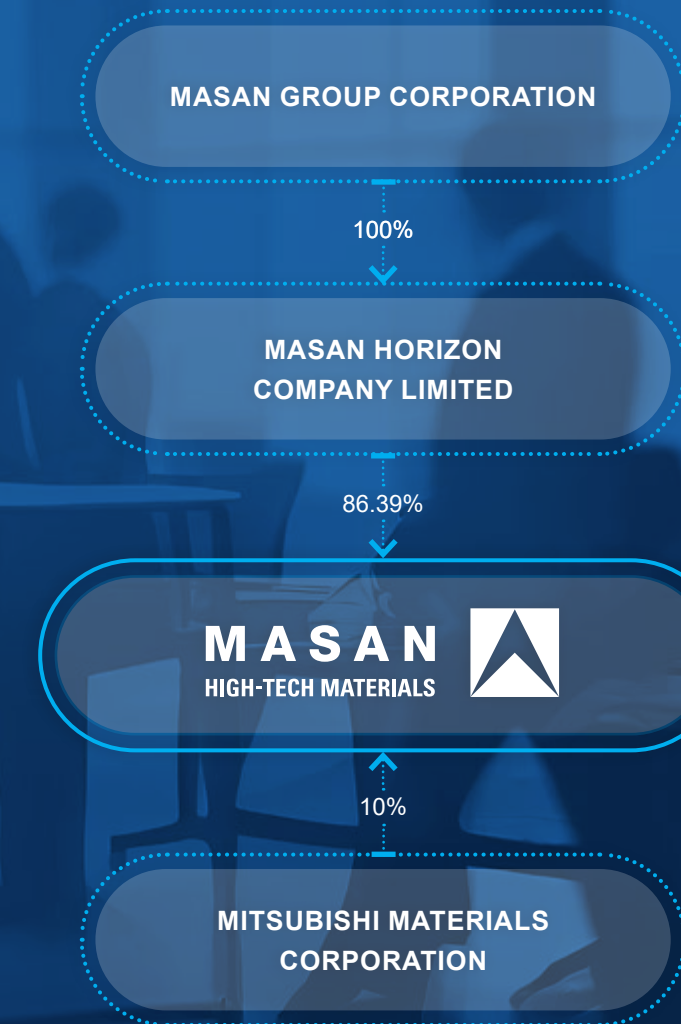
## List of shareholders holding at least 5% of the charter capital of the Company

The list of shareholders holding at least 5% of the charter capital of the Company as of December 31, 2023 is as follows:

No.	Shareholder structure	Number of Shares held	Value (by par value) (VND)	Shareholding percentage
<b>1</b>	<b>Domestic shareholders</b> Masan Horizon Company Limited	949,597,153	94,959,715,300,000	86.39%
<b>2</b>	<b>Foreign Shareholders</b> Mitsubishi Materials Corporation	109,915,542	1,099,155,420,000	10.00%

## Major Shareholders - Investors

Ownership structure of Masan High-Tech Materials as of December 31, 2023





## Institutional Shareholders

### Domestic Shareholder

#### **MASAN GROUP CORPORATION**

*(The controlling shareholder through its wholly owned subsidiary, via Masan Horizon).*

Masan Group Corporation (“Masan” or the “Company”) believes in “Doing well by doing good”. The Company’s mission is to provide better products and services to the 100 million people of Vietnam, so that they can pay less for their daily essentials. Masan aims to achieve this by driving productivity with technological innovations, trusted brands, and focusing on fewer but bigger opportunities that impact the most lives.

Masan Group’s member companies and associates are industry leaders in branded fast-moving consumer goods, branded meat, modern retail, F&B retail, financial services, telecommunications, and value-added chemical processing, altogether representing segments of Vietnam’s economy that are experiencing the most transformational growth.

**Masan Consumer Holdings** - one of Vietnam’s largest local diversified FMCG companies, manufacturing and distributing a range of food and beverage products, including soya sauce, fish sauce, seasoning, chili sauce, instant noodles, instant coffee, instant cereals, bottled beverages, processed meat, and beer. Recently, Masan Consumer Holdings has grown its product portfolio in the home and personal care.

**WinCommerce** (formerly Vincommerce) – the largest modern retail platform in Vietnam. WinCommerce, via WinEco (formerly VinEco), owns 14 high-tech farms WinEco which provide products of international quality standards.

**CrownX** (consumer retail platform that currently consolidates Masan’s interests in Masan Consumer Holding and Wincommerce).



**Masan MEATLife** - one of the largest fully integrated (“Feed-Farm-Food” business model) branded meat platform, focused on driving productivity in Vietnam’s animal protein industry and ultimately directly serving consumers with traceable, quality, and affordable meat products.

**Techcombank** - one of the largest joint stock commercial banks in Vietnam in terms of total operating income, assets, loans, deposits, customers, and distribution network. It has built industry-leading franchises in retail deposits, SME, and retail lending through its consumer-centric ecosystem approach.

**Masan High-Tech Materials (MHT)** - one of Vietnam’s largest integrated industrial mineral and chemical producers.

### Foreign Shareholder

#### **MITSUBISHI MATERIALS**

**Mitsubishi Materials Corporation** holds 109,915,542 ordinary shares (equivalent to 10% of the total shares in circulation). Mitsubishi Materials Corporation is an integrated materials manufacturer, supplying basic materials such as copper and cement, mechanical components, electronic materials and components used in automobiles, home appliances, as well as the tools used to make them. MMC is also involved in the recycling and energy sectors. Founded in 1871, it is one of the core companies of Mitsubishi Group in Japan. The company is listed on the Tokyo Stock Exchange and the Osaka Exchange and is a constituent of the Nikkei 225 stock market index.

