

## CONFIRMATION OF REFINING PROCESS

### STRONG RESULTS FROM LOCKED-CYCLE TESTS

#### HIGHLIGHTS

- Successful locked-cycle test ("LCT") results further support the Cinovec project's credentials to initially produce battery-grade lithium carbonate.
- European Metals has demonstrated that Cinovec battery grade lithium carbonate can be easily converted into lithium hydroxide monohydrate with a commonly utilised liming plant process.
- Six LCTs were planned but testwork was stopped after four cycles as the main process stream compositions had successfully stabilised.
- Battery grade lithium carbonate was produced in every LCT with lithium recoveries of up to 92.0% achieved in the four LCTs performed.
- The LCTs tested zinnwaldite concentrate from the southern part of Cinovec, representative of the first five years of mining.
- Improved fluoride removal process step further enhances project's economic outcomes as a result of the regeneration and reuse of the ion exchange resins.
- Further optimisation work in hydrometallurgy processing steps expected to improve lithium recoveries from concentrate to >92.0%.

**European Metals Holdings Limited** (ASX & AIM: EMH, NASDAQ: ERPNF) ("EMH", "European Metals" or the "Company") is pleased to announce results of locked-cycle testwork, a metallurgical processing assessment conducted on ore concentrate extracted from the Company's flagship Cinovec lithium project.

The Cinovec project, located on the German border of the Czech Republic, is the largest hard-rock lithium resource in Europe, containing lithium-bearing mica known as zinnwaldite which the Company intends to refine using a number of processes initially outlined in a Pre-Feasibility Study ("PFS") (see ASX Announcement dated: 17 June 2019).

#### Commenting on the results, European Metals Executive Chairman Keith Coughlan said:

*"In a significant vote of confidence for our Pre-Feasibility Study, the proposed process methodology has been confirmed by excellent locked-cycle test results which also include new processes involving recycle streams. The robustness of the process was further confirmed by the stabilisation of the process streams, enabling the work to stop after only four of the six test cycles were completed. The recovery of up to 92% of the lithium in the zinnwaldite concentrate at this early stage of DFS testwork is very promising for increased recoveries during the planned process optimisation work. Further, an improved fluoride removal step which is cheaper and cleaner represents only the beginning of further optimisation work which we expect will result in greater lithium recoveries and even stronger economics for the Cinovec Project."*

#### DIRECTORS AND MANAGEMENT

**Keith Coughlan**  
EXECUTIVE CHAIRMAN

**Richard Pavlik**  
EXECUTIVE DIRECTOR

**Kiran Morzaria**  
NON-EXECUTIVE DIRECTOR

**Lincoln Bloomfield**  
NON-EXECUTIVE DIRECTOR

**Dennis Wilkins**  
COMPANY SECRETARY

#### CORPORATE INFORMATION

ASX EMH

AIM EMH

NASDAQ ERPNF

Frankfurt E861.F

CDI'S ON ISSUE 174.8M

*It is also encouraging to note that the process was as successful as that conducted during the 2019 PFS on the Central/NW part of the orebody, further underlying the consistency of the Cinovec ore body.*

*We look forward to providing further updates on the Definitive Feasibility Study work as it unfolds."*

### **LOCKED-CYCLE TEST RESULTS PROVE ABILITY TO PROCESS ZINNWALDITE**

Geomet s.r.o. ("Geomet") commissioned the LCTs with the principal objective of confirming the flowsheet for the processing of zinnwaldite concentrate from Cinovec run-of-mine ore.

The LCTs differ from previous proof of concept and optimisation testwork conducted during the Cinovec PFS by confirming the effect of recycle streams (which carry some lithium and other alkali metals) on the overall recovery of lithium from the pregnant leach solution resulting from the water leaching of the roasted zinnwaldite concentrate and the ability to produce battery grade lithium carbonate.

The LCTs have been performed by Dorfner Anzaplant, Germany and have been supervised by Lithium Consultants Australasia and SMS group Processing Technologies GmbH ("SMS") in parallel with the Front-End Engineering Design ("FEED") programme being undertaken by SMS.

The LCTs have processed zinnwaldite concentrate from drill core samples taken from the southern part of the Cinovec orebody, representing ore that will be processed in the first five years of the mine plan. The recovery of up to 92% of the lithium in the concentrate sample compares favourably with the similar recovery in the PFS flowsheet of 91%. However, this new recovery of up to 92% is before lithium plant DFS/FEED optimisation testwork that will be targeted in specific process areas and which is expected to increase hydrometallurgical recovery in the lithium plant to more than 92%.

Separate metallurgical testwork on the Front-End Comminution and Beneficiation ("FECAB") circuit is underway and is designed to improve upon the lithium recovery of 90% from ore to concentrate. This testwork will be reported at a later date.

