Euro Manganese Inc.

FOCUS ON GREEN AND EUROPEAN
ULTRA HIGH-PURITY MANGANESE PRODUCTS

Corporate Presentation | June 2019

Cautionary Note

Forward-Looking Statements and Risks Notice

Except for statements of historical fact relating to the Euro Manganese Inc. (“EMI” or the “Company”), certain information contained in this presentation constitutes forward-looking statements. When we discuss our costs and timing of current and proposed evaluation; planning; development; capital expenditures; cash flow; working capital requirements; and the requirement for additional capital; operations; revenue; margins and earnings; future prices of electrolytic manganese metal, manganese sulphate and other products; future foreign currency exchange rates; future accounting changes; future prices for marketable securities; future resolution of contingent liabilities; or other things that have not yet happened in this review, we are making statements considered to be forward-looking information or forward-looking statements under Canadian law. We refer to them in this review as forward-looking information.

The forward-looking information typically includes words and phrases about the future, such as: plan, expect, forecast, intend, anticipate, estimate, budget, scheduled, believe, may, could, would, should, might, and will. We can give no assurance that the forward-looking information will prove to be accurate. It is based on a number of assumptions management believes to be reasonable, including but not limited to the continued operation of the Company’s exploration, evaluation and development activities, no material adverse change in the market price of commodities and exchange rates, and such other assumptions and factors as set out herein.

It is also subject to risks associated with our business, including but not limited to: risks inherent in the mineral exploration and evaluation and mineral extraction business; commodity price fluctuations and hedging; competition for mineral properties; mineral resources and reserves and recovery estimates; currency fluctuations; interest rate risk; financing risk; environmental risk; foreign activities; legal proceedings; and other risks.

If our assumptions prove to be incorrect or risks materialize, our actual results and events may vary materially and adversely from what we currently expect as set out in this review.

Forward-looking information is designed to help you understand management’s current views of our near and longer-term prospects, and it is not appropriate for other purposes. We will not necessarily update this information unless we are required to by law.

Compliance Statements

Competent and Qualified Persons Statement

All production targets for the Chvaletice Manganese Project referred to in this presentation are underpinned by estimated Measured and Indicated Mineral Resources prepared by competent persons and qualified persons in accordance with the requirements of the Joint Ore Reserves Committee Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 Edition ("JORC Code") and National Instrument 43-101 - *Standards and Disclosures for Mineral Projects* ("NI 43-101"), respectively.

Additionally, the scientific and technical information included in this presentation is based upon technical reports prepared by Mr. James Barr, P. Geo, Senior Geologist, Mr. Jianhui (John) Huang, Ph.D., P. Eng., Senior Metallurgical Engineer, Mr. Hassan Ghaffari, P.Eng, M.A.Sc., Senior Process Engineer and Mr. Mark Horan, P.Eng, MSc., Senior Mining Engineer, all with Tetra Tech Canada Inc. ("Tetra Tech"), and entitled "Technical Report and Preliminary Economic Assessment for the Chvaletice Manganese Project, Chvaletice, Czech Republic" having an effective date of 29 January 2019 (release date 15 March 2019) (the "NI-43-101 Technical Report") and "Public Report and Preliminary Economic Assessment for the Chvaletice Manganese Project, Chvaletice, Czech Republic" having an effective date of 29 January (release date 22 March 2019) (the "JORC Code Report"). The NI-43-101 Technical Report was filed on SEDAR at www.sedar.com on 15 March 2019 and the JORC Code Report was lodged with the ASX on 26 March 2019. The above-named persons are consultants to, and independent of the Company within the meaning of NI 43-101, and have sufficient experience in the field of activity being reported to qualify as Competent Persons as defined in the JORC Code, and are Qualified Persons, as defined in NI 43-101. Messrs. Barr, Huang, Ghaffari and Horan have no economic or financial interest in the Company and consent to the inclusion in this presentation of the matters based on their information in the form and context in which it appears.

References to ASX and TSX-V Market Announcements

This presentation contains information extracted from certain of the Company's ASX and TSX-V market announcements, as shown below, including exploration results, estimates of Measured and Indicated Mineral Resources, and production targets as reported in accordance with the JORC Code and NI 43-101 standards:

i. Drill results for the Chvaletice Manganese Project reported on page 17 of this presentation were reported in TSX-V and ASX market announcements dated 17 October 2018 and 17 December 2018.

ii. The closing of the option agreement reported on page 19 of this presentation was reported in the TSX-V and ASX market announcement dated 17 October 2018.

iii. Results of the preliminary economic assessment reported on pages, 22, 38 and 39 of this presentation were reported in the TSX-V and ASX market announcement dated 30 January 2019.

iv. The decision made to proceed to Feasibility Study stage reported on page 22 of this presentation was reported in the TSX-V and ASX market announcement dated 22 May 2019.

v. Metallurgical testing results reported on page 33 of this presentation were reported in the TSX-V and ASX market announcement dated 17 December 2018.

vi. Results of the drilling program and metallurgical testing reported on page 35 of this presentation were reported in TSX-V and ASX market announcements dated 17 October 2018 and 17 December 2018.

vii. Mineral processing and metallurgical testing results referred to and/or reported on page 37 of this presentation were reported in the TSX-V and ASX market announcement dated 17 December 2018.

The Company is not aware of any new information or data that materially affects the information contained in the above-referenced market announcements. The Company also confirms that all material assumptions and technical parameters underpinning the estimates of Measured and Indicated Mineral Resources as provided in the relevant market announcements, as well as all material assumptions underpinning the production targets and financial forecast information in the JORC Code Report, continue to apply and have not materially changed, and that the form and context in which the Competent Persons' findings are presented have not been materially modified.

EMN Highlights

WASTE REPROCESSING FROM HISTORIC MINING OPERATION

- EMN holds 100% of the rights to the Chvaletice Manganese Project.
- Targeting competitive production of **environmentally-superior, ultra-high-purity manganese products**
- EMN pilot tests have confirmed ability to meet **highest customer specifications** for new-generation of EV battery production.
- Western Europe's largest manganese resource, hosted in tailings/waste from 1951-1975 mining operation.

STRATEGIC EUROPEAN ASSET ~25-YEAR LIFE EXPECTANCY

- Significant **measured and indicated resource of 26.96 million tonnes grading 7.33% manganese**. 25 year target project life at ~48,000 TPA Mn-equivalent.
- Low-cost extraction method anticipated, involving the **recycling of manganese-rich waste** – no hard rock mining or milling required – using combination of **proven, clean, commercial technology.**
- Strategic Asset in Europe: China produces over 98% of electrolytic manganese metal and over 85% of high-purity manganese sulfate in the world.

EXCELLENT INFRASTRUCTURE TIER-ONE JURISDICTION

- Rail, highway, gas pipeline, water and power available on-site.
- Located at major node in Czech national electrical grid = competitively-priced electrical power.
- Secured industrial-zoned land for plant.
- Sophisticated, **stable and business-friendly European Union jurisdiction.** Czech Government encourages direct foreign investment.
- Clear legal and regulatory framework.
- 19% corporate tax rate.

Development Plan Highlights

CLEAR TIMELINE TO DEVELOPMENT

- Extensive metallurgical tests and pilot-plant runs completed. Confirmed ability to convert Chvaletice tailings into **ultra high purity manganese products.**
- **Preliminary mining permit secured** in April 2018.
- Preliminary Economic Assessment issued in early 2019. **Robust economics**.
- **Demonstration Plant planned for 2019** to produce bulk finished product for customer testing and qualification.
- Targeting construction start in 2021.

STRONG MARKET OUTLOOK FOR MANGANESE PRODUCT

- Demand for manganese products for lithium-ion battery production expected to ramp-up very significantly around the world.
- Stable, growing manganese demand in the high-performance steel and aluminum superalloy production – numerous European, North American and international consumers.
- Major investments in European electrical vehicle battery, cathode and precursor plants in close proximity to Project. NMC cathode chemistry expected to dominate, requiring high-purity manganese inputs.

HIGHLY EXPERIENCED MANAGEMENT TEAM

- Solid multidisciplinary team with **proven corporate and project development track record**, as well as extensive operating experience.
- Secured access to leading high-purity manganese products production expertise and technology.
- Company founders have **award-winning track record of excellence in environmental and social practices**.

Management Team
CANADA

Marco Romero

PRESIDENT & CEO, FOUNDER & DIRECTOR

- 40 years of diversified international experience in mining and construction material industries.
- Co-founder of several Canadian companies including Eldorado Gold, Polaris Materials, Delta Gold and Euro Manganese.
- Recipient of several international, national and regional awards for achievements in corporate social responsibility and environmental excellence.

Pierre Masse

VP FINANCE & CHIEF FINANCIAL OFFICER

- 35+ years of international experience in finance
- Held senior financial positions as a controller, Vice President Finance or CFO with several Canadian private and public exploration and mining companies, including Equinox Resources Ltd., Pan American Silver Corp. and Eldorado Gold Corporation.
- Mining Engineering degree, qualified as a Chartered Accountant in 1976 and is also a Chartered Financial Analyst.

Thomas Glück

VICE PRESIDENT, DEVELOPMENT

- 26-year track record of successful development and operation of production facilities for electrolytic manganese metal and associated products.
- Held various leadership roles for world's leading producer of high purity, selenium-free EMM, Manganese Metal Company, including superintendent, development manager and works manager.
- Thomas holds a PhD in Chemical Engineering.

Gary Nordin

CHIEF GEOLOGIST

- Leading exploration geologist with a history of identifying, evaluating and developing successful mining projects, including the Refugio Mine, La Colorada mine, Kisladag mine and the Orca Sand & Gravel Quarry.
- Previously co-founder and director of several public companies including Bema Gold, Eldorado Gold, Polaris Materials, Delta Gold, Orestone Mining, Nevada Pacific Gold, Canasil Resources and Galileo Minerals.

