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ASX: EMH

AIM: EMH

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CDIs on Issue: 130M



**EUROPEAN METALS**

**4 July 2017**

## **CINOVEC MAIDEN ORE RESERVE – FURTHER INFORMATION**

European Metals Holdings Limited (“**European Metals**” or “**the Company**”) is pleased to provide further information with regards to the release of 27 July 2017 concerning the declaration of the maiden Ore Reserve at the Company’s Cinovec Lithium / Tin Project in the Czech Republic.

The maiden Ore Reserve was declared subsequent to the publication of the key parameters of the Company’s recently completed Preliminary Feasibility Study.

### **ORE RESERVE STATEMENT**

Based upon the Preliminary Feasibility Study undertaken for the Cinovec Project, the Company declares a maiden Probable Ore Reserve of 34.5 Mt @ 0.65% Li<sub>2</sub>O, as detailed below. The Probable Reserves have been declared solely from the Indicated Mineral Resource category and are classified based on a PFS level of study and category of Mineral Resource.

<b>CINOVEC ORE RESERVES SUMMARY</b>					
<b>Category</b>	<b>Tonnes</b>	<b>Li</b>	<b>Li<sub>2</sub>O</b>	<b>Sn</b>	<b>W</b>
	(Millions)	%	%	%	%
Proven Ore Reserves	0	0	0	0	0
Probable Ore Reserves	34.5	0.30	0.65	0.09	0.03
<b>Total Ore Reserves</b>	<b>34.5</b>	<b>0.30</b>	<b>0.65</b>	<b>0.09</b>	<b>0.03</b>

Notes to Reserves Table.

1. Probable Ore Reserves have been prepared by Bara International in accordance with the guidelines of the JORC Code (2012).
2. The effective date of the Probable Ore Reserves is June 2017.
3. All figures are rounded to reflect the relative accuracy of the estimate.
4. The operator of the project is Geomet S.R.O. a wholly-owned subsidiary of EMH. Gross and Net Attributable Probable Ore Reserves are the same.
5. Any apparent inconsistencies are due to rounding errors.

The Ore Reserve is based on the Mineral Resource prepared by Widenbar and Associates and issued in February 2017. The Mineral Resource is reported in the report Cinovec Resource Estimation published by Widenbar and Associates and is reported in accordance with the JORC 2012 guidelines. The table below summarises the Mineral Resource declared.

<b>CINOVEC 2017 RESOURCE</b>						
	<b>Cutoff</b>	<b>Tonnes</b>	<b>Li</b>	<b>Li<sub>2</sub>O</b>	<b>Sn</b>	<b>W</b>
	%	(Millions)	%	%	%	%
<b>INDICATED</b>	0.1%	347.7	0.21	0.45	0.04	0.015
<b>INFERRED</b>	0.1%	308.8	0.18	0.39	0.04	0.014
<b>TOTAL</b>	0.1%	656.5	0.20	0.43	0.04	0.014

### **Reserves – Other Material Information Summary**

A summary of other material information pursuant to Listing Rule 5.9.1 is provided below.

#### ***Material Assumptions for Ore Reserve***

- Lithium carbonate price of \$10,000/t
- Capital and operating costs estimated from independent studies by specialist consultants
- Metallurgical performance based on testing in independent labs supervised by EMH personnel and consultants
- Environmental and permitting reviews from Czech based independent specialist consultants

#### ***Ore Reserve Classification***

The classification of the Cinovec Ore Reserve has been carried out in accordance with the recommendations of the JORC Code 2012.

All Probable Ore Reserves have been derived from Indicated Resources

#### ***Mining Method***

The mine design, geotechnical review and scheduling has been completed by Bara Consulting of Johannesburg (Bara).

Geotechnical data was transformed into rock mass quality by using classifications such as Rock mass rating (RMR89), Geological Strength Index (GSI) and Q-index (Q and Q'). Laboratory testing of core samples included uniaxial compressive strength with elastic moduli (UCM), triaxial compressive strength (TCS), indirect tensile strength (UTB) and base friction angle (direct shear) tests (BFA).

The output information from the geotechnical characterization phase was used to derive the underground mine method and design criteria.

The geometry of the payable ore is largely flat or shallow dipping and massive enough to mechanise using long-hole open stope mining.

An evaluation was completed to establish the achievable extraction ratios with and without backfill, based on the geotechnical design criteria including pillar sizes and stope spans (see above). The preferred option was to mine with pillars support only, negating the requirement for a backfill plant.

The payable ore will be split into blocks approximately 90 m long in the strike direction and 25 m high. The bottom of each block will be accessed in the central position by an access crosscut and the block will be developed from the centre to the strike limit by drifting. The stope will then be mined on retreat from the block limit, retreating to the access cross cut position. The stopes will be a maximum of 13 m wide with rib pillars between stopes of 4 to 7 m wide depending on stope height.

Access to the stopes will be by footwall drives developed in the footwall at 25 m vertical intervals. All stope access crosscuts will be developed out of the footwall drives.

The mine will be accessed by a twin decline system. A conveyor will be installed from the underground primary crusher on 590m Elevation to surface in the conveyor decline. The second decline will be used as a service decline for men, material and as an intake airway.

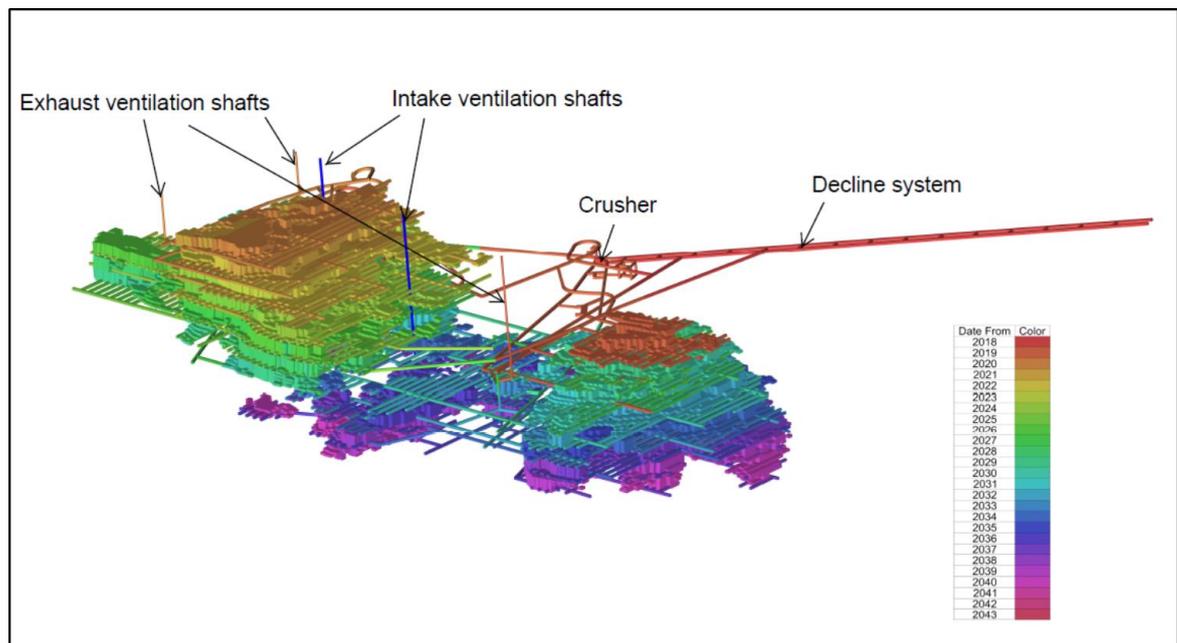
The modifying factors used to generate the mining inventory used in the study from the Indicated Mineral resource are:

- Un-planned dilution 3%;
- Un-planned ore loss 3%; and
- Exclusion zones, any ore within 70 m vertical distance from surface was excluded from the mine plan. In the northern areas where mining occurs below the village the crown pillar exclusion was increased to 150 m.
- A cash margin of a minimum of \$35/t was used to define blocks that could be used for the mine schedule. This margin was calculated using the operating costs, recoveries and metal prices used in the study

Underground infrastructure designs take into consideration the life of mine plan and aims to support the underground mining production and development activities.

Surface infrastructure supports the mine plan with consideration of the labour and mechanised equipment requirements of the operation in addition to the movement of rock, men and materials. The infrastructure is divided into two distinct areas, with the area at the portal servicing the initial development requirements and the second servicing the production phase.

**Figure 1: Mine Design and Schedule**



### ***Processing***

European Metal's approach for operation of the project as a whole is to provide a constant feed rate of 360,000 tonnes per year of mica concentrate to the LCP. The Comminution and Beneficiation plants will therefore vary operating hours to accommodate fluctuations in the mine feed grade, to produce the required level of mica production.

### ***Processing Testwork***

### ***Front End Comminution and Beneficiation Testwork***

This phase of testwork concerned the beneficiation of primary crushed ROM ore, by primary comminution followed by concentration of zinnwaldite by wet magnetic separation to produce a mica-concentrate, which is further treated by the downstream lithium carbonate plant.

**Liberation:** Across all lithologies the lithium bearing mica, zinnwaldite, is effectively liberated from the gang material with a top-end particle size of less than 300 µm. Initial liberation analysis was supported by Heavy-Liquid Separation (HLS) of minerals from each of the various lithologies. This was followed by detailed liberation, mineralogical and petrographic analysis using QEMSCAN of SAG milled composites with a P80 passing 212 µm. These results confirmed those from the HLS tests.

**Lithium Concentration:** Initial studies investigated both froth flotation and magnetic separation for concentration of zinnwaldite. Magnetic separation was proven to be far superior (91 % lithium metallurgical recovery versus 78 %) and was selected as the method to be optimized for the PFS.

To ascertain the performance of the chosen method and to allow finalization of the circuit, two composites were produced to reflect a high-grade and low-grade lithium ROM feed. A pseudo-lock-cycle flow sheet was implemented to test the effects of variability of grade and the effects of improving lithium recovery via scavenging.

The results showed that an additional Wet High Intensity Magnetic Separation (WHIMS) stage could be used to upgrade the para-magnetic material to produce a scavenger magnetic fraction, which is sent back to the start of the circuit. The testwork has resulted in an estimated lithium recovery of 91 % to the concentrate using a 3-stage magnetic separation flow sheet comprising a rougher, cleaner, and scavenger stage. The cleaner magnetic concentrate was reground and passed over a shaking table to recover liberated tin. The gravity concentrate and the scavenger concentrate are returned to the beginning of the circuit.

A lock-cycle gravity testwork program was conducted to simulate the gravity recovery circuit component of the FECAB plant. A pre-concentrate grade of 8 % Sn was produced with an Sn recovery of 80 -90 % to the magnetic fraction. A dressing circuit was approximated for the testwork by using a Mozley Super-Paner centrifugal separator.

SAGability testwork was conducted at ALS on the three primary lithologies. Cinovec's ore was determined to be amenable to single stage SAG milling, which forms part of the FECAB comminution design. Wardle Armstrong conducted a Starkey SAGability test along with standard bond ball and bond rod work indexes.

### ***Lithium Carbonate Plant Testwork***

Testwork has been conducted at both Anzaplan, Germany and Nagrom, Western Australia.

Initial sodium sulphate testwork conducted at Anzaplan concluded that the optimal mass ratio of mica: sodium sulphate: lime is 6:3:1. This roast resulted in a leach lithium recovery of 82.8 % – 87.0 % lithium at a roast temperature of 850 °C for 1 hour.

Additional roast optimization testwork then focused on optimising:

- Sodium sulphate ratio;
- Lime ratio;
- Particle size distribution of feed; and
- Roasting residence time.

Based on the best lithium extraction achieved in the roast optimisation testwork, a bulk composite of mica concentrate, produced from representative Cinovec core samples, was roasted at Nagrom, and an initial lithium carbonate produced which had a purity of >99.5%.

To achieve the high purity Lithium Carbonate bicarbonation step was required.

Ongoing testwork is focused on fluoride and silica removal. Initial lime tests have indicated that silica can be removed as well as part of the fluoride content. Initial tests to remove the fluoride down to acceptable levels is encouraging and EMH is confident this can be successfully removed. The acceptable level of fluoride in battery grade lithium carbonate needs to be confirmed with potential offtakers.

Based on detailed analysis of the testwork results, specific recovery algorithms were developed and entered directly into each block in the block model used for mine scheduling. The average metallurgical recoveries used in the project financial model are summarised below:

- Lithium recovery to concentrate – 90%;
- Lithium recovery in carbonate plant – 85%;
- Overall lithium recovery – 76.5%; and
- Tin recovery – 65%.

