



**Euro  
Manganese  
Inc.**

**MANAGEMENT'S DISCUSSION AND ANALYSIS  
FOR THE YEAR ENDED SEPTEMBER 30, 2022**

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## 1. Introduction

The principal business and current focus of Euro Manganese Inc. (the "Company" or "EMN") is the development of the Chvaletice Manganese Project (the "Project"), in which the Company has a 100% ownership interest. The Project involves the re-processing of a readily leachable manganese deposit hosted in the tailings of a decommissioned mine in the Czech Republic. The Company has also started to explore an opportunity to develop a project to produce high-purity manganese products in Canada for the North American market. The Company's goal is to produce high-purity manganese products in an economically, socially and environmentally-sound manner, principally for use in lithium-ion batteries.

EMN was incorporated under the British Columbia Business Corporations Act on November 24, 2014. The Company's corporate offices are located at 700 West Pender Street, Suite 709, Vancouver, B.C., Canada, and its registered offices are located at 666 Burrard Street, Suite 1700, Vancouver, B.C., Canada. The Company's common shares are traded on the TSX Venture Exchange ("TSX-V") and on the OTC Best Market ("OTCQX") under the symbols "EMN.V" and "EUMNF", respectively. CHESS Depository Interests ("CDIs", with each CDI representing one common share) are traded on the Australia Securities Exchange ("ASX") under the symbol "EMN.AX".

This management's discussion and analysis ("MD&A") of the financial condition and results of operations, prepared as of December 15, 2022, supplements, but does not form part of the audited consolidated financial statements of the Company for the year ended September 30, 2022 (the "September 2022 Financial Statements"), which can be found along with other information of the Company on SEDAR at [www.sedar.com](http://www.sedar.com). The Company prepares its financial statements in accordance with the International Financial Reporting Standards ("IFRS"), as issued by the International Accounting Standards Board ("IASB"). The Company's significant accounting policies are set out in Note 3 of the September 2022 Financial Statements.

Additional information relating to the Company, including the Annual Information Form for the year ended September 30, 2022, is available on SEDAR at [www.sedar.com](http://www.sedar.com), and on the Company's website [www.mn25.ca](http://www.mn25.ca).

The technical information in this MD&A concerning the Chvaletice Manganese Project was prepared under the supervision of Ms. Andrea Zaradic, P. Eng., a Qualified Person under the National Instrument 43-101 *Standards of Disclosure for Mineral Projects* ("NI 43-101").

This MD&A contains "forward-looking statements" that are subject to risk factors as set out in a cautionary note contained in Section 19. The financial information presented in this MD&A is in Canadian dollars, unless otherwise stated.

## 2. Overview

The Chvaletice Manganese Project is located in the Czech Republic, within the townships of Chvaletice and Trnavka, in the Labe River valley, approximately 90 kilometres to the east of the country's capital, Prague. The Project site is adjacent to established infrastructure, including an 820-megawatt power station that supplies the Czech Republic's national grid, a major railway line, a highway and a natural gas line. The surrounding region is industrialized and skilled labour is expected to be available from local markets. The Project resource is contained in flotation tailings piles that were emplaced on flat terrain immediately below the site of a flotation mill site, adjacent to the former Chvaletice open pit mine. The tailings were deposited from historical milling operations for the recovery of pyrite used for the production of sulfuric acid. The tailings, which consist of three separate piles ranging from 12 to 28 metres in thickness, cover a cumulative surface area of approximately one square kilometre.

## 2. Overview (continued)

The Company has significantly advanced the Project since 2015 and believes that the Project's environmentally-friendly tailings reprocessing to produce ultra-high-purity manganese products should enable it to become Europe's only primary producer of such products, with a best-in-class environmental footprint. The Project is also expected to result in the environmental remediation of a polluted former mine site, bringing it into full compliance with modern Czech and European Union environmental standards and regulations.

The Project is targeting production of ultra-high-purity electrolytic manganese metal ("HPEMM") with specifications exceeding 99.9% Mn and ultra-high-purity manganese sulphate monohydrate ("HPMSM") with a minimum manganese content of 32.34%, both of which exceed typical industry standards. These products will be selenium, fluorine and chromium-free and are designed to contain very low levels of deleterious impurities.

HPEMM and HPMSM are critical components of Li-ion batteries and few sources of manganese ore are suitable for production of high-purity manganese products. As such, demand for high-purity manganese products is growing rapidly, fueled largely by the Li-ion and electric vehicle ("EV") markets. The Company has entered into five technical and commercial collaboration memorandums of understanding ("MOU") with consumers of high-purity manganese products, intended to result in the supply chain qualification of the Project's products and the eventual offtake of high-purity manganese products from the Project. The Company is also in active discussions and negotiations with multiple other parties, including battery, chemical and automobile manufacturers, and have received indicative bids with the intent to enter into offtake contracts. A detailed overview of the high-purity manganese market can be found in Section 6 of this MD&A.

The Company's wholly-owned subsidiary, Mangan Chvaletice s.r.o. ("Mangan") holds two licenses covering mineral exploration rights for the Project ("Licenses"), which are both valid until May 31, 2026. Mangan also holds a Preliminary Mining Permit, referred to by the Czech Ministry of Environment as the Prior Consent for the Establishment of a Mining Lease District, which is also valid until May 31, 2026. The Preliminary Mining Permit represents one of the key steps towards final permitting for the Project, covers the areas included in the Licenses, and secures Mangan's exploration rights for the entire deposit. The establishment of the Mining Lease District, the application for the Final Mining Permit, and applications for permits relating to the construction of infrastructure and operation of a processing facility required for the Project, must be submitted and approved prior to any commercial extraction and processing activities at the Project.

The Company has experienced collaboration and support for the Project at various levels of the Czech Government, who in March 2020, issued a ruling under European Union's Natura 2000 which determined that the Project is not expected to adversely impact endangered and protected species habitat.

The area of interest for the Project overlies several privately-owned land parcels with surface rights. To date, Mangan has received the consent to conduct exploration activities and to access the site from the landowners whose surface properties underlie the tailings. At present, Mangan does not hold all surface rights to the Project area, which includes those parcels of land underlying and immediately surrounding the three tailings deposits. However, in June 2022, the Company and the Municipality of Chvaletice ("Chvaletice") signed a land rental agreement, granting the Company access to a portion of the tailings surface area (Section 3 of this MD&A). Additionally, Mangan signed a land purchase agreement with the owners of certain land parcels which are adjacent to the tailings area and provide additional room and flexibility for the Chvaletice residue storage facility layout (Section 3 of this MD&A).

The Company is currently negotiating the acquisition of the remaining surface rights; however, there is no assurance that access to the remaining areas will be secured. On August 18, 2018, Mangan has signed an option agreement giving it the right to acquire 100% of a company that owns a 19.94-hectare parcel of land intended to be the site of Mangan's high-purity processing plant (Section 6 of this MD&A). The Company also signed further agreements to acquire rights to several additional strategic parcels of land, completing its land assembly for the proposed Chvaletice commercial plant (Section 6 of this MD&A).

## **2. Overview (continued)**

The land for the proposed processing plant is already zoned for industrial use. On March 23, 2022, the Village of Trnavka ("Trnavka"), on which approximately 85% of the Project's tailings are located, formally approved the rezoning of such land for mining use. Trnavka is the closest residential area and lies just to the east of the Project. The rezoning demonstrates continued support from Trnavka, which previously sold the Company a 2.96-hectare strip of land adjacent to the Project's tailings hosted deposit. The remaining area of the underlying land falls under the authority of the Municipality of Chvaletice ("Chvaletice"), which lies just to the west of the Project. Chvaletice previously voted unanimously to approve the initiation of the rezoning process under its municipal land use plans. This process is progressing, and the Company anticipates that the rezoning of the Chvaletice land underlying the Project's tailings deposit to be formally approved for mining in the first half of 2023.

The Company announced the results of its feasibility study on July 27, 2022 ("Feasibility Study"), including the conversion of 98.4% of the Mineral Resources into Mineral Reserves. The results of the Feasibility Study for the Project are summarized in Section 6 of this MD&A.

The Company has commenced work on a North American growth strategy and is evaluating several opportunities to develop a project to produce HPEMM and HPMSM into the North American market, leveraging the engineering design work completed from the Project. This work is of an exploratory nature and the Company will provide an update when, and if, this work achieves material results.

The Company continues to monitor the impact of the COVID-19 pandemic which has affected input prices, supply chain lead times, and funding markets. The Company adopted a number of measures to ensure the safety of its personnel, together with alignment to government directives to support the broader community response to COVID-19. Despite the easing of travel and other restrictions, the duration of the pandemic and its impact on the Company and the global economy remains uncertain. Should the Company be required to implement further measures to manage COVID-19, they may have the potential to cause further disruptions and delays to operations. Additionally, the Russia-Ukraine conflict which began on February 24, 2022, has caused additional disruptions in Europe and elsewhere. The duration of this conflict and its impact on the Company also remain uncertain.

## **3. Financial and Project Highlights**

The following is a summary of the Company's highlights during the year ended September 30, 2022, and to the date of this MD&A:

- On November 16, 2022, the Company announced that it is exploring an opportunity to develop a project to produce high-purity manganese products in Canada for the North American market. The Company signed a three-month Land Access and Exclusivity Agreement with The Société du parc industriel et portuaire du Bécancour, a Québec state enterprise and owner of the proposed EMN 15-hectare land parcel within the Port of Bécancour. The agreement allows the Company to exclusively conduct due diligence on the land parcel, after which the Company has the opportunity to conclude an option agreement for the purchase of the site.
- Following the release of the Feasibility Study, the Company began the process of preparing an Engineering, Procurement, Construction Management ("EPCM") tender package for the next stage of Project development. The tender process is currently in progress, and the EPCM award is anticipated in the first calendar quarter of 2023.
- Following the arrival at site in early September 2022, the demonstration plant modules placed in position within the two fully refurbished buildings adjacent to the intended site of the main Chvaletice processing plant. An emission scrubbing unit, manufactured in Europe, was also installed. Commissioning of the demonstration plant will occur on a module by module basis, and commenced in early November 2022.