Fausto Taddei

VP CORPORATE DEVELOPMENT & CORPORATE SECRETARY

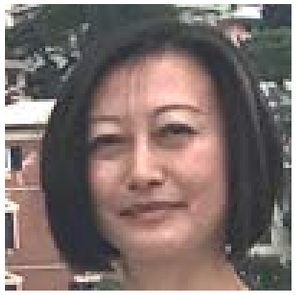
- Over 30 years of public resource company experience with development and operating entities involved in precious and base metals, and metallurgical coal . Senior level experience in multiple mining operations, financing, treasury functions, off-take arrangements, tax planning and public company reporting and governance matters.
- Held Senior VP & CFO positions with Nevsun Resources Ltd., Aura Minerals Inc. and Western Canadian Coal Corp.
- Qualified as a CPA (CA) in 1985.

Management Team
EUROPE

Jan Votava

MANAGING DIRECTOR (MANGAN CHVALETICE S.R.O.) & DIRECTOR (EURO MANGANESE INC.)

- 18+ years experience as an engineer and executive leader in Czech republic.
- Responsible for leading the Company in the Czech Republic, for its organizational and reputational development, as well as Project permitting and development.
- Previously held different managerial roles as Head of Transformation Team for Europe, Technical Director for Central Europe, and Executive Chairman and Managing Director for the Czech Republic for Lafarge Holcim.
- Holds a doctorate in mechanical engineering.



Wenling Sun

STRATEGIC DIRECTOR, CHINA

- Highly experienced mining industry professional with an 18-year track record in China, covering mining project development, metals trading, pricing, trade structure, and project management and financing.
- Ran an active consulting practice, advising international clients on the procurement of Chinese technology, equipment and services from Europe.
- Managed the development of the first bio-heap copper and nickel leaching projects in China and played a key role in several international mine and plant developments.
- Holds a Masters degree in Economics from Renmin University.

Klaus Acker

VICE PRESIDENT, MANGANESE MARKETS

- Prominent and highly experienced metal sales and trading professional, with 27 years of experience in European metal markets.
- Represented some of the world's leading EMM producers, including Vice President, Ferro Alloys for Traxys SA.
- Based in Cologne, Germany

Tomas Hochmann

TECHNICAL DIRECTOR

- Started career in basic research related to petrochemistry leading to a PhD in Chemical Engineering after which he worked in applied research and development for petrochemical and pharmaceutical companies.
- The last 20 years have been spent in the cement industry working in cement plants in the Czech republic, Bosnia, Libya, Serbia, Venezuela and Canada – responsible for process development and optimization, plant operations as well as plant strategy, investment planning and construction management.
- Has also been engaged in the technical training of young engineers, troubleshooting and plant start-ups within the cement group.

Non-Executive Directors

Roman Shklanka

CHAIRMAN & CO-FOUNDER

- Geologist, mine finder and company builder whose experience includes Chairman, director and co-founder of Canico Resource Corp, Polaris Materials, Kobex Resources, Pacific Imperial Mines, Delta Gold Corp. and Sutton Resources.
- Previously held various senior exploration roles with Placer Dome over more than 20 years, including VP Exploration.
- Inducted into Canadian Mining Hall of Fame in 2009.

David Dreisinger

DIRECTOR

- Professor and chair holder of the Industrial Research Chair in Hydrometallurgy at UBC.
- Published over 200 papers and involved in 16 U.S. patents for work in hydro-metallurgical research.
- Active international consulting practice on many major hydrometallurgical projects and plants.
- Previous corporate experience includes director positions Search Minerals, Clifton Star Resources and South American Silver.

Daniel Rosický

DIRECTOR

- Practiced law for 22 years and is fluent in English and Czech. Daniel is an attorney at law of the Czech Bar Association and is also admitted to the Bar in Ontario, Canada.
- Senior partner at PRK Partners, a leading Czech corporate law firm.
- Specializes in real estate and inbound foreign investment law, including resource development.
- Born in the Czech Republic and educated in Canada.

Harvey McLeod

DIRECTOR

- Geotechnical engineer and a world leader in the evolution and development of mine tailings management over a 40-year career, with work on over 100 tailings dams in over 20 countries.
- Chairman of the ICOLD subcommittee on tailings dams and active in the Canadian Dam Association.
- Currently VP Strategic Marketing for Klohn Crippen Berger.
- Inducted as Fellow of the Canadian Engineering Institute in 2017.

John Webster

DIRECTOR

- Senior finance professional who spent over 30 years with PricewaterhouseCoopers until his retirement in 2014.
- Roles included British Columbia Managing Partner, three years as Assurance Leader in Romania and head of the firm's mining practice in Canada.
- Extensive experience as audit partner and advising private and listed clients.
- Director of Eldorado Gold Corporation.

Gregory Martyr

DIRECTOR

- Over 30 years experience in resources investment banking and corporate finance, and international resource and mining company management.
- Executive Director of Carbon Fibre Development Technologies Pty Ltd.
- Former Managing Director with Standard Chartered Bank, ultimately as the Global Head of Advisory, Mining and Metals.
- Previously a partner with Gryphon Partners and held several executive roles with Normandy Mining Ltd. Incl. President, Americas.

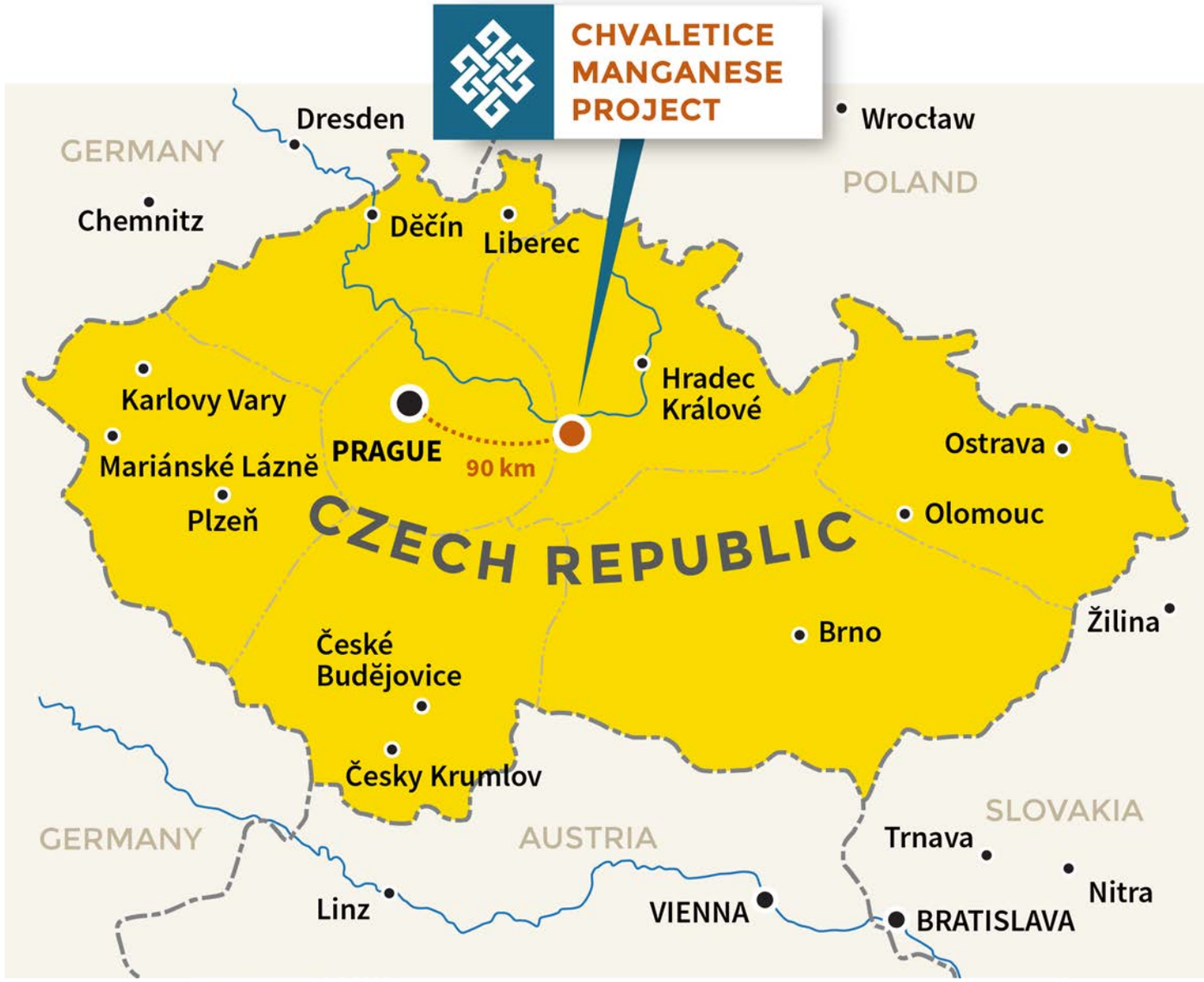
Project Location and Infrastructure

Strategically located 90km east of Prague, in the heart of Europe.

- Set in an industrialized valley with gentle topography, served by excellent infrastructure. Rail, gas, water and power are all available on the Project site.

- Adjacent to 820 MW power station at a major node in the Czech Republic's modern electrical distribution grid.

- Easy rail and road access to the ports of Hamburg, Gdansk and Rotterdam.



Growing Lithium Battery Cluster in Europe

(The wave of production capacity development that has gone through Asia is now washing over Europe)

Euro Manganese Inc.