### ***Front End Comminution and Beneficiation***

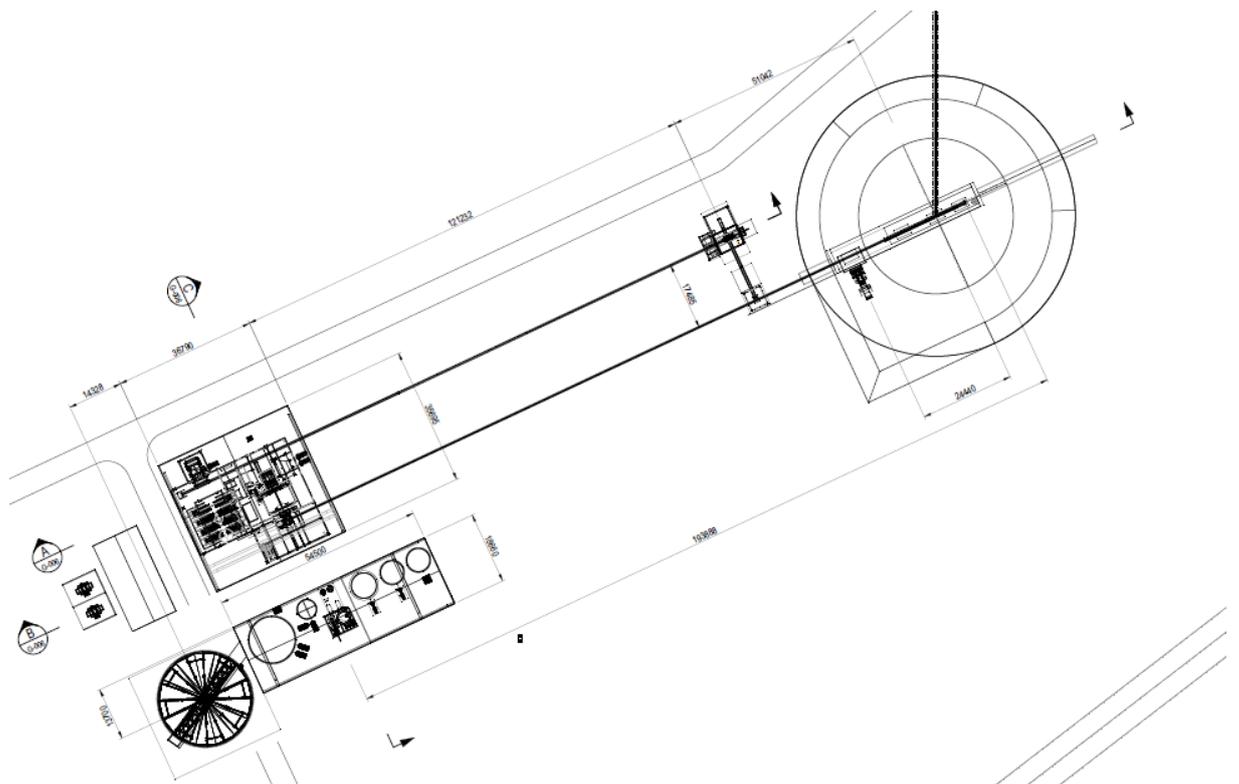
#### ***Comminution Plant***

The purpose of the Comminution Plant (Figure 6) is to reduce the size of the ROM Ore to a particle size Distribution (PSD) that optimises lithium recovery, whilst allowing efficient pumping to the Beneficiation Plant.

Primary crushed Ore is delivered to Coarse Ore stockpile. The Ore is milled to 250 µm in a single stage SAG mill.

The Comminution Plant is run water neutral to remove the need for make-up water or disposal at the mine-site location. This is achieved by returning water from the Beneficiation Plant via a pipeline. Thus, the comminution plant has the advantage of operating at zero water discharge.

**Figure 6: Comminution Plant Layout**



The layout of The Comminution Plant maximises the use of the flat land available upon the top of the ridge, shortening the overall footprint. Room has been allowed for future pebble crushing in the SAG mill recirculating load, to allow for retrofitting if conditions warrant.

### **Beneficiation Plant**

The Beneficiation Plant has two functions:

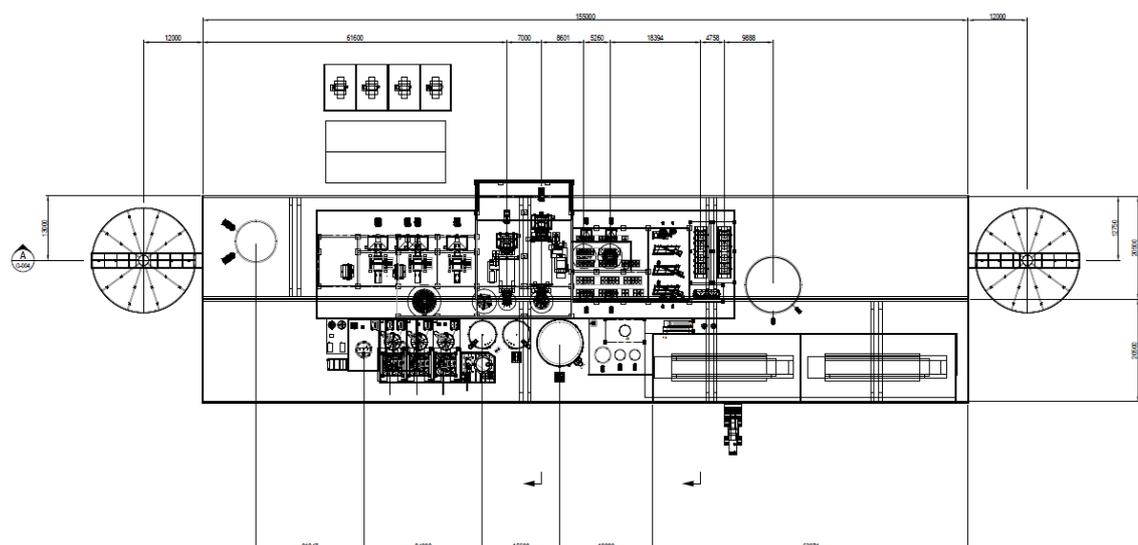
- (i) First, to magnetically separate the paramagnetic zinnwaldite to produce a lithium rich magnetic stream (mica-concentrate) to feed the downstream lithium carbonate plant; and
- (ii) Second, to then treat the non-magnetics stream with gravity, flotation, magnetic and electrostatic separation to produce tin and tungsten product. Filtered tailings are produced for storage in the TSF.

**Magnetic Circuit:** Milled product from the Comminution Plant received via the overland pipeline is stored in the Magnetic Circuit Feed Tank. The tank is agitated and acts as a buffer between the Beneficiation Plant and the overland pipeline. The pipeline slurry density is 56% to 58% solids, whilst the discharge density required by the Low Intensity Magnetic Separation ('LIMS') is 40% solids. The LIMS magnets reject ferromagnetic species from the slurry prior to the multi-stage Wet High Intensity Magnetic Separation (WHIMS) process.

The WHIMS circuit features a rougher, cleaner, scavenger arrangement. The scavenger retrieves the non-magnetic material from the rougher and cleaner units, and returns the 'scavenged' magnetic fraction back to the start of the circuit.

The cleaner magnetic fraction is reground enclose circuit with a spiral to remove reduce the PSD to required LCP feed size. Any tin which is liberated in the process is recovered from the mica-concentrate by the spirals.

**Figure 7: Beneficiation Plant Layout**



**Non-Magnetics Gravity Circuit:** The Non-Magnetics Gravity Circuit treats the Magnetic Separation Circuit's non-magnetics and concentrates the tin and tungsten minerals for feeding to the Tin Dressing Circuit, where the final product streams are produced. The circuit also has the ability to receive tin and tungsten gravity concentrate as slurry from the Lithium Carbonate Plant.

The circuit incorporates three stages of classification with:

- The coarse fraction is treated by two stages of spirals and two stages of wet tables and also incorporates a regrind mill which is used to achieve the liberation size of the tin and tungsten minerals;

- The medium fraction is treated by two stages of spirals and two stages of wet tables;
- The finer fraction is treated with a flotation and high gravity concentrator; and
- The finest fraction, slimes, is rejected to final tails.

The concentrate produced from the gravity circuit is sent for dressing whilst the tails are dewatered via a thickener and filter.

The dressing circuit upgrades the concentrates through sulphide flotation. Electrostatic precipitation is then used to separate wolframite and cassiterite from the scheelite. Dry magnetics separate the wolframite from the cassiterite to give the final saleable concentrates.

### ***Lithium Carbonate Plant***

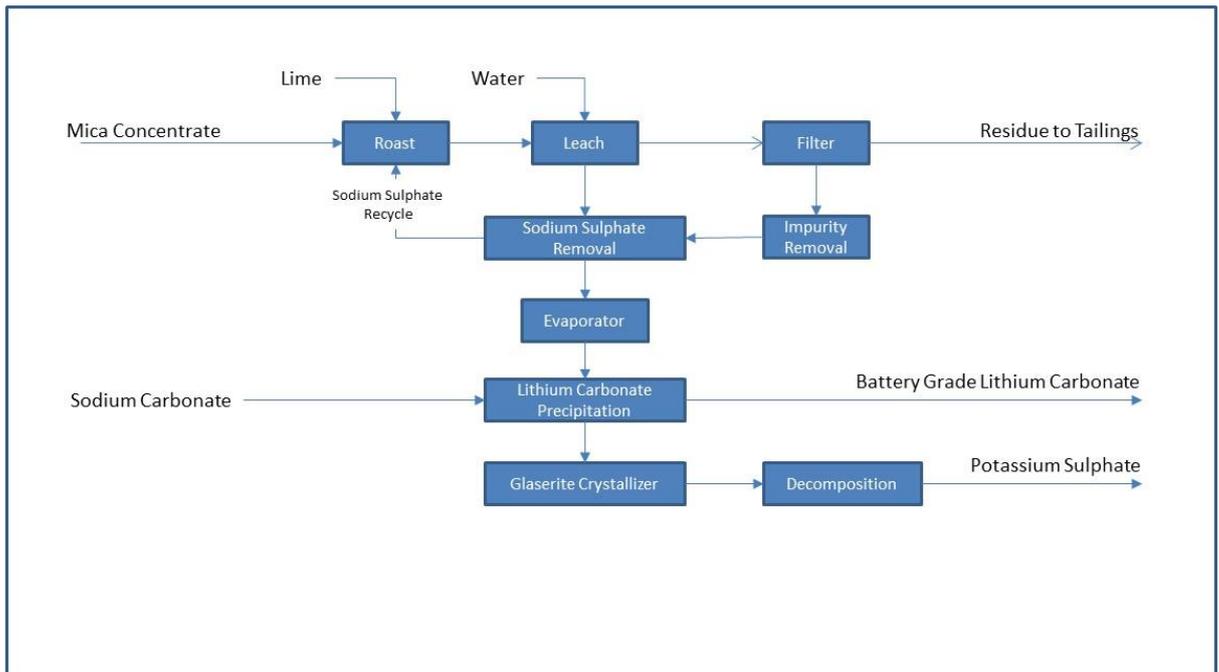
The current flowsheet is shown in Figure 8. The Lithium Carbonate Plant receives a mica concentrate slurry from the FECAB plant, which is dewatered and stored in covered stockpiles to create a buffer between the FECAB and the LCP. The concentrate is mixed with sodium sulphate and lime before roasting to convert the lithium into a lithium potassium sulphate which dissolves in the leach as lithium sulphate.

The leached slurry is filtered to separate the PLS (pregnant leach solution) from the residue. The leach solution undergoes impurity removal steps to remove calcium, magnesium, fluoride and silica by precipitation and adsorption. Sodium sulphate is then recovered from the leach solution (as Glauber's Salt) by cooling. The Glauber's salt is melted and then crystallised as anhydrous sodium sulphate for recycle back to the roaster feed.

Crude lithium carbonate is then precipitated from the PLS by further evaporation and addition of sodium carbonate. The crude lithium carbonate is re-dissolved to form bi-carbonate. The lithium bicarbonate solution is filtered and purified by ion exchange before pure lithium carbonate is re-crystallised by heating the solution causing the bicarbonate to decompose. The battery grade lithium carbonate is then dried, micronised and packaged for sale.

A fertiliser grade potash (potassium sulphate) by-product is also recovered from the depleted lithium carbonate solution (spent liquor). In this circuit, Glaserite double salt ( $\text{Na}_3\text{K}(\text{SO}_4)_2$  sulphate) is precipitated by evaporative crystallisation. Potassium sulphate is then recovered by decomposing Glaserite in water to form soluble sodium sulphate and solid potassium sulphate. The potassium sulphate product is then dewatered, dried and packaged for sale.

**Figure 8: LCP Process Flowsheet**



### **Tailings**

All the processing tailings produced by the Beneficiation and Lithium Carbonate Plants pressed into filter cakes to allow dry stack impoundment a close distance from the processing plants. Tailings consists of approximately 1.5 Mtpa of FECAB material and 500 ktpa of LCP material (mostly leach residue).

Although dry stacking is the more expensive compared to traditional wet deposition, it was chosen due to the following advantages:

- The higher safety factors associated with the design versus conventional storage facilities. The region has historic high levels of rainfall thus dry stacking reduces the amount of water to treat by reducing the TSF footprint;
- Progressive rehabilitation is possible, spreading the cost of closure over a longer time when compared to conventional storage facilities; and
- Filtered tailings allow better recovery of lithium by recovering more liquor.

During operations tailings, a dried on a filtered press and dumped on a pad. Wheel loaders and articulated trucks transport the tailings approximately 600 m to the TSF for compaction and impoundment.

An initial TSF cell was designed to accommodate the first two years of combined tailings, with the associated capital cost included in the capital estimate. The TSF is lined and features water collection and diesel powered decant pumps for returning any run off water to the processing plant. 3D model was created to facility the capital cost estimate.

A contractor will be engaged for tailings disposal, an operating cost of \$1.50/tonne for LCP tails and \$1.0/tonne for FECAB tails is incorporated in the operating cost model.

### **Environmental**

The Project is governed by Act No.100/2001 Coll., on Environment Impact Assessment (hereinafter referred to as the “EIA Act”). The competent authority is the Ministry of the Environment (Environment Impact Assessment Department). An integrated permit is issued upon completion of the EIA process.

The EIA documentation is required to be structured as follows:

- details concerning the notifier;
- details concerning the development project;
- details concerning the status of the environment in the region concerned;
- comprehensive characteristics and assessment of the project impacts on public health and the environment;
- a comparison of project versions (if any);
- a conclusion; and
- a commonly understood summary and annexes (opinion of the Building Authority, opinion of the Nature Protection Authority, expert studies and assessments).

The following expert studies and assessments must be compiled during the EIA Documentation preparation stage:

- noise impact study;
- air quality impact study;
- biological survey;
- human health impact study;
- transport impact study;
- landscape impact study; and
- water quality and hydrology impact study.

In this case, with respect to the location of the project at the border with Germany, an “international assessment” provision applies (Section 13, Act No. 100).