# GROUP STRUCTURE

MHT Structure

Organisation Chart

Management Structure



# MHT STRUCTURE

**Holding Company**  
Masan High-Tech Materials Corporation (MHT)

**Name of the Company**  
Masan High-Tech Materials Corporation

**Address**  
Suite 802, 8th Floor, Central Plaza, 17 Le Duan, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam

**Tel**  
+84 28 6256 3862

**Fax**  
+84 28 3827 4115

**Website**  
<https://masanhightechmaterials.com/>

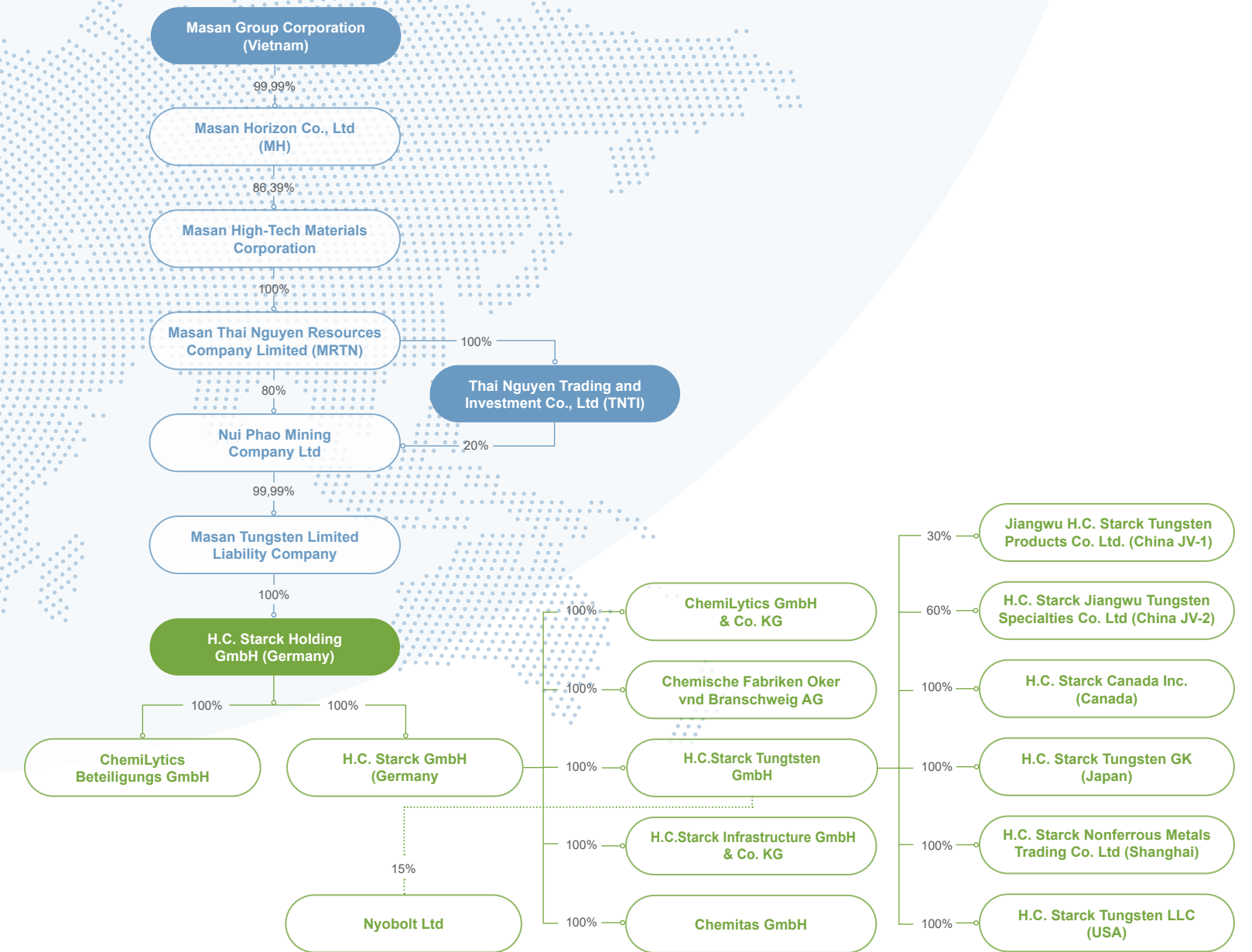
**Enterprise Registration Certificate**  
No. 0309966889 issued by the Department of Planning and Investment of Ho Chi Minh City on April 27, 2010, as amended for the 19th time on February 11, 2023.

<b>Charter Capital</b>	<b>Contributed capital in Company</b>
VND 10,991,554,200,000	VND 10,991,554,200,000

**Major business sectors**

- Market research and public surveys (details: market research);
- Management consultancy (details: investment and management consulting services, excluding financial services).

The corporate structure of MHT is set out in the diagram below



## CONSOLIDATED SUBSIDIARIES



### MASAN THAI NGUYEN RESOURCES COMPANY LIMITED (MRTN)

<b>Name of the Company:</b>	Masan Thai Nguyen Resources Company Limited
<b>Address:</b>	Suite 802, 8th Floor, Central Plaza, 17 Le Duan, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam
<b>Tel:</b>	+84 28 6256 3862
<b>Fax:</b>	+84 28 3827 4115
<b>Enterprise Registration Certificate:</b>	0309960069 issued by the Department of Planning and Investment of Ho Chi Minh City on May 7, 2010, and amended for the 8th time on December 14, 2020
<b>Charter Capital:</b>	VND 12,156,476,389,000
<b>Contributed capital in Company:</b>	VND 12,156,476,389,000
<b>Capital contribution ratio of the Company:</b>	100% of charter capital

#### Major business sectors:

- Market research and public surveys (details: market research);
- Management consultancy (details: investment and management consulting services, excluding financial services).



### THAI NGUYEN TRADING AND INVESTMENT COMPANY LIMITED (TNTI)

<b>Name of the Company:</b>	Thai Nguyen Trading and Investment Company Limited
<b>Address:</b>	Suite 802, 8th Floor, Central Plaza, 17 Le Duan, Ben Nghe Ward, District 1, Ho Chi Minh City, Vietnam
<b>Tel:</b>	+84 28 6256 3862
<b>Fax:</b>	+84 28 3827 4115
<b>Enterprise Registration Certificate:</b>	No. 0309960069 issued by the Department of Planning and Investment of Ho Chi Minh City on May 7, 2010, and amended for the 8th time on December 14, 2020
<b>Charter Capital:</b>	VND 2,158,702,686,000
<b>Contributed capital in Company:</b>	VND 2,158,702,686,000
<b>Capital contribution ratio of the Company:</b>	100% of charter capital

#### Major business sectors:

- Management consultancy (details: investment and management consulting services, excluding financial and accounting consulting services);
- Advertising;
- Market research and public surveys (details: market research);
- Extraction of precious and rare minerals (not operating at the head office);
- Extraction of non-ferrous metals (not operating at the head office);
- Trade promotion; and
- Financial support services, not classified (details: investment consulting services, excluding legal, financial, and accounting consulting services).

TNTI was established on October 15, 2010, as a Limited Liability Company to conduct consultancy activities (excluding financial and accounting consultancy), advertising, market research, and trade promotion. TNTI is among the group of companies established to develop the Nui Phao Project, including MRTN, NPMC, and TNTI.



### NUI PHAO MINING COMPANY LTD (NPMC)

<b>Name of the Company:</b>	Nui Phao Mining Company Ltd
<b>Address:</b>	Suoi Cat Hamlet, Ha Thuong Commune, Dai Tu District, Thai Nguyen Province, Vietnam
<b>Tel:</b>	+84 24 37182490
<b>Fax:</b>	+84 24 37182491
<b>Enterprise Registration Certificate:</b>	No. 4600864513 issued by the Department of Planning and Investment of Thai Nguyen province on July 5, 2010, the 14th amendment dated June 03, 2022.
<b>Charter Capital:</b>	VND 10,792,915,155,000
<b>Contributed capital in Company:</b>	VND 10,792,915,155,000
<b>Capital contribution ratio of the Company:</b>	100% of charter capital

#### Major business sectors:

- Extraction of precious metal ores (exploitation, processing of Tungsten, Fluorspar, Bismuth, Copper and Gold);
- Extraction of other, nonferrous containing ore;
- Assistance service activities for mining of other ores, not mentioned above;
- Production of precious metal ores;
- Sale of the metals and metal ores (excluding sale and purchase of gold bars);
- Management consultancy;
- Other special office assistance; and
- Import and export of the products traded by the Company.