### 3. Financial and Project Highlights (continued)

- On August 26, 2022, the Company received the third and final investment instalment of €62,500 (\$80,606) from EIT InnoEnergy, an EU-backed organization. The first instalment of €62,500 (\$92,850) was made on March 24, 2021, and the second instalment of €125,000 (\$185,162) was made on July 26, 2021. The three investment instalments in the Project aggregate €250,000. On January 6, 2022, the Company issued 147,380 and 330,647 common shares to EIT InnoEnergy at the price of \$0.63 and \$0.56 per share, respectively, in connection with the first and second instalments.
- On August 2, 2022, the Company announced the highlights of the Life Cycle Assessment ("LCA") completed for the Chvaletice Project, confirming its environmental credentials, namely its low carbon footprint and benefits of remediating the historic tailings area, where the quality of soil and freshwater improve over the lifetime of the Project. These positive results were confirmed in December 2022 when the Company announced the highlights of the benchmarking study, based on which the Project's products have the lowest carbon footprint in the battery metals sector.
- In August 2022, the Company was approved to receive advisory services and up to \$165,000 in funding from the National Research Council of Canada Industrial Research Assistance Program ("IRAP"). The funding supports the initiative the Company is undertaking with Nano One Materials Corp. ("Nano One"), Metal direct to Cathode Active Material, as well as the evaluation of the manganese metal by-product from the battery black mass recycling.
- On July 27, 2022, the Company announced positive Feasibility Study base case results for the Project supporting a 25-year project life with robust economics having an after-tax net present value ("NPV") of US\$1.34 billion at an 8% real discount rate and an ungeared 21.9% IRR and pre-tax NPV of US\$1.75 billion at 8% real discount rate and an ungeared 24.9% IRR. Based on HPMSM and HPEMM price forecasts prepared by CPM Group LLC ("CPM Group"), a leading, independent commodities market research firm with expertise in high-purity manganese, the upside case shows an after-tax NPV of US\$1.79 billion at an 8% real discount rate and an ungeared 24.1% IRR.
- On July 19, 2022, the Company announced its membership of the Global Battery Alliance ("GBA"), a partnership of leading organizations from across the battery value chain, governments, academics and NGOs who have mobilized to ensure that battery production not only supports green energy, but also safeguards human rights and promotes environmental sustainability.
- On June 27, 2022, the Company appointed Stifel Nicolaus Europe Limited, a wholly owned subsidiary of Stifel Financial Corp. (NYSE:SF) ("Stifel") as financial advisor to assist with the structuring and securing of project financing for the development of the Project.
- On June 7, 2022, the Company signed an agreement with a private landowner to acquire several land parcels aggregating 78,437m<sup>2</sup>. These land parcels are adjacent to the tailings area and provide additional room and flexibility for the Chvaletice residue storage facility layout. The total cost of the land is 54,327,751 Czech Koruna (approximately \$3.0 million).
- On June 6, 2022, the Company and the Municipality of Chvaletice signed a land access agreement via rental of the land to the Company until the earlier of a 40-year period or upon remediation of the land. The annual rental of 7.46 million Czech Koruna (approximately \$420,000), adjusted for inflation based on the average annual Czech consumer price index for the 12 months of the previous calendar year. The Agreement grants the Company access to a portion of the tailings surface area.
- On April 25, 2022, the Company appointed Ms. Hanna Schweitz to its Board of Directors (the "Board"), who brings significant experience in the metals and EV battery materials industry, which will be invaluable to the Company as it moves forward with the development of the Project in the Czech Republic, within the European Union.

### **3. Financial and Project Highlights (continued)**

- On March 23, 2022, Trnavka, on which approximately 85% of the Project's tailings are located, formally approved the rezoning of such land for mining use.
- On February 10, 2022, the Company completed a private placement of 17,800,000 common shares to the European Bank for Reconstruction and Development ("EBRD") at a price of \$0.4775 per share for gross proceeds of \$8,499,500 (the "Placement"). In connection with the Placement, the Company incurred legal and other due diligence expenses of \$255,243. The Company also issued 534,000 common shares at a deemed price of \$0.4775 per share, equal to \$254,985 and being 3% of the gross proceeds of the Placement, as a finder's fee to EIT InnoEnergy.
- On January 31, 2022, the Company issued 4,820,109 common shares at a price of \$0.47262 per share valued at \$2,278,080 (US\$1,800,000) and paid US\$1,800,000 (\$2,340,965) to settle the balance owing under the royalty termination agreements dated May 31, 2021. The Company incurred transaction costs of \$80,000 in connection with this transaction. In aggregate, the Company paid US\$4.5 million to extinguish the aggregate 1.2% net smelter royalty interest in the Project, which based on the 2019 Preliminary Economic Assessment would eliminate US\$91.1 million in expenditures over the Project's 25-year life, reduce operating costs by US\$3.40 per tonne of plant feed (or 2.5% of total cost per tonne of plant feed), and increase the after-tax NPV of the Project by US\$25.3 million (approximately 4%) using the PEA's 10% discount rate.
- On December 20, 2021, Dr. Matthew James was appointed as President and Chief Executive Officer and as a member of the Board. Dr. James succeeded Marco Romero, the founder of the Company and one of its largest shareholders. Mr. Romero relinquished his executive role with effect from January 4, 2022, and stepped down as a member of the Board, but continues with the Company as a strategic adviser, assisting with the generation of potential growth opportunities for the Company.
- On October 4, 2021, the Company entered into a Joint Development Agreement with Nano One. Joint activities will focus on developing manganese products expected to be produced by the Company for use in cathode materials made by Nano One, in the context of rapidly rising demand for high-purity manganese products. Nano One has successfully tested samples of HPEMM produced from the Chvaletice tailings in their process.

### **4. Outlook**

The Company has sufficient funding to complete the environmental studies, permitting, the commissioning of the Chvaletice demonstration plant and its operation for one year. Additional funding will be required for the continuous operation of the demonstration plant, execution of the Engineering, Procurement, Construction Management ("EPCM") services for the Project, additional land acquisitions, as well as the potential future construction of infrastructure and facilities for the Project and the progress of the Company's North American strategy (Section 9 of this MD&A).

The following are the Company's short-term priorities:

- commissioning and operating the demonstration plant to allow the Company to produce bulk, multi-tonne finished product samples for prospective customers' supply chain qualification;
- rezoning of the remaining land area underlying the tailings for mining use, which the Company anticipates being approved by Chvaletice by the end of calendar 2022;
- submitting of the Project's Final Environmental and Social Impact Assessment with the Czech Ministry of Environment ("MoE");

#### **4. Outlook (continued)**

- continuing discussions and negotiations with potential customers to enter into offtake contracts, as well as strategic and financial partners and government agencies, including those related to funding the development of the Project;
- negotiating and completing the acquisition or access to the remaining land rights;
- awarding the EPCM contract for the Project;
- developing an optimum financing structure for the Project, which is dependent upon the above milestones being achieved; and
- completing the scoping study to evaluate the site at Bécancour, Québec for potential production of high-purity manganese products in Canada for the North American EV market.

Once permitted and offtake agreements have been entered into with the Company's prospective customers, and the remaining land access rights have been acquired, the Company intends to secure financing in order to commence construction of the full-scale commercial Chvaletice process plant and related infrastructure. The Company appointed Stifel in late June 2022 to assist with the structuring and securing of project financing for the Project and it believes that the capacity for project financing is likely to compare advantageously to the majority of projects given the Project's robust economics as demonstrated in the Feasibility Study; its in-demand products; its safe jurisdiction; quality of potential offtake agreements that are possible in the EV battery industry; the unique environmental credentials and benefits of the Project; strategic position within the European battery supply chain; and the indication of strong support from leading European financial institutions. The Project's debt capacity would be influenced by: the bankability of offtake agreements and any available price downside protection; government, Export Development Agency and European Union credit guarantees of debt; sponsorship by customers through advances, prepayments on offtake agreements and / or equity or debt contribution; and potential cost overrun protection provided by an EPCM counterparty.

#### **5. Significant Transactions During the Year Ended September 30, 2022**

The Company did not complete any additional transactions in the year ended September 30, 2022, other than the transactions described in Section 3 of this MD&A.

#### **6. Review of Operations - Chvaletice Manganese Project**

##### *Feasibility Study and Environmental Impact Assessment*

On July 27, 2022, the Company announced the results of its Feasibility Study. The Feasibility Study was prepared by Tetra Tech Canada Inc. ("Tetra Tech"), an independent engineering services group with extensive experience in mineral processing, tailings management and mining. Tetra Tech oversaw the project, the resource and reserve estimates and the design of the mine and residue storage facility. BGRIMM Technology Group (a division of Beijing General Research Institute of Mining and Metallurgy) ("BGRIMM") acted as lead process plant design engineer as well as completed validation bench scale test work required in order to finalize the process flowsheet. Tractebel Engineering a.s. provided Czech and European cost inputs, localization, and GET s.r.o ("GET") and Bilfinger Tebodin Czech Republic provided environmental services. Sudop Praha a.s. provided railway infrastructure design.