The Company commenced the EIA process with a baseline study, prepared by GET s.r.o an independent Czech based environmental consultancy, which identified the environmental areas to be assessed and determined preliminary outcomes. The underground mine and surface portal is located on the border of or immediately adjacent to environmentally sensitive area. From that perspective, the EIA will focus particularly on project impacts on European protected areas Natura 2000 (protected birds) and mine water discharge into surface streams. The Company has re-positioned key infrastructure to minimise impacts to both the environment and the community and has placed crushing facilities underground to minimise noise as well as enclosing the mill to further reduce noise and visual impacts. Considering the long-term mining history in region and at the deposit itself, the project will not significantly impact the environment.

### **Operating Cost**

The average operating cost for the Cinovec Project is \$3,483 per tonne of lithium carbonate, after by-product credits.

**Table 1: Average Project Operating Cost**

<b>Average Operating Cost (yr. 3-20)</b>	<b>\$M pa</b>	<b>\$t / ROM</b>	<b>\$t / LCE</b>	<b>% Op Cost</b>
Mining	40.7	24.3	1,960	38%
FECAB	19.4	11.6	935	18%
LCP	47.3	28.2	2,274	44%
Overall Project Admin	0.9	0.5	42	1%
<b>Total Operating Cost</b>	<b>108.3</b>	<b>64.6</b>	<b>5,211</b>	

<b>By-product Revenue Credits</b>	<b>\$M pa</b>	<b>\$t / ROM</b>	<b>\$t / LCE</b>
Sn/W (yr3-2 0)	29.2	17.4	1,404
Potash	6.7	4.0	324
<i>Excluding Sn/W Royalties &amp; Transportation Cost</i>			
<b>Total Opex (Net of By-product Credits)</b>	<b>72.4</b>	<b>43.2</b>	<b>3,483</b>

Overhead corporate office costs are excluded. The maintenance costs used in the operating cost modelling includes requirements for sustaining capex. The cost of tailings impounded is included in the above numbers.

An estimated 58% of the project's operating cost is variable (i.e. changes with the production rate). This high variable percentage improves economic robustness, by giving the operating team the flexibility to easily scale down operating costs if market conditions dictate.

### **Capital Cost**

The estimated capital cost of the Cinovec Project is \$393 M based on Q1 CY2017 pricing. The accuracy of the estimate is considered +/-25%. The estimate breakdown is summarised in Table 6 below.

The capital includes all costs for design and construction of the plant and infrastructure on the site for the mine, FECB and LCP, Allowances are also made for connection to off-site services such as gas, electricity and water, construction of a tailings storage facility, project contingency and owners costs including project management team, project approvals, establishment of the operating team and commissioning.

The capital estimate is based on detailed engineering designs produced by the independent consultants. Each consultant provided a capital estimate for their respective scope of works. Based on process modelling and mass flow calculations, detailed mechanical equipment lists were compiled, with quotes for all items costing over \$100 k. The mechanical equipment list was then used as a base for factoring other project commodities. Material take-offs from the 3D modelling were then used as an integrity check.

As the Project lies on the border of Germany and the Czech Republic it is exceptionally well serviced by supporting infrastructure including access to rail, national highways, power, water, gas, skilled workforce, engineering companies and chemical companies.

**Table 2: Overall Project Development Capital**

	<b>TOTAL US\$ M</b>
<b>Underground Mining Development</b>	
Mining Directs	67.3
Mining In directs	3.0
<b>Total Mining Cost</b>	<b>70.3</b>
<b>Front End Comminution &amp; Beneficiation Plant (FECAB)</b>	
Comminution - Direct	25.2
Beneficiation - Direct	40.5
Infrastructure -Direct	20.8
FECAB In directs	18.4
<b>Total FECAB</b>	<b>104.9</b>
<b>Lithium Carbonate Plant (LCP)</b>	
LCP Directs	141.9
LCP In directs	38.0
<b>Total LCP Capital</b>	<b>179.9</b>
<b>Total Tailings</b>	<b>2.6</b>
<b>Overall Project Contingency @10%</b>	<b>35.8</b>
<b>TOTAL CAPITAL COST</b>	<b>393.4</b>

In addition, a total of \$40m is required in working capital.

### **Financial Summary**

The Cinovec Project yields a post-tax NPV (discounted at 8%) of \$540 M and a post-tax Internal Rate of Return of 21%. When operating in steady state the Project achieves an operating cash margin of 59% and has an operating cost of \$3,483 per tonne LCE. The key findings of the PFS are set out in Table 3: below:

**Table 3: Key PFS Findings**

<b>Metric</b>	<b>Value</b>	<b>Metric</b>	<b>Value</b>
NPV @8% Discount	\$540 M	Project Breakeven (IRR=0% ) \$/t Li <sub>2</sub> CO <sub>3</sub>	\$5,200 /t
NPV @ 10% Discount	\$392 M	Avg Li <sub>2</sub> CO <sub>3</sub> Production (yr. 3-20)	20,800 tpa
IRR (Pre-tax)	21.6 %	Avg Potash Production (yr. 3-20)	12,954 tpa
IRR (Post Tax)	20.9 %	Avg Production Cost (without credits)	\$ 5,211 /t
Capital Expenditure	\$393 M	Avg Production Cost (with credits)	\$3,483/t
Total Mined Ore	34.4 Mt	Life of Mine	21 Years
Peak Mill Feed	1.8 Mtpa	Avg Mill Rate (yr. 3-20)	1.68 Mtpa

## Metal Pricing

Metal pricing used for the PFS was as follows:

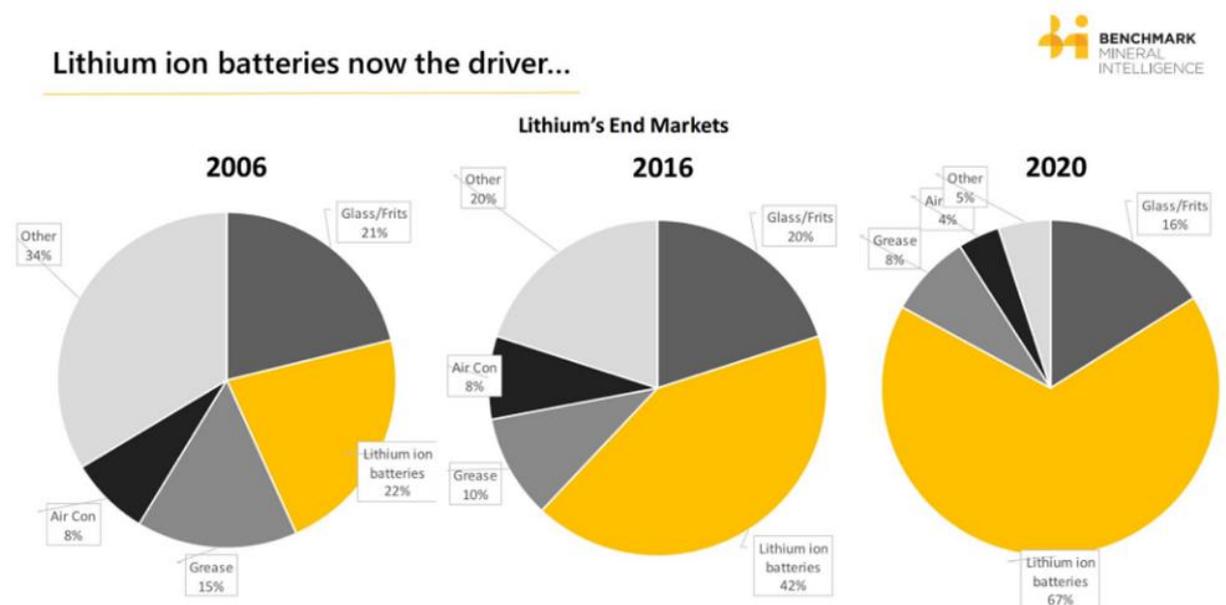
- Lithium carbonate - \$10,000/t;
- Tin - \$22,500/t;
- Tungsten – \$330/MTU; and
- Sulphate of potash - \$520/t.

Lithium is the key driver of the Project. According to Deutsche Bank, global lithium demand increased 15% year on year to 212 kt LCE in 2016, slightly ahead of estimates. Deutsche Bank forecast lithium pricing to remain elevated relative to historical averages, but retrace 15% over 2016 pricing levels. Further, the medium-term outlook is improving and Deutsche Bank have recently lifted their 2019 demand forecast to 380 kt.

The ramp up of new EV model sales from major auto companies is generally considered to be the key driver of lithium demand in the short to medium term. Other factors include the increased production from battery manufacturing facilities and the continued inventory build within the supply chain.

The Cinovec Project is located centrally and within close proximity to a number of major European car manufacturers.

**Figure 9: Lithium End Use**



Benchmark expects the average forecasted price range for lithium carbonate 99.95% to be \$ 9,500 to \$ 13,000/tonne (USD) between 2017 and 2020.

European Metals has considered this forecast in light of other independent forecasts such as Deutsche Bank, and on generally available lithium market commentary.

For the purposes of the PFS with regards to financial modelling, a long-term average price of \$ 10,000/t lithium carbonate FOB has been used.

## BACKGROUND INFORMATION ON CINOVEC

### PROJECT OVERVIEW

#### Cinovec Lithium/Tin Project

European Metals owns 100% of the Cinovec lithium-tin deposit in the Czech Republic. Cinovec is an historic mine incorporating a significant undeveloped lithium-tin resource with by-product potential including tungsten, rubidium, scandium, niobium and tantalum and potash. Cinovec hosts a globally significant hard rock lithium deposit with a total Indicated Mineral Resource of 348Mt @ 0.45% Li<sub>2</sub>O and 0.04% Sn and an Inferred Mineral Resource of 309Mt @ 0.39% Li<sub>2</sub>O and 0.04% Sn containing a combined 7.0 million tonnes Lithium Carbonate Equivalent and 263kt of tin.

This makes Cinovec the largest 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.

The recently completed Preliminary Feasibility Study, conducted by specialist independent consultants, returned a post tax NPV of USD540m and an IRR of 21%. It confirmed the deposit is amenable to bulk underground mining. Metallurgical test work has produced both battery grade lithium carbonate and 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.

### CONTACT

For further information on this update or the Company generally, please visit our website at [www.europeanmet.com](http://www.europeanmet.com) or contact:

**Mr. Keith Coughlan**  
Managing Director

### COMPETENT PERSON

Information in this release that relates to exploration results is based on information compiled by European Metals Director 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.

The information in this release that relates to Mineral Reserves is based on, and fairly represents, information and supporting documentation prepared by Mr Jim Pooley. Mr Pooley, who is a Fellow of the Southern African Institute of Mining and Metallurgy, is a full time employee of Bara International Ltd and produced the estimate based on the Mineral Resource supplied by European Metals. Mr Pooley 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 Pooley 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.

Statements regarding plans with respect to the Company’s mineral properties may contain forward-looking statements in relation to future matters that can only be made where the Company has a reasonable basis for making those statements.

This announcement has been prepared in compliance with the JORC Code 2012 Edition and the current ASX Listing Rules.

## 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<sub>2</sub>CO<sub>3</sub>. 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 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>
Lithium	Li	<b>1.000</b>	2.153	5.324
Lithium Oxide	Li <sub>2</sub> O	0.464	<b>1.000</b>	2.473
Lithium Carbonate	Li <sub>2</sub> CO <sub>3</sub>	0.188	0.404	<b>1.000</b>

## WEBSITE

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

## TECHNICAL GLOSSARY

The following is a summary of technical terms:

“beneficiation” or “benefication”	in extractive metallurgy, is any process that improves (benefits) the economic value of the ore by removing the gangue minerals, which results in a higher grade product (concentrate) and a waste stream (tailings)
“carbonate”	refers to a carbonate mineral such as calcite, CaCO <sub>3</sub>
“cut-off grade”	lowest grade of mineralised material considered economic, used in the calculation of Mineral Resources
“deposit”	coherent geological body such as a mineralised body
“exploration”	method by which ore deposits are evaluated
“g/t”	gram per metric tonne
“grade”	relative quantity or the percentage of ore mineral or metal content in an ore body
“Indicated” or “Indicated Mineral Resource”	as defined in the JORC and SAMREC Codes, is that part of a Mineral Resource which has been sampled by drill holes, underground openings or other sampling procedures at locations that are too widely spaced to ensure continuity but close enough to give a reasonable indication of continuity and where geoscientific data are known with a reasonable