SWEDEN
Plant Type: **Precursors/Batteries**
Status: **Construction 2018**
Production Start: **2020**
Planned Capacity: **32 GWH**

POLAND
Plant Type: **Battery Packs Assembly**
Status: **Construction**
Production Start: **2019**
Planned Capacity: **10k packs**

POLAND
Plant Type: **NMC cathodes**
Status: **Construction**
Production Start: **2020**
Planned Capacity: **TBC**

FINLAND
Plant Type: **NMC Precursors**
Status: **Operational + expansion?**
Production Start: **2019 acquisition**
Planned Capacity: **TBC**

POLAND
Plant Type: **Batteries**
Status: **Discussed**
Production Start: **NA**
Planned Capacity: **100k battery cells**

POLAND
Plant Type: **Li-ion Electrolyte**
Status: **Construction 2019**
Production Start: **2020**
Planned Capacity: **Electrolyte for 1 million EVs**

FINLAND
Plant Type: **NMC Precursors**
Status: **Discussed Oct 2018**
Production Start: **2020**
Planned Capacity: **~15 GWh**

FINLAND
Plant Type: **NMC Precursors**
Status: **Announced**
Production Start: **2021**
Planned Capacity: **177 Kilotons**

GERMANY
Plant Type: **Batteries**
Status: **Construction 2019**
Production Start: **2020**
Planned Capacity: **5-55 GWh**

GERMANY
Plant Type: **Batteries**
Status: **Announced Jan 2019**
Production Start: **NA**
Planned Capacity: **100 M cells/year**

HUNGARY
Plant Type: **Batteries**
Status: **Operational**
Production Start: **2018**
Planned Capacity: **2-5 GWh**

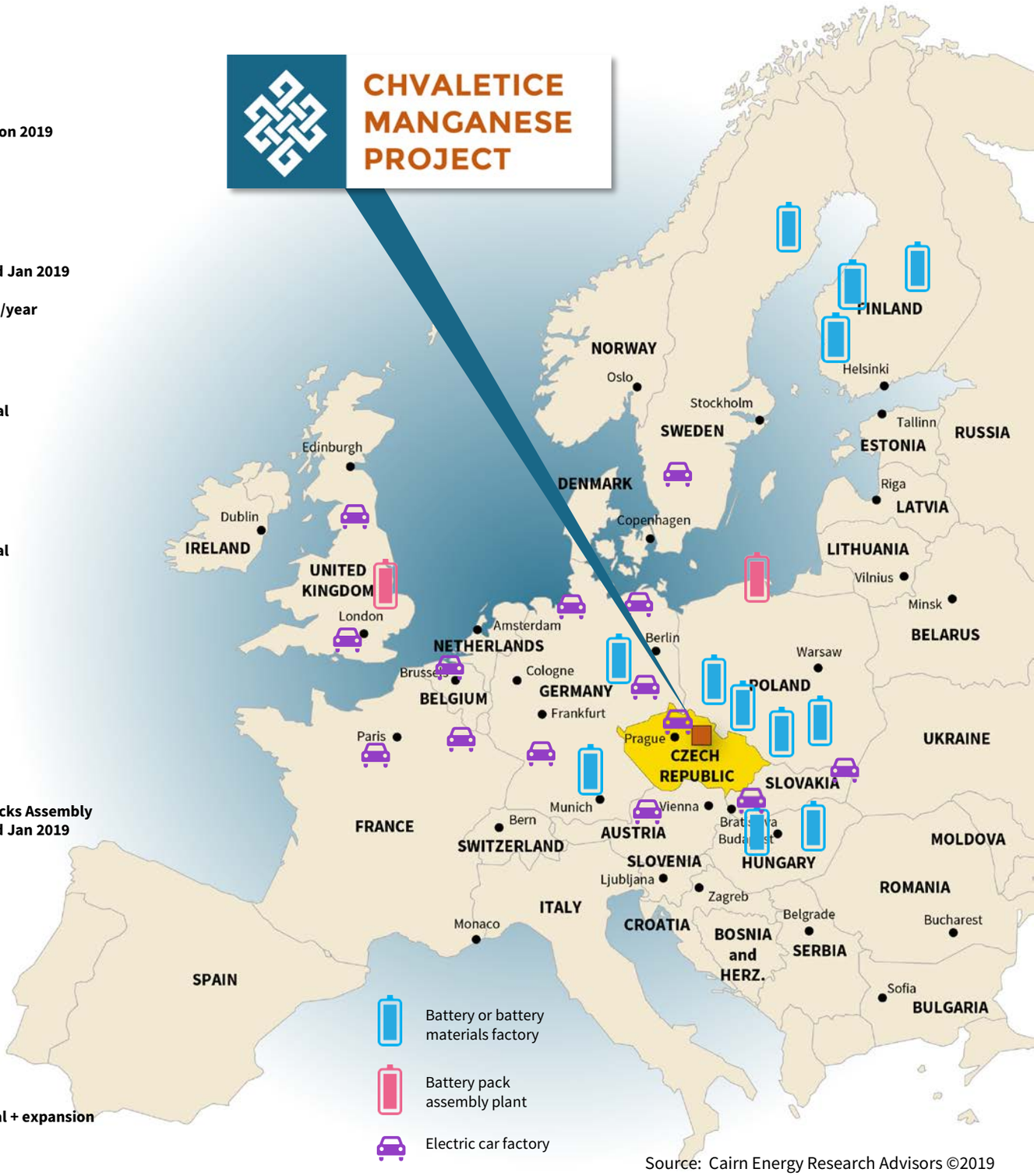
HUNGARY
Plant Type: **Batteries**
Status: **Operational**
Production Start: **2019**
Planned Capacity: **7-10 GWh**

TBD
Plant Type: **Batteries**
Status: **Discussed**
Production Start: **TBD**
Planned Capacity: **100 GWh**

UNITED KINGDOM
Plant Type: **Battery Packs Assembly**
Status: **Announced Jan 2019**
Production Start: **TBA**
Planned Capacity: **TBA**

GERMANY
Plant Type: **Cells**
Status: **Discussed**
Production Start: **TBD**
Planned Capacity: **TBD**

POLAND
Plant Type: **Batteries**
Status: **Operational + expansion**
Production Start: **2018**
Planned Capacity: **17 GWh**



Source: Cairn Energy Research Advisors ©2019

Lithium Ion Battery Market Mn Demand

Manganese use in NMC and LNMO cathode formulations

NMC has several major formulations, each expressed as a ratio of Nickel to Manganese to Cobalt:

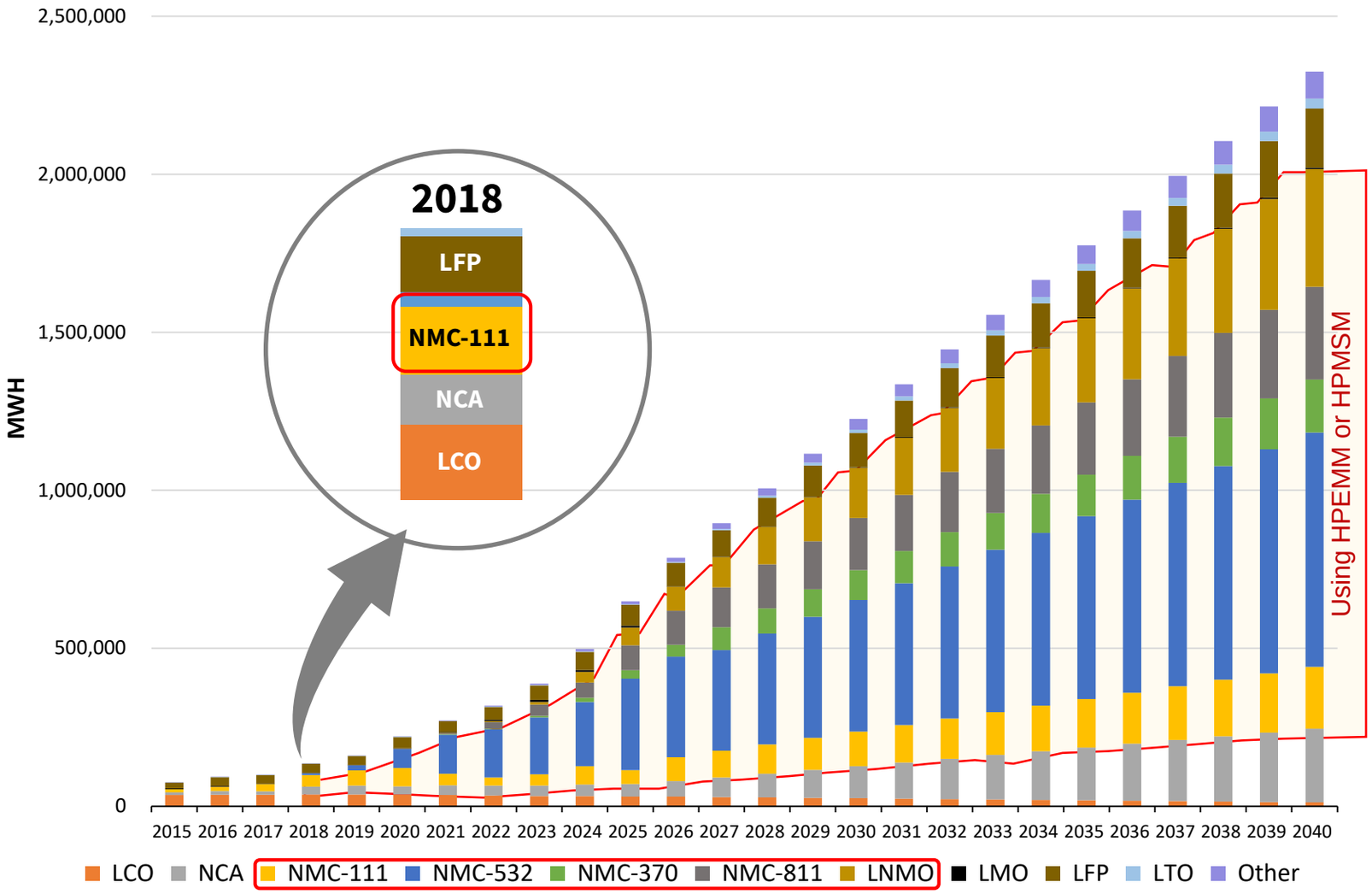
NMC 1-1-1
Most NMC today is the 1-1-1 formulation, which is the most stable and long-lasting.