## 6. Review of Operations - Chvaletice Manganese Project (continued)

The Feasibility Study results are based on a Proven and Probable Reserve Estimate that is detailed in the NI 43-101 and JORC Code Technical Reports on the Chvaletice Manganese Project. The 43-101 technical report, entitled "Technical Report and Feasibility Study for the Chvaletice Manganese Project, Chvaletice, Czech Republic", with an effective date of July 27, 2022, was filed on SEDAR at [www.sedar.com](http://www.sedar.com) on September 9, 2022, and the JORC Code technical report, entitled "Public Report and Feasibility Study for the Chvaletice Manganese Project, Chvaletice, Czech Republic", with an effective date of July 27, 2022, was lodged on the ASX announcement platform on September 14, 2022 (together, the "Feasibility Study Technical Reports").

The highlights of the Feasibility Study are as follows:

- Conversion of the Mineral Resource to a 27 million tonne Proven and Probable Reserve (98.3% Proven) with a grade averaging 7.41% Mn. Recycling of the historic tailings without the requirement of any hard rock mining, crushing or milling.
- 25-year project operating life producing 1.19 million tonnes of HPEMM, approximately two-thirds of which is expected to be converted into HPMSM, with the flexibility to supply either product to suit customer preference.
- Saleable product includes 2.5 million tonnes of HPMSM (32.34% Mn) and 372,300 tonnes of HPEMM (99.9% Mn) over the life of project, averaging 98,600 tonnes of HPMSM and 14,890 tonnes of HPEMM annually, principally focused on Europe's rapidly growing EV battery industry.
- Base case after-tax NPV of US\$1.34 billion and pre-tax NPV of US\$1.75 billion, using an 8% real discount rate and risk-adjusted base case price forecast.
- Ungearing after-tax Internal IRR of 21.9% with a 4.1-year payback period; and an ungeared pre-tax IRR of 24.9% with a 3.6-year payback period.
- Initial capital ("Capex") of US\$757.3 million, including contingencies of US\$103.2 million (US\$78.4 million on direct costs and US\$24.8 million of growth capital) and sustaining capital ("Sustaining Capex") of US\$117.0 million over the 25-year life of project.
- Life of project revenues of US\$13.9 billion with gross revenues expected to average US\$554 million per year over the 25-year project life.
- Project earnings before interest, taxes, depreciation and amortization ("EBITDA") and annual average EBITDA forecasted to be US\$8.1 billion and US\$326 million respectively, averaging 58.8% EBITDA over the life of project.
- Base case project economics are based on Tetra Tech adoption of a risk-adjusted short-term price forecast that follows CPM Group's forecast for HPMSM and HPEMM to 2031 and then holds prices flat over the remaining life of project, resulting in average prices of \$4,019 per tonne of HPMSM containing 32.34% Mn and \$10,545/t of HPEMM containing 99.9% Mn.
- CPM Group's unaltered price forecast was used as the upside case in the Feasibility Study sensitivity analysis with average life of project prices of \$4,509/t for HPMSM and \$12,075/t for HPEMM.
- Using the upside CPM Group price forecast for HPMSM and HPEMM, after-tax NPV<sub>8%</sub> increases to US\$1.79 Billion, with an ungeared IRR of 24.1%.
- Project has access to excellent transportation, energy and community infrastructure. Proposed process plant site to be located in an industrially-zoned brownfield site, where a historical process plant generated the Chvaletice tailings.

## 6. Review of Operations - Chvaletice Manganese Project (continued)

- Exceptional green project credentials resulting in a significant remediation of the Chvaletice tailings site, arresting the ongoing pollution related to historical tailings disposal activities with opportunities to enhance returns through process optimization initiatives and various government investment incentives and financial support programs that may be available.

### Resource and Reserve Estimate

#### a. Resource Estimate

Tetra Tech was engaged in 2018 to prepare the Resource Estimate for EMN's Chvaletice Manganese Project and to prepare technical reports in accordance with NI 43-101 and the JORC Code. The 43-101 Technical Report, entitled "Technical Report and Mineral Resource Estimate for the Chvaletice Manganese Project, Chvaletice, Czech Republic", with an effective date of December 8, 2018, was filed on SEDAR on January 28, 2019, and the JORC Code Technical Report, entitled "Public Report and Mineral Resource Estimate for the Chvaletice Manganese Project, Chvaletice, Czech Republic", with an effective date of December 8, 2018, was lodged on the ASX announcement platform on February 6, 2019 (together, the "Mineral Resource Estimate").

In 2019, the Company appointed Tetra Tech as the owner's engineering representative for the Feasibility Study, responsible for overseeing the consultants and service providers in connection with the Feasibility Study, and for the preparation of Feasibility Study Technical Reports. No additional drilling or data collection pertaining to the technical disclosure of mineral inventory has been undertaken since the completion of the Mineral Resource Estimate, and the effective date for the Mineral Resource Estimate is revised to July 1, 2022. The Project's combined Measured and Indicated Mineral Resources amount to 26,960,000 tonnes, grading 7.33% total manganese as detailed in the table below.

Tailings Cell #	Classification	Dry In-situ Bulk Density (t/m <sup>3</sup> )	Volume (x1,000 m <sup>3</sup> )	Tonnage (kt)	Total Mn (%)
#1	Measured	1.52	6,577	10,029	7.95
	Indicated	1.47	160	236	8.35
#2	Measured	1.53	7,990	12,201	6.79
	Indicated	1.55	123	189	7.22
#3	Measured	1.45	2,942	4,265	7.35
	Indicated	1.45	27	39	7.90
Total	Measured	1.51	17,509	26,496	7.32
	Indicated	1.50	309	464	7.85
Combined	Measured and Indicated	1.51	17,818	26,960	7.33

#### Notes:

1. Estimated in accordance with the Canadian Institution of Mining ("CIM") Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, as amended, which are materially identical to the JORC Code.
2. The Chvaletice Mineral Resource has a reasonable prospect for eventual economic extraction. Mineral Resources do not have demonstrated economic viability.
3. Indicated Resources have lower confidence than Measured Resources.
4. A break-even grade of 2.18% total Mn has been estimated for the Chvaletice deposit based on preliminary pre-concentration operating costs of US\$6.47/t feed, leaching and refining operating cost estimates of US\$188/t feed, total recovery to HPMM and HPMSM of approximately 60.5% and 58.9%, respectively, and product prices of US\$9.60 kg/t for HPMM and US\$3.72 kg/t for HPMSM (CPM Group Report, June 2022). The actual commodity price for these products may vary.
5. A cut-off grade has not been applied to the block model. The estimated break-even cut-off grade falls below the grade of most of the blocks (excluding 5,000 tonnes which have grades less than 2.18% total Mn). It is assumed that material segregation will not be possible during extraction due to inherent difficulty of grade control and selective mining for this deposit type.
6. Grade capping has not been applied.
7. Numbers may not add exactly due to rounding.

## 6. Review of Operations - Chvaletice Manganese Project (continued)

### b. Reserve Estimate

Mineral Reserves for the Project are based on the Measured and Indicated Resource and adhere to the guidelines set by the Canadian Institute of Mining ("CIM"), NI 43-101 and the CIM Best Practices. Material economic modifying factors were applied to each block in the block model including mined grade, contained metal, recovery rates for HPEMM and HPMSM, mining operating cost, processing cost (including EMM to MSM conversion cost), residue placement cost, general and administrative costs, site service costs, water treatment, shipping cost, product insurance, and royalties. The Project's combined Proven and Probable Mineral Reserve (effective July 14, 2022) amount to 26,644,000 tonnes, grading at 7.41% total manganese as detailed in the following table:

Tailings Cell #	Classification	Dry In-situ Bulk Density (t/m <sup>3</sup> )	Volume (m <sup>3</sup> )	Tonnage (metric tonnes)	Total Mn (%)
#1	Proven	1.51	6,651	10,132	7.83
	Probable	1.52	141	208	8.24
#2	Proven	1.53	7,929	12,106	6.91
	Probable	1.54	199	183	7.35
#3	Proven	1.46	2,744	3,979	7.49
	Probable	1.46	25	36	7.98
Total	Proven	1.50	17,325	26,217	7.35
	Probable	1.51	284	427	7.84
Combined	Proven and Probable	1.51	17,609	26,644	7.41

#### Notes:

1. Estimated in accordance with the CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, as amended, which are materially identical to the JORC Code.
2. The Mineral Resource is inclusive of the Mineral Reserves.
3. Probable Reserves have lower confidence than Proven Reserves. Inferred Resources have not been included in the Reserves.
4. A break-even grade of 2.18% total Mn has been estimated for the Chvaletice deposit based on preliminary pre-concentration operating costs of US\$6.47/t feed, leaching and refining operating cost estimates of US\$188/t feed, total recovery to HPEMM and HPMSM of approximately 60.5% and 58.9% respectively and product prices of US\$9.60 kg/t for HPEMM and US\$3.72 kg/t for HPMSM (CPM Group Report, June 2022). The actual commodity price for these products may vary.
5. Grade capping has not been applied.
6. Numbers may not add exactly due to rounding.
7. Minimal dilution and losses of <1% are expected to occur at the interface between the lower bounds of the tailings cells and original ground as the surface is uneven.

#### Life Cycle Assessment

On August 2, 2022, the Company released the highlights from its LCA for the Project. Euro Manganese engaged Minviro Ltd. ("Minviro"), a UK-based and globally recognized sustainability and life cycle assessment consultancy, and RCS Global Ltd. ("RCS Global"), a leading global auditor of battery material supply chains, to conduct a cradle-to-gate, critically reviewed study quantifying the environmental impacts, including the carbon footprint, of producing high-purity manganese products from manganese-rich historic mine tailings at the Project.