	<p>degree of reliability. An Indicated Mineral Resource will be based on more data and therefore will be more reliable than an Inferred Mineral Resource estimate</p>
<b>“Inferred” or “Inferred Mineral Resource”</b>	<p>as defined in the JORC and SAMREC Codes, is that part of a Mineral Resource for which the tonnage and grade and mineral content can be estimated with a low level of confidence. It is inferred from the geological evidence and has assumed but not verified geological and/or grade continuity. It is based on information gathered through the appropriate techniques from locations such as outcrops, trenches, pits, working and drill holes which may be limited or of uncertain quality and reliability</p>
<b>“JORC Code”</b>	<p>Joint Ore Reserve Committee Code; the Committee is convened under the auspices of the Australasian Institute of Mining and Metallurgy</p>
<b>“kt”</b>	<p>thousand tonnes</p>
<b>“LCE”</b>	<p>the total equivalent amount of lithium carbonate (see explanation above entitled Explanation of Lithium Classification and Conversion Factors)</p>
<b>“lithium”</b>	<p>a soft, silvery-white metallic element of the alkali group, the lightest of all metals</p>
<b>“lithium carbonate”</b>	<p>the lithium salt of carbonate with the formula <math>\text{Li}_2\text{CO}_3</math></p>
<b>“Measured” or Measured Mineral Resources”</b>	<p>Measured: a mineral resource intersected and tested by drill holes, underground openings or other sampling procedures at locations which are spaced closely enough to confirm continuity and where geoscientific data are reliably known; a measured mineral resource estimate will be based on a substantial amount of reliable data, interpretation and evaluation which allows a clear determination to be made of shapes, sizes, densities and grades. Indicated: a mineral resource sampled by drill holes, underground openings or other sampling procedures at locations too widely spaced to ensure continuity but close enough to give a reasonable indication of continuity and where geoscientific data are known with a reasonable degree of reliability; an indicated resource will be based on more data, and therefore will be more reliable than an inferred resource estimate. Inferred: a mineral resource inferred from geoscientific evidence, underground openings or other sampling procedures where the lack of data is such that continuity cannot be predicted with confidence and where geoscientific data may not be known with a reasonable level of reliability</p>
<b>“metallurgical”</b>	<p>describing the science concerned with the production, purification and properties of metals and their applications</p>
<b>“micrometer”</b>	<p>(symbol <math>\mu\text{m}</math>) is an SI unit of length equal to one millionth of a metre</p>
<b>“Mineral Resource”</b>	<p>a concentration or occurrence of material of intrinsic economic interest in or on the Earth’s crust in such a form that there are reasonable prospects for the eventual economic extraction; the location, quantity, grade geological characteristics and continuity of a mineral resource are known, estimated or interpreted from specific geological evidence and knowledge; mineral resources are sub-divided into Inferred, Indicated and Measured categories</p>
<b>“mineralisation”</b>	<p>process of formation and concentration of elements and their chemical compounds within a mass or body of rock</p>
<b>“Mt”</b>	<p>million tonnes</p>
<b>“Ore Reserve”</b>	<p>An Ore Reserve is the economically mineable part of a Measured or Indicated Mineral Resource. It includes diluting materials and allowance for losses which may occur when the material is mined. Appropriate assessments, which may include pre-feasibility or feasibility studies, have been carried out, and will include consideration of an modification by realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. These assessments demonstrate at the time of reporting that extraction could reasonably be</p>

	justified. Ore Reserves are sub-divided in order of increasing confidence into Probable Ore Reserves and Proved Ore Reserves.
“P80”	the mill circuit product size in micrometers
“ppm”	parts per million
“Probable Ore Reserve”	A Probable Ore Reserve is the economically mineable part of an Indicated Mineral Resource, and in some circumstances, Measured Mineral Resource.
“PSD”	particle size distribution
“recovery”	proportion of valuable material obtained in the processing of an ore, stated as a percentage of the material recovered compared with the total material present
“run-of-mine”	mined ore of a size that can be processed without further crushing
“semi-autogenous grinding” or “SAG”	a method of grinding rock into fine powder whereby the grinding media consist of larger chunks of rocks and steel balls
“stope”	underground excavation within the orebody where the main production takes place
“t”	a metric tonne
“tin”	A tetragonal mineral, rare; soft; malleable: bluish white, found chiefly in cassiterite, SnO <sub>2</sub>
“treatment”	Physical or chemical treatment to extract the valuable metals/minerals
“tungsten”	hard, brittle, white or grey metallic element. Chemical symbol, W; also known as wolfram
“W”	chemical symbol for tungsten

#### ADDITIONAL GEOLOGICAL TERMS

“apical”	relating to, or denoting an apex
“cassiterite”	a mineral, tin dioxide, SnO <sub>2</sub> . Ore of tin with specific gravity 7
“cupola”	a dome-shaped projection at the top of an igneous intrusion
“dip”	the true dip of a plane is the angle it makes with the horizontal plane
“glaserite”	A colourless or white crystalline compound, K <sub>2</sub> SO <sub>4</sub> , used in glassmaking and fertilisers and as a reagent in analytical chemistry
“granite”	coarse-grained intrusive igneous rock dominated by light-coloured minerals, consisting of about 50% orthoclase, 25% quartz and balance of plagioclase feldspars and ferromagnesian silicates
“greisen”	a pneumatolitically altered granitic rock composed largely of quartz, mica, and topaz. The mica is usually muscovite or lepidolite. Tourmaline, fluorite, rutile, cassiterite, and wolframite are common accessory minerals
“igneous”	said of a rock or mineral that solidified from molten or partly molten material, i.e., from a magma
“muscovite”	also known as potash mica; formula: KAl <sub>2</sub> (AlSi <sub>3</sub> O <sub>10</sub> )(F,OH) <sub>2</sub> .
“quartz”	a mineral composed of silicon dioxide, SiO <sub>2</sub>
“rhyolite”	an igneous, volcanic rock of felsic (silica rich) composition. Typically >69% SiO <sub>2</sub>
“vein”	a tabular deposit of minerals occupying a fracture, in which particles may grow away from the walls towards the middle
“wolframite”	a mineral, (Fe,Mn)WO <sub>4</sub> ; within the huebnerite-ferberite series
“zinnwaldite”	a mineral, KLiFeAl(AlSi <sub>3</sub> O <sub>10</sub> (F,OH) <sub>2</sub> ; mica group; basal cleavage; pale violet, yellowish or greyish brown; in granites, pegmatites, and greisens

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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.