NMC 5-3-2 and 6-2-2
Going forward, 5-3-2 and 6-2-2 will emerge in 2020 and 8-1-1 in 2023. By 2026 the majority will be 5-3-2.

NMC 8-1-1
Higher Ni-content is preferable to buyers due to the lower proportion of Co, making it cheaper. Additionally, 8-1-1 has a higher energy density. If durability & stability issues can be solved, it will become the cathode chemistry of choice for carmakers.

NMC 3-7-0
New chemistry announced by BASF in 2018. Will use 70% Mn in its cathode

LNMO (Lithium-Nickel-Manganese Oxide)
The highest consumer of Mn per 1 kWh of capacity (1+ kg) will mature commercially after 2025, principally in electronics and in certain formulations of EV batteries.



All rights reserved Cairn Energy Research Advisors and CPM Group ©2019

EMN Market Approach

BECOME WORLD'S GREENEST AND EUROPE'S ONLY PRIMARY PRODUCER OF TWO KEY MANGANESE PRODUCTS:

1 UHP Electrolytic Manganese Metal (99.9% EMM / HPEMM)

Highest specifications: Selenium-free, >99.94% Mn.

Form:	Flake and powder
Use:	From lithium-ion battery cathodes to military grade super-alloys

AND

2 UHP Manganese Sulphate Monohydrate (HP MnSO4 / HPMSM)

Battery-grade: Highest specifications (>32.34 Mn)

Form:	Granulated or liquid
Use:	New generation of NMC rechargeable, automotive and other lithium-ion battery cathodes.

Ultra –High-Purity EMM and MSM (granulated and liquid) made from Chvaletice tailings.

CHVALETICE MANGANESE PROJECT OVERVIEW

Project Highlights

A LEADING GREEN HIGH-PURITY MANGANESE PRODUCTS PROJECT

- **100% ownership of rights to Chvaletice Manganese Resource**
- **Targeted 25-Year Life-of-Project /designed by world-leaders in the HPEMM and HPMSM field**
- **Recovering manganese by reprocessing tailings (waste recycling) makes Chvaletice manganese products environmentally-superior.**
  - Major manganese resource. No hard rock mining, crushing or milling required.
  - Manganese carbonate ore: Direct leach. No calcination or toxic chemical reduction required prior to leaching.
  - Extensive metallurgical test work completed with modern, conventional, proven process technology.
  - Pilot-plant tests completed in 2018.
  - Extraction of Chvaletice manganese is expected to result in self-funding environmental remediation of the Chvaletice site, bringing it in full compliance with all Czech and EU environmental, health and safety regulations.

EMN executives, Thomas Glück and Jan Votava, inspecting Chvaletice bulk sample preparation at CRIMM R&D Center in Changsha, China.

Project Highlights

WORKING IN THE CZECH REPUBLIC

Electrical supply

- Competitively-priced electrical power in Czech Republic, which is generated 43% from non-fossil fuel sources.

Key process inputs

- Conventional, REACH-registered reagents all expected to be available in Czech Republic and Europe.
- Industrialized region – highly-skilled labour, quality goods and first-world technical services locally available.

Excellent infrastructure

- Rail, highway, natural gas, water are available on or immediately adjacent to site.

Investment-friendly jurisdiction

- Prosperous free-market economy. Local & national governments encourage direct foreign investment.
- Property rights are legally protected.

Drilling & Bulk Sampling

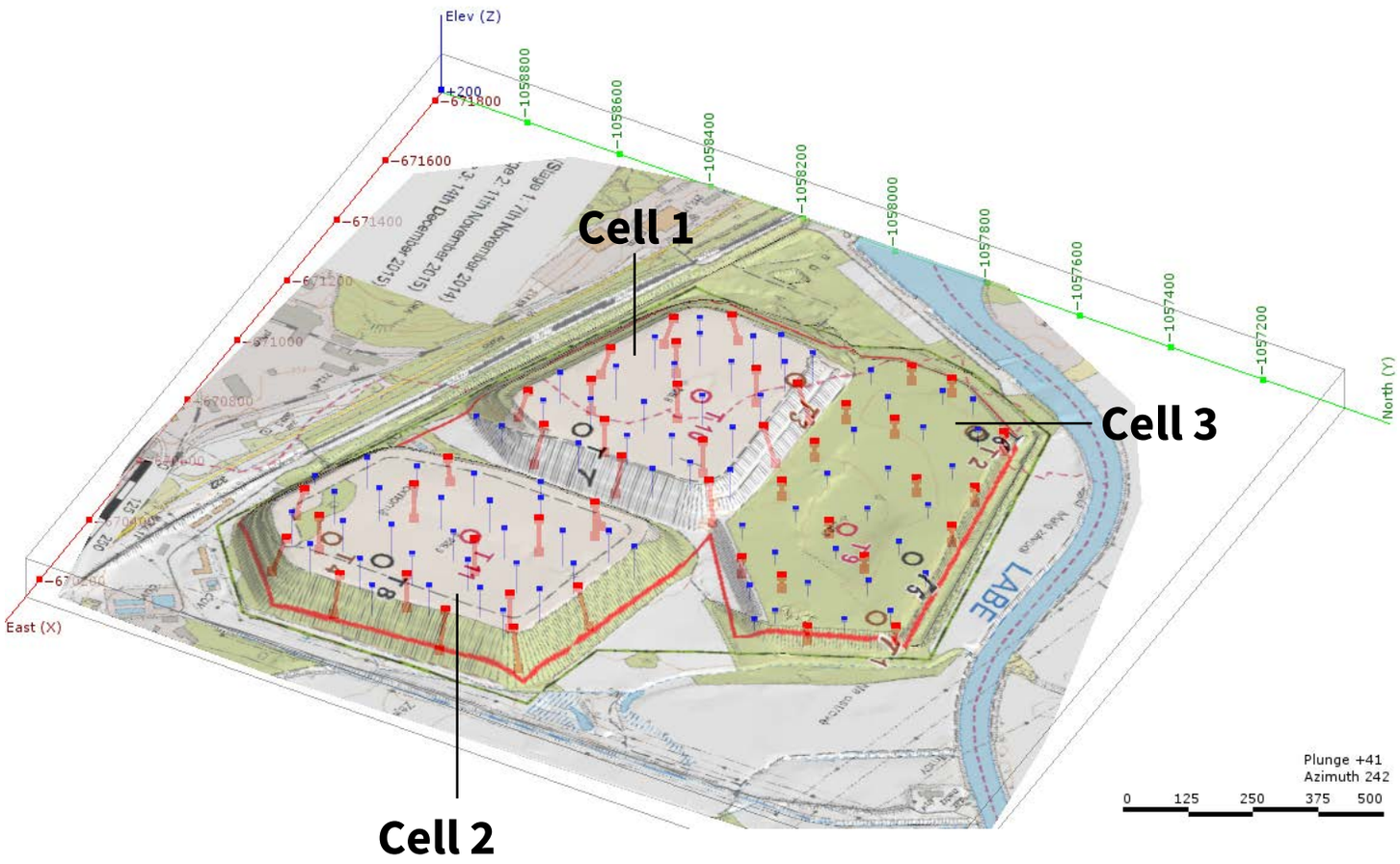
Sonic drill – modern, effective sampling tool

Sonic drill "core" of soft, sandy tailings material

14.8-tonne bulk sample collected using Sonic drill for metallurgical and pilot plant testing

Drilling & Bulk Sampling Program

2017-2018 DRILL PROGRAM



- 160-Hole 2017-2018 Sonic and auger drill program upgraded the resource estimate to a Measured and Indicated Status (98.3% Measured)
- Resulting resource model is expected to form a reliable basis for tailings extraction plan and project economics
- Representative bulk samples were collected with drill rig to support extensive 2018/2019 metallurgical optimization testwork and process design program.
- Test mining program is planned for 2019.

2017 Drill holes

2018 Drill holes

2018 NI 43-101/JORC Resource Estimate:

NI43:101/JORC-Compliant Resource Estimate *

Updated Resource Estimate issued on December 12, 2018 by Tetra Tech Canada Inc.

