

# LITHIUM LIFE CYCLE ASSESSMENT SPECIALIST ENGAGED

# HIGHLIGHTS

- UK-based and globally recognised sustainability and life cycle assessment consultancy, Minviro, engaged to provide an ISO compliant life cycle assessment ("LCA") of the Cinovec lithium / tin project.
- Cinovec LCAs to be produced for both battery-grade lithium carbonate and batterygrade lithium hydroxide monohydrate which will be manufactured at a lithium chemical plant nearby to the Cinovec mine.
- Cinovec LCAs will be benchmarked against global lithium peers.
- Minviro will be actively engaged to identify low-carbon optimisations in the developing feasibility study for Cinovec.
- Cinovec LCAs expected to demonstrate strong carbon footprint credentials with lower energy use, less intensive reagent application and net carbon credits from mine and process by-products.
- LCA Report anticipated to be completed and provided to the Company in Q3 2021

**European Metals Holdings Limited** (ASX & AIM: EMH, NASDAQ: ERPNF) ("EMH", "European Metals" or the "Company") is pleased to announce the engagement of Minviro, a UK-based and globally recognised sustainability and life cycle assessment consultancy, to provide an ISO compliant life cycle assessment ("LCA"), including a carbon footprint evaluation, of the Cinovec lithium / tin project in the Czech Republic.

Life Cycle Assessment is a widely accepted and robust numerical method used to quantify climate change and other environmental impacts for industrial processes, while identifying opportunities for impact reduction and process improvement. The ISO-compliant and third-party reviewed Life Cycle Assessment (LCA) Report is anticipated to be completed and provided to the Company in Quarter 3 2021.

## European Metals Executive Chairman Keith Coughlan said:

"As we transition towards climate neutrality and a more sustainable society, it is important to ensure this transition is done in a sustainable way by minimizing the carbon footprint across the full battery value chain, from raw materials to finished batteries. European Metals has a unique competitive advantage based on minimizing the carbon footprint of the production of our battery grade Lithium products. We are looking forward to the results of the life cycle analysis as a testament to how a locally sourced sustainable battery grade material supply for the European battery industry will look."

DIRECTORS AND MANAGEMENT	Keith Coughlan executive chairman ASX EMH AIN	Richard Pavlik EXECUTIVE DIRECTOR	Kiran Morzaria NON-EXECUTIVE DIRECTOR ERPNF Frankfurt	Lincoln Bloomf NON-EXECUTIVE DIR E861.F	ield Dennis Wilkins ector COMPANY SECRETARY CDI'S ON ISSUE 174.8M
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#### Minviro Founder & Director Dr Robert Pell further states:

"Lithium production has a legacy of social and environmental impacts. As Lithium demand grows in line with renewable energy and EV uptake, it is important that steps are taken to measure and mitigate the environmental impact of producing these essential elements. Delivery of an LCA is a central part of this process for the battery and EV industries as it provides customers with the necessary data to measure their impact, compare process or supplier scenarios and optimize the environmental performance of projects."

#### LOW CARBON LITHIUM FROM CINOVEC

Geomet s.r.o. ("Geomet"), the jointly CEZ/EMH-owned Cinovec project company, is committed to delivering a low carbon footprint, high quality lithium product for cathode and battery manufacturers. The work that will be conducted by Minviro will help Geomet understand how to best achieve this and how the Cinovec project compares against hard-rock [and brine] lithium peers.

The International Organisation for Standardisation ("ISO") has a set of standards published on Life Cycle Assessment ("LCA") (ISO 14040 and 14044). The standards outline the best practice requirements and principles to be undertaken for a LCA study. ISO compliance includes a third-party review by an independent panel of experts. The results are then allowed to be disclosed publicly and used for comparison with different primary production methods of raw materials.

This will provide the Cinovec project with an independently-verified carbon assessment that is recognised by financiers and potential off-takers.

#### **ABOUT MINVIRO**

Minviro (<u>www.minviro.com</u>) is a London based and globally recognized consultancy and technology company specialised in carrying out life cycle assessments in the technology metal space. The company provides quantitative environmental and climate impact data for mineral resource projects, battery manufacturers and OEMs to make environmentally informed decisions.

Minviro Ltd has recently completed, or are engaged for LCA assessments, for various processes and products being developed in the battery raw materials markets. Minviro will use data generated from the pre-feasibility study of the Cínovec Project. The LCA includes a cradle-to-gate life cycle inventory and life cycle impact assessment for five impact categories including carbon footprint, alongside recommended impact mitigation opportunities. The results will be delivered to the Company in the form of an ISO-compliant and third-party reviewed Life Cycle Assessment (LCA) Report.

#### WEBSITE

A copy of this announcement is available from the Company's website at <u>www.europeanmet.com</u>.

#### **ENDS**

The Board of Directors of European Metals Holdings authorised this announcement to be given to ASX.



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The information contained within this announcement is considered to be inside information, for the purposes of Article 7 of EU Regulation 596/2014, prior to its release. The person who authorised for the release of this announcement on behalf of the Company was Keith Coughlan, Executive Chairman.