## JORC Code, 2012 Edition - Table 1

### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>In 2014, the Company commenced a core drilling program and collected samples from core splits in line with JORC Code guidelines.</li> <li>Sample intervals honour geological or visible mineralization boundaries and vary between 50cm and 2 m. Majority of samples is 1 m in length</li> <li>The samples are half or quarter of core; the latter applied for large diameter core.</li> <li>Between 1952 and 1989, the Cinovec deposit was sampled in two ways: in drill core and underground channel samples.</li> <li>Channel samples, from drift ribs and faces, were collected during detailed exploration between 1952 and 1989 by Geindustria n.p. and Rudne Doly n.p., both Czechoslovak State companies. Sample length was 1 m, channel 10x5cm, sample mass about 15kg. Up to 1966, samples were collected using hammer and chisel; from 1966 a small drill (Holman Hammer) was used. 14179 samples were collected and transported to a crushing facility.</li> <li>Core and channel samples were crushed in two steps: to -5mm, then to -0.5mm. 100g splits were obtained and pulverized to -0.045mm for analysis.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by</li> </ul>	<ul style="list-style-type: none"> <li>In 2014, three core holes were drilled for a total of 940.1m. In 2015, six core holes were drilled for a total of 2,455.0m. In 2016, eight core holes were drilled for a total of 2,795.6m.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>what method, etc).</i>	<ul style="list-style-type: none"> <li>In 2014 and 2015, the core size was HQ3 (60mm diameter) in upper parts of holes; in deeper sections the core size was reduced to NQ3 (44mm diameter). Core recovery was high (average 98%). In 2016 up to four drill rigs were used, and select holes employed PQ sized core for upper parts of the drillholes.</li> <li>Historically only core drilling was employed, either from surface or from underground.</li> <li>Surface drilling: 80 holes, total 30,340 meters; vertical and inclined, maximum depth 1596m (structural hole). Core diameters from 220mm near surface to 110 mm at depth. Average core recovery 89.3%.</li> <li>Underground drilling: 766 holes for 53,126m; horizontal and inclined. Core diameter 46mm; drilled by Craelius XC42 or DIAMEC drills.</li> </ul>
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> <li><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li><i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></li> </ul>	<ul style="list-style-type: none"> <li>Core recovery for historical surface drill holes was recorded on drill logs and entered into the database.</li> <li>No correlation between grade and core recovery was established.</li> </ul>
<i>Logging</i>	<ul style="list-style-type: none"> <li><i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></li> <li><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li><i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>In 2014-2016, core descriptions were recorded into paper logging forms by hand and later entered into an Excel database.</li> <li>Core was logged in detail historically in a facility 6 km from the mine site. The following features were logged and recorded in paper logs: lithology, alteration (including intensity divided into weak, medium and strong/pervasive), and occurrence of ore minerals expressed in %, macroscopic description of congruous intervals and structures and core recovery.</li> </ul>
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> <li><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li><i>Measures taken to ensure that the sampling is representative of the in situ</i></li> </ul>	<ul style="list-style-type: none"> <li>In 2014-16, core was washed, geologically logged, sample intervals determined and marked then the core was cut in half. In 2016 larger core was cut in half and one half was cut again to obtain a quarter core sample. One half or one quarter samples was delivered to ALS Global for assaying after duplicates, blanks and standards were inserted in the sample stream. The remaining drill core is stored on site for reference.</li> <li>Sample preparation was carried out by</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>material collected, including for instance results for field duplicate/second-half sampling.</i></p> <ul style="list-style-type: none"> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<p>ALS Global in Romania, using industry standard techniques appropriate for the style of mineralisation represented at Cinovec.</p> <ul style="list-style-type: none"> <li>• Historically, core was either split or consumed entirely for analyses.</li> <li>• Samples are considered to be representative.</li> <li>• Sample size and grains size are deemed appropriate for the analytical techniques used.</li> </ul>
<p><i>Quality of assay data and laboratory tests</i></p>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>• In 2014-16, core samples were assayed by ALS Global. The most appropriate analytical methods were determined by results of tests for various analytical techniques.</li> <li>• The following analytical methods were chosen: ME-MS81 (lithium borate fusion or 4 acid digest, ICP-MS finish) for a suite of elements including Sn and W and ME-4ACD81 (4 acid digest, ICP-AES finish) additional elements including lithium.</li> <li>• About 40% of samples were analysed by ME-MS81d (ME-MS81 plus whole rock package). Samples with over 1% tin are analysed by XRF. Samples over 1% lithium were analysed by Li-OG63 (four acid and ICP finish).</li> <li>•</li> <li>• Standards, blanks and duplicates were inserted into the sample stream. Initial tin standard results indicated possible downgrading bias; the laboratory repeated the analysis with satisfactory results.</li> <li>• Historically, tin content was measured by XRF and using wet chemical methods. W and Li were analysed by spectral methods.</li> <li>• Analytical QA was internal and external. The former subjected 5% of the sample to repeat analysis in the same facility. 10% of samples were analysed in another laboratory, also located in Czechoslovakia. The QA/QC procedures were set to the State norms and are considered adequate. It is unknown whether external standards or sample duplicates were used.</li> <li>• Overall accuracy of sampling and assaying was proved later by test mining and reconciliation of mined and analysed grades.</li> </ul>
<p><i>Verification of sampling and assaying</i></p>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> </ul>	<ul style="list-style-type: none"> <li>• During the 2014-16 drill campaigns the Company indirectly verified grades of tin and lithium by comparing the length and</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<p>grade of mineral intercepts with the current block model.</p>
Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>In 2014-16, drill collar locations were surveyed by a registered surveyor.</li> <li>Down hole surveys were recorded by a contractor.</li> <li>Historically, drill hole collars were surveyed with a great degree of precision by the mine survey crew.</li> <li>Hole locations are recorded in the local S-JTSK Krovak grid.</li> <li>Topographic control is excellent.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Historical data density is very high.</li> <li>Spacing is sufficient to establish an inferred resource that was initially estimated using MICROMINE software in Perth, 2012.</li> <li>Areas with lower coverage of Li% assays have been identified as exploration targets.</li> <li>Sample compositing to 1m intervals has been applied mathematically prior to estimation but not physically.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>In 2014-16, drill hole azimuth and dip was planned to intercept the mineralized zones at near-true thickness. As the mineralized zones dip shallowly to the south, drill holes were vertical or near vertical and directed to the north. Due to land access restrictions, certain holes could not be positioned in sites with ideal drill angle.</li> <li>The Company has not directly collected any samples underground because the workings are inaccessible at this time.</li> <li>Based on historic reports, level plan maps, sections and core logs, the samples were collected in an unbiased fashion, systematically on two underground levels from drift ribs and faces, as well as from underground holes drilled perpendicular to the drift directions. The sample density is adequate for the style of deposit.</li> <li>Multiple samples were taken and analysed by the Company from the historic tailing repository. Only lithium was analysed (Sn and W too low). The results matched the historic grades.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>In the 2014-16 programs, only the Company's employees and contractors handled drill core and conducted sampling. The core was collected from the drill rig each day and transported in a</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>company vehicle to the secure Company premises where it was logged and cut. Company geologists supervised the process and logged/sampled the core. The samples were transported by Company personnel in a Company vehicle to the ALS Global laboratory pick-up station. The remaining core is stored under lock and key.</p> <ul style="list-style-type: none"> <li>Historically, sample security was ensured by State norms applied to exploration. The State norms were similar to currently accepted best practice and JORC guidelines for sample security.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>Review of sampling techniques possible from written records. No flaws found.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li><i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></li> <li><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></li> </ul>	<ul style="list-style-type: none"> <li>Cinovec exploration rights held under three licenses Cinovec (expires 30/07/2019), Cinovec 2 (expires 31/12/2020) and Cinovec 3 (expires 31/10/2021).100% owned, no native interests or environmental concerns. A State royalty applies metals production and is set as a fee in Czech crowns per unit of metal produced.</li> <li>There are no known impediments to obtaining an Exploitation Permit for the defined resource.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>There has been no acknowledgment or appraisal of exploration by other parties.</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>Cinovec is a granite-hosted tin-tungsten-lithium deposit.</li> <li>Late Variscan age, post-orogenic granite intrusion Tin and tungsten occur in oxide minerals (cassiterite and wolframite). Lithium occurs in zinwaldite, a Li-rich muscovite</li> <li>Mineralization in a small granite cupola. Vein and greisen type. Alteration is greisenisation, silicification.</li> </ul>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i> <ul style="list-style-type: none"> <li><i>easting and northing of the drill hole collar</i></li> <li><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li><i>dip and azimuth of the hole</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Reported previously.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> <li>● <i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></li> </ul>	
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>● <i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li>● <i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li>● <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>● Reporting of exploration results has not and will not include aggregate intercepts.</li> <li>● Metal equivalent not used in reporting.</li> <li>● No grade truncations applied.</li> </ul>
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>● <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>● <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li>● <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i></li> </ul>	<ul style="list-style-type: none"> <li>● Intercept widths are approximate true widths.</li> <li>● The mineralization is mostly of disseminated nature and relatively homogeneous; the orientation of samples is of limited impact.</li> <li>● For higher grade veins care was taken to drill at angles ensuring closeness of intercept length and true widths</li> <li>● The block model accounts for variations between apparent and true dip.</li> </ul>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>● <i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></li> </ul>	<ul style="list-style-type: none"> <li>● Appropriate maps and sections have been generated by the Company, and independent consultants. Available in customary vector and raster outputs, and partially in consultant's reports.</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>● <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></li> </ul>	<ul style="list-style-type: none"> <li>● Balanced reporting in historic reports guaranteed by norms and standards, verified in 1997, and 2012 by independent consultants.</li> <li>● The historic reporting was completed by several State institutions and cross validated.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>● <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater,</i></li> </ul>	<ul style="list-style-type: none"> <li>● Data available: bulk density for all representative rock and ore types; (historic data + 92 measurements in 2016 from current core holes); petrographic and mineralogical studies, hydrological information, hardness,</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	moisture content, fragmentation etc.
<i>Further work</i>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Grade verification sampling from underground or drilling from surface. Historically-reported grades require modern validation in order to improve the resource classification.</li> <li>The number and location of sampling sites will be determined from a 3D wireframe model and geostatistical considerations reflecting grade continuity.</li> <li>The geologic model will be used to determine if any infill drilling is required.</li> <li>The deposit is open down-dip on the southern extension, and locally poorly constrained at its western and eastern extensions, where limited additional drilling might be required.</li> <li>No large scale drilling campaigns are required.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
<i>Database integrity</i>	<ul style="list-style-type: none"> <li><i>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</i></li> <li><i>Data validation procedures used.</i></li> </ul>	<ul style="list-style-type: none"> <li>Assay and geologic data were compiled by the Company staff from primary historic records, such as copies of drill logs and large scale sample location maps.</li> <li>Sample data were entered in to Excel spreadsheets by Company staff in Prague.</li> <li>The database entry process was supervised by a Professional Geologist who works for the Company.</li> <li>The database was checked by independent competent persons (Lynn Widenbar of Widenbar &amp; Associates, Phil Newell of Wardell Armstrong International).</li> </ul>
<i>Site visits</i>	<ul style="list-style-type: none"> <li><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></li> <li><i>If no site visits have been undertaken indicate why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>The site was visited by Mr Pavel Reichl who has identified the previous shaft sites, tails dams and observed the mineralisation underground through an adjacent mine working.</li> <li>The site was visited in June 2016 by Mr Lynn Widenbar, the Competent Person for Mineral Resource Estimation. Diamond drill rigs were viewed, as was core; a visit was carried out to the adjacent underground mine in Germany which is a continuation of the Cinovec Deposit.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Geological interpretation</i>	<ul style="list-style-type: none"> <li>• <i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i></li> <li>• <i>Nature of the data used and of any assumptions made.</i></li> <li>• <i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i></li> <li>• <i>The use of geology in guiding and controlling Mineral Resource estimation.</i></li> <li>• <i>The factors affecting continuity both of grade and geology.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The overall geology of the deposit is relatively simple and well understood due to excellent data control from surface and underground.</li> <li>• Nature of data: underground mapping, structural measurements, detailed core logging, 3D data synthesis on plans and maps.</li> <li>• Geological continuity is good. The grade is highest and shows most variability in quartz veins.</li> <li>• Grade correlates with degree of silicification and greisenisation of the host granite.</li> <li>• The primary control is the granite-country rock contact. All mineralization is in the uppermost 200m of the granite and is truncated by the contact.</li> </ul>
<i>Dimensions</i>	<ul style="list-style-type: none"> <li>• <i>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Cinovec South deposit strikes north-south, is elongated, and dips gently south parallel to the upper granite contact. The surface projection of mineralization is about 1 km long and 900 m wide.</li> <li>• Mineralization extends from about 200m to 500m below surface.</li> </ul>
<i>Estimation and modelling techniques</i>	<ul style="list-style-type: none"> <li>• <i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i></li> <li>• <i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li>• <i>The assumptions made regarding recovery of by-products.</i></li> <li>• <i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></li> <li>• <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li>• <i>Any assumptions behind modelling of selective mining units.</i></li> <li>• <i>Any assumptions about correlation between variables.</i></li> <li>• <i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li>• <i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li>• <i>The process of validation, the checking process used, the comparison of model</i></li> </ul>	<ul style="list-style-type: none"> <li>• Block estimation was carried out in Micromine using Ordinary Kriging interpolation.</li> <li>• A geological domain model was constructed using Leapfrog software with solid wireframes representing greisen, granite, greisenised granite and the overlying barren rhyolite. This was used to both control interpolation and to assign density to the model (2.57 for granite, 2.70 for greisen and 2.60 for all other material).</li> <li>• Analysis of sample lengths indicated that compositing to 1m was necessary.</li> <li>• Search ellipse sizes and orientations for the estimation were based on drill hole spacing, the known orientations of mineralisation and variography.</li> <li>• An “unfolding” search strategy was used which allowed the search ellipse orientation to vary with the locally changing dip and strike.</li> <li>• After statistical analysis, a top cut of 5% was applied to Sn% and W%; no top cut is applied to Li%.</li> <li>• Sn% and Li% were then estimated by Ordinary Kriging within the mineralisation solids.</li> <li>• The primary search ellipse was 150m along strike, 150m down dip and 7.5m across the mineralisation. A minimum of</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>data to drill hole data, and use of reconciliation data if available.</i>	<p>4 composites and a maximum of 8 composites were required.</p> <ul style="list-style-type: none"> <li>• A second interpolation with search ellipse of 300m x 300m x 12.5m was carried out to inform blocks to be used as the basis for an exploration target.</li> <li>• Block size was 5m (E-W) by 10m (N-S) by 5m</li> <li>• Validation of the final resource has been carried out in a number of ways including section comparison of data versus model, swathe plots and production reconciliation.</li> </ul>
<i>Moisture</i>	<ul style="list-style-type: none"> <li>• <i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Tonnages are estimated on a dry basis using the average bulk density for each geological domain.</li> </ul>
<i>Cut-off parameters</i>	<ul style="list-style-type: none"> <li>• <i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A series of alternative cutoffs was used to report tonnage and grade: Sn 0.1%, 0.2%, 0.3% and 0.4%. Lithium 0.1%, 0.2%, 0.3% and 0.4%.</li> </ul>
<i>Mining factors or assumptions</i>	<ul style="list-style-type: none"> <li>• <i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Mining is assumed to be by underground methods. A Scoping Study has determined the optimal mining method.</li> <li>• Limited internal waste will need to be mined at grades marginally below cutoffs. Mine dilution and waste are expected at minimal levels and the vast majority of the Mineral Resource is expected to convert to an Ore Reserve.</li> <li>• Based on the geometry of the deposit, it is envisaged that a combination of drift and fill mining and longhole open stoping will be used.</li> </ul>
<i>Metallurgical factors or assumptions</i>	<ul style="list-style-type: none"> <li>• <i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Recent testwork on 2014 drill core indicates a tin recovery of 80% can be expected.</li> <li>• Testwork on lithium is complete, with 70% recovery of lithium to lithium carbonate product via flotation concentrate and atmospheric leach.</li> <li>• Extensive testwork was conducted on Cinovec South ore in the past. Testing culminated with a pilot plant trial in 1970, where three batches of Cinovec South ore were processed, each under slightly different conditions. The best result, with a tin recovery of 76.36%, was obtained from a batch of 97.13t grading 0.32% Sn. A more elaborate flowsheet was also investigated and with flotation produced final Sn and W recoveries of better than 96% and 84%, respectively.</li> <li>• Historical laboratory testwork</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>demonstrated that lithium can be extracted from the ore (lithium carbonate was produced from 1958-1966 at Cinovec).</p>
<p><i>Environmental factors or assumptions</i></p>	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Cinovec is in an area of historic mining activity spanning the past 600 years. Extensive State exploration was conducted until 1990.</li> <li>The property is located in a sparsely populated area, most of the land belongs to the State. Few problems are anticipated with regards to the acquisition of surface rights for any potential underground mining operation.</li> <li>The envisaged mining method will see much of the waste and tailings used as underground fill.</li> </ul>
<p><i>Bulk density</i></p>	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>Historical bulk density measurements were made in a laboratory.</li> <li>The following densities were applied: <ul style="list-style-type: none"> <li>2.57 for granite</li> <li>2.70 for greisen</li> <li>2.60 for all other material</li> </ul> </li> </ul>
<p><i>Classification</i></p>	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul style="list-style-type: none"> <li>Following a review of a small amount of available QAQC data, and comparison of production data versus estimated tonnage/grade from the resource model, and given the close spacing of underground drilling and development, the majority of the Tin resource was originally classified in the Inferred category as defined by the 2012 edition of the JORC code.</li> <li>The new 2014 and 2016 drilling has confirmed the Tin mineralisation model and a part of this area has been upgraded to the Indicated category.</li> <li>The Li% mineralisation has been assigned to the Inferred category where the average distance to composites used in estimation is less than 100m. Material outside this range is unclassified but has been used as the basis for an Exploration Target.</li> <li>The new 2014 and 2016 drilling has confirmed the Lithium mineralisation</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>model and a part of this area has been upgraded to the Indicated category.</p> <ul style="list-style-type: none"> <li>The Competent Person (Lynn Widenbar) endorses the final results and classification.</li> </ul>
<p><i>Audits or reviews</i></p>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>Wardell Armstrong International, in their review of Lynn Widenbar’s initial resource estimate stated "the Widenbar model appears to have been prepared in a diligent manner and given the data available provides a reasonable estimate of the drillhole assay data at the Cinovec deposit".</li> </ul>
<p><i>Discussion of relative accuracy/ confidence</i></p>	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i></li> <li><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li><i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>In 2012, WAI carried out model validation exercises on the initial Widenbar model, which included visual comparison of drilling sample grades and the estimated block model grades, and Swath plots to assess spatial local grade variability.</li> <li>A visual comparison of Block model grades vs drillhole grades was carried out on a sectional basis for both Sn and Li mineralisation. Visually, grades in the block model correlated well with drillhole grade for both Sn and Li.</li> <li>Swathe plots were generated from the model by averaging composites and blocks in all 3 dimensions using 10m panels. Swathe plots were generated for the Sn and Li estimated grades in the block model, these should exhibit a close relationship to the composite data upon which the estimation is based. As the original drillhole composites were not available to WAI. 1m composite samples based on 0.1% cut-offs for both Sn and Li assays were</li> <li>Overall Swathe plots illustrate a good correlation between the composites and the block grades. As is visible in the Swathe plots, there has been a large amount of smoothing of the block model grades when compared to the composite grades, this is typical of the estimation method.</li> </ul>