Chvaletice Mineral Resource Statement, Effective Date December 8, 2018						
Tailings Cell #	**Classification**	**Volume (m^3)**	**Tonnage (MT)**	**Dry In-situ Bulk Density (t/m^3)**	**Total Mn (%)**	**Soluble Mn (%)**
#1	**MEASURED**	6,577,000	10,029,000	1.52	7.95	6.49
	INDICATED	160,000	236,000	1.47	8.35	6.67
#2	**MEASURED**	7,990,000	12,201,000	1.53	6.79	5.42
	INDICATED	123,000	189,000	1.55	7.22	5.30
#3	**MEASURED**	2,942,000	4,265,000	1.45	7.35	5.63
	INDICATED	27,000	39,000	1.45	7.90	5.89
TOTAL	**MEASURED**	17,509,000	26,496,000	1.51	7.32	5.86
	INDICATED	309,000	464,000	1.50	7.85	6.05
COMBINED	**M&I**	**17,818,000**	**26,960,000**	**1.51**	**7.33**	**5.86**

** Resources are not to be considered reserves and their economic viability has not been proven or confirmed.*

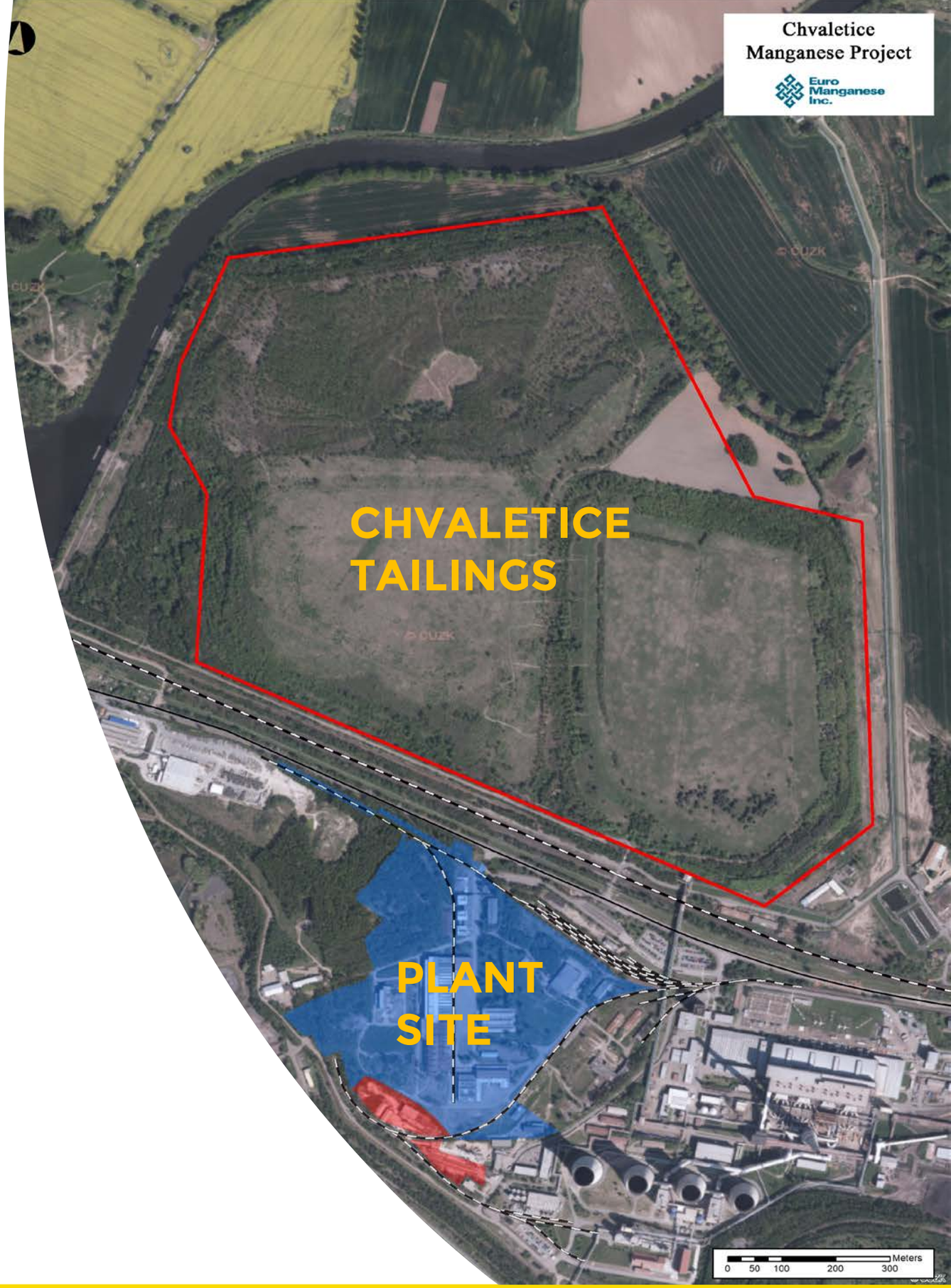
2017 – 2018: 160-hole drilling program findings

- Manganese is for the most part evenly distributed through the entire tailings deposit.
- Finely milled, unconsolidated tailings placed above ground expected to result in very low mining and virtually zero ore dressing costs.
- ~80% of manganese is contained in easily leachable manganese carbonate minerals that require no calcination or chemical reduction prior to leaching, unlike manganese oxide ore.
- Extraordinary 98.3% of Chvaletice resource is now classified in Measured category.

Permitting Momentum and Plant Site Land

1. Baseline environmental studies completed. EIA preparation initiated. Early 2020 submission targeted.
2. Rezoning process initiated. Both adjoining municipalities voted unanimously to proceed with land-use plan change
3. Intensive community consultation ongoing. Overwhelmingly positive feedback and reaction to project.
4. Closed option in 2018 to acquire 100% of Czech company that owns 19.94 hectares of strategically-located land (Shaded blue on map), with payments spread over up to 5-years, and tied to permitting progress milestones. Additional parcels of land secured in 2018 and 2019, including one from adjoining village of Trnavka.

- Plant site land zoned for industrial use
- Onsite infrastructure: Two rail spurs and sidings, highway access, gas, water and electrical energy.
- Located less than 200 metres from Chvaletice tailings.
- Adjacent to 820 MW power plant, as well as ready-mix concrete and pre-cast concrete plants.

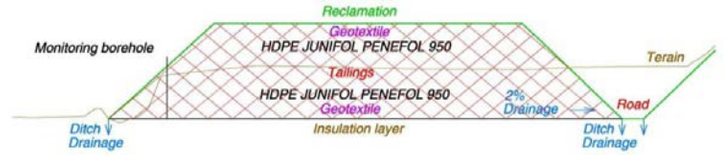


Preliminary Chvaletice Plant Site Design
(Screenshots from 3-D virtual reality tour)

Euro Manganese Inc.

Progressive Reclamation and Site Remediation:
Meeting Europe's Circular Economy Goals by Recycling Waste

Euro Manganese Inc.

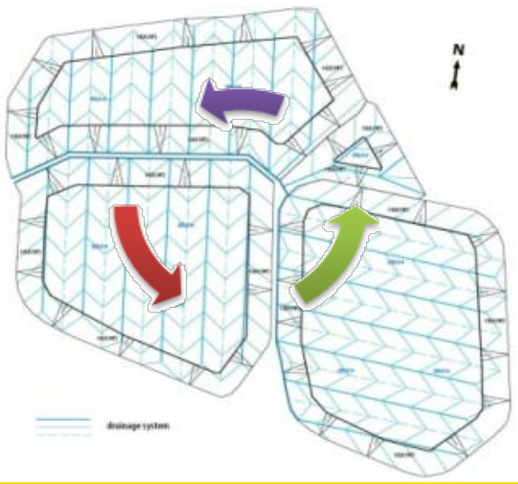


Staged Tailings Extraction

- Tailings extracted in phases, cell-by-cell, placed back on same site in full compliance with Czech and EU standards, and in-keeping with modern industry best practices.
  No significant new waste generated.
- Small footprint of tailings exposed at any given time

Progressive Site Reclamation

- After Mn extraction, tailings to be washed and neutralized, placed on impermeable membrane, then capped with geomembrane, before site revegetation for long-term, safe and productive use. Reclamation plan is being designed with community input.
- Site restoration and long-term usage plan expected to be designed in collaboration with local communities and regulator
- Minimizing environmental footprint and leaving site in better condition than it is today



EMN Progress Since October 2018 IPO

- ✓ Secured critical industrial land for plant site.
- ✓ Completed NI 43:101 / JORC resource estimate with an extraordinary 98.3% of the Chvaletice resource classified in the Measured category.
- ✓ Completed Preliminary Economic Assessment: After-tax 10% NPV of US$593 million and 22.6% IRR on $403 million capex. ~50,000 tonnes per annum of Mn equivalent production for 25 years.
- ✓ Signed Strategic Agreement with battery company (identity not disclosed at this stage)
  - Supply of multi-tonne samples of HPMSM produced at Chvaletice Demonstration Plant for testing and qualification
  - Technical collaboration for product development
  - Intention to enter into offtake agreement
- ➔ Ongoing discussions and negotiations with other consumers of high-purity manganese products.
- ✓ Chvaletice Manganese Project straddles two municipalities. Both community councils voted unanimously to proceed with rezoning process for tailings site (land use plan change).
- ✓ Municipality of Trnavka agreed to sell a 3-hectare land parcel to EMN for an infrastructure and environmental corridor.
- ➔ Intensifying community consultation and cooperation. Overwhelmingly positive reaction to Project to date.
- ➔ Decision made to proceed to Feasibility Study stage. Appointed Tetra Tech Canada as owner's representative for Feasibility Study and preparation of NI 43:101 Technical Report. Appointment of Chinese Feasibility Study technical-partner is imminent.
- ✓ Appointed Bilfinger Tebodin to lead Environmental Impact Assessment and Project permit filing.
- ➔ Design by CRIMM and planning of Chvaletice Demonstration Plant is ongoing.