### MASAN TUNGSTEN LIMITED LIABILITY COMPANY (MTC)

<b>Name of the Company:</b>	Masan Tungsten Limited Liability Company
<b>Address:</b>	Suoi Cat Hamlet, Ha Thuong Commune, Dai Tu District, Thai Nguyen Province, Vietnam
<b>Tel:</b>	+84 24 73075588
<b>Fax:</b>	+84 24 37182491
<b>Enterprise Registration Certificate:</b>	No. 4601163743 issued by the Department of Planning and Investment of Thai Nguyen province on January 15, 2014, the 12th amendment dated July 19, 2022
<b>Charter Capital:</b>	VND 3,238,491,280,000
<b>Contributed capital in Company:</b>	VND 3,238,491,280,000
<b>Capital contribution ratio of the Company:</b>	100% of charter capital

#### Major business sectors:

Manufacture of non-ferrous metals and rare metals (processing tungsten for export or domestic trade).



### H.C. STARCK HOLDING (GERMANY) GmbH

<b>Registered Number:</b>	HRB 200744
<b>Registered Office:</b>	Im Schleeke 78-91, 38642 Goslar, Germany
<b>Date and place of incorporation:</b>	Date and place of incorporation: April 23, 2007, Goslar, Germany
<b>Charter capital:</b>	EUR 25,000
<b>Ownership:</b>	Masan Tungsten Limited Liability Company
<b>Directors:</b>	Craig Richard Bradshaw, Stephan Broske, Dr. Hady Seyeda (Managing Director)
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+49 5321 751-0
<b>Business sectors:</b>	Holding company, no operating business



### H.C. STARCK GmbH

<b>Registered Number:</b>	HRB 200743
<b>Registered Office:</b>	Im Schleeke 78-91, 38642 Goslar, German
<b>Date and place of incorporation:</b>	April 20, 2007, Goslar, Germany
<b>Charter capital:</b>	EUR 10,000,000
<b>Ownership:</b>	H.C. Starck Holding (Germany) GmbH
<b>Directors:</b>	Craig Richard Bradshaw, Stephan Broske, Dr. Hady Seyeda (Managing Director)
<b>Accounting reference date:</b>	31 December
<b>Tel:</b>	+49 5321 751-0
<b>Business sectors:</b>	Holding company, no operating business



### H.C. STARCK TUNGSTEN GmbH

<b>Registered Number:</b>	HRB 210391
<b>Registered Office:</b>	Im Schleeke 78-91, 38642 Goslar, Germany
<b>Date and place of incorporation:</b>	November 26, 2015, Munich, Germany
<b>Charter capital:</b>	EUR 26,000,000
<b>Ownership:</b>	H.C. Starck GmbH (100%)
<b>Directors:</b>	Dr. Hady Seyeda (Managing Director)
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+49 5321 751-0

#### Business sectors:

- Headquarters of H.C. Starck Tungsten GmbH and the largest Tungsten powder production plant.
- High-level regulatory authority.
- Entire value chain of Tungsten is produced here, with a special focus on Tungsten recycling.
- Closed-loop technology in processing raw materials (including recycling) and manufacturing Tungsten chemicals, Tungsten metal, Tungsten Carbide, Tantalum powder, Niobium Carbide.
- Technical center comprising: Research and Development Center for technical technology.
- Long-standing and deep relationships with local authorities and the Government.

**H.C. STARCK INFRASTRUCTURE GmbH & Co. KG GmbH**

<b>Registered Number:</b>	HRA 104613
<b>Registered Office:</b>	Nymphenburger Str, 84, 80335 Munich, Germany
<b>Date and place of incorporation:</b>	November 26, 2015, Munich, Germany
<b>Charter capital:</b>	EUR 26,000,000
<b>Ownership:</b>	H.C. Starck GmbH (100%)
<b>Directors:</b>	Craig Richard Bradshaw, Stephan Broske, TS. Hady Seyeda (Managing Director)

**Business sectors:**

Landowner in Goslar, lessor of certain buildings on site, owner of the H.C. Starck brand, licensor.

**JIANGWU H.C. STARCK TUNGSTEN PRODUCTS CO. LTD**

<b>Registered Number:</b>	360700520012039
<b>Registered Office:</b>	Shuixi Nonferrous and Metallurgical Industrial Base, Zhanggong District, Ganzhou, Jiangxi Province, PRC.
<b>Date and place of incorporation:</b>	November 27, 2012, Ganzhou, PRC
<b>Charter capital:</b>	RMB 95,355,000
<b>Ownership</b>	<ul style="list-style-type: none"> <li>• H.C. Starck Tungsten GmbH (30%);</li> <li>• Jiangxi Tungsten Industry Co., Ltd. (70%).</li> </ul>
<b>Directors:</b>	Dr. Hady Seyeda, Yi Zhang (Board of Directors)
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+86 18870105188

**Business sectors:**

- Production of ammonium paratungstate and tungsten oxide products
- Sale of ammonium paratungstate and tungsten oxide products
- Architecture and related technical consulting
- Production and trade of chemical products (excluding dangerous goods).

**H.C. STARCK JIANGWU TUNGSTEN SPECIALITIES (GANZHOU) CO., LTD.**

<b>Registered Number:</b>	070020036480
<b>Registered Office:</b>	Shuixi Nonferrous and Metallurgical Industrial Base, Zhanggong District, Ganzhou City, Jiangxi Province, PRC
<b>Date and place of incorporation:</b>	July 31, 2012, Ganzhou, PRC
<b>Charter capital:</b>	RMB 149,625,000
<b>Ownership:</b>	H.C. Starck Tungsten GmbH (60%) Jiangxi Tungsten Industry Co., Ltd. (40%)
<b>Directors:</b>	Dr. Hady Seyeda, Yi Zhang, Nanqiu Wen (Board of Directors)
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+86 797 5162518

**Business sectors:**

- Production of tungsten metal powder and tungsten carbide powder
- Sale of tungsten metal powder and tungsten carbide powder
- Research and development of tungsten metal powder and tungsten carbide powder
- Import and export of products traded by company, and
- Other value-added services for customers

**H.C. STARCK NONFERROUS METALS TRADING (SHANGHAI) CO. LTD**

<b>Registered Number:</b>	12000002201811140012
<b>Registered Office:</b>	Room 204, Tower T1A, Hongqiao Lihpao Plaza / No. 189 Shen Wu Road / Min Hang District / Shanghai, 201100/ P.R. China
<b>Date and place of incorporation:</b>	November 14, 2018, Shanghai, PRC
<b>Charter capital:</b>	RMB 4,000,000
<b>Ownership:</b>	H.C. Starck Tungsten GmbH (100%)
<b>Directors:</b>	Stephan Broske (Legal Representative)
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+86 21 6025 1106

**Business sectors:**

- Sales, customer service, application support, marketing consulting, financial and management consulting;
- Other special office assistance, not mentioned above.

**H.C. STARCK CANADA INC**

<b>Registered Number:</b>	435820-1
<b>Registered Office:</b>	933 Vidal Street South, P.O. Box 3098, Sarnia, Ontario, N7T 8H8, Canada
<b>Date and place of incorporation:</b>	May 18, 2006, Sarnia, Canada
<b>Ownership:</b>	H.C. Starck Tungsten GmbH (100%)
<b>Directors:</b>	Stephan Broske, Ryan Bende
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+1 519-346-4300

**Business sectors:**

- Manufacturing Chemicals
- Producing Tungsten Metal Powders, Tungsten Carbide Powders, and Cast Tungsten Carbide Powder.