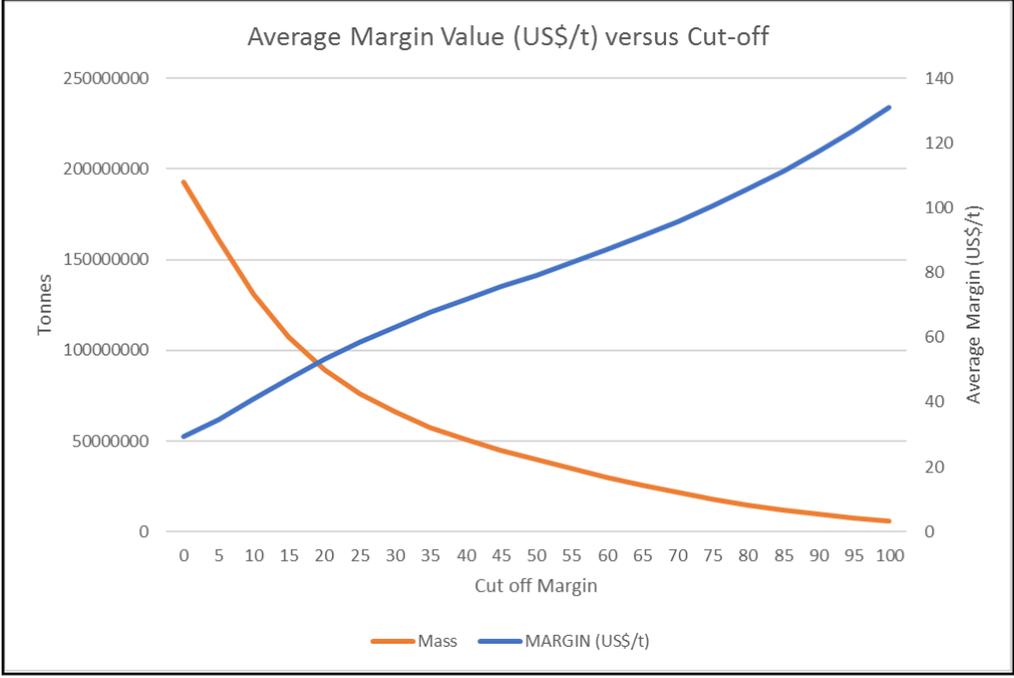
## ORE as at 1<sup>ST</sup> JUNE 2017

### Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in section 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary																																										
Mineral Resource estimate for conversion to Ore reserves	<ul style="list-style-type: none"> <li>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</li> <li>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>	<p>A JORC 2012 Mineral Resource Estimate (MRE) was issued by Widenbar and Associates. The electronic resource models were provided to Bara for the purposes of mine design. The table below summarises the mineral resource provided.</p> <table border="1" data-bbox="512 613 1541 864"> <thead> <tr> <th colspan="7">CINOVEC 2017 RESOURCE</th> </tr> <tr> <th></th> <th>Cutoff</th> <th>Tonnes</th> <th>Li</th> <th>Li<sub>2</sub>O</th> <th>Sn</th> <th>W</th> </tr> <tr> <th></th> <th>%</th> <th>(Millions)</th> <th>%</th> <th>%</th> <th>%</th> <th>%</th> </tr> </thead> <tbody> <tr> <td><b>INDICATED</b></td> <td>0.1%</td> <td>347.7</td> <td>0.21</td> <td>0.52</td> <td>0.04</td> <td>0.015</td> </tr> <tr> <td><b>INFERRED</b></td> <td>0.1%</td> <td>308.8</td> <td>0.18</td> <td>0.44</td> <td>0.04</td> <td>0.014</td> </tr> <tr> <td><b>TOTAL</b></td> <td>0.1%</td> <td>656.5</td> <td>0.20</td> <td>0.40</td> <td>0.04</td> <td>0.014</td> </tr> </tbody> </table>	CINOVEC 2017 RESOURCE								Cutoff	Tonnes	Li	Li <sub>2</sub> O	Sn	W		%	(Millions)	%	%	%	%	<b>INDICATED</b>	0.1%	347.7	0.21	0.52	0.04	0.015	<b>INFERRED</b>	0.1%	308.8	0.18	0.44	0.04	0.014	<b>TOTAL</b>	0.1%	656.5	0.20	0.40	0.04	0.014
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Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<p>The Mineral Resources are declared inclusive of Ore Reserves.</p> <p>The CP visited the site on 7<sup>th</sup> and 8<sup>th</sup> of September 2016, inspections were made of:</p> <ul style="list-style-type: none"> <li>Exploration drill cores.</li> <li>Underground visits were undertaken to old underground mine workings close to and situated in the same deposits as the Cinovec project area.</li> <li>The project surface site was visited including visits to: <ul style="list-style-type: none"> <li>Possible surface infrastructure sites.</li> <li>The sites of existing vertical shafts into the old Cinovec mine workings</li> <li>Access road and rail infrastructure.</li> </ul> </li> </ul>																																										
Study Status	<ul style="list-style-type: none"> <li>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</li> <li>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</li> </ul>	<p>A pre-feasibility study (PFS) has been undertaken for the Cinovec Project. All material issues relevant to the project have been considered in this study to ensure estimates to levels of accuracy generally accepted for a PFS.</p>																																										
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the cut-off grade(s) or quality parameters applied.</li> </ul>	<p>Revenue will be generated from the sales of Lithium (Li), Tin (Sn) and Tungsten (W). Each metal has different in-situ grades, plant recoveries, operating costs and metal prices. To determine the revenue generated from a block of material in the block model there factors need to be taken into account. To do this the total revenue and operating costs were calculated using a script in the block model. The cost was deducted from the revenue to produce a "Margin" value for each block. Where Margin is greater than zero, the</p>																																										

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		block is flagged as ore. The metal prices, recoveries and formulae used to calculate the operating costs for purposes of the margin calculation are tabled below.																																																																																								
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	<p data-bbox="526 206 1540 884">  </p>	<p data-bbox="981 907 1540 1456">           In order to optimise the value of the project a strategic decision was made by the client to mine at a higher grade than the average and to optimise the mined grade by reducing the tonnes and increasing the grade to the point where mine life becomes the constraint, or the mining becomes prohibitively selective. The production rate of the processing plant was set by EMH at 360,000 tpa of mica concentrate. This equates to approximately 1.7 million tpa of RoM ore. For a mine life of over 20 years, which was the requirement stated by EM, the mining inventory needs to be at least 34 million tonnes. Using the grade versus tonnage curve a cut-off of US\$35/tonne Margin was selected. This resulted in the appropriate mine life while still allowing the use of bulk mining methods such as LHOS.         </p> <p data-bbox="981 1489 1189 1523"><u>Geotechnical input</u></p> <p data-bbox="981 1545 1540 1713">           A geotechnical study was completed as part of the pre-feasibility study. The geotechnical study prescribed geotechnical design criteria which should be applied in the mine design. The design criteria are detailed in the table below.         </p>
<p data-bbox="279 1489 470 1556"><i>Mining factors or assumptions</i></p>	<ul data-bbox="486 1489 949 2094" style="list-style-type: none"> <li>• <i>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</i></li> <li>• <i>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</i></li> <li>• <i>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</i></li> <li>• <i>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</i></li> <li>• <i>The mining dilution factors used.</i></li> <li>• <i>The mining recovery factors used.</i></li> <li>• <i>Any minimum mining widths used.</i></li> <li>• <i>The manner in which Inferred Mineral</i></li> </ul>	

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	<p>Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</p> <ul style="list-style-type: none"> <li>The infrastructure requirements of the selected mining methods.</li> </ul>	<p style="text-align: center;"><b>CINOVEC MINE DESIGN CRITERIA</b></p> <table border="1"> <thead> <tr> <th>Aspect</th> <th>Description</th> <th colspan="2">Value</th> </tr> </thead> <tbody> <tr> <td>Spans</td> <td>Maximum stope spans</td> <td colspan="2">13.0m</td> </tr> <tr> <td rowspan="4">Potvin's Stability number</td> <td>Crown (Rhyolite)</td> <td colspan="2">19.70</td> </tr> <tr> <td>Hanging wall (Greisen + Granite orebody)</td> <td colspan="2">39.40</td> </tr> <tr> <td>Footwall (Albite Granite)</td> <td colspan="2">52.70</td> </tr> <tr> <td>Endwalls (Greisen + Granite orebody)</td> <td colspan="2">39.40</td> </tr> <tr> <td rowspan="4">Hydraulic radius</td> <td><i>Stability graph</i></td> <td><i>Matthews-Potvin, 1992</i></td> <td><i>Extended Matthews, 2002</i></td> </tr> <tr> <td>Crown (Rhyolite)</td> <td>7.20</td> <td>9.2</td> </tr> <tr> <td>Hanging wall (Greisen + Granite orebody)</td> <td>9.30</td> <td>15</td> </tr> <tr> <td>Endwalls (Greisen + Granite orebody)</td> <td>9.30</td> <td>15</td> </tr> <tr> <td rowspan="5">Critical strike span</td> <td>Stope height (m)</td> <td colspan="2">(m)</td> </tr> <tr> <td>25.0</td> <td colspan="2">80</td> </tr> <tr> <td>20.0</td> <td colspan="2">90</td> </tr> <tr> <td>15.0</td> <td colspan="2">90</td> </tr> <tr> <td>10.0</td> <td colspan="2">90</td> </tr> <tr> <td rowspan="5">Rib pillar widths [m]</td> <td>Stope height (m)</td> <td colspan="2">(m)</td> </tr> <tr> <td>25.0</td> <td colspan="2">7.0</td> </tr> <tr> <td>20.0</td> <td colspan="2">6.0</td> </tr> <tr> <td>15.0</td> <td colspan="2">5.0</td> </tr> <tr> <td>10.0</td> <td colspan="2">4.0</td> </tr> <tr> <td rowspan="3">Sill pillar widths [m]</td> <td>Stope height (m)</td> <td colspan="2">(m)</td> </tr> <tr> <td>&gt;25.0</td> <td colspan="2">6.0</td> </tr> <tr> <td>&lt;25.0</td> <td colspan="2">No sill pillars for stope height less than 25.0m</td> </tr> <tr> <td>Crown pillar dimension</td> <td>Crown pillar width</td> <td colspan="2">40</td> </tr> </tbody> </table>	Aspect	Description	Value		Spans	Maximum stope spans	13.0m		Potvin's Stability number	Crown (Rhyolite)	19.70		Hanging wall (Greisen + Granite orebody)	39.40		Footwall (Albite Granite)	52.70		Endwalls (Greisen + Granite orebody)	39.40		Hydraulic radius	<i>Stability graph</i>	<i>Matthews-Potvin, 1992</i>	<i>Extended Matthews, 2002</i>	Crown (Rhyolite)	7.20	9.2	Hanging wall (Greisen + Granite orebody)	9.30	15	Endwalls (Greisen + Granite orebody)	9.30	15	Critical strike span	Stope height (m)	(m)		25.0	80		20.0	90		15.0	90		10.0	90		Rib pillar widths [m]	Stope height (m)	(m)		25.0	7.0		20.0	6.0		15.0	5.0		10.0	4.0		Sill pillar widths [m]	Stope height (m)	(m)		>25.0	6.0		<25.0	No sill pillars for stope height less than 25.0m		Crown pillar dimension	Crown pillar width	40	
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		<p>An evaluation was completed to establish the achievable extraction ratios with and without backfill, based on the geotechnical design criteria including pillar sizes and stope spans (see above). The preferred option was to mine with pillars support only, negating the requirement for a backfill plant.</p> <p>The selected mining method is long hole open stoping with pillar support. The payable ore will be split into blocks approximately 90 m long in the strike direction and 25 m high. The bottom of each block will be accessed in the central position by an access crosscut and the block will be mined out from the centre to the strike limit by drifting. The stope will be mined on retreat from the block extent, retreating to the access cross cut position. The stopes will be a maximum of 13 m wide with rib pillars between stopes of 4 to 7 m wide depending on stope height. Access to the stopes will be by footwall drives developed in the footwall at 25 m vertical intervals. All stope access crosscuts will be developed out of the footwall drives.</p> <p>The mine will be accessed by a twin decline system. A conveyor will be installed from the underground primary crusher on 590m Elevation to surface in the conveyor decline. The second decline will be used as a service decline for men, material and as an intake airway.</p> <p><u>Mining modifying factors</u></p> <p>Stope shapes were determined by use of stope optimisation software after application of minimum stope size and stope geometry. The design criteria specified included:</p> <ul style="list-style-type: none"> <li>• Cut-off – Margin &gt;US\$35 per tonne. This means that the average margin of the resultant stope shape must be greater than US\$35/tonne.</li> <li>• Stope width – 17 m (includes rib pillar, which was deducted as a tonnage loss later in the schedule)</li> <li>• Maximum stope height – Unlimited. Stope shapes greater than 25m high were later split by level and sill pillar losses accounted for.</li> <li>• Minimum stope height – 5m (height of ore drive).</li> <li>• Stope length – Minimum 10 m, maximum unlimited. Stopes were later split into stope blocks with maximum length of 180 m (two stopes of 90 m each)</li> <li>• Minimum footwall slope angle - 50°.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>After definition of the stope shapes mining modifying factors as described below were applied:</p> <p><i>Mining Exclusions</i></p> <ol style="list-style-type: none"> <li>1. The Northern most portion of the orebody is located below the village. In this area it was agreed to leave an unmined crown pillar of at least 150 m between surface and the uppermost mining level. In other parts of the orebody the crown pillar was 70 m.</li> <li>2. DSO created stope shapes according to the criteria specified above, but with no consideration of the development required to access these blocks. The design was edited to remove any blocks that were not practical to access, being either excessively far from planned development and too small to justify the access development, or small volumes on an elevation that is difficult to access being between mining levels.</li> </ol> <p><i>Pillar loss</i></p> <p>Total pillar loss is estimated to be 35%.</p> <p><i>Unplanned dilution</i></p> <p>In order to account for these mining inefficiencies unplanned dilution was added to all stope tonnage. Due to the large size of the stopes the dilution percentage is low at 3%. This allows for approximately 0.25 m of over break around the entire stope.</p> <p>Since the stopes are defined by a grade cut-off and the mineralisation is disseminated, there is not expected to be a sharp drop-off of grade outside the stope envelope. The dilution will therefore contain metal grade. The average grade of the resource below the margin cut-off of US\$35/t has been applied to the dilution material in the mine plan. The grade of the dilution is:</p> <p style="text-align: center;">Li% - 0.22</p> <p style="text-align: center;">Sn% - 0.04</p> <p style="text-align: center;">W% - 0.01</p> <p><i>Ore loss</i></p> <p>Ore loss does occur in mining operations due to mining inefficiencies. This can be due to factors such as:</p> <ul style="list-style-type: none"> <li>• Ore not loaded out of stopes</li> <li>• Grade control errors</li> <li>• Haulage errors</li> <li>• Underbreak in the blasting operation</li> </ul>

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		<ul style="list-style-type: none"> <li>• Stope hang ups</li> </ul> <p>To account for these inefficiencies an ore loss factor of 3% has been included in the mining schedule. This is a tonnage loss at the average grade of the block.</p> <p><u>Inferred Resources</u></p> <p>No inferred resources were included as ore in the pre-feasibility mine plan. Inferred resources were treated as waste.</p> <p><u>Infrastructure</u></p> <p><i>Surface Infrastructure</i></p> <p>The surface infrastructure has been designed to support the mining plan with consideration of the labour and mechanised equipment requirements of the operation in addition to the movement of rock, men and materials. The infrastructure is divided into two distinct areas, with the area at the portal servicing the initial development requirements and the second servicing the production phase. Allowance has been made for;</p> <ul style="list-style-type: none"> <li>• Security fencing.</li> <li>• Site access control and parking.</li> <li>• Development offices</li> <li>• Development change house and laundry.</li> <li>• Lamp house and crush.</li> <li>• Medical station.</li> <li>• Trackless workshop and wash bay.</li> <li>• Compressor station</li> <li>• Diesel farm.</li> <li>• Oil and grease storage,</li> <li>• Main store and material yard.</li> <li>• Capital laydown area</li> <li>• Service water storage and settling.</li> <li>• Downcast air heating.</li> <li>• Brake testing ramp</li> <li>• Main offices</li> <li>• Main change houses</li> <li>• Main laundry.</li> <li>• Training centre.</li> <li>• Parking and bus drop off zone</li> <li>• Fire systems</li> <li>• Potable water infrastructure including municipal Interface.</li> <li>• Sewage Infrastructure including municipal Interface.</li> <li>• Gas supply Infrastructure including municipal Interface.</li> <li>• MV electrical infrastructure including municipal Interface.</li> <li>• Explosives accessories magazine.</li> </ul>