Target Project Development Timeline

SHORT TERM MILESTONES

MEDIUM TERM MILESTONES

2018

- ✓ Upgrade resource estimate to Measured and Indicated status
- ✓ Pilot Scale metallurgical testwork, process design and optimization studies
- ✓ Confirm ability to produce ultra-high-purity EMM and MSM, meeting highest customer specifications for low-cobalt and high-nickel EV battery formulations
- ✓ Determine target products and specifications for modeling in PEA and Feasibility Study (HPEMM and HPMSM)
- ✓ Plant site selection and plant site land acquisition
- ✓ Complete environmental baseline studies
- ✓ Intensifying community engagement
- ✓ Product specification development

2019

- ✓ Complete NI-43-101/JORC Code Preliminary Economic Assessment (for both HPEMM and HPMSM production)
- ✓ Initiate environmental permitting process to file EIA in early 2020
- ➔ Build demonstration plant in Czech Republic to produce bulk samples of finished manganese products for customer testing and qualification
- ➔ Organizational development
- ➔ Initial offtake agreements and first steps of project financing
- ✓ Trigger rezoning process – community votes unanimous
- ➔ Intensive community consultation

2020/2021

- ➔ Complete feasibility study
- ➔ Detailed engineering
- ➔ Complete permitting
- ➔ Project financing
- ➔ Initiate Construction

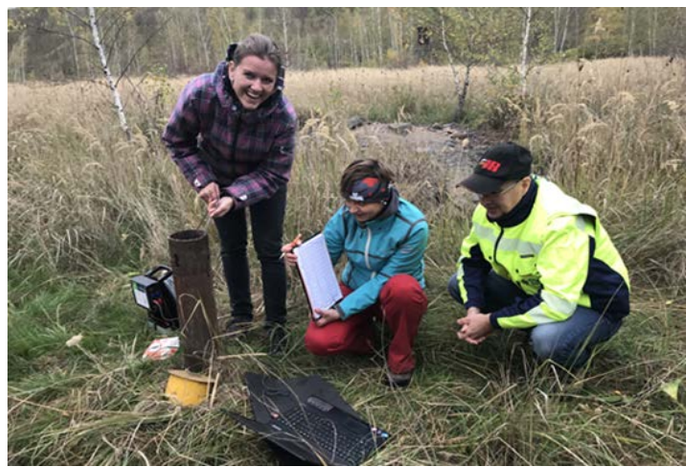
2022

- ➔ Start-up, commissioning and commercial production

Chvaletice Manganese Project Highlights

- **Western Europe's largest manganese deposit – expected to become its only primary producer of HPEMM and HPMSM.**
- EMN focus on production of **ultra-high-purity manganese products,** to serve most demanding customers by 2022.
- EMN **strategically located** in the heart of Europe, amidst a major emerging cluster of EV, cathode and battery plants.
- **EV and battery industry growing rapidly in Europe –** Investment and plant development wave has been shifting from Asia to Europe.
- Chvaletice tailings deposit is well-suited for production of HPEMM and HPMSM, using a combination of **clean, modern and commercially-proven technology.**
- EMN has secured rights to strategic, **industrially-zoned land** for plant site adjacent to Chvaletice tailings deposit.
- **Valuable, strategic, European alternative** and complement to existing and planned HPEMM and HPMSM production.
- **Green production**: No hard rock mining. No new waste generation. Recycling of old mine waste. Self-funding remediation of old environmentally-damaged site. Czech electrical power is made from 48% non-carbon energy sources. **Environmentally-superior Mn products.**
- Proactive, respectful and increasingly intensive community engagement. **Solid permitting momentum.**
- Solid EMN management team. **God is in the details.**

THANK YOU!



Euro Manganese Inc.

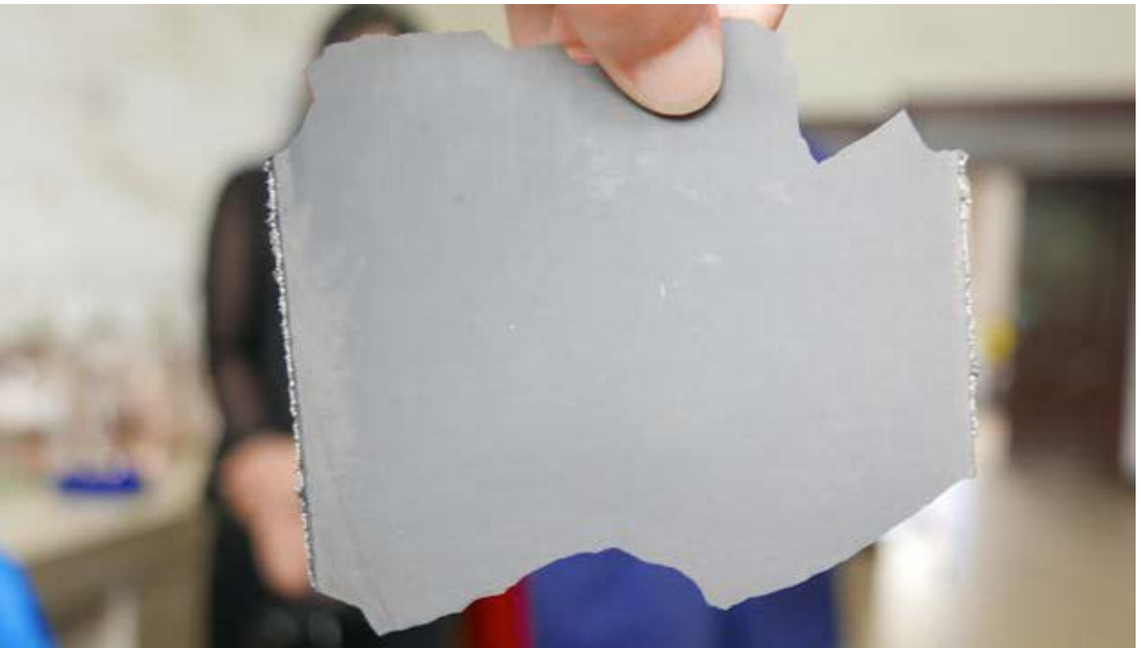
Marco A. Romero | President & CEO | Tel: +1 (604) 681-1010 x 101
1500 - 1040 West Georgia Street | Vancouver, BC Canada V6E 4H8

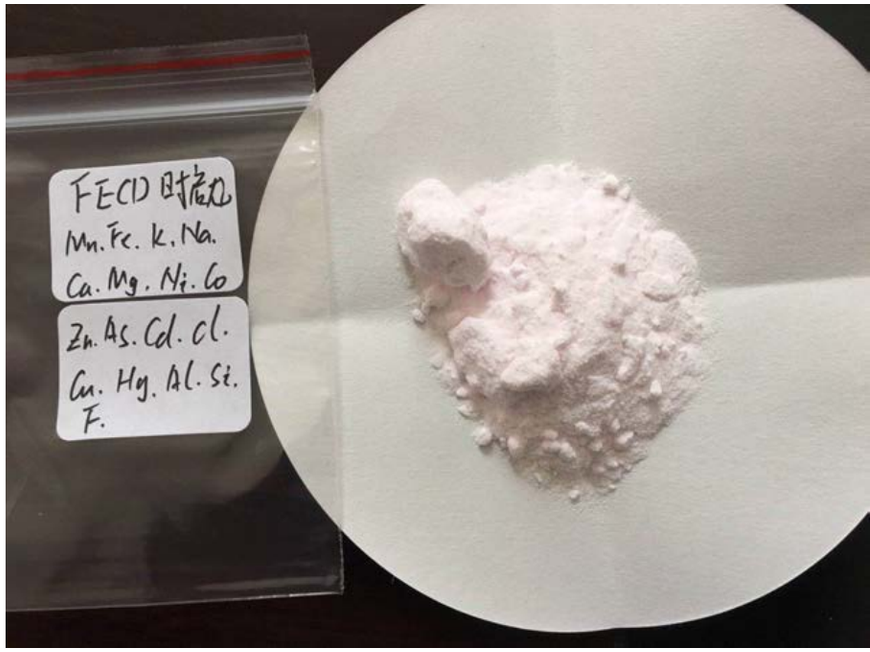
info@Mn25.ca | www.Mn25.ca

Appendix A: HIGH-PURITY MANGANESE MARKET

FOCUS ON ULTRA HIGH-PURITY MANGANESE PRODUCTS

Manganese Market Challenge: Processing





Photos show ultra high purity manganese products made from Chvaletice Manganese Project tailings during 2018 product development and testwork program.

Fifth most mined metal in the world.

- Mostly traded as raw ore and semi-processed products, such as ferro-manganese.
- >90% used for steelmaking.
- Component of aluminum alloys and agricultural products

Producing Ultra-High-purity manganese products for energy storage is not a resource availability challenge, it is a processing, cost and environmental challenge.

Ultra-high-purity manganese products have emerged as a **critical raw material** for high-performance, low-cobalt lithium-ion battery cathode manufacturing.

High-purity manganese for lithium-ion batteries sold as:

- High Purity Electrolytic Manganese Metal ("**HPEMM**"); or
- High Purity Manganese Sulphate Monohydrate ("**HPMSM**" - Granulated or liquid form).

Source: Cairn Energy Research Advisors ©2018

Electric Vehicle Demand for Manganese

Chevy Bolt

Battery Pack Size:	**60 kWh**
Battery Manufacturer:	**LG Chem**
Cathode Material:	**NMC 1-1-1**
Mn Sulfate Content:	**87 KG**
Mn Metal Content:	**28 KG**

BMW i3

Battery Pack Size:	**42 kWh**
Battery Manufacturer:	**Samsung SDI**
Cathode Material:	**NMC 1-1-1**
Mn Sulfate Content:	**61 KG**
Mn Metal Content:	**20 KG**

BAIC EC 200

Battery Pack Size:	**36.8 kWh**
Battery Manufacturer:	**CATL**
Cathode Material:	**NMC 5-3-2**
Mn Sulfate Content:	**53 KG**
Mn Metal Content:	**17 KG**

Jaguar iPace

Battery Pack Size:	**90 kWh**
Battery Manufacturer:	**LG Chem**
Cathode Material:	**NMC 1-1-1**
Mn Sulfate Content:	**131 KG**
Mn Metal Content:	**43 KG**

Source: Cairn Energy Research Advisors ©2018

How much Manganese is needed for one EV?