## 6. Review of Operations - Chvaletice Manganese Project (continued)

The results of the LCA validate the environmental value proposition of the Project including multiple environmental benefits from the remediation of the historic tailings area, particularly in terms of soil quality and freshwater quality. Both improve over the lifetime of the Project as remediation avoids the current leaching of metals and reduces the impacts of the historic tailings to soil and water streams. The Company plans to use 100% renewable electricity, which reduces the Global Warming Potential of the project by half compared to the use of non-renewable electricity. Opportunities exist to further reduce the Project's carbon footprint by sourcing reagents from manufacturers with lower environmental impact than those assumed in the study. The Company is committed to identifying and selecting suppliers with commitments to decarbonization.

Delivery of the LCA is timely as EMN continues to engage with customers in the EV battery/automotive space, each of whom are testing and qualifying both the chemistry and environmental credentials of the Company's high-purity manganese products.

The LCA was conducted according to the requirements of ISO-14040:2006 and ISO-14044:2006, which included a critical review by an independent LCA expert, RCS Global Ltd., and provides EMN with an independently verified assessment for financiers and customers. RCS Global also reviewed and commented on the LCA study. Minviro has also completed a benchmarking exercise where the Project's Global Warming Potential was compared against similar projects and operations producing high-purity manganese products. The results of the benchmarking exercise show that the high-purity manganese products from the Chvaletice Project have a carbon footprint that is approximately one-third of the China-based incumbent industry.

### *Environmental and Social Impact Assessment*

In 2019-2020, Bilfinger conducted the Preliminary Environmental and Social Impact Assessment ("EIA Notification") as the first stage of environmental assessment of the Project. Several detailed expert studies were prepared including a comprehensive site-wide Biological Survey, a detailed Air Dispersion model and Study, an Acoustic/Noise Impact Study, a Road and Rail Transportation Study, a site wide Hydrogeological Survey, a Health Impact Assessment, an Impact on Landscape Character study and a Reclamation and Remediation Study. A screening decision summarizing all received comments on the Company's EIA Notification was published by the MoE in December 2020.

No crucial objections and comments were raised within the first phase of the Project's environmental impact assessment (screening procedure). Requirements arising from the first stage of environmental and social assessment were incorporated into the Feasibility Study and Project Design. Documentation for the second and final stage of the Project's Environmental and Social Impact Assessment ("ESIA") is expected to be submitted to the MoE in December 2022, which could potentially enable final environmental permitting for the Project in the first half of 2023.

### *Commercial and Demonstration Plant Progress Update*

The Company's Chvaletice demonstration plant, which is intended to produce the equivalent of 32kg per day of HPEMM or 100kg per day of HPMSM, and will deliver high-purity manganese products to interested prospective customers for testing and qualification, was delivered to site in early-September 2022. Following inspection and assembly, the commissioning commenced on a module-by-module basis in early November 2022. Once commissioned, on-spec products of HPEMM and HPMSM are expected in the first quarter of 2023, after which the Company will then commence deliveries of demonstration plant samples to customers. The demonstration plant will also enable process optimization and testing for final product development and serve as a testing and training facility for future operators. It is expected to operate for up to three years and will also be available for testing of potential additional feedstock for the commercial plant.

## 6. Review of Operations - Chvaletice Manganese Project (continued)

The Company estimates that the cost, including fabrication, delivery, commissioning, laboratory set-up and an operator training program, as well as the cost of operation for one year, will be approximately US\$5.8 million (\$7.7 million). To the date of this MD&A, the Company made total payments of US\$1.6 million (\$1.9 million) for the demonstration plant and incurred additional expenses of \$1.7 million for permitting and site preparation.

Approximately 55% of the demonstration plant's planned first year production has been allocated to several customers for testing and qualification. These parties and their markets include: a global leading participant in the lithium-ion battery supply chain, for use in NMC cathodes; a company focused on large scale lithium-ion battery manufacturing, for use in NMC cathodes; a global chemicals and specialty materials company, for use in metal hydride for hybrid automobile anodes; and JFE Corporation, a leading Japanese steel producer, for use in specialty steel applications. A further six companies, including European and North American automotive OEMs, battery manufacturers, and cathode manufacturers, who are currently testing pilot plant samples, are expected to request Demonstration Plant samples as part of their strategy to move to local supply chains with full traceability and the highest sustainability standards.

In conjunction with testing and evaluation by these and other parties, and in support of a production decision on the Project being made, the Company is working towards establishing long-term commercial offtake arrangements for the supply of its high-purity manganese products. The Company continues to hold active discussions and negotiations with additional consumers of high-purity manganese products, which include battery, chemical and automobile manufacturers, in Asia, Europe and North America. However, there can be no assurance that these discussions will lead to offtake agreements or commercial or strategic relationships in the near term, if at all.

Following discussions with prospective customers, the Company re-started its pilot plant in 2021 in order to deliver product samples in advance of the production from the Demonstration Plant. This will allow prospective customers to continue or initiate their supply chain qualification of the Company's products in advance of larger samples. The pilot plant produced approximately 37kg of HPEMM and 151kg of HPMSM, which will be tested by certain prospective customers.

### *Option Agreement and Land Acquisitions*

The Company, through its subsidiary, Mangan, entered into an option agreement dated August 13, 2018 (the "EPCS Option Agreement"), to acquire 100% of the equity of EP Chvaletice s.r.o. ("EPCS"), a small Czech steel fabrication company that owns a 19.94 hectare parcel of land. This land is located immediately south of the highway and rail line that bound the Chvaletice tailings deposit. It is also adjacent to the Chvaletice power plant and 1.7-hectare parcel of land and rail siding that was previously acquired by the Company. This strategic land parcel encompasses the intended site of its proposed processing plant. The land is zoned for industrial use and contains numerous buildings, including office, warehousing and other industrial structures, several of which are leased to short-term tenants. The land also contains two rail spurs and is served by gas, water and power.

The Company has the right to acquire EPCS by making payments aggregating 140 million Czech Koruna payable in four cash instalments, the first and second of which were paid on October 17, 2018, and August 13, 2021, respectively, each in the amount of 14 million Czech Koruna (\$815,000 and \$819,576, respectively). Additionally, on August 13, 2021, the Company exercised the option to extend the payment term of the following instalments by one year for a fee of 2.1 million Czech Koruna, payable with the next instalment.

On August 10, 2022, the Company made the third option payment of 42 million Czech Koruna (\$2,304,402) together with the fee for the extension of 2.1 million Czech Koruna (\$115,220). The total value of the instalments, revalued at September 30, 2022, is \$3.94 million. The Company can complete the acquisition of EPCS by making the final instalment of 70,000,000 Czech Koruna (approximately \$3.82 million at September 30, 2022), due upon receipt of all development permits for the Chvaletice Manganese Project, but no later than August 13, 2023, being five years after signing the EPCS Option Agreement.

## 6. Review of Operations - Chvaletice Manganese Project (continued)

The Company entered into the following agreements to acquire rights to three additional strategic parcels of land, completing its land assembly for the proposed Chvaletice commercial plant:

- i. Purchase from the owner of the nearby Chvaletice power plant, a 1,952 m<sup>2</sup> section of land encompassing Rail Spur no. 1, through which the proposed Chvaletice process plant will be serviced and connected to existing rail infrastructure. This acquisition is particularly important for the Project, as it provides the Company with a second rail connection, through the existing rail siding of the neighboring power plant. This is expected to provide greater logistical capacity and flexibility for the Project. The cost of the land is 252,762 Czech Koruna (approximately \$14,000). The acquisition of this section of land was completed on April 15, 2021.
- ii. Purchase of a 49,971 m<sup>2</sup> parcel of land, including a rail spur extension that will provide additional room and flexibility for the definitive Chvaletice commercial plant layout. The cost of the land is 18,739,125 Czech Koruna (approximately \$1.1 million) and can be paid in five 7.5% annual instalments (approximately \$80,000), followed by the remaining balance of approximately \$700,000 in the final year. At September 30, 2021, the Company recognized a liability for the two payments due in October 2021 and 2022 in the total amount of \$164,304. In October 2021, the Company paid \$82,152 of this amount. At September 30, 2022, the remaining balance was revalued at \$77,636. In October 2022, the Company paid the third annual instalment.
- iii. Lease of a 3,504 m<sup>2</sup> right-of-way for a period of 30 years, with a one-month cancellation notice period, to allow the straightening of a proposed conveyer route. Annual rental will be 60,000 Czech Koruna (approximately \$3,000) and the Company will retain an option to purchase this land.

The area of interest for the Project overlies several privately-owned land parcels with surface rights. To date, Mangan has received the consent to access the site from the landowners whose surface properties underlie the tailings. The Company and the Municipality of Chvaletice, being one of the landowners, signed a land access agreement via rental of the land to the Company until the earlier of a 40-year period or upon remediation of the land. The annual rental is 7.46 million Czech Koruna (approximately \$420,000), adjusted for inflation based on the average annual Czech consumer price index for the 12 months of the previous calendar year. The land rental agreement is effective July 1, 2022, and the first rental payment was made on July 28, 2022.

On June 7, 2022, the Company also signed an agreement with Helot, spol. s.r.o. and Ing. Martin Vanek to acquire 78,437m<sup>2</sup> in total consisting of several land parcels adjacent to the tailings area that provide additional room and flexibility for the Chvaletice residue storage facility layout. The total cost of the land is 54,327,751 Czech Koruna (approximately \$3.0 million). The first instalment of \$516,452 was paid on June 22, 2022. The remaining amount will be paid in two instalments of approximately \$516,000 and \$1,918,000 in January 2023 and 2024, respectively.

The Company is currently negotiating the acquisition of the balance of the surface rights with the remaining two landowners; however, there can be no assurance that access to the remaining areas will be secured.

### *High-Purity Manganese Market Overview*

High-performance Li-ion batteries are being increasingly used in EVs and other energy storage applications. The manufacturing processes and formulations for Li-ion batteries require reliable, high-purity sources of manganese and other battery raw materials to ensure that the batteries meet increasingly demanding performance, safety and durability standards.