## BACKGROUND INFORMATION ON CINOVEC

#### **PROJECT OVERVIEW**

## **Cinovec Lithium/Tin Project**

Geomet s.r.o. controls the mineral exploration licenses awarded by the Czech State over the Cinovec Lithium/Tin Project. Geomet s.r.o. is owned 49% by European Metals and 51% by CEZ a.s. through its wholly owned subsidiary, SDAS. Cinovec hosts a globally significant hard rock lithium deposit with a total Indicated Mineral Resource of 372.4Mt at 0.45% Li<sub>2</sub>O and 0.04% Sn and an Inferred Mineral Resource of 323.5Mt at 0.39% Li<sub>2</sub>O and 0.04% Sn containing a combined 7.22 million tonnes Lithium Carbonate Equivalent and 263kt of tin reported 28 November 2017 (Further Increase in Indicated Resource at Cinovec South). An initial Probable Ore Reserve of 34.5Mt at 0.65% Li<sub>2</sub>O and 0.09% Sn reported 4 July 2017 (Cinovec Maiden Ore Reserve – Further Information) has been declared to cover the first 20 years

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mining at an output of 22,500tpa of lithium carbonate reported 11 July 2018 (Cinovec Production Modelled to Increase to 22,500tpa of Lithium Carbonate).

This makes Cinovec the largest hard rock lithium deposit in Europe, the fourth largest non-brine deposit in the world and a globally significant tin resource.

The deposit has previously had over 400,000 tonnes of ore mined as a trial sub-level open stope underground mining operation.

In June 2019 EMH completed an updated Preliminary Feasibility Study, conducted by specialist independent consultants, which indicated a return post tax NPV of USD1.108B and an IRR of 28.8% and confirmed that the Cinovec Project is a potential low operating cost, producer of battery grade lithium hydroxide or battery grade lithium carbonate as markets demand. It confirmed the deposit is amenable to bulk underground mining. Metallurgical test-work has produced both battery grade lithium hydroxide and battery grade lithium carbonate in addition to high-grade tin concentrate at excellent recoveries. Cinovec is centrally located for European end-users and is well serviced by infrastructure, with a sealed road adjacent to the deposit, rail lines located 5 km north and 8 km south of the deposit and an active 22 kV transmission line running to the historic mine. As the deposit lies in an active mining region, it has strong community support.

The economic viability of Cinovec has been enhanced by the recent strong increase in demand for lithium globally, and within Europe specifically.

There are no other material changes to the original information and all the material assumptions continue to apply to the forecasts.

## **BACKGROUND INFORMATION ON CEZ**

Headquartered in the Czech Republic, CEZ a.s. is an established, integrated energy group with operations in a number of Central and Southeastern European countries and Turkey. CEZ's core business is the generation, distribution, trade in, and sales of electricity and heat, trade in and sales of natural gas, and coal extraction. CEZ Group has 33,000 employees and annual revenue of approximately EUR 7.24 billion.

The largest shareholder of its parent company, CEZ a.s., is the Czech Republic with a stake of approximately 70%. The shares of CEZ a.s. are traded on the Prague and Warsaw stock exchanges and included in the PX and WIG-CEE exchange indices. CEZ's market capitalization is approximately EUR 10.08 billion.

As one of the leading Central European power companies, CEZ intends to develop several projects in areas of energy storage and battery manufacturing in the Czech Republic and in Central Europe.

CEZ is also a market leader for E-mobility in the region and has installed and operates a network of EV charging stations throughout Czech Republic. The automotive industry in Czech is a significant contributor to GDP and the number of EV's in the country is expected to grow significantly in coming years.



## CONTACT

For further information on this update or the Company generally, please visit our website at www.europeanmet.com or see full contact details at the end of this release.

## CAUTION REGARDING FORWARD LOOKING STATEMENTS

Information included in this release constitutes forward-looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs.

Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the company's actual results, performance and achievements to differ materially from any future results, performance or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licences and permits and diminishing quantities or grades of reserves, political and social risks, changes to the regulatory framework within which the company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation.

Forward looking statements are based on the company and its management's good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the company's business and operations in the future. The company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the company's business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the company or management or beyond the company's control.

Although the company attempts and has attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements or events not to be as anticipated, estimated or intended, and many events are beyond the reasonable control of the company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements. Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the company does not undertake any obligation to publicly update or revise any of the forward looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.

## LITHIUM CLASSIFICATION AND CONVERSION FACTORS

Lithium grades are normally presented in percentages or parts per million (ppm). Grades of deposits are also expressed as lithium compounds in percentages, for example as a percent lithium oxide (Li<sub>2</sub>O) content or percent lithium carbonate (Li<sub>2</sub>CO<sub>3</sub>) content.

Lithium carbonate equivalent ("LCE") is the industry standard terminology for, and is equivalent to,  $Li_2CO_3$ . Use of LCE is to provide data comparable with industry reports and is the total equivalent amount



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of lithium carbonate, assuming the lithium content in the deposit is converted to lithium carbonate, using the conversion rates in the table included below to get an equivalent Li<sub>2</sub>CO<sub>3</sub> value in percent. Use of LCE assumes 100% recovery and no process losses in the extraction of Li<sub>2</sub>CO<sub>3</sub> from the deposit.

Lithium resources and reserves are usually presented in tonnes of LCE or Li.

The standard conversion factors are set out in the table below:

## Table: Conversion Factors for Lithium Compounds and Minerals

Convert from		Convert to Li	Convert to Li <sub>2</sub> O	Convert to Li <sub>2</sub> CO <sub>3</sub>	Convert to LiOH.H <sub>2</sub> O
Lithium	Li	1.000	2.153	5.325	6.048
Lithium Oxide	Li <sub>2</sub> O	0.464	1.000	2.473	2.809
Lithium Carbonate	Li <sub>2</sub> CO <sub>3</sub>	0.188	0.404	1.000	1.136
Lithium Hydroxide	LiOH.H <sub>2</sub> O	0.165	0.356	0.880	1.000
Lithium Fluoride	LiF	0.268	0.576	1.424	1.618