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		<p><i>Underground Infrastructure</i></p> <p>Underground infrastructure designs take into consideration the life of mine plan and aims to support the underground mining production and development activities. Underground infrastructure comprises:</p> <ul style="list-style-type: none"> <li>• Mine service water systems</li> <li>• Mine dewatering systems, including clear and dirty water pump stations.</li> <li>• Mine electrical reticulation</li> <li>• Control systems and instrumentation</li> <li>• Trackless workshops</li> <li>• Refuelling bays</li> <li>• Underground crushers, tips, and conveyors.</li> </ul> <p>The mine service water system is based on a re-circulation design, with settled water from the mining activities used as service water. This reduces the mine pumping requirement in turn reducing power costs.</p> <p>In terms of electrical reticulation, the Cinovec mining operation will require a bulk power supply of 3.5 MVA. Power will be provided by a local supply authority and it is anticipated it will be at 6kV.</p> <p><i>Underground Ore Handling</i></p> <p>The underground ore handling system is designed for 500 t/h and will comprise the following:</p> <ul style="list-style-type: none"> <li>• A primary tip, equipped with a static grizzly and a hydraulic rock breaker to break oversize lumps;</li> <li>• An ore-pass;</li> <li>• A primary crushing station, equipped with a vibrating grizzly feeder and jaw crusher;</li> <li>• A sacrificial conveyor (CV001), 18 m long, to protect the main decline conveyor;</li> <li>• A decline conveyor (CV002), 1,146 m long.</li> </ul>
<p><i>Metallurgical factors or assumptions</i></p>	<ul style="list-style-type: none"> <li>• <i>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</i></li> <li>• <i>Whether the metallurgical process is well-tested technology or novel in nature.</i></li> <li>• <i>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</i></li> <li>• <i>Any assumptions or allowances made for deleterious elements.</i></li> <li>• <i>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</i></li> <li>• <i>For minerals that are defined by a</i></li> </ul>	<p>The beneficiation plant process route consists of crushing, SAG milling, classification, thickening and wet high intensity magnetic separation (WHIMS). The magnetic fraction passes to the Lithium Carbonate Plant (LCP). The non-magnetic fraction is processed by classification, spiral concentration and regrinding of the spiral middlings. The spirals product is a tin / tungsten product. The LCP process route consists of roasting, leaching filtration, impurity removal by ion exchange and crystallization. The testwork program has indicated that the process route selected is appropriate for the style of mineralization of the orebody.</p>

Criteria	JORC Code explanation	Commentary
	<p><i>specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</i></p>	<p>The process route selected utilizes standard, industry proven technology. The process route selected was based on the testwork carried out, and on the respective engineering companies' experience on other, similar projects.</p> <p>The samples used for the beneficiation plant testwork were quarter core composites from the drilling campaigns. For the comminution tests, composites were made up of the various ore types to provide an indication of variability. As composites of drill cores were used for the testwork, the samples are considered to be representative of the deposit. The variability in the deposit may be an issue in the plant operation, but additional testwork will be carried out during the feasibility study to inform on this issue. The mass of sample received for the testwork was 150kg, which enabled appropriate sized samples (taking into consideration that the study being carried out is pre-feasibility) to be used for the various tests. The product recoveries were determined from the testwork, factors were not applied.</p> <p>Testwork has produced a saleable lithium carbonate product (&gt;99.5% lithium carbonate) although the levels of fluoride (500 ppm) and silicon (300 ppm) were high. These elements are not generally considered to be deleterious elements in product specifications. Further testwork will be carried out to reduce these levels.</p> <p>No bulk samples were available for the testwork but were not required as the level of study was pre-feasibility. Pilot scale testwork will be carried out during the feasibility study. The composite samples used for the testwork are considered to be representative of the ore-body and suitable for the testwork performed.</p> <p>The specification for the lithium carbonate product is a minimum of 99.5% lithium carbonate. This was achieved in the testwork. Testwork will be carried out during the next phase of the project to further improve on the quality of the product to be produced.</p>
<p><i>Environmental</i></p>	<ul style="list-style-type: none"> <li><i>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</i></li> </ul>	<p>The Company has commenced the Environmental Impact Assessment EIA process with a baseline study, prepared by GET s.r.o an independent Czech based environmental consultancy. This identified the environmental areas to be assessed and determined preliminary outcomes. The underground mine and surface portal is located on the border adjacent to an environmentally sensitive area – Natural park Eastern Krusne hory.</p> <p>The Project area is mostly covered by forests and treeless plateau with bushy growth. The area of Dubí township is covered by farm land (15%) and</p>

Criteria	JORC Code explanation	Commentary
		<p>non-agricultural land (85%), out of that 80% are forests. Intensive biological investigation executed in 2016 identified 20 natural biotops, out of them 4 peat bogs, springheads, waterlogged spruce growths and mountain meadows) are protected within the Natura 2000. Screening process also identified 67 animal species – 2 amphibians, 2 snakes, 51 birds and 11 mammals living in the area. Of them, 14 species are protected. Through the area also runs the regional natural bio corridor K2.</p> <p>The Cinovec Sn/W Lithium Project is governed by Act No.100/2001 Coll., on Environment Impact Assessment (hereinafter referred to as the “EIA Act”). The competent authority is the Ministry of the Environment (Environment Impact Assessment Department). An integrated permit is issued upon completion of the EIA process.</p> <p>In consideration of the exploitation mining licence to be granted and the expected production of the Li-W-Sn ore exceeding 1 Mt a year during the implementation of the Project, the EIA documentation must be prepared and assessed (full-scope EIA Report).</p> <p>The Cinovec Sn/W Lithium Project development documentation shall be structured as follows:</p> <ul style="list-style-type: none"> <li>• details concerning the Notifier,</li> <li>• details concerning the development project,</li> <li>• details concerning the status of the environment in the region concerned,</li> <li>• comprehensive characteristics and assessment of the Project impacts on public health and the environment,</li> <li>• a comparison of project versions (if any),</li> <li>• a conclusion, and</li> <li>• a commonly understood summary and annexes (opinion of the Building Authority, opinion of the Nature Protection Authority, expert studies and assessments).</li> </ul> <p>The following expert studies and assessments must be compiled during the EIA Documentation preparation stage:</p> <ul style="list-style-type: none"> <li>• noise impact study,</li> <li>• air quality impact study,</li> <li>• biological survey,</li> <li>• human health impact study,</li> <li>• transport impact study,</li> <li>• landscape impact study, and</li> <li>• water quality and hydrology impact study.</li> </ul> <p>In this case, with respect to the location of the Project at the border with Germany, the so-called “international assessment” provision applies (Section 13, Act No. 100). This process is more</p>

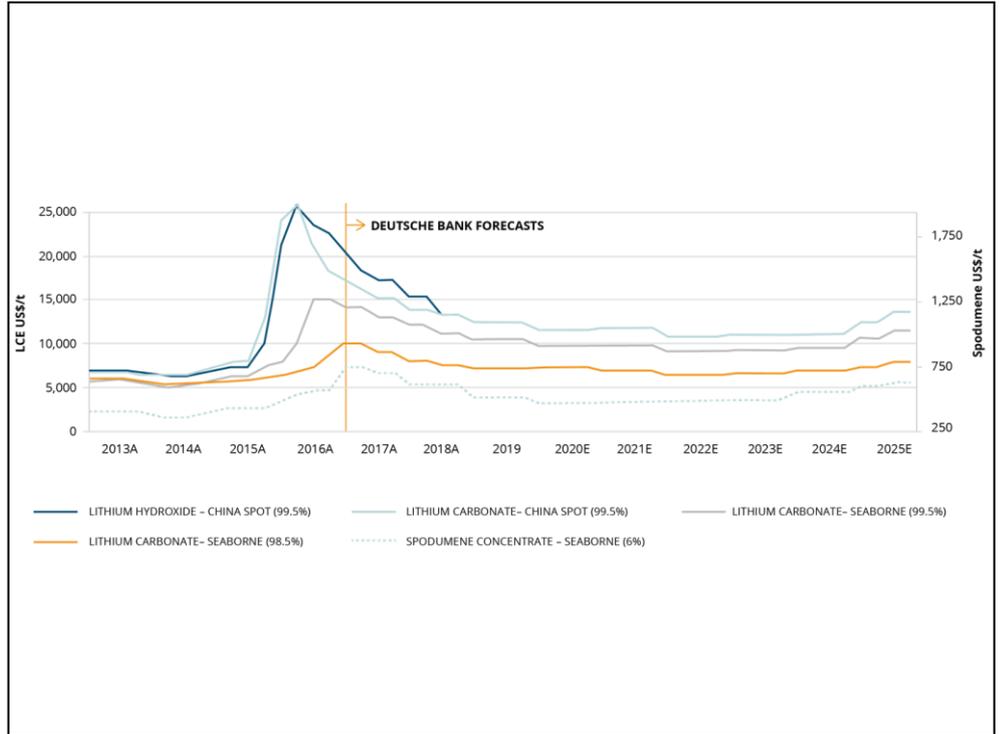
Criteria	JORC Code explanation	Commentary
		<p>time-demanding – in an international assessment, the Ministry of the Environment may extend the deadlines to present views by up to 30 days; other deadlines (Sec. 12, Act.100) are extended adequately in such a case.</p> <p>EMH commenced the EIA process with the baseline study, prepared by GET, which identified the environmental areas to be assessed and determined preliminary outcomes. The project, mainly the underground mine and surface portal is located in environmentally sensitive area. From that perspective, the EIA will focus particularly on project impacts on European protected areas Natura 2000 (protected birds) and mine water discharge into surface streams due to the content of Beryllium and radioactive components. Considering the long-term mining history in region the Project will not significantly change the situation towards to environment and from that perspective all identified potential problems should be resolvable and EMH do not envision any fatal flaws will be encountered.</p> <p>The Cinovec EIA will focus particularly on Project impacts on European protected areas Natura 2000 (protected birds) and mine water discharge into surface streams. The Company has re-positioned key infrastructure to minimise impacts to both the environment and the community and has placed crushing facilities and fans underground to minimise noise as well as enclosing the mill to further reduce noise and visual impacts. Considering the long-term mining history in region and at the deposit itself, the Project will not significantly impact the environment.</p> <p><b>Waste Rock</b></p> <p>Acid-Base accounting (ABA): Acid-Base accounting (ABA) is a screening procedure whereby the acid-neutralising potential (assets) and acid-generating potential (liabilities) of rock samples are determined, and the difference, net neutralising potential (equity), is calculated.</p> <p>Samples were devoid of sulphides and have no potential to generate acid-mine drainage as confirmed through both the ABA and NAG test. However, the Neutralisation Potential of the samples were also very low and samples also had a very low total C content. However, the potential to leach at least As and F which should be further investigated through the column leach testing as these two parameters will also be present in neutral drainage from samples.</p> <p>The addition of acid to samples (ABCC method: 3 g sample in 100 ml water as per AMIRA, 2002) resulted in quick acidification confirming that the</p>

Criteria	JORC Code explanation	Commentary
		<p>samples had almost no Neutralisation Potential. The pH curve is only slightly higher than for the Blank (distilled water).</p> <p>Net Acid Generation (NAG): The single addition NAG test was used to classify the acid generating potential of all 42 samples. The NAG test involves the reaction of a sample with hydrogen peroxide to rapidly oxidise any sulphide minerals contained within a sample. The end result represents a direct measurement of the net amount of acid generated by the sample. This value is commonly referred to as the NAG capacity and is expressed in the is kg H<sub>2</sub>SO<sub>4</sub>/tonne.</p> <p>All of the samples tested were classified as non-acid forming. The ICP analysis of the NAG elution did not yield any significant results. This test is more appropriate where the sample have sulphides that can be oxidised with peroxide and ICP analyses indicate metals released.</p> <p>Tailings</p> <p>Tailings produced by the gravity circuit of the FECAB's beneficiation plant and the Residue Filtration Stream produce by the LCP require permanent impoundment in a suitable Tailings Storage Facility (TSF). For the PFS a conservative approach was taken by designing a dry stack tailings facility. Any water from the dry stacked tails is captured and recycled to the LCP process water feed. This approach, although higher in Capex, offers the most environmentally sustainable method of tailings impoundment.</p> <p>Tailings produced by the gravity circuit are filtered in two pressure filters to produce a filter cake with a moisture content of 18%. This moisture content is based of filtration test work performed on a representative tailings sample by Diemme<sup>®</sup> with the results interpreted by Ausenco and incorporated into the FECAB design.</p> <p>The FECAB filter cakes falls into a bunker below the pressure filters, from where it is collected by a wheel loader and loaded into an articulated truck for transfer to the dry stacks tails tip point. The articulate truck dumps the tailings filter cake where it is spread and compacted by a bulldozer. The estimated cost of the FECAB tailings disposal is \$1.00/ wet tonne.</p> <p>The LCP tailings consist of leach residue filter cake produced by a pressure filter. As with the FECAB, the pressure filter drops the filter cake into a bunker for loading via a wheel loader. The estimated cost for LCP residue disposal is \$1.50/ wet tonne.</p>