## 6. Review of Operations - Chvaletice Manganese Project (continued)

The dominant Li-ion battery cathode chemistry used in EVs is nickel-manganese-cobalt (“NMC”), which accounted for nearly half of all Li-ion batteries produced in 2021, measured by megawatt hours (“MWh”). The amount of these metals can vary within the NMC family, such as NMC811, which is 80% nickel, 10% manganese and 10% cobalt. With the rising raw material prices, battery companies are seeking to reduce the cost of the batteries. Increasing the content of manganese, the least expensive of these battery metals, is gaining traction. These are known as manganese-rich chemistries. As an example, BASF announced plans to scale up production of NMC370 battery, containing 30% nickel, 70% manganese and no cobalt.

Additionally, high-purity manganese is now being added to lithium-iron-phosphate (“LFP”) chemistries, creating a new family of lithium-manganese-iron-phosphate (“LMFP”) chemistries with improved performance, with the manganese content of certain LMFP chemistries as high as 60%. Contemporary Amperex Technology Co., Limited (“CATL”), China’s largest battery producer and Tesla’s main battery supplier, have reported that they are planning to add manganese to their LFP chemistry, increasing the battery’s voltage, thus boosting its energy density by up to 20%. CATL is reportedly starting deliveries of new batteries with the LMFP cathodes to Tesla in the fourth quarter of 2022.

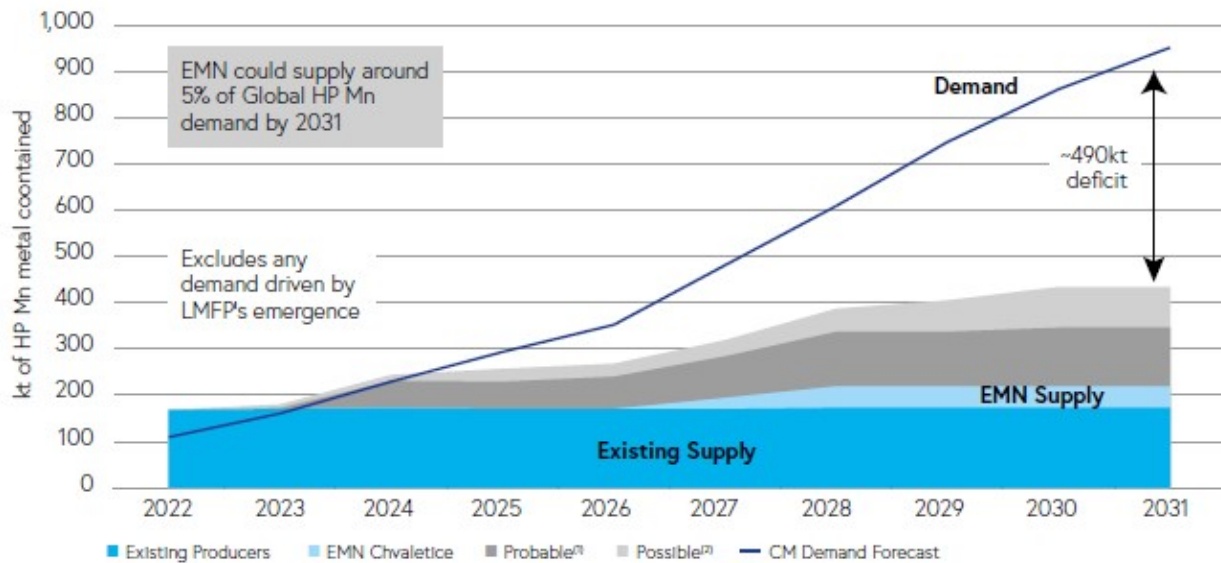
Only certain manganese ores can feasibly and sustainably be used for the specialty, high-end products of the battery industry. A critical factor is availability of the right quality ore in the right location. Carbonate ores, which are rare, are preferred for the production of high-purity manganese, although oxides can be used after roasting or chemical treatment using current commercial processes, resulting in a higher cost of reagents and energy, which can also cause environmental issues.

In connection with the preparation of the Feasibility Study, the Company commissioned the independent research and consultancy firm of CPM Group to provide an HPEMM and HPMSM (collectively described as “High-Purity Manganese” or “HPM”) product market outlook study for the Project as follows:

- The market for HPMSM and HPEMM is forecast to be radically transformed as a result of the ‘EV revolution’. Most lithium-ion batteries that power electric vehicles are expected to use manganese in their cathodes and these manganese-containing battery chemistries are expected to dominate the battery market for the next two decades.
- As a result, CPM Group expects the demand for high purity manganese to increase 13 times between 2021 and 2031 (from 90 kt to 1.1 million tonnes of Mn contained) and 50 times between 2021 and 2050 (to 4.5 million tonnes of Mn contained).
- The total Mn market in 2022 is approximately 22 million tonnes, with Mn use currently dominated by the steel industry, however, high purity manganese suitable for the battery market makes up less than 0.5% of the global manganese market.
- The bottleneck in supply of HPMSM and HPEMM is the lack of high-purity refining capacity. Known expansions and new projects are unable to satisfy this demand. CPM Group forecasts the 2031 deficit to be 475kt Mn equivalent and if battery demand continues to grow as expected and no additional new projects come to the market, the deficit would increase to 1 million tonnes by 2037.

6. Review of Operations - Chvaletice Manganese Project (continued)

Global High-Purity Manganese Forecasted Supply & Demand  
(thousand tonnes of Mn)



(1) Probable: existing producer expansions or projects with Feasibility Studies.  
(2) Possible: projects yet to produce Feasibility Studies.

Source: E-Source, CPM Group, Industry sources, Euro Manganese analysis.

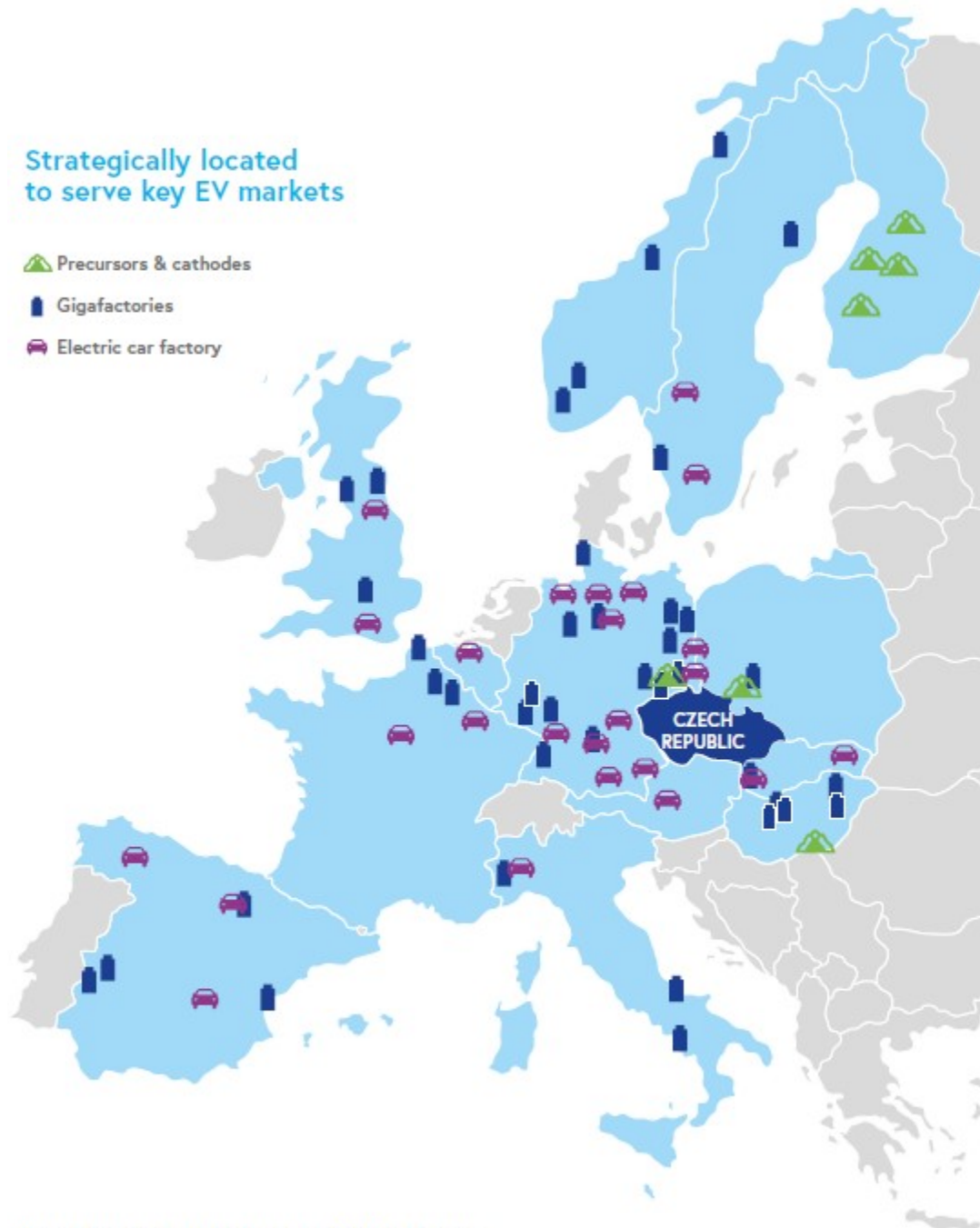
According to the International Manganese Institute, China produced only 4.2% of the 2021 global output of manganese ore (down 28% from the previous year), while retaining its dominant position as a supplier of high-purity manganese products – more than 91% of the HPMSM suitable for the battery industry originated in China in 2021. China relies heavily on imported ore, mainly from South Africa, Australia, Gabon and Ghana. At present, only about 2.5% of HPMSM suitable for the battery industry is produced in Europe. In discussions with prospective customers, the Company has learned that they are increasingly interested in diversifying their strategic raw material sourcing and wish to promote the creation of independent, local supply chains, particularly in regions such as Europe, where the automobile manufacturing industry employs over 14 million people directly and indirectly and where the automotive companies have made strong commitments to the electrification of their fleets.