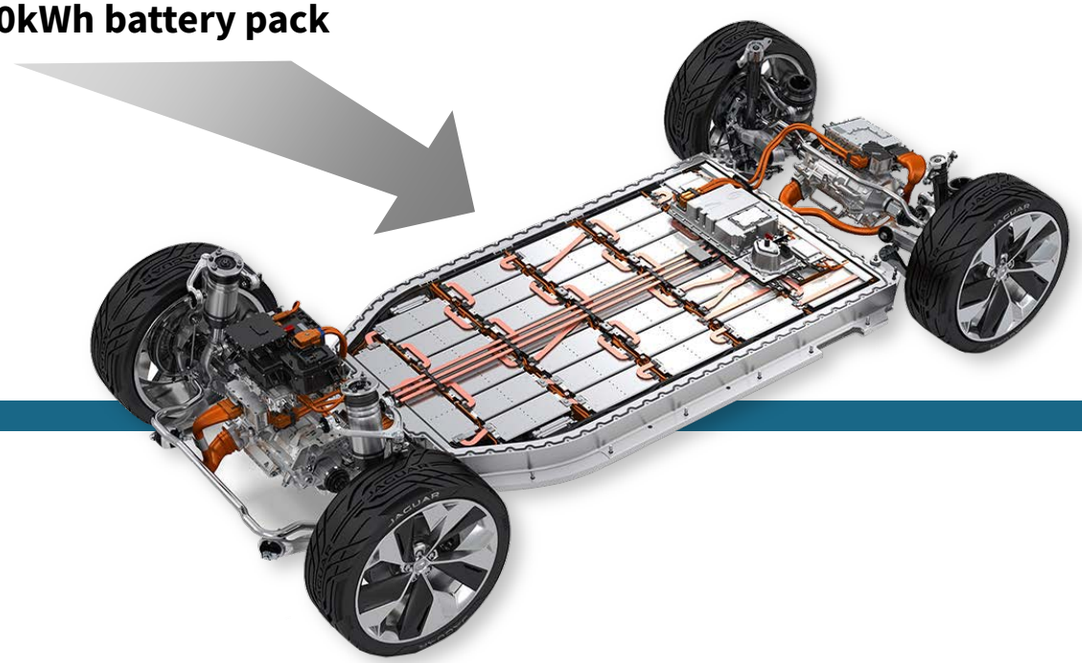
0.473 kg HPEMM → Conversion to (1% loss) $MnSO_4 \cdot H_2O$ → **1.453 kg HPMSM** → Cathode (5% loss) Production → **1.439 kg HPMSM**

Equivalent to 0.445 kg HPEMM

1 kWh Cathode

x90

for a 90kWh battery pack



Some new battery chemistries will use up to 2.3 times more manganese than the current NMC-111 chemistry

Gross Mn weight required for 1 kWh of battery capacity:

NMC-111:	**0.473 kg** HPEMM or	**1.453 kg** HPMSM
NMC-532:	**0.404 kg**	**1.241 kg**
NMC-622:	**0.269 kg**	**0.828 kg**
NMC-811:	**0.127 kg**	**0.389 kg**
NMC-370:	**0.986 kg**	**3.031 kg**

1kWh = 0.13 – 1.1 kg HPEMM

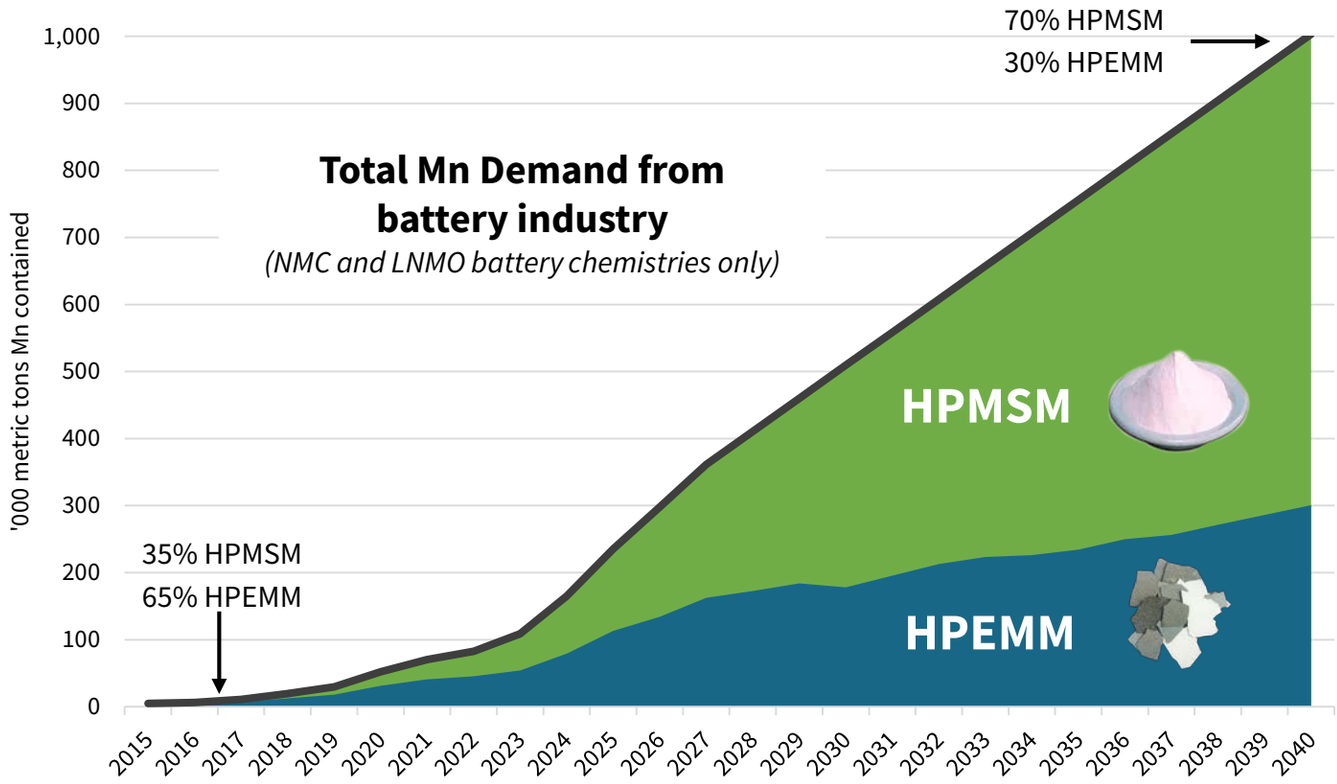
A 90-kwh BATTERY PACK MAY:

- Weigh 500 kg
- Cost $13,000
- Contain 11 kg to 99 kg of Mn *(depending on battery chemistry)*
- The cost of Mn in the pack can be 0.25% to 2.3% of the cost of the battery pack* *(depending on battery chemistry)*

* assuming $3/kg of HPEMM (2018 price)

Source: Cairn Energy Research Advisors, CPM Group, 2019

HP Manganese Market Opportunity



MANGANESE USE IN Li-ION BATTERY MARKET

- Li-ion battery market due to increase ~24x in the next twenty years, growing from 99 GigaWattHours (GWh) of annual capacity production in 2017 to 2,325 GWh in 2040.
- The primary cathode chemistry in 2040 will be NMC and LNMO, requiring manganese input of the over one million tonnes of manganese metal equivalent.
- Li-ion cathode manufacturers and NMC powder producers purchase high-purity manganese sulfate monohydrate (HPMSM) that has been made from manganese ore or from electrolytic manganese metal (EMM), or purchase High-Purity EMM in order to make their own $MnSO_4$.

Source: Cairn Energy Research Advisors ©2017

Appendix B: Corporate and Project Information

EMN Strategic Considerations

Manganese in oil pipeline segments

Mn in Ford F-150 pickup aluminum frame and body

Mercedez Benz NMC lithium-ion battery prototype

GROWING MARKETS FOR HIGH-PURITY MANGANESE PRODUCTS

- NMC and LNMO Lithium-Ion Batteries demand for Electric Vehicles (EVs) growing very rapidly
- Stable demand for High-Performance Specialty Steel and Aluminum Alloys
- Non-Ferrous Metal Alloys

MARKET INTEREST IN EMN PRODUCTS – PURITY IS IMPORTANT

- EMN sees opportunity to supply both HPEMM and HPMSM at Chvaletice site, or HP MnSO4 solution at precursor production site made from HPEMM.
- EMN plans to build a demonstration Plant at Chvaletice in 2019 to produce bulk, ultra-high-purity finished product samples for customer testing and qualification in 2020.

Project 2017-2018 Progress

METALLURGICAL TESTING AND PROCESS DESIGN

March 2017 – HPEMM Metallurgical Testing Initiated

Extensive metallurgical testwork program comprised of hundreds of tests, including beneficiation, leaching, purification and electrowinning with Changsha Research Institute for Mining & Metallurgy (CRIMM), a division of China Minmetals, Culminating with pilot plant tests from Q1 to Q3 2018.

May 2017 – Magnetic Separation Breakthrough

Tests on Chvaletice ore (bulk sample) conducted in CRIMM: Condensate successfully produced using advanced high-intensity magnetic separation technology. Positive impact on capex and opex expected.

2017-2018 – Metallurgical Testwork Program

Chvaletice ore and concentrate using EMN bulk sample. Preliminary results indicate that manganese recoveries in the 60-63% range are possible.

Pilot scale magnetic separation tests at CRIMM R&D laboratory in Changsha.