**H.C. STARCK TUNGSTEN GK**

<b>Registered Number:</b>	0100-03-027237
<b>Registered Office:</b>	2-20, Kaigan 1-chome, Minato-ku, Tokyo 105-0022, Japan
<b>Date and place of incorporation:</b>	March 26, 2018, Tokyo, Japan
<b>Charter capital:</b>	JPY 650,00
<b>Ownership:</b>	H.C. Starck Tungsten GmbH (100%)
<b>Directors:</b>	Stephan Broske, Tadashi Iba (Operating Officers)
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+81-3-6721-8050

**Business sectors:**

- Import, export, and sales of rare metals and chemical compounds such as tungsten, and cobalt, etc.; and
- Any other business incidental to or relating to the foregoing such as scrap recovery of cemented carbides, heavy metals, etc.



### H.C. STARCK TUNGSTEN LLC

<b>Registered Number:</b>	7615788
<b>Registered Office:</b>	275 Grove St. Suite 2-400, Newton, MA 02466, USA
<b>Date and place of incorporation:</b>	September 19, 2019, Newton, USA
<b>Ownership:</b>	H.C. Starck Tungsten GmbH (100%)
<b>Directors:</b>	Hendrik Becker (President)
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+1-339-293-0990

#### Business sectors:

- Sale of metals and metal ores;
- Import and export of the products by the Company.



### CHEMISCHE FABRIKEN OKER UND BRAUNSCHWEIG AKTIENGESELLSCHAFT

<b>Registered Number:</b>	110008
<b>Registered Office:</b>	Im Schleeke 78 - 91, 38642 Goslar, Germany
<b>Date and place of incorporation:</b>	February 14, 2006, Goslar, Germany
<b>Charter capital:</b>	EUR 205,000
<b>Ownership:</b>	H.C. Starck Tungsten GmbH (100%)
<b>Directors:</b>	Juliane Saupe (Management board), Dr. Hady Seyeda (Chairman of Supervisory Board), Stephan Broske (Member of Supervisory Board)
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+49 5321 751-0

#### Business sectors:

Landowner in Goslar, lessor of certain buildings on site



### CHEMILYTICS BETEILIGUNGS GmbH

<b>Registered Number:</b>	HRB 207566
<b>Registered Office:</b>	Im Schleeke 78 - 91, 38642 Goslar, Germany
<b>Date and place of incorporation:</b>	December 27, 2018, Goslar, Germany
<b>Charter capital:</b>	EUR 25,000
<b>Ownership:</b>	H.C. Starck Holding GmbH (Germany) (100%)
<b>Directors:</b>	Dr. Sascha Janosch (Managing Director)
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+49 5321 751 51515

#### Business sectors:

Holding company, no operating business.



### CHEMILYTICS GmbH & Co. KG

<b>Registered Number:</b>	HRA 202206
<b>Registered Office:</b>	Im Schleeke 78 – 91, 38642 Goslar, Germany
<b>Date and place of incorporation:</b>	October 10, 2018, Goslar, Germany
<b>Charter capital:</b>	EUR 10,000
<b>Ownership:</b>	H.C. Starck GmbH (100%)
<b>Directors/General partner:</b>	H.C. Starck GmbH
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+49 5321 751 51515

#### Business sectors:

Laboratory for a full range of inorganic elemental analytics and powder characterization serving all relevant industries e.g. metal, chemistry, ceramic and battery.



## CHEMITAS GmbH

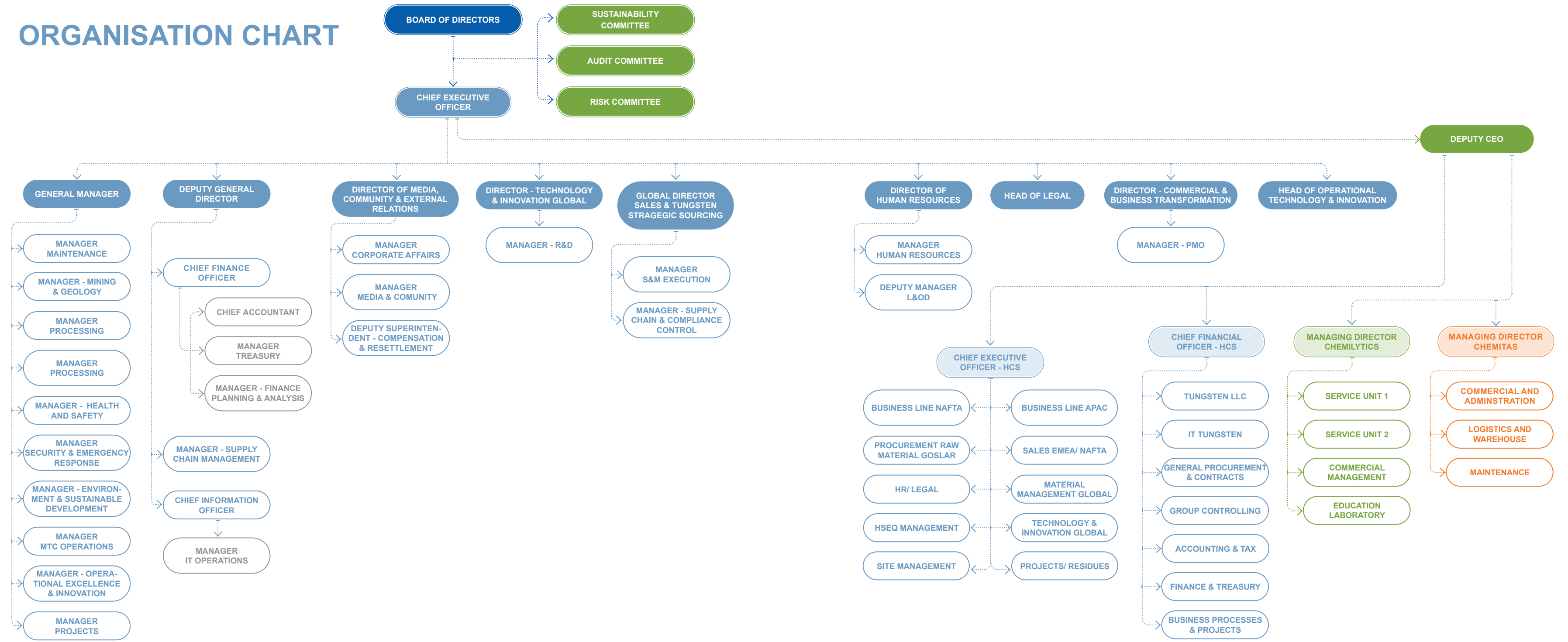
<b>Registered Number:</b>	HRB 201518, Amtsgericht BRAUNSCHWEIG
<b>Registered Office:</b>	Lange Wanne 8, 38644 Goslar, Germany
<b>Date and place of incorporation:</b>	December 12, 2017, Goslar, Germany
<b>Charter capital:</b>	EUR 25,000
<b>Ownership:</b>	H.C. Starck GmbH (100%)
<b>Directors/General partner:</b>	Norman Koch, Jochen Weber
<b>Accounting reference date:</b>	December 31
<b>Tel:</b>	+49 5321 7510

### Business sectors:

Providing warehousing services and other freight transportation services.