Europe is rapidly becoming a major hub in the global electric car and battery industries, with 7 battery cell gigafactories (defined as >1GWh/annum of battery production) in operation now. Local supply chains are being built in Europe and apart from the convenient logistics, companies located within the European single market benefit from frictionless trading and additional benefits (e.g. 5% EU import tariff on imported manganese sulphate monohydrate has been only temporarily suspended until the end of 2023). According to announcements from the battery makers, by 2030 Europe should have 56 battery gigafactories, with more than 1,458 GWh of production capacity installed (30% of global capacity, second after China). CPM Group believes that the entire planned output of the Project can be consumed by the growing lithium-battery sector in Europe.

In addition to the highest product purity possible, European consumers of HPM expect the products they use to be traceable, having 'green credentials', and with a strong preference for locally sourced materials. The local supply chain in Europe is growing rapidly, and, in addition to the battery gigafactories under construction, will soon include five precursor makers, four electrolyte and separator factories, and eight battery pack assembly plants. At least twelve of the gigafactories that consume manganese inputs are or will be located between 200 km and 500 km of the Project, as shown below.



6. Review of Operations - Chvaletice Manganese Project (continued)



## 7. Annual Financial Review

	Years ended September 30,		
	2022	2021	2020
(expressed in thousands of Canadian dollars, except per share data)	\$	\$	\$
Revenue	—	—	—
Chvaletice Project evaluation expenses	5,671	4,950	3,199
Other evaluation expenses	456	—	—
Other expenses	7,330	4,590	3,178
Net loss for the year attributable to shareholders	13,457	9,540	6,377
Basic and diluted loss per share attributable to shareholders <sup>(1)</sup>	\$0.03	\$0.03	\$0.03
	As at September 30,		
	2022	2021	2020
	\$	\$	\$
Cash and cash equivalents	21,561	31,219	2,731
Total assets <sup>(2)</sup>	39,896	43,336	5,808
Non-current financial liabilities <sup>(2)</sup>	166	248	40

<sup>(1)</sup> Fully diluted weighted average common shares outstanding, used in the calculation of diluted net loss per share in each of the periods presented, is not reflective of the outstanding stock options and warrants as their exercises would be anti-dilutive in the net loss per share calculation.

<sup>(2)</sup> Total assets for each year shown include \$1,249,086 in mineral property interest related to the acquisition of the Chvaletice Manganese Project on May 13, 2016, and at September 30, 2022, total assets also include the net smelter royalty buy back from the original owners of Mangan in the amount of \$5,424,458.

## 7. Annual Financial Review (continued)

## Year ended September 30, 2022, compared to the year ended September 30, 2021

The loss for the year ended September 30, 2022, of \$13,457,373 compared to a loss of \$9,540,421 for the year ended September 30, 2021, represents an increase of \$3,916,952 or 41.1%. Basic and fully diluted loss per share in the current period remain unchanged at \$0.03 per common share. An overview of the project evaluation and other expenses, and an explanation of the significant variances is as follows:

	Year ended September 30,	
	2022	2021
(expressed in thousands of Canadian dollars, except per share data)	\$	\$
<b>Chvaletice Project evaluation expenses</b>		
Engineering	2,518	2,982
Remuneration	1,585	782
Share-based compensation	489	416
Drilling, sampling and surveys	1	133
Metallurgical	48	—
Travel	103	13
Legal and professional fees	405	373
Geological	57	122
Market studies	221	96
Supplies and rentals	244	33
	<b>5,671</b>	<b>4,950</b>
<b>Other evaluation expenses</b>		
Engineering	123	—
Legal and professional fees	291	—
Travel	57	—
Other income	(15)	—
	<b>456</b>	<b>—</b>
<b>Other expenses</b>		
Remuneration	2,494	1,532
Share-based compensation	2,253	418
Total remuneration	4,747	1,950
Legal and professional fees	809	752
Investor relations	372	606
Product sales and marketing	23	130
Travel	293	17
Filing and compliance fees	371	401
Office, general and administrative	157	181
Insurance	245	119
Conferences	120	39
Depreciation	191	103
Accretion expense	26	21
Interest income	(171)	(24)
Foreign exchange	147	295
	<b>7,330</b>	<b>4,590</b>
<b>Loss and comprehensive loss for the year</b>	<b>13,457</b>	<b>9,540</b>
<b>Basic and diluted loss per common share</b>	<b>\$0.03</b>	<b>\$0.03</b>

## 7. Annual Financial Review (continued)

Chvaletice Project evaluation costs for the year ended September 30, 2022 and 2021, were \$5,671,342 and \$4,950,474, respectively. The increase in costs over the comparative year is due to the impact of COVID-19 in 2021 on the level of work conducted in connection with the advancement of the Feasibility Study and the planning, permitting and other studies related to the demonstration plant. The delay in securing financing and COVID-19 restrictions prevented the Company from advancing the Project significantly in fiscal 2021, during which work on the Project was restarted. The activities in the current 2022 fiscal year represent work conducted on the Project's Feasibility Study and the Final ESIA. Accordingly, the Chvaletice Project evaluation costs were 15% higher in the year ended September 30, 2022, than in fiscal 2021.

The main cost variances include: an increase of \$803,338 in remuneration as a result of hiring new employees in the Czech Republic, partly in preparation for the installation and commissioning of the demonstration plant; an increase of \$72,785 in share-based compensation due to partial vesting of a share option grant in the year ended September 30, 2022; and a \$210,329 increase in supplies and rentals due to land rental from the Municipality of Chvaletice. Market studies in support of the Feasibility Study resumed after being temporarily suspended in 2021, resulting in an increase of \$125,456 in the current year. Travel also resumed after the easing of COVID-19 pandemic restrictions and resulted in an increase of \$89,510. Additionally, there was a \$47,939 increase in metallurgical expenses due to laboratory scale test work performed for the Feasibility Study and a \$31,784 increase in legal and professional fees related mainly to land purchase negotiations and documentation. The overall increase in the Chvaletice Project evaluation costs was partially offset by a decrease of \$463,500 in engineering costs due to the reduction in level of work required as the Feasibility Study work neared completion; a \$132,052 decrease in drilling, sampling and survey costs as this part of the Feasibility Study work was completed in the previous year; and a \$64,721 decrease in geological costs due to the completion of certain studies in the comparative year.

Other evaluation costs for the year ended September 30, 2022 and 2021, were \$455,769 and nil, respectively. These costs mostly represent the scoping study and due diligence related to the Company's evaluation of opportunities in the North American market, particularly the potential Port of Bécancour site in Québec, Canada. Additionally, the Company has progressed work on the initiatives with Nano One and it has received \$14,897 from IRAP, offsetting a portion of these costs. The IRAP funding is shown as other income within other evaluation costs.

The \$2,740,315 increase in administrative costs for the year ended September 30, 2022, over the same period in 2021 is mainly attributable to: a \$961,492 increase in remuneration due to a higher number of employees in the corporate office in Canada and due to \$307,500 paid to the Company's former President and CEO; an increase of \$1,834,988 in share-based compensation due to partial vesting of a large share option grant in the year ended September 30, 2022; a \$275,718 increase in travel and \$79,364 increase in conferences following the easing of COVID-19 related restrictions; an increase of \$126,138 in insurance due to the higher cost for directors' and officers' insurance; and an \$87,754 increase in depreciation due to a new office lease asset in Canada and a lease asset resulting from the rental of two buildings at the Project site which will host the demonstration plant. Additionally, there was a \$57,003 increase in legal and professional expenses, mainly due to costs for the financial advisor. The overall increase in administrative costs was partially offset by a \$233,388 decrease in investor relations expenses due to fewer campaigns and promotional activities; a \$107,047 decrease in product sales and marketing expenses due to lower activities and resulting decrease in fees; a decrease of \$29,419 in filing and compliance fees as a result of fewer private placements than took place in fiscal 2021; and a \$23,902 decrease in general and administrative expenses due to the Company's office move in 2021. Additionally, there was a \$147,274 foreign exchange gain arising from the revaluation of the liabilities for the royalty buy back, EPCS Option and land deposits; and an increase of \$146,357 from interest earned on the Company's bank deposits.

## 8. Quarterly Financial Review

The following table summarizes selected financial information for each of the eight most recently completed quarters, expressed in thousands of Canadian dollars, except for share amounts:

As at the end of or for the period ending	Jul to Sep'22	Apr to Jun'22	Jan to Mar'22	Oct to Dec'21	Jul to Sep'21	Apr to Jun'21	Jan to Mar'21	Oct to Dec'20
	\$	\$	\$	\$	\$	\$	\$	\$
Cash and cash equivalents	21,561	28,026	32,070	29,129	31,219	33,457	33,118	11,394
Total assets	39,896	42,280	44,800	41,589	43,336	44,472	37,276	15,449
Working capital <sup>(1)</sup>	19,754	26,839	30,676	23,341	26,078	27,821	32,877	11,372
Current liabilities	2,440	1,630	1,823	6,549	5,685	6,025	624	454
Revenue	—	—	—	—	—	—	—	—
Chvaletice Project evaluation expenses	1,739	1,023	1,511	1,399	1,437	1,724	1,305	484
Other evaluation expenses	95	280	71	10	—	—	—	—
Other expenses	2,089	1,804	1,673	1,763	1,256	1,342	1,165	826
Net loss attributable to shareholders	3,923	3,106	3,255	3,172	2,693	3,066	2,470	1,310
Net loss per share, basic and diluted, attributable to shareholders <sup>(2)</sup>	0.01	0.01	0.01	0.01	0.01	0.01	0.01	—

<sup>(1)</sup> The additional non-GAAP financial measure of working capital is calculated as current assets less current liabilities.

