



# Testwork Realises Continued Outstanding Lithium Recoveries

### **Highlights:**

- Testwork confirms separation efficiency and capability of flotation of lithiumbearing zinnwaldite from Cinovec,
- Flotation testwork repeatedly reached >95% lithium recovery to flotation concentrates at target Li-grades and mass yield
- DFS remains on track for completion in Q4 2023

European Metals Holdings Limited (ASX & AIM: EMH, OTCQX: EMHXY, ERPNF and EMHLF) ("European Metals" or the "Company") is pleased to announce exceptional testwork results which confirm separation efficiency and capability of flotation of lithium-bearing zinnwaldite.

The updated flotation testwork recently undertaken at Nagrom Laboratories (Perth) has repeatedly reached >95% lithium recovery from flotation concentrates at target Li-grades and mass yield. Ongoing testwork to confirm the robust nature of the process and optimise the Definitive Feasibility Study ("DFS") design has surpassed previous performance indicators.

Results from testing and optimisation of flotation for the concentration of zinnwaldite in fine ore has exceeded expectations and further demonstrated the potential for high overall lithium recoveries when combined with magnetic separation for the coarse particle size ranges.

Detailed information on the floatation testwork conducted on Cinovec zinnwaldite ore is provided at the end of this report.

Commenting on the recent testwork European Metals Executive Chairman Keith Coughlan said:

"The exceptional lithium extraction results are outstanding and further underline the commercial viability of operations at Cinovec. These results show repeatability of >95% lithium recovery at neutral pH and confirm both capex and opex reductions, demonstrating the strong operational viability of the FECAB plant. We look forward to further results of the ongoing optimisation work as part of the DFS. The neutral pH of the flotation further enhances the already strong ESG credentials of the Cinovec Project particularly when compared to the acid flotation used on micas elsewhere around the globe. We expect the current testwork to be completed by the end of June and will publish the full results."

### Flotation Testwork Protocol

The Front-End Comminution and Beneficiation (FECAB) process beneficiates Cinovec ore by recovering liberated lithium-bearing **zinnwaldite** from the quartz and feldspar host rock, collecting the zinnwaldite into a clean concentrate suitable to feed the downstream Lithium Chemical Plant (LCP):

Testwork to concentrate zinnwaldite traditionally focused on using Wet High Intensity Magnetic Separation (WHIMS) as the only technology of beneficiation. Results demonstrated suitability of magnetic separation for coarse ore, but also the need for an alternative technology suited for concentration of the fine fractions, to enable maximising lithium recoveries across all particle size ranges.

**DIRECTORS AND MANAGEMENT** 

Keith Coughlan

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**CORPORATE INFORMATION** 

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- Further studies into liberation of "mica-like" zinnwaldite from the quartz and feldspar host rock revealed that almost complete liberation is achieved at a grind size of 500 micrometres ("µm"), which is significantly coarser than the 250µm previously applied. Operating at a coarser grind size results in overall reduction in energy required, whilst reducing deportment of zinnwaldite into ultra-fine particle fractions due to comminution.
- Testwork using flotation technology demonstrated suitability of this technology for concentration of fine zinnwaldite and improved recovery performance, compared to magnetic separation for fine particle size ranges.
- Traditionally, successful flotation of "mica-like" minerals was only possible at highly acidic pH levels. Flotation testwork for the Cinovec project aimed and proved to be successful at performing flotation at neutral pH. This renders the process more environmentally and operationally friendly.
- Testwork results demonstrated repeated >95% lithium recovery with fully deslimed ore samples, producing zinnwaldite concentrate at target lithium grades.
- Further testwork to quantify the effect of slimes on flotation efficiency and to enhance recovery of lithium from ultra-fines, was completed. The tests correspondingly produced concentrate at >95% lithium recovery at target lithium grade, using samples containing up to 8% slimes. This is a significant achievement, as the tests demonstrate the robustness of the process under simulated plant operating conditions.
- The flotation process and subsequent concentrate cleaning results in final concentration of clean zinnwaldite into 30% of the original flotation feed mass (at 95% lithium recovery), thereby demonstrating flotation as an efficient concentrating technology for Cinovec ore.
- The flotation process for Cinovec is relatively simple, using only a collector and minor quantities of pH-regulating reagents. The final optimised flowsheet design is minimal, employing only Rougher, Scavenger and a single Cleaner stage.
- Testing and optimisation of flotation for concentration of the fine ore has realistically pioneered the achievement of high overall lithium recovery when combined with magnetic separation for the coarse particle size ranges.
- In the optimised Cinovec FECAB flowsheet, flotation will process overall 42% of ROM, including milled middlings arising from the magnetic separation process. This excludes ultra-fine slimes which are required to be removed prior to flotation.
- Further optimisation of the flotation process at Nagrom resulted in elimination of the attritioning process (violent stirring of the flotation feed) prior to flotation and an increase in flotation feed pulp density. The direct consequences of these positive outcomes are:
  - Significant reduction in ore break-down and creation of ultra-fines or slimes.
  - A reduction in ultra-fines results in a direct decrease of possible lithium losses to slimes.
  - Saving in capital cost (equipment related) and operating cost (due to direct decrease in energy required and reduced maintenance frequency).
- In additional testwork currently underway, core samples, representing three different lithium life-of-mine feed grades, will be processed through the optimised FECAB flowsheet to quantify









the effect of feed grade on recovery of lithium as well as chemical properties of the resulting concentrate for the LCP feed.

This announcement has been approved for release by the Board.

#### CONTACT

For further information on this update or the Company generally, please visit our website at <a href="https://www.europeanmet.com">www.europeanmet.com</a> or see full contact details at the end of this release.

## **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 has been granted a preliminary mining permit by the Ministry of Environment and the Ministry of Industry. The company is owned 49% by EMH and 51% by CEZ a.s. through its wholly owned subsidiary, SDAS. Cinovec hosts a globally significant hard rock lithium deposit with a total Measured Mineral Resource of 53.3Mt at 0.48% Li<sub>2</sub>O and 0.08% Sn, Indicated Mineral Resource of 360.2Mt at 0.44% Li<sub>2</sub>O and 0.05% Sn and an Inferred Mineral Resource of 294.7Mt at 0.39% Li<sub>2</sub>O and 0.05% Sn containing a combined 7.39 million tonnes Lithium Carbonate Equivalent and 335.1kt of tin (refer to the Company's ASX release dated 13 October 2021) (Resource Upgrade at Cinovec Lithium Project).

An initial Probable Ore Reserve of 34.5Mt at 0.65%  $\text{Li}_2\text{O}$  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 (refer to the Company's ASX release dated 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 fifth 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.

On 19 January 2022, EMH provided an update to the 2019 PFS Update, conducted by specialist independent consultants, which indicates a post-tax NPV of USD1.938B and a post-tax IRR of 36.3% 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 (refer to the Company's ASX release dated 19 January 2022) (PFS Update delivers outstanding results). 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 South-eastern 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 is one of the ten largest energy companies in Europe, has 28,000 employees and annual revenue of approximately EUR 9.97 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 17.7 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 the Czech Republic is a significant contributor to GDP, and the number of EV's in the country is expected to grow significantly in the coming years.

### **ENQUIRIES:**

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