# ORGANISATION CHART





## MANAGEMENT STRUCTURE

### MHT General Meeting of Shareholders

The General Meeting of Shareholders is the supreme authoritative body of the Company. The Annual General Meeting (AGM) of Shareholders shall be organized once a year. The annual General Meeting of Shareholders shall be convened within 4 months from the end of the financial year, or as may be extended, but not beyond 6 months from the end of the fiscal year, to the extent permitted by the business registration authority and at the request of the Board of Directors.

### MHT Board of Directors

The Board of Directors (BOD) is responsible for the overall management and direction of the Company. The Board of Directors typically meets when required, but at least once every quarter, to review and monitor the Company's financial position and operations.

The current Board of Directors comprises five (5) members. The term of the Board of Directors is five years. The term of each member of the Board of Directors shall not exceed five years, with a possibility of re-election at the end of the term. The Board of Directors may elect, dismiss, or remove the Chairman of the Board of Directors.

### List of members of the Board of Directors

The current members of the current Board of Directors are as follows:

NAME	POSITION IN THE COMPANY	EXECUTIVE/ NON-EXECUTIVE MEMBER	DATE OF APPOINTMENT
Mr. Danny Le	Chairman of the Board of Director	Non-executive member	19/04/2019
Mr. Nguyen Thieu Nam	First Vice Chairman of the Board of Directors	Non-executive member	18/02/2013
Mr. Craig Richard Bradshaw	Member of the Board of Director	Executive member	19/04/2019
Mr. Tadakazu Ohashi	Member of the Board of Director	Non-executive member	18/04/2023
Ms. Nguyen Thu Hien	Member of the Board of Director	Independent member	12/04/2021

## MHT Management Team



**Mr. Craig Richard Bradshaw** • Chief Executive Officer

Mr. Craig Richard Bradshaw has 30 years' experience in the mining sector, spanning mining and processing operations, logistics, sales and marketing in Australia, Thailand and Lao PDR. Mr. Bradshaw was previously Senior Commercial Manager for Lang Xang Minerals Ltd Sepon Mine. He has also previously served as the Country General Manager for Thailand for Toll, Australia's largest fully integrated logistics service provider. Prior to this, Mr. Bradshaw worked in management roles for Mount Isa Mines Limited ("MIM") and Xstrata.

**Dr. Hady Seyeda** • Deputy Chief Executive Officer

Dr. Seyeda has more than 20 years' experience in refractory metal industry and technology, specialized in Tungsten, Tantalite and Niobium. Mr. Hady owns 3 patents and is co-author of 12 publications. He has Doctor's degree in Inorganic chemistry and worked for H.C. Starck since 1998 at key positions such as: Deputy Chairman of Corporate Strategy, Deputy Director of Plant Operation and Management in Goslar, MD China.



**Ms. Dinh Le Hang** • Deputy Chief Executive Officer

Ms. Dinh Le Hang holds a Master's degree in International Accounting from Swinburne University of Technology in Australia, an auditor certificate issued by the Ministry of Finance, and a Certified Practising Accountant (CPA) Australia. She has more than 25 years of experience in finance, accounting and auditing. Prior to joining the Company, Ms. Hang has got extensive expertise as a senior financial expert and has held management positions at major corporations such as Insight Group (Australia), Ernst & Young Vietnam Co., Ltd., HSBC Vietnam Bank, Standard Chartered Bank.



**Mr. Nguyen Huy Tuan** • Acting Chief Financial Officer

Mr. Nguyen Huy Tuan holds a Bachelor's degree in International Business Economics from Hanoi Foreign Trade University, and is a member of the Association of Chartered Certified Accountants (ACCA). He has over 10 years of experience in finance, accounting and auditing. Prior to joining the Company, Mr. Tuan worked for over 5 years at PwC Vietnam Co., Ltd.

**Mrs. Nguyen Thi Thanh Mai** • Chief Accountant

Mrs. Nguyen Thi Thanh Mai holds a Bachelor's degree in Accounting from National Economics University and an Auditor Certificate issued by the Ministry of Finance. She has over ten years' auditing experience at Arthur Andersen Vietnam Limited Company and KPMG Limited. Prior to joining MHT, she worked for Ban Phuc Nickel Mines Limited Liability Company as Chief Accountant in charge of accounting, finance and tax for 12 years.



## NPMC Management Structure

The rights and obligations of the Members' Council, the Chairman and the General Director are regulated by the charter of Nui Phao Mining. According to the charter of NPMC, the Members' Council is the highest decision-making body of NPMC. The Members' Council is responsible for the management of the businesses and for the appointment of principal senior management of NPMC. The Chairman of the Members' Council is elected by the Members' Council. The term of office of the Chairman is five years and can be re-elected without any limit.



**Mr. Nguyen Thieu Nam**  
Chairman



**Mr. Nguyen Van Thang**  
Vice Chairman



**Mr. Danny Le**  
Member



**Mr. Craig Richard Bradshaw**  
Member

NAME	POSITION IN THE COMPANY	EXECUTIVE/ NON-EXECUTIVE MEMBER	DATE OF APPOINTMENT
<b>Mr. Nguyen Thieu Nam</b>	Chairman of the Members' Council	Member of the Members' Council	19/04/2019
<b>Mr. Nguyen Van Thang</b>	Vice Chairman of the Members' Council	Member of the Members' Council	09/11/2010
<b>Mr. Danny Le</b>	Member of the Members' Council	Member of the Members' Council	19/04/2019
<b>Mr. Craig Richard Bradshaw</b>	Member of the Members' Council	Member of the Members' Council	19/04/2019

## NPMC Management Team



**Mr. Craig Richard Bradshaw** • Chief Executive Officer

Mr. Craig Richard Bradshaw has 30 years' experience in the mining sector, spanning mining and processing operations, logistics, and sales and marketing in Australia, Thailand and Lao PDR. Mr. Bradshaw was previously Senior Commercial Manager for Lang Xang Minerals Ltd Sepon Mine. He has also previously served as the Country General Manager for Thailand for Toll, Australia's largest fully integrated logistics service provider. Prior to this, Mr. Bradshaw worked in management roles for Mount Isa Mines Limited ("MIM") and Xstrata.

**Ms. Dinh Le Hang** • Deputy Chief Executive Officer

Ms. Dinh Le Hang holds a Master's degree in International Accounting from Swinburne University of Technology in Australia, an auditor certificate issued by the Ministry of Finance, and a Certified Practising Accountant (CPA) Australia. She has more than 25 years of experience in finance, accounting and auditing. Prior to joining the Company, Ms. Hang gained many years of experience as a senior financial expert and held management positions at many large companies such as Insight Group (Australia), Ernst & Young Vietnam Co., Ltd., HSBC Vietnam Bank, Standard Chartered Bank.