<sup>(2)</sup> Figures may not add to annual results due to rounding.

The variation in quarterly evaluation expenditures is mainly attributed to the following:

- The quarter ended December 31, 2020, was impacted by the COVID-19 pandemic, causing delays and deferrals of Feasibility Study work and significant cost cutting measures.
- The Company resumed the Feasibility Study work and ordered the demonstration plant in the last quarter of calendar 2020. Chvaletice Project evaluation costs incurred related to the commissioning of studies for the demonstration plant and the initiation of the Feasibility Study.
- In the seven most recent quarters, the Company focused on progressing the Feasibility Study, preparation work and permitting of the demonstration plant and the preparation of the Final ESIA. In the most recent quarter, the Company started incurring expenses related to the evaluation of a potential dissolution plant at the Port of Bécancour in Québec, Canada, which would produce high purity manganese products for the North American EV market.

Fluctuations in the level of quarterly administrative expenditures is mainly attributed to the following:

- The quarter ended December 31, 2020, was impacted by the COVID-19 pandemic, which resulted in significant cost cutting measures, including temporary salary adjustments, re-negotiations, cancellations or interruptions of contracts and restricted travel.
- Other expenses for the most recent seven quarters are higher as a result of an increase in filing and compliance fees relating to the private placements in fiscal 2021, and a higher number of employees in the corporate office in Canada. In the quarter ended December 31, 2021, increased remuneration costs are attributable to the change in the Company's CEO and to non-cash share-based payments in the period.

## 8. Quarterly Financial Review (continued)

## Three months ended September 30, 2022, compared to the three months ended September 30, 2021

The loss for the three months ended September 30, 2022, of \$3,922,555 compared to a loss of \$2,694,937 for the three months ended September 30, 2021, represents an increase of \$1,227,618 or 45.6%. Basic and fully diluted loss per share in the current period remain unchanged at \$0.01 per common share. An overview of the project evaluation and other expenses, and an explanation of the significant variances is as follows:

(expressed in thousands of Canadian dollars, except per share data)	Three months ended September 30,	
	2022	2021
	\$	\$
<b>Chvalitice Project evaluation expenses</b>		
Engineering	512	685
Remuneration	727	261
Share-based compensation	77	86
Drilling, sampling and surveys	—	86
Metallurgical	2	—
Travel	37	13
Legal and professional fees	69	244
Geological	(1)	18
Market studies	110	32
Supplies and rentals	206	12
	<b>1,739</b>	<b>1,437</b>
<b>Other evaluation expenses</b>		
Engineering	20	—
Legal and professional fees	80	—
Travel	10	—
Other income	(15)	—
	<b>95</b>	<b>—</b>
<b>Other expenses</b>		
Remuneration	569	434
Share-based compensation	599	103
Total remuneration	<b>1,168</b>	<b>537</b>
Legal and professional fees	365	249
Investor relations	107	95
Product sales and marketing	14	19
Travel	85	14
Filing and compliance fees	57	92
Office, general and administrative	13	45
Insurance	73	34
Conferences	44	12
Depreciation	63	39
Accretion expense	9	6
Interest income	(75)	(24)
Foreign exchange	166	138
	<b>2,089</b>	<b>1,256</b>
<b>Loss and comprehensive loss for the period</b>	<b>3,923</b>	<b>2,693</b>
<b>Basic and diluted loss per common share</b>	<b>\$0.01</b>	<b>\$0.01</b>

## 8. Quarterly Financial Review (continued)

Chvaletice Project evaluation costs for the three months ended September 30, 2022 and 2021, were \$1,737,667 and \$1,437,890, respectively. The increase in cost over the comparative quarter in fiscal 2021 is due to the planning, permitting and other studies related to the demonstration plant. The main cost variances include: an increase in remuneration of \$465,283 due to a higher number of employees in the Czech Republic; a \$193,992 increase in supplies and rentals due to land rental from the Municipality of Chvaletice; the resumption of market studies after being temporarily suspended in 2021 which resulted in an increase of \$77,351 in the current quarter; and an increase of \$23,617 in travel due to the resumption of travel after the easing of COVID-19 pandemic restrictions. The overall increase in the Chvaletice Project evaluation costs was partially offset by a \$175,330 decrease in legal and professional fees which was due to lower costs for land purchase negotiations; a decrease of \$173,209 in engineering costs due to the reduction in the level of work required on the Project as the Feasibility Study work was finalized in the current quarter; and a decrease of \$85,961 in drilling, sampling and survey costs as this part of the Feasibility Study work was completed in previous periods.

Other evaluation costs for the three months ended September 30, 2022 and 2021, were \$95,104 and nil, respectively. These costs mostly represent the scoping study and due diligence related to the Company's evaluation of opportunities in the North American market, particularly the potential Port of Bécancour site in Québec, Canada. Additionally, the Company has progressed work on the initiatives with Nano One and the Company has received \$14,897 from IRAP, offsetting a portion of these costs. The IRAP funding is shown as other income within other evaluation costs.

The \$832,738 increase in administrative costs for the three months ended September 30, 2022, compared to the same period in 2021 is mainly attributable to: a \$135,491 increase in remuneration due to a higher number of employees in the corporate office in Canada; an increase of \$495,665 in share-based compensation due to partial vesting of a share option grant in December 2021; a \$115,751 increase in legal and professional expenses related to costs for the project financial advisor; a \$70,798 increase in travel and a \$31,141 increase in conferences due to the easing of COVID-19 restrictions; and an increase of \$39,846 in insurance due to the higher cost for directors' and officers' insurance. The increase of \$23,819 in depreciation is due to a new office lease asset in Canada and a lease asset resulting from the lease of two buildings at the Project site which will host the demonstration plant. Additionally, there was an increase of \$11,608 in investor relations expenses due to a higher number of promotional activities. The overall increase in administrative costs was partially offset by a decrease of \$35,624 in filing and compliance fees as a result of the private placement in the fourth quarter of fiscal 2021; and a \$31,961 decrease in office, general and administrative costs due to the Company's office move in 2021. Additionally, there was an \$28,234 in foreign exchange loss arising from revaluation of the liabilities for the royalty buy back, EPCS Option and land deposits; and a \$50,630 increase in interest earned on the Company's bank deposits.

## 9. Liquidity and Capital Resources

As at September 30, 2022, the Company held cash and cash equivalents of approximately \$21.6 million. Cash and cash equivalents is held with reputable financial institutions and is invested in highly liquid short-term investments with maturities of one year or less. The funds are not exposed to significant liquidity risk and there are no restrictions on the ability of the Company to use these funds to meet its obligations.

The decrease in cash of \$9.7 million during the year ended September 30, 2022, is a result of \$9.5 million used in operating activities and \$8.2 million used in investing activities, which included the payment for the royalty buy back, the demonstration plant and certain land related payments. This decrease was partially offset by cash generated from financing activities of \$8.1 million. The proceeds of cash in financing activities represents the private placement by the EBRD. Working capital decreased by \$6.3 million during the year ended September 30, 2022, to \$19.8 million from \$26.1 million at September 30, 2021.

## 9. Liquidity and Capital Resources (continued)

Additional funding will be required for the potential future construction of infrastructure and facilities for the Project. The ability of the Company to arrange such funding will depend principally upon prevailing market conditions, the business performance of the Company, and other factors such as disruptions resulting from an extended duration of the COVID-19 pandemic or the Russia-Ukraine conflict. Such funding may not be available when needed, if at all, or be available on terms favourable to the Company and its shareholders. Failure to obtain such additional financing could result in a delay, indefinite postponement or curtailment of further evaluation and development of the Company's principal property.

On June 27, 2022, the Company appointed Stifel as financial advisor to assist with the structuring and securing of financing for the Project of \$757.3 million as well as a working capital facility. The results of the Feasibility Study confirm several factors, including robust project economics, in-demand products, unique environmental credentials, stable jurisdiction and strong support from leading European institutions, that the Company believes make the Project an attractive proposition for potential financial partners. Consequently, the Company has reasonable grounds to assume that it will be able to fund the development of the Project (see also Section 4 of this MD&A).

The Company's commitments at September 30, 2022, are shown in Section 12 of this MD&A.

## 10. Off Balance Sheet Arrangements

As at September 30, 2022, there are no off-balance sheet arrangements which could have a material impact on current or future results of operations or the financial condition of the Company.

## 11. Related Party Transactions

At September 30, 2022, key management personnel include those persons having authority and responsibility for planning, directing and controlling the activities of the Company as a whole, and consisted of the Company's Board of Directors, President and Chief Executive Officer, Chief Financial Officer, Vice President, Corporate Development and Corporate Secretary, Vice President, Operations and the Managing Director of the Company's Czech subsidiary.

	<b>Year ended September 30,</b>	
	<b>2022</b>	<b>2021</b>
	<b>\$</b>	<b>\$</b>
Salaries and fees	<b>2,162,807</b>	1,787,234
Share-based compensation	<b>2,051,389</b>	192,908
	<b>4,214,196</b>	1,980,142

At September 30, 2022, amounts owing to directors and officers of the Company for salaries and directors' fees amounted to \$378,373 (2021 - \$33,803), and includes salary and bonuses owing to the Managing Director of Mangan. Other amounts payable to officers and directors for the reimbursement of office and travel related expenses were \$31,093 at September 30, 2022 (2021 - \$14,998).