### **PROOF OF PROCESSING STEPS FOR REMOVAL OF FLUORIDE, POTASSIUM AND RUBIDIUM**

Ahead of the LCTs, Geomet tested an alternative process to remove fluoride in order to meet the Electric Vehicle ('EV') grade specification of <50ppm in the lithium carbonate. The previously announced PFS flowsheet proposed the removal of fluoride by the use of activated alumina, a relatively costly step because the activated alumina was not considered suitable for regeneration. This step has been replaced by a cheaper and cleaner two-step process involving chemical precipitation and ion-exchange. This new method of fluoride removal has been proven to be highly effective, easier to implement and is less costly as the ion-exchange resin can easily be regenerated and re-used many times.

In addition to fluoride, the zinnwaldite mica at Cinovec contains alkali metals, including potassium, rubidium and caesium, which are leached into solution and will build up in the plant if not removed from the circuit.

The LCTs have proven conclusively that unwanted alkali metals can be removed preferentially by control of temperature, pH, solution saturation and crystallisation. It has been confirmed that these alkali metals will not build up due to recycling processes within the plant. The removal of these deleterious elements within four LCTs with minor loss of lithium is a major step towards confirmation of process plant design.

## LITHIUM HYDROXIDE PRODUCTION

The current LCTs have been commissioned to confirm the lithium carbonate processing flowsheet. The Cinovec Project has optionality to either produce a battery grade lithium carbonate product or to further process the lithium carbonate to produce battery grade lithium hydroxide.

As the FEED programme continues, Geomet is expected to commission testwork to confirm the optimal production route for lithium hydroxide and to produce marketing samples for prospective offtake partners and environmental samples to assist in permitting approvals.

## 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 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](http://www.europeanmet.com) or see full contact details at the end of this release.

## **COMPETENT PERSON**

Information in this release that relates to exploration results is based on information compiled by Dr Pavel Reichl. Dr Reichl is a Certified Professional Geologist (certified by the American Institute of Professional Geologists), a member of the American Institute of Professional Geologists, a Fellow of the Society of Economic Geologists and is a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and a Qualified Person for the purposes of the AIM Guidance Note on Mining and Oil & Gas Companies dated June 2009. Dr Reichl consents to the inclusion in the release of the matters based on his information in the form and context in which it appears. Dr Reichl holds CDIs in European Metals.

The information in this release that relates to Mineral Resources and Exploration Targets has been compiled by Mr Lynn Widenbar. Mr Widenbar, who is a Member of the Australasian Institute of Mining and Metallurgy, is a full time employee of Widenbar and Associates and produced the estimate based on data and geological information supplied by European Metals. Mr Widenbar has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the JORC Code 2012

Edition of the Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves. Mr Widenbar consents to the inclusion in this report of the matters based on his information in the form and context that the information appears.

### **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 ( $\text{Li}_2\text{O}$ ) content or percent lithium carbonate ( $\text{Li}_2\text{CO}_3$ ) content.

Lithium carbonate equivalent ("LCE") is the industry standard terminology for, and is equivalent to,  $\text{Li}_2\text{CO}_3$ . Use of LCE is to provide data comparable with industry reports and is the total equivalent amount 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  $\text{Li}_2\text{CO}_3$  value in percent. Use of LCE assumes 100% recovery and no process losses in the extraction of  $\text{Li}_2\text{CO}_3$  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 $\text{Li}_2\text{O}$	Convert to $\text{Li}_2\text{CO}_3$	Convert to $\text{LiOH}\cdot\text{H}_2\text{O}$
Lithium	Li	1.000	2.153	5.325	6.048
Lithium Oxide	$\text{Li}_2\text{O}$	0.464	1.000	2.473	2.809
Lithium Carbonate	$\text{Li}_2\text{CO}_3$	0.188	0.404	1.000	1.136
Lithium Hydroxide	$\text{LiOH}\cdot\text{H}_2\text{O}$	0.165	0.356	0.880	1.000
Lithium Fluoride	LiF	0.268	0.576	1.424	1.618

## **AUTHORISATION**

This announcement has been authorised for release by Keith Coughlan, Executive Chairman.

## **WEBSITE**

A copy of this announcement is available from the Company's website at [www.europeanmet.com](http://www.europeanmet.com).

## **ENQUIRIES:**

### **European Metals Holdings Limited**

Keith Coughlan, Executive Chairman

Tel: +61 (0) 419 996 333

Email: [keith@europeanmet.com](mailto:keith@europeanmet.com)

Kiran Morzaria, Non-Executive Director

Tel: +44 (0) 20 7440 0647

Dennis Wilkins, Company Secretary

Tel: +61 (0) 417 945 049

Email: [dennis@europeanmet.com](mailto:dennis@europeanmet.com)

### **WH Ireland Ltd (Nomad & Joint Broker)**

James Joyce/James Sinclair-Ford (Corporate Finance)

Tel: +44 (0) 20 7220 1666

Harry Ansell/Jasper Berry (Broking)

### **Shard Capital (Joint Broker)**

Damon Heath

Erik Woolgar

Tel: +44 (0) 20 7186 9950

### **Blytheweigh (Financial PR)**

Tim Blythe

Megan Ray

Tel: +44 (0) 20 7138 3222

### **Chapter 1 Advisors (Financial PR – Aus)**

David Tasker

Tel: +61 (0) 433 112 936

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.