**Mr. Nguyen Huy Tuan** • Acting Chief Financial Officer

Mr. Nguyen Huy Tuan holds a Bachelor's degree in International Business Economics from Hanoi Foreign Trade University, and is a member of the Association of Chartered Certified Accountants (ACCA). He has over 10 years of experience in finance, accounting and auditing. Prior to joining the Company, Mr. Tuan worked for over 5 years at PwC Vietnam Co., Ltd.



**Mr. Phan Chien Thang** • Director of Media, Community and External Relations

Mr. Phan Chien Thang holds the position of Director of Media, Community and External Relations at Masan High-Tech Materials, cum. PR Deputy Director of Masan Group. Mr. Thang has 23 years of experience in journalism, communication and corporate affairs. Prior to joining Masan High-Tech Materials, Mr. Thang worked as Deputy Editor-in-Chief of the Saigon Times (under the People's Committee of Ho Chi Minh City). He formerly held several senior roles at Lao Dong Newspaper. He has attended numerous international training courses in communication and public relations in Germany, Israel, and Sweden. Mr. Thang has a wide network of press and government agencies, at both local and central levels, and extensive experience in working with the community. Mr. Thang also holds the position of Vice Chairman of Vietnam Association of Geological and Mineral Enterprises (VAGME). He graduated in Bachelor of Laws from Hanoi Law University and in Bachelor of English from Hanoi University of Foreign Languages (now Hanoi University).

**Mr. Ashley Mc Aleese** • General Manager of Thai Nguyen Operations

Mr. Ashley Mc Aleese is a qualified Minerals Processing Engineer with 20 years of operational experience across a range of commodities including Copper, Gold, Silver, Zinc and Lead, in both operating and greenfield projects in Australia, Indonesia, Papua New Guinea and now Vietnam. Prior to joining NPMC, he was the Operations Manager for PT Batutua Tembaga Raya which owns the Wetar Copper Project on Wetar island, Indonesia and before that Operations Manager for PT Natarang Mining in Indonesia. He is a member of the Australasian Institute of Mining & Metallurgy.



**Mr. William John Parry-Jones** • Head of Sales & Marketing

Mr. William John Parry-Jones has over 10 years of experience in the minerals and metals industry, with a particular focus on the sales and marketing of tungsten products. Prior to joining NPMC, he worked as a commodities trader for Amalgamated Metal Corporation, where he developed extensive knowledge of international commerce and strong global relationships in the upstream technology metals industry. He holds a Bachelor's degree in Materials Engineering, and a Master of Science in Aerospace Composites from Imperial College London, UK.

**Dr. Marc Roos** • Director of Global Human Resources

Mr. Marc graduated with a PhD in Science from Swiss Federal University of Technology (ETH) Zurich, Switzerland before embarking on a 20-year career in Human Resources Management. He brings a wealth of global experience, having worked for companies such as Shell, Glencore, and Weir Engineering in various countries, including Cameroon, France, Russia, Netherlands, Mauritania and Qatar.



## MTC Management Structure

According to the Charter of MTC, the organizational structure of MTC consists of the Members' Council and the General Director. The Members' Council is the supreme decision-making body of MTC and consists of a maximum of four (4) representatives appointed by NPMC and TNTI, of which up to three (3) representatives are to be appointed by NPMC and one (1) representative is to be appointed by TNTI.

The Members' Council is responsible for the management of the businesses and the appointment of the principal senior management of MTC. The Members' Council has one Chairman who is nominated by NPMC and elected by the Members' Council. The term of office of the Chairman is five years and can be re-elected without any limit.

## MTC Management Team

The rights and obligations of the Members' Council, the Chairman and the General Director are regulated by the charter of MTC. According to the charter of MTC, the Members' Council is the highest decision-making body of MTC. The Members' Council is responsible for the management of the businesses and the appointment of the principal senior management of MTC. The chairperson of the Members' Council is recommended by MTC and voted for by the Members' Council. The term of office of the Chairman is five years and can be re-elected without any limit.

NAME	POSITION IN THE COMPANY	EXECUTIVE/ NON-EXECUTIVE MEMBER	DATE OF APPOINTMENT
Mr. Nguyen Van Thang	Chairman of the Members' Council	Member of the Members' Council	15/01/2020
Mr. Nguyen Thieu Nam	Member of the Members' Council	Member of the Members' Council	16/04/2019
Mr. Craig Richard Bradshaw	Member of the Members' Council	Member of the Members' Council	14/08/2018

## MTC Management Team



**Mr. Craig Richard Bradshaw** • Chief Executive Officer

Mr. Craig Richard Bradshaw has 30 years' experience in the mining sector, spanning mining and processing operations, logistics, and sales and marketing in Australia, Thailand and Lao PDR. Mr. Bradshaw was previously Senior Commercial Manager for Lang Xang Minerals Ltd Sepon Mine. He has also previously served as the Country General Manager for Thailand for Toll, Australia's largest fully integrated logistics service provider. Prior to this, Mr. Bradshaw worked in management roles for Mount Isa Mines Limited ("MIM") and Xstrata.

**Mr. Nguyen Huy Tuan** • Acting Chief Financial Officer

Mr. Nguyen Huy Tuan holds a Bachelor's degree in International Business Economics from Hanoi Foreign Trade University, and is a member of the Association of Chartered Certified Accountants (ACCA). He has over 10 years of experience in finance, accounting and auditing. Prior to joining the Company, Mr. Tuan worked for over 5 years at PwC Vietnam Co., Ltd.



**Mr. Stuart Arnold** • Operation Excellence & Innovation Manager



Stuart has over 22 years' experience in Mineral Processing and Metallurgy. Before working as Operation Manager of MTC plant, he had been in the role of Superintendent - Metallurgy at Nui Phao Mining Company Limited.

### Audit Committee

Members of the Audit Committee	Position	Day becoming/no longer member of the Audit Committee	Number of attendances	Percentage	Reasons for absence
Ms. Nguyen Thu Hien	Chairwoman	12/04/2021	2/2	100%	-
Mr. Nguyen Thieu Nam	Member	12/04/2021	2/2	100%	-

### Sustainability Committee

Members of Sustainability Committee	Position	Day becoming/no longer member of the Audit Committee	Number of attendances	Percentage	Reasons for absence
Mr. Ashley James McAleese	Chairman	11/01/2021	4/4	100%	-
Mr. Nguyen Van Thang	Member	23/06/2017	4/4	100%	-
Mr. Craig Richard Bradshaw	Member	23/06/2017	4/4	100%	-
Mr. Tran Phuong Bac	Member	23/06/2017	4/4	100%	-

### Risk & Audit Committee

Members of Risk & Audit Committee	Position	Day becoming/no longer member of the Audit Committee	Number of attendances	Percentage	Reasons for absence
Mr. Craig Richard Bradshaw	Chairman	21/09/2017	1/1	100%	-
Mr. Tran Phuong Bac	Member	21/09/2017	1/1	100%	-
Mr. Pham Nguyen Hai	Member	21/09/2017	1/1	100%	-



## HCS Management Team



**Dr. Hady Seyeda** • H.C. Starck Tungsten Powders CEO

Dr. Hady Seyeda has more than 20 years' experience in refractory metal industry and technology, specialized in Tungsten, Tantalite and Niobium. Mr. Hady owns 3 patents and is co-author of 12 publications. He has Doctor's degree in Inorganic chemistry and worked for HCS since 1998 at key positions such as: Deputy Chairman of Corporate Strategy, Deputy Director of Plant Operation and Management in Goslar, MD China. In 2016, he was appointed to the position of Deputy General Manager, responsible for monitoring production, research and development, managing supply chain and health, safety and emergency response of the Company with branches worldwide. Since 2018, he holds a position of General Manager of H.C. Starck.