## 12. Contractual Commitments

As at September 30, 2022, the Company was committed to make the minimum annual cash payments, are as follows:

	Payments due by period		
	Total	Less than one year	1 - 2 years
	\$	\$	\$
Minimum lease payments <sup>(1)</sup>	7,497	7,497	—
Land acquisition payments <sup>(2)</sup>	2,471,441	524,245	1,947,196
Equipment purchases - demonstration plant	891,893	548,000	343,893
Operating expenditure commitments	153,000	152,904	96
<b>Total contractual obligations</b>	<b>3,523,831</b>	<b>1,232,646</b>	<b>2,291,185</b>

<sup>(1)</sup> The Company has one non-cancellable operating office lease expiring in one year.

<sup>(2)</sup> Land acquisition payments relate to land parcels for the residue storage facility layout.

In addition to the commitments disclosed above, the Company agreed to acquire a right-of-way for a period of 30 years having an annual rental of 60,000 Czech Koruna (approximately \$3,000).

The Company and the Municipality of Chvaletice, being one of the owners of the land underlying the tailings, signed a land access agreement via rental of the land to the Company until the earlier of a 40-year period or upon remediation of the land. The annual rental is 7.46 million Czech Koruna (approximately \$420,000), adjusted for inflation based on the average annual Czech consumer price index for the 12 months of the previous calendar year. The land rental agreement is effective July 1, 2022, and the first rental payment was made on July 28, 2022.

The Company is not subject to any externally imposed capital requirements.

## 13. Outstanding Share Data

The Company's authorized share capital consists of an unlimited number of common shares without par value. The following common shares, share purchase options and share purchase warrants were outstanding at December 15, 2022:

	Number of securities
Issued and outstanding common shares	402,107,217
Share purchase options	34,320,998
Warrants	8,500,000

## 14. Proposed Transactions

As at September 30, 2022, there is no proposed asset or business acquisition or disposition being considered that would affect the financial condition, financial performance or cash flows of the Company.

## 15. Events After the Reporting Period

Subsequent to the year end, 991,666 stock options were exercised for proceeds to the Company of \$152,666.

## **16. Significant Accounting Policies, Estimates and Judgments**

### *Basis of preparation and accounting policies*

The Company's annual consolidated financial statements were prepared in accordance with IFRS as issued by the IASB. Detailed description of the Company's significant accounting policies can be found in Note 3 of the Company's audited consolidated financial statements for the year ended September 30, 2022. The impact of future accounting changes is disclosed in Note 3.14 of the September 2022 Financial Statements.

### *Critical accounting estimates and judgments*

The preparation of consolidated financial statements in conformity with IFRS requires management to make estimates that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. Areas of judgment and key sources of estimation uncertainty that have the most significant effect are disclosed in Note 3.15 of the September 2022 Financial Statements.

## **17. Financial Instruments and Financial Risk Management**

A description of the Company's financial instruments and financial risks that the Company is exposed to and management of these risks can be found in Notes 10 and 11, respectively, of the September 2022 Financial Statements.

## **18. Internal Controls over Financial Reporting and Disclosure Controls and Procedures**

### *Disclosure Controls and Procedures*

The Company's management, under the supervision of the Chief Executive Officer (CEO) and Chief Financial Officer (CFO) are responsible for establishing and maintaining adequate disclosure controls and procedures. Disclosure controls and procedures are designed to provide reasonable assurance that material information relating to the Company, including its consolidated subsidiaries, is made known to the CEO and CFO during the reporting period. The Company's CEO and CFO believe that the Company's disclosure controls and procedures are effective in providing reasonable assurance that information required to be disclosed under applicable securities regulations is recorded, processed, summarized and reported within the time periods specified in the securities legislation.

Management, including the CEO and CFO, has evaluated the design and operating effectiveness of the Company's disclosure controls and procedures as of September 30, 2022. Based on this evaluation, management concluded that the Company's disclosure controls and procedures, as defined in NI 52-109 - Certification of Disclosure in Issuer's Annual and Interim Filings, are effective to achieve the purpose for which they have been designed.

### *Internal Controls Over Financial Reporting*

Management is responsible for establishing and maintaining adequate internal control over financial reporting to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. The Company uses the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") internal control framework to design internal controls over financial reporting.

## 18. Internal Controls over Financial Reporting and Disclosure Controls and Procedures (continued)

Internal control over financial reporting includes those policies and procedures that: (1) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and disposition of assets, (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with IFRS, and that receipts and expenditures are being made only in accordance with authorizations of management and directors of the Company, and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on the financial statements.

Because of their inherent limitations, internal controls over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. The design, maintenance and testing of any system of controls is based in part upon certain assumptions about the likelihood of future events, and any control system may not succeed in achieving its stated goals under all potential future conditions.

Management, under the supervision and with the participation of our CEO and CFO, has evaluated the effectiveness of the design and operating effectiveness of the Company's internal control over financial reporting as of September 30, 2022. Based on its evaluation, management concluded that the Company's internal controls over financial reporting, as defined in NI 52-109 - Certification of Disclosure in Issuer's Annual and Interim Filings, are effective to achieve the purpose for which they have been designed.

## 19. Forward-Looking Statements and Risks Notice

Certain statements in this MD&A constitute "forward-looking statements" or "forward-looking information" within the meaning of applicable securities laws. Such statements and information involve known and unknown risks, uncertainties and other factors that may cause the actual results, performance or achievements of the Company, its projects, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements or information. Such statements can be identified by the use of words such as "may", "would", "could", "will", "intend", "expect", "believe", "plan", "anticipate", "estimate", "scheduled", "forecast", "predict" and other similar terminology, or state that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved.

Results of the Feasibility Study constitutes forward-looking information or statements, including but not limited to estimates of internal rates of return (including any pre-tax and after-tax internal rates of return), payback periods, net present values, future production, assumed prices for HPMSM and HPEMM, ability of the Company to achieve a pricing premium for its products, proposed extraction plans and methods, operating life estimates, cash flow forecasts, metal recoveries and estimates of capital and operating costs. Such forward-looking information or statements also include, but are not limited to, statements regarding the Company's intentions regarding the Project in the Czech Republic, the development of the Project, the ability to source green power and other requirements for the Project, the completion and submission of an environmental and social impact assessment, statements regarding the ability of the Company to obtain remaining surface rights, the benefits of remediating the historic tailings areas, the growth and development of the high purity manganese products market, the desirability of the Company's products, the growth of the EV industry, the use of manganese in batteries, the manganese project supply line, support from European financial institutions, and the Company's ability to obtain financing for the Project.

Readers are cautioned not to place undue reliance on forward-looking information or statements. Forward-looking statements are subject to a number of risks and uncertainties that may cause the actual results of the Company to differ materially from those discussed in the forward-looking statements and, even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on, the Company.

## 19. Forward-Looking Statements and Risks Notice (continued)

Factors that could cause actual results or events to differ materially from current expectations include, among other things: the ability to develop adequate processing capacity; the availability of equipment, facilities, and suppliers necessary to complete development; the cost of consumables and extraction and processing equipment; risks and uncertainties related to the ability to obtain, amend, or maintain necessary licenses, or permits, risks related to acquisition of surface rights; risks and uncertainties related to expected production rates; timing and amount of production and total costs of production; the potential for unknown or unexpected events to cause contractual conditions to not be satisfied; the failure of parties to contracts with the Company to perform as agreed; risks and uncertainties related to the accuracy of mineral resource and reserve estimates, the price of HPEMM and HPMSM, power supply sources and price, reagent supply resources and prices, future cash flow, total costs of production, and diminishing quantities or grades of mineral resources and reserves; changes in Project parameters as plans continue to be refined; risks related to global epidemics or pandemics and other health crises, including the impact of the novel coronavirus (COVID-19); availability and productivity of skilled labour; risks and uncertainties related to interruptions in production; unforeseen technological and engineering problems; the adequacy of infrastructure; risks related to Project working conditions, accidents or labour disputes; social unrest or war; the possibility that future results will not be consistent with the Company's expectations; risks relating to variations in the mineral content and grade within resources from that predicted; variations in rates of recovery and extraction; developments in EV battery markets and chemistries; and risks related to fluctuations in currency exchange rates, changes in laws or regulations; and regulation by various governmental agencies. For a further discussion of risks relevant to The Company, see "Risk Factors" in the Company's annual information form for the year ended September 30, 2022, available on the Company's SEDAR profile at [www.sedar.com](http://www.sedar.com).

All forward-looking statements are made based on the Company's current beliefs as well as various assumptions made by the Company and information currently available to the Company. Generally, these assumptions include, among others: the presence of and continuity of manganese at the Project at estimated grades; the ability of the Company to obtain all necessary land access rights; the availability of personnel, machinery, and equipment at estimated prices and within estimated delivery times; currency exchange rates; manganese sales prices and exchange rates assumed; growth in the manganese market; appropriate discount rates applied to the cash flows in economic analyses; tax rates and royalty rates applicable to the proposed operations; the availability of acceptable Project financing; anticipated extraction losses and dilution; success in realizing proposed operations; and anticipated timelines for community consultations and the impact of those consultations on the regulatory approval process.

Although the forward-looking statements contained in this MD&A are based upon what management of the Company believes are reasonable assumptions, the Company cannot assure investors that actual results will be consistent with these forward-looking statements. These forward-looking statements are made as of the date of this MD&A and are expressly qualified in their entirety by this cautionary statement. Subject to applicable securities laws, the Company does not assume any obligation to update or revise the forward-looking statements contained herein to reflect events or circumstances occurring after the date of this MD&A.