Project 2017-2018 Progress

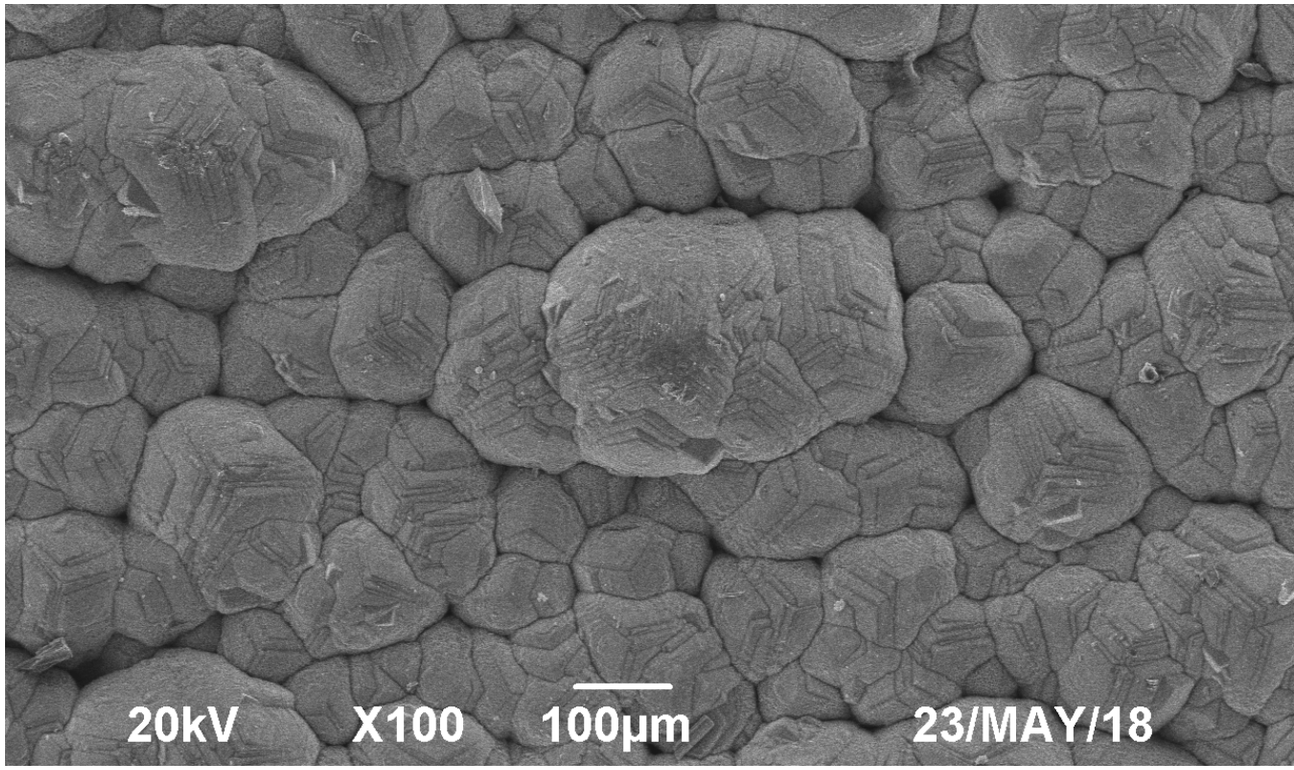
ENGINEERING

January 2017 and On-going – Process Design, Engineering, Capital and operating Cost Estimation

- Various engineering studies initiated with China's CINF Engineering, a division of Aluminum Company of China/Chinalco, for process and Project design, as well as capital and operating cost estimation and completion of Chinese standard Pre-Feasibility Study in Q4 2018.
- 43:101/JORC Preliminary Economic Assessment by Tetra Tech Canada completed, having an effective date January 29, 2019.

Localization Studies and Planning

- Tebodin Bilfinger Czech Republic (A division of Bilfinger Engineering) to provide local cost estimation, standards definition and regulatory compliance inputs for the CINF PFS and Tetra Tech PEA.



Above: Ultra-high-purity EMM produced during pilot plant run from Chvaletice tailings.
Below: Euro Manganese team meeting with CRIMM to review of metallurgical testwork results.

2017-2018: Progress

SITE ACTIVITIES

2017-2018

- 160-hole Sonic drill program completed.
- Bulk sample (14.8 tonnes) collected for metallurgical bench-scale and pilot plant tests.
- Plant site selection studies & land acquisition
- Geotechnical studies
- Environmental baseline studies completed.

Ongoing

- Hydrological studies (drilling and modelling)
- Environmental studies and planning (waste characterization, reclamation planning, etc…)
- Site layout design and basic engineering
- Waste management planning
- Tailings extraction planning / materials handling studies
- Intensive community consultation

Project 2017-2018 Progress

RESOURCE DEFINITION

Summers of 2017 and 2018

Tetra Tech Canada Inc completed NI43:101/JORC-compliant Indicated and Inferred Mineral Resource Estimate. (Report issued December 2018.)

TENURE AND PERMITTING

December 2017

Euro Manganese secured registration of Chvaletice resource in Czech Sate Register, the first step in the Project permitting process.

April 2018

Secured Preliminary Mining Permit (Important milestone)

December 2018

Secured 5-year extension to exploration license to 2023

On-going

- Community consultation – Public meetings
- EIA planning and preparation
- Filing of EIA Project Description targeted in Q2 2019

Metallurgical Pilot Plant Tests

MINERAL PROCESSING & METALLURGICAL TESTING

Recent Findings of Bulk Sample Pilot-Scale Metallurgical Testwork

- Magnetic Separation pilot scale tests were successful and confirmed earlier exploratory results.
- Leaching tests were successful. Good leach recoveries on fine and coarse tailings .
- Iron and other impurities removal and precipitate dewatering tests were successful.
- Exploratory Flotation Tests were not successful (as expected).
- Electrowinning tests ongoing - (HPEMM meeting highest known customer specifications – even for demanding NMC 811).
- Solid-liquid separation tests on magnetic separation and leach tails were successful.

Locked-system HPEMM pilot plant tests combining all aspects of preliminary process flowsheet from Q1-Q3 2018. Optimized flowsheet confirmed in December 2018 and in subsequent PEA.

Significant capital and operating cost savings result from smaller scale leaching plant required to process a magnetic separation concentrate. Optimization tests completed for leaching and solution purification process.

Path to ultra-high-purity MSM production and related economics confirmed for process involving dissolution of HPEMM, followed by deep purification. Assures quality of product, meeting the battery specifications of tomorrow. Producing both battery-grade products provides flexibility to deliver either HPEMM or HPMSM to customers, to suit their preferences.

Euro Manganese Inc. – PEA Summary

PRODUCTION SUMMARY	
Life of project	25 years
Chvaletice tailings extracted & processed	26,828 K tonnes
Total manganese grade	7.33%
Contained Manganese (Mn)	1,967 K tonnes
HPEMM produced	1,186.4 K tonnes
HPEMM further processed into HPMSM	782.3 K tonnes
HPEMM sold	404.1 K tonnes
HPMSM produced/sold	2,345.0 K tonnes
Total Mn contained in HPEMM & HPMSM	1,165 K tonnes
Overall Mn recovery (combined HPEMM and HPMSM)	59.2%

Euro Manganese Inc. – PEA Summary

PROJECT ECONOMICS (USD)	Pre-Tax	After-Tax
Net Present value, (10% discount rate)	$781.6 M	$593.2 M
Internal Rate of Return	25.2%	22.6%
Payback (from start of processing)	4.5 Years	4.9 Years
Cumulative Cash Flow, undiscounted	$4,088.8 M	$3,291.8 M

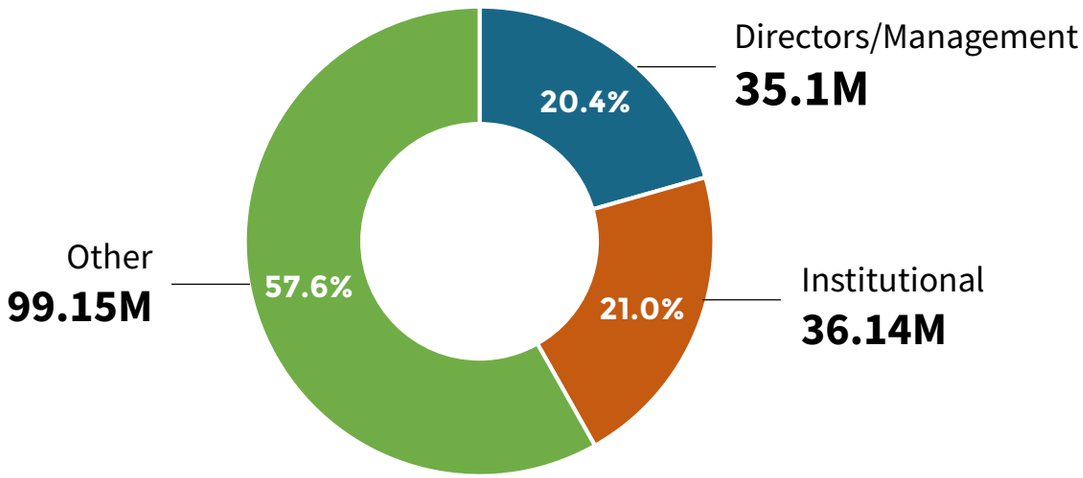
CAPITAL REQUIREMENTS (USD)	
Initial Capital requirements	$403.9 M
Life of Project Sustaining Capital (excludes $255 M in maintenance costs which are included in operating costs)	$24.8 M
Working Capital	$30.5 M

PRODUCT PRICE ASSUMPTIONS (USD)	Life of Project Average
High-purity electrolytic manganese metal (“HPEMM”) (1)	$4,617 per tonne
High purity manganese sulphate monohydrate (“HPMSM”) (1)	$2,666 per tonne

(1) Average real selling prices per tonne of HPEMM (99.9% Mn content) and HPMSM (32% Mn content) as projected in a market study prepared for the Company by CPM Group LLC, entitled “Market Outlook for High-purity Electrolytic Manganese Metal and High-purity Manganese sulphate monohydrate,” dated January 21, 2019.

Euro Manganese Inc. – Capitalization

- **Dual IPOs completed on ASX and TSX Venture Exchange** (October 2nd, 2018).
- **35M Shares at C$0.25, raised C$8.6M**
- ASX & TSXV Symbol: **"EMN"**
- Cash position as of 3/31/2019 **~C$7.1M.**
- Current Market Cap. **~C$34M based on C$0.20**

Capitalization as of May 31, 2019 (Note 1)	
Shares (including 74.5M CDIs)	172,138,170
Options	15,650,000
Warrants	8,684,015
Fully Diluted	**196,472,185**

Ownership Structure at May 31, 2019
Total 172.1M