**Mr. Stephan Broske** • H.C. Starck Tungsten Powders CFO

Mr. Stephan Broske has over 25 years' financial experience in a wide range of sectors such as banking, logistics and chemicals. With 14 years working at H.C. Starck, he started working as the Head of Financial department then became the Chief Financial Officer of the Company until now. Prior to that, he worked as a Financial Risk Manager for Cognis Special Chemicals, Henkel sculpture and fabrication company, and the Deutsche Post DHL Group. He started his career at HypoVereinsbank/ UniCredit as a Sales Manager for foreign exchange & currency market. Mr. Broske holds a Certified Financial Investment Analyst® (CFA) recognized globally.



**Mr. Peter Zhang** • General Manager - H.C. Starck APAC

Mr. Peter Zhang has more than 25 years' experience of powder business in Asia. As senior management group member for Höganäs Asia Pacific, he led China to become the most successful subsidiary for Höganäs Group. Previously, he worked as President for Wagner Industry Solutions China. Mr. Zhang is skilled at creating and sharing value on the whole value chain as well as building strong local team to drive sustainable growth and profitability for foreign companies in China and the Asia region.



**Ms. Juliane Saupe** • Site Manager - H.C. Starck Tungsten Goslar, Germany

Ms. Juliane Saupe has 15 years' experience in the chemical industry, process development and optimization, Lean management, sustainability and health management. After graduating from the Technical University of Berlin as chemical engineer, she started working as a R&D project manager at H.C. Starck in 2007. Later, she switched to plant management and has now been the site manager of our location in Goslar since 2019.



**Mr. Julia Meese-Marktscheffel** • Director Technology & Innovation Global

Ms. Juliane Meese-Marktscheffel has over 25 years of experience in global innovation and technology management in the chemical industry. As graduated chemist and certified business chemist, her main innovation focus areas are on R&D strategy and development of superior product portfolios. Her international record refers to the set-up of diverse joint ventures including commissioning and ramp-up of new powder productions at sites in Canada and Japan in the battery material business and for strategic Tungsten powders/chemicals in China and Vietnam. She started her professional career within the rare earth element chemistry followed by more than 10 years in the cathode materials development of secondary batteries zooming in on Nickel/Cobalt based Lithium ion/ polymer batteries for electromobility. Scientific emphasis meanwhile is across the value chains of the refractory metals, in particular Tungsten. She is a member of the Scholarship Foundation of the German Nation as well as of the Alexander-von-Humboldt Foundation of Germany.

# DEVELOPMENT STRATEGIES

Sustainability at MHT

Development Objectives

Social Development Objectives

Growth through Sustainability



## SUSTAINABILITY AT MHT

MHT is dedicated to building a sustainable business that not only ensures the longevity of our company but also adds value to our shareholders. Our sustainability strategy is rooted in addressing global issues, such as pandemic management, climate change, human rights, social change, and responsible sourcing.

We believe in keeping our sustainability commitments public and welcome an open dialogue on the topic. Our approach, values, success metrics, and decision-making process are communicated to our employees and shareholders, promoting a common understanding of our sustainability efforts.

At MHT, sustainability is about reducing negative impacts on the environment, society, economy, and culture while supporting and sustaining the industries and communities we operate in. Our policies are set at a global level, with a focus on local implementation. By identifying and managing risks, we aim to create a sustainable future for all stakeholders.

## DEVELOPMENT OBJECTIVES

Masan High-Tech Materials has set a bold objective to position Vietnam as a leader in development of advanced tungsten and fluorspar products and tungsten recycling technology. The company is actively researching the development of new tungsten products in Vietnam and planning to construct its first Tungsten recycling plant in the country, in line with the global trend towards a circular economy and sustainable development.

These pivotal projects are designed to foster the development of innovative tungsten chemicals in a financially prudent manner. Simultaneously, they aim to diminish dependence on primary raw materials derived from mining activities. Moreover, the overarching goal is to establish Vietnam as a pivotal regional technology hub, particularly in the realm of recycling tungsten and other crucial metals.

By the year 2027, Masan High-Tech Materials aspires to not only assume the role of the world's premier supplier of high-tech materials but also emerge as a trailblazer in the innovative recycling of critical materials such as Cobalt, Lithium, Nickel, and Manganese. This ambitious vision underscores the company's unwavering commitment to fostering innovation, championing sustainability, and charting a course for sustained long-term growth.





## SOCIAL DEVELOPMENT OBJECTIVE

At Masan High-Tech Materials (MHT), our social development objective is to not only support the local community, but also strive for sustainable growth through responsible business practices. As part of our commitment to promoting the circular economy, we aim to recycle a similar amount of tungsten as our annual production, reducing the reliance on primary raw materials from mining activities.

In addition, our focus on producing technology consumer products not only benefits the consumer, but also the environment. Our products continue to maintain market leadership across important indicators such as customer feedback, customer ratings, and pricing advantage against similar products. This demonstrates our continued value proposition to customers and our commitment to sustainable business practices.

## GROWTH THROUGH SUSTAINABILITY

Since the commencement of its operations, MHT has consistently embraced “Sustainability” as a fundamental element ingrained in its corporate DNA, transcending mere popular jargon. This commitment to “Sustainability” remains pivotal to the Company’s growth strategy, evident in the successful acquisition and integration of H.C. Starck. MHT has actively pursued diverse avenues for growth, contributing to the establishment of a sustainable ecosystem for its global stakeholders.

### Sustainable solutions using advanced materials

The MHT teams have demonstrated successful efforts in developing and introducing innovative solutions across various consumer segments. This aligns with the strategic objective of moving downstream and engaging more closely with consumers through the creation of new and inventive applications.

The recent introduction of advanced tungsten powders, branded as “starck2charge,” within the battery materials range, along with the investment in Nyobolt Limited, a pioneering entity in tungsten-based fast-charging battery solutions during FY2022, exemplifies MHT’s unwavering commitment to developing sustainable and cost-effective solutions to address the world’s energy needs. Through strategic partnerships and investments, particularly with Nyobolt Limited, MHT not only anticipates offering comprehensive and innovative battery solutions but also aims to enhance its presence in B2C business segments by accessing and developing consumer-centric battery and product solutions in the future. To further advance, MHT’s objective of sustainable cost advantage through energy-effective solutions, MHT also completed the acquisition of Chemitas GmbH, an integrated site infrastructure and logistic services provider at H.C. Starck’s site at Goslar Germany and working relentlessly to optimize the energy consumption not only for H.C. Starck but also for other onsite external customers.

MHT is actively serving the sunrise segment of additive manufacturing, commonly known as 3D printing, by leveraging its innovative tungsten products and complementary services under the “starck2print” trademark. The Company is strategically positioned to move further downstream by offering specialized tungsten products differentiated for their flowability and optimized particle size distribution, tapping into a new growth market.

### Circular economy-based growth models

Adopting a circular economy-based approach, in contrast to linear and conventional business models, MHT is consciously creating an inclusive growth platform for all stakeholders, encompassing employees, shareholders, society, and the environment.

In 2023, the Company conducted a successful feasibility study for establishing a tungsten scrap recycling plant in Vietnam. This initiative aims to supplement tungsten concentrates supply cost-effectively to its fully owned subsidiary, Masan Tungsten Company Ltd, thereby realizing economies of scale. MHT plans to procure tungsten scraps domestically and internationally, subject to regulatory licenses and permits.

Apart from developing innovative materials and battery solutions, MHT initiated the construction of a pilot black mass recycling facility at Goslar, Germany, in FY2022 and almost completed it in FY2023. The results from this pilot plant will inform the technical design and feasibility study for the eventual commercialization of the project. The facility is designed to be scalable, enabling the establishment of multiple facilities to facilitate localized recycling of black mass, aligning with anticipated geopolitical regionalization trends in recycling.

### Operational strategies for sustainable competitive advantages

In pursuit of sustainable competitive advantages, MHT has consistently applied sustainability concepts to its operations in Vietnam, Germany, Canada, and China. Throughout FY2023, the Company implemented various operational initiatives aimed at achieving cost efficiencies across raw materials, mining, processing, maintenance costs, and general corporate overheads. MHT actively monitors and optimizes the consumption of major consumables and ancillary services, forging strategic partnerships with suppliers, contractors, and service providers. Additionally, the Company is working on developing in-house solutions for critical services in Vietnam and Germany through both organic and inorganic means.



## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This communication contains information that may constitute “forward-looking statements”. Generally, the words “believe”, “expect”, “intend”, “aim”, “estimate”, “anticipate”, “project”, “will” and similar expressions identify forward-looking statements, which generally are not historical in nature. However, the absence of these words or similar expressions does not mean that a statement is not forward-looking. All statements that address operating performance, events, or developments that we expect or anticipate will occur in the future – including statements relating to volume growth, share of sales, and earnings per share growth, and statements expressing general views about future operating results – are forward-looking statements.

Management believes that these forward-looking statements are reasonable as and when made. However, caution should be taken not to place undue reliance on any such forward-looking statements because such statements speak only as of the date when made. Masan High-Tech Materials Corporation undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise, except as required by law. In addition, forward-looking statements are subject to certain risks and uncertainties that could cause audited results to differ materially from our company’s historical experience and our present expectations or projections. These risks include commodity pricing risks and the prices

we obtain for our Tungsten, Copper, Fluorspar and Bismuth are determined by, or linked to, prices in world markets, which have historically been subject to substantial volatility. Fluctuations in commodity prices can occur due to price shifts reflecting underlying global economic and geopolitical factors, industry demand, increased supply due to the development of new productive resources, technological change, product substitution, and national tariffs. Volatility in global economic growth has the potential to adversely impact future demand and prices for commodities. This has the potential to negatively impact future earnings and cash flows. These risks and uncertainties include, but are not limited to, those described elsewhere in this report and those described from time to time in our future reports filed with the Hanoi Stock Exchange.

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## ABBREVIATIONS/ DEFINITIONS

ACCA	Association of Chartered Certified Accountants
AFFF	Aqueous Film Forming Foam
AGM	Annual General Meeting
ANCO	Argo Nutrition International Joint Stock Company
APEC	Asia-Pacific Economic Cooperation
APT	Ammonium Paratungstate
APT Plant	Tungsten Chemicals Processing Plant of Masan Tungsten LLC
BGC	German BG Case
BImSchG	Bundesimmissionsschutzgesetz (Federal Emission Control Act)
BOD	The Board of Directors of the Company
BOJ	Bank of Japan
BTO	Blue Tungsten oxide
C&R	Compensation and Resettlement
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CHESS	Community, Health, Environment, Safety and Sustainability committee
Company	Masan High-Tech Materials/Masan High-Tech Materials Corporation and its subsidiaries
CSI	Corporate Sustainability Index
CSR	Corporate social responsibility
DAW	Days Away From Work
DAWC	Days Away From Work Cases
DAWC 3	Number of Days Away from Work Cases of third party Contractors
DAWCR	Days Away From Work Cases Rate
DP2	Discharge Point 2
DP3	Discharge Point 3
EBITDA	Earnings before Interest, Taxes, Depreciation and Amortization
EC	Electro-chromic
EIA	Environmental Impact Assessment
ENV	Environment
EMAS	Eco Management and Audit Scheme
E-PRTR	European Pollutant Release and Transfer Register
ERD	Economic Restoration Development
FA	Fatal Accidents
FY	Financial Year

GDP	Gross Domestic Product	MTC	Masan Tungsten Limited Liability Company
H.C. Starck or HCS	H.C. Starck Tungsten Powders	mtu	1mtu = 10kg
HC	Headcount	NHTCM	Nui Phao - H.C. Starck Tungsten Chemicals Manufacturing
HNX	The Hanoi Stock Exchange	NPAT	Net Profit After Tax
HR	Human Resources	NPMC	Nui Phao Mining Company Ltd
HRD	Human Resources Department	PCDP	Public consultation and information disclosure program
HSD	Hill Side Dyke	PROC	Processing
HSS	Health, Safety and Security Department	R&D	Research & Development
IC	Integrated Circuit	RMI	Responsible Minerals Initiative
IED	Industrial Emissions Directive	RMIP	Raw Material & Inventory Planning
IT	Information technology	S&M	Sales and Marketing
ITIA	The International Tungsten Industry Association	SCM	Supply chain management
ITLC	International Trade law & Customs	THW	Total Hours Worked
ITRB	Independent Tailings Review Board	TNTI	Thai Nguyen Trading and Investment Company Limited
Law on Enterprises	Law on Enterprises No. 68/2014/QH13 dated November 26, 2014 of the National Assembly of the Socialist Republic of Vietnam	TRC	Total Recordable Cases
LCD	Liquid Crystal Display	TRCR	Total Recordable Cases Rate
LTI	Lost-Time-Injury	TRIFR	Total Recordable Injuries Frequency Rate
LTIFR	Lost Time Injury Frequency Rate	TSF	Tailings Storage Facility
M&A	Mergers and Acquisitions	USD or US\$ or \$	The official currency of United States of America
M&G	Mining & Geology	USQ	German Severity Rate
MAINT	Maintenance	VAS	Vietnamese Accounting Standards
MAQ	German Accident Rate	VAT	Value-added tax
Masan Group	MSN and its subsidiaries	VBCSD	Vietnam Business Council for Sustainable Development
Masan Horizon or MH	Masan Horizon Company Limited	VND	The official currency of Vietnam
Masan Resources or MSR	Masan Resources Corporation	VNR	Vietnam Report Corporation
MCH	Masan Consumer Corporation		
MHT	Masan High-Tech Materials Corporation		
MNSMML	Masan Nutri-Science CorporationMasan MEATLife Corporation		
MONRE	Ministry of Natural Resources and Environment		
MRTN	Masan Thai Nguyen Resources Company Limited		
MSN	Masan Group Corporation		



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**FUTURE**





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