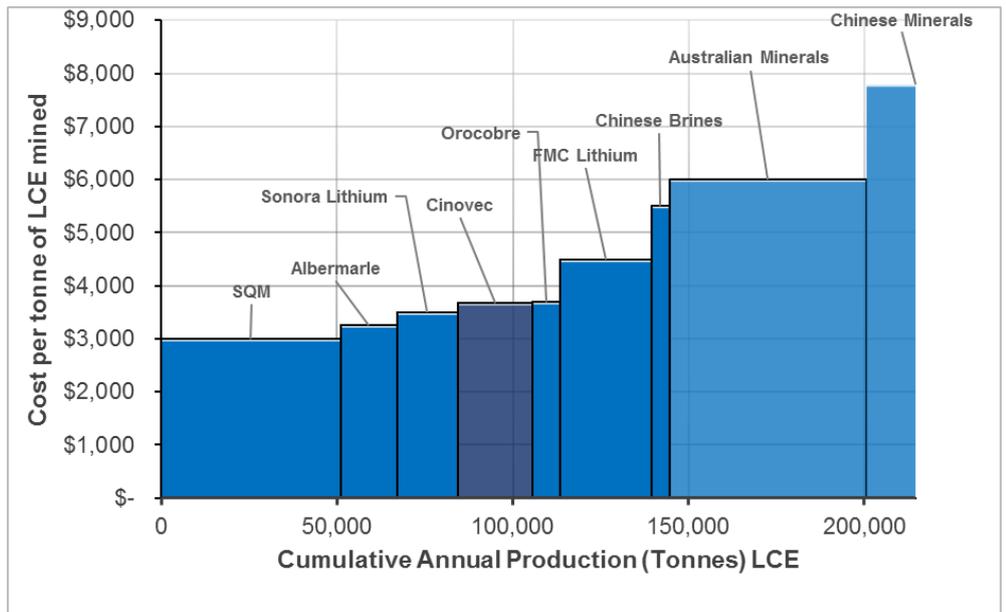
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		<p>The loading, trucking and spreading of the tailings will be performed by a local contract earth moving company.</p> <p>Data used as input criteria to the TSF design concept are listed in the table, which is considered adequate for PFS and has been derived from PFS level engineering.</p> <table border="1" data-bbox="767 501 1489 840"> <thead> <tr> <th rowspan="2">Criteria</th> <th colspan="2">Value</th> </tr> <tr> <th>LCP</th> <th>FECAB</th> </tr> </thead> <tbody> <tr> <td>Tailings P<sub>80</sub></td> <td>53 µm</td> <td>53 µm</td> </tr> <tr> <td>Tailings production rate (dry tpa)</td> <td>506,998</td> <td>1,636,260</td> </tr> <tr> <td>Tailings dry density (t/m<sup>3</sup>)</td> <td>1.64</td> <td>1.69</td> </tr> <tr> <td>Tailings % solids at deposition (% wt)</td> <td>75</td> <td>85</td> </tr> <tr> <td>Design life of starter TSF (yr)</td> <td>2</td> <td>2</td> </tr> <tr> <td>Design life of TSF (yr)</td> <td>10</td> <td>10</td> </tr> </tbody> </table> <p>All permits for the tailings dam, waste rock dump and operations will be applied for when appropriate and as governed by Czech law. To date, permits for mine de-watering and preliminary mining permits have been received.</p>	Criteria	Value		LCP	FECAB	Tailings P <sub>80</sub>	53 µm	53 µm	Tailings production rate (dry tpa)	506,998	1,636,260	Tailings dry density (t/m <sup>3</sup> )	1.64	1.69	Tailings % solids at deposition (% wt)	75	85	Design life of starter TSF (yr)	2	2	Design life of TSF (yr)	10	10
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<b>Infrastructure</b>	<ul style="list-style-type: none"> <li><i>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.</i></li> </ul>	<p>Currently, no infrastructure exists at the mine site and therefore allowance has been made for all support facilities required by the planned mining operation. Surface infrastructure has been designed to support the mining plan with consideration of the labour and mechanised equipment requirements of the operation in addition to the movement of rock, men and materials. The infrastructure is divided into two distinct areas, with the area at the portal servicing the initial development requirements and the second servicing the production phase. The surface infrastructure design includes all facilities and services (such as offices, changehouses, workshops) as well as utilities and reticulation (such as power, water and gas utilities) to support the underground mining activities for the life of mine.</p> <p>Underground infrastructure designs take into consideration the life of mine plan and aims to support the underground mining production and development activities. The underground infrastructure primarily comprises the underground conveyor and crushing system, dewatering facilities, and underground workshops</p>																							
<b>Costs</b>	<ul style="list-style-type: none"> <li><i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></li> <li><i>The methodology used to estimate operating costs.</i></li> <li><i>Allowances made for the content of</i></li> </ul>	<p>The capital and operating cost estimate has been determined through the application of budget quotations, database costs and estimated costs. These costs were applied to material take offs, bill of quantities and estimated quantities derived</p>																							

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	<p><i>deleterious elements.</i></p> <ul style="list-style-type: none"> <li>• <i>The source of exchange rates used in the study.</i></li> <li>• <i>Derivation of transportation charges.</i></li> <li>• <i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></li> <li>• <i>The allowances made for royalties payable, both Government and private.</i></li> </ul>	<p>from the engineering design process. The once the overall capital cost was calculated, the costs are scheduled according to an implementation plan in order to determine the spend over the life of the project.</p> <p>Capital Cost are summarised as follows:</p> <table border="1"> <thead> <tr> <th></th> <th>TOTAL US\$ M</th> </tr> </thead> <tbody> <tr> <td colspan="2"><b>Underground Mining Development</b></td> </tr> <tr> <td>Mining Directs</td> <td>67.3</td> </tr> <tr> <td>Mining In directs</td> <td>3.0</td> </tr> <tr> <td><b>Total Mining Cost</b></td> <td><b>70.3</b></td> </tr> <tr> <td colspan="2"><b>Front End Comminution &amp; Beneficiation Plant (FECAB)</b></td> </tr> <tr> <td>Comminution - Direct</td> <td>25.2</td> </tr> <tr> <td>Beneficiation - Direct</td> <td>40.5</td> </tr> <tr> <td>Infrastructure -Direct</td> <td>20.8</td> </tr> <tr> <td>FECAB In directs</td> <td>18.4</td> </tr> <tr> <td><b>Total FECAB</b></td> <td><b>104.9</b></td> </tr> <tr> <td colspan="2"><b>Lithium Carbonate Plant (LCP)</b></td> </tr> <tr> <td>LCP Directs</td> <td>141.9</td> </tr> <tr> <td>LCP In directs</td> <td>38.0</td> </tr> <tr> <td><b>Total LCP Capital</b></td> <td><b>179.9</b></td> </tr> <tr> <td><b>Total Tailings</b></td> <td><b>2.6</b></td> </tr> <tr> <td><b>Overall Project Contingency @10%</b></td> <td><b>35.8</b></td> </tr> <tr> <td><b>TOTAL CAPITAL COST</b></td> <td><b>393.4</b></td> </tr> </tbody> </table> <p>Operating costs are summarised as follows:</p> <table border="1"> <thead> <tr> <th>Area</th> <th>Total [USD/t]</th> </tr> </thead> <tbody> <tr> <td>Mining Opex</td> <td>24.26</td> </tr> <tr> <td>FECAB Opex</td> <td>11.66</td> </tr> <tr> <td>LCP Opex</td> <td>28.17</td> </tr> <tr> <td>Contingency Opex</td> <td>-</td> </tr> <tr> <td>Overall Project Admin</td> <td>0.53</td> </tr> <tr> <td><b>Total operating costs</b></td> <td><b>64.62</b></td> </tr> </tbody> </table>		TOTAL US\$ M	<b>Underground Mining Development</b>		Mining Directs	67.3	Mining In directs	3.0	<b>Total Mining Cost</b>	<b>70.3</b>	<b>Front End Comminution &amp; Beneficiation Plant (FECAB)</b>		Comminution - Direct	25.2	Beneficiation - Direct	40.5	Infrastructure -Direct	20.8	FECAB In directs	18.4	<b>Total FECAB</b>	<b>104.9</b>	<b>Lithium Carbonate Plant (LCP)</b>		LCP Directs	141.9	LCP In directs	38.0	<b>Total LCP Capital</b>	<b>179.9</b>	<b>Total Tailings</b>	<b>2.6</b>	<b>Overall Project Contingency @10%</b>	<b>35.8</b>	<b>TOTAL CAPITAL COST</b>	<b>393.4</b>	Area	Total [USD/t]	Mining Opex	24.26	FECAB Opex	11.66	LCP Opex	28.17	Contingency Opex	-	Overall Project Admin	0.53	<b>Total operating costs</b>	<b>64.62</b>
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	<p><i>treatment charges, penalties, net smelter returns, etc.</i></p> <ul style="list-style-type: none"> <li><i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></li> </ul>	<table border="1"> <tr> <td>Tungsten (US\$/MTU)</td> <td>330</td> </tr> <tr> <td>Lithium Carbonate (US\$/t)</td> <td>10 000</td> </tr> <tr> <td>Potassium Sulphate (Potash) (US\$/t)</td> <td>480</td> </tr> </table> <p>Exchange Rates Used</p> <table border="1"> <tr> <td>USD</td> <td>1.0000</td> </tr> <tr> <td>EUR</td> <td>0.9276</td> </tr> <tr> <td>CZK</td> <td>25.0500</td> </tr> <tr> <td>CAD</td> <td>1.3082</td> </tr> <tr> <td>AUD</td> <td>1.3212</td> </tr> <tr> <td>GBP</td> <td>0.7965</td> </tr> </table>	Tungsten (US\$/MTU)	330	Lithium Carbonate (US\$/t)	10 000	Potassium Sulphate (Potash) (US\$/t)	480	USD	1.0000	EUR	0.9276	CZK	25.0500	CAD	1.3082	AUD	1.3212	GBP	0.7965
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Market assessment	<ul style="list-style-type: none"> <li><i>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</i></li> <li><i>A customer and competitor analysis along with the identification of likely market windows for the product.</i></li> <li><i>Price and volume forecasts and the basis for these forecasts.</i></li> <li><i>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</i></li> </ul>	<p>Lithium is the key driver of the Project. According to Deutsche Bank, global lithium demand increased 15% year on year to 212 kt LCE in 2016, slightly ahead of estimates. Deutsche Bank forecast lithium pricing to remain elevated relative to historical averages, but retrace 15% over 2016 pricing levels. Further, the medium-term outlook is improving and Deutsche Bank has recently lifted their 2019 demand forecast to 380 kt.</p> <p>The ramp up of new EV model sales from major auto companies is generally considered to be the key driver of lithium demand in the short to medium term. Other factors include the increased production from battery manufacturing facilities and the continued inventory build within the supply chain.</p> <p>The Cinovec Project is located centrally and within close proximity to a number of major European car manufacturers.</p> <p>Benchmark expects the average forecasted price range for lithium carbonate 99.95% to be \$ 9,500 to \$ 13,000/tonne (USD) between 2017 and 2020.</p> <p>European Metals has considered this forecast in light of other independent forecasts such as Deutsche Bank, and on generally available lithium market commentary.</p> <p>For the purposes of the PFS with regards to financial modelling, a long-term average price of \$ 10,000/t lithium carbonate FOB has been used. The graph below shows the Deutsche Bank lithium price forecasts to 2025.</p>																		

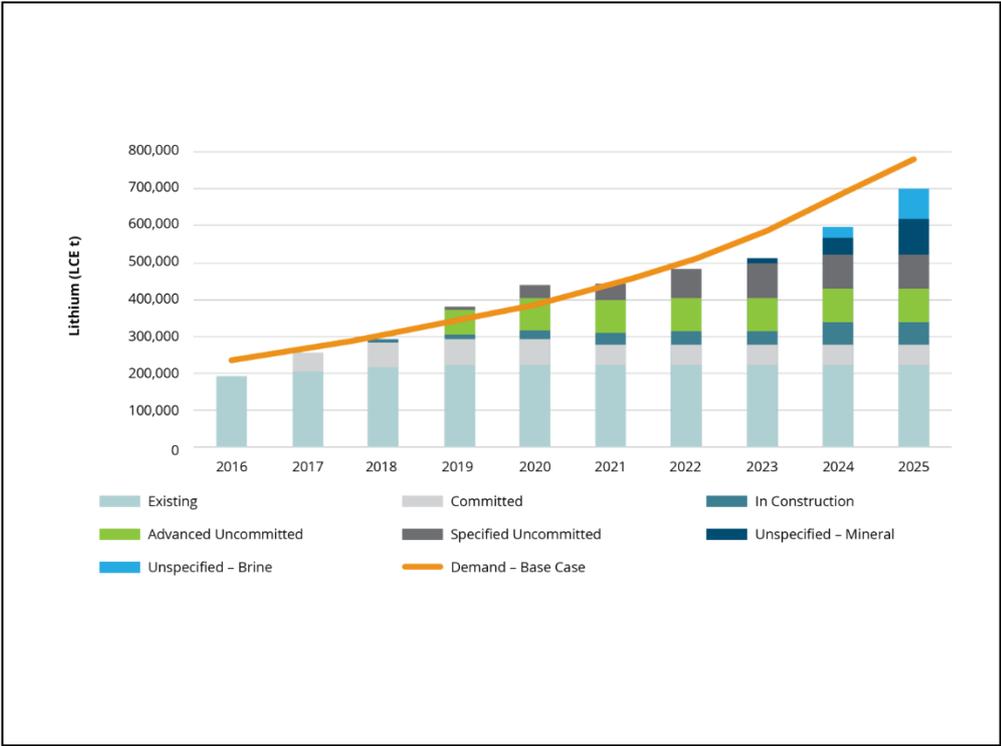
**Criteria**
**JORC Code explanation**
**Commentary**


A cost comparison shows the project will be in the lowest half of the global cost curve.



The graph below shows the anticipated supply and demand for lithium.

Criteria	JORC Code explanation	Commentary
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There are industry standard specifications for lithium carbonate. The table below shows that the results achieved to-date in testing meets these standards.

Element	Precipitation (ppm)	Bicarbonation (ppm)	FMC/ Chinese Specification Values (ppm)
Iron	160 – 320	20	(5, 2)
Aluminium	60	< 10	(10, 2)
Calcium	10 – 20	< 5	(400, 25)
Sodium	200 – 300	< 50	(500, 20)
Potassium	200 – 300	< 5	(N/A, 10)
Sulphate	1200 – 1900	< 150	(1000, 30)
Fluoride	450 – 500	500	(N/A, N/A)
Silicon	300 – 600	300	(N/A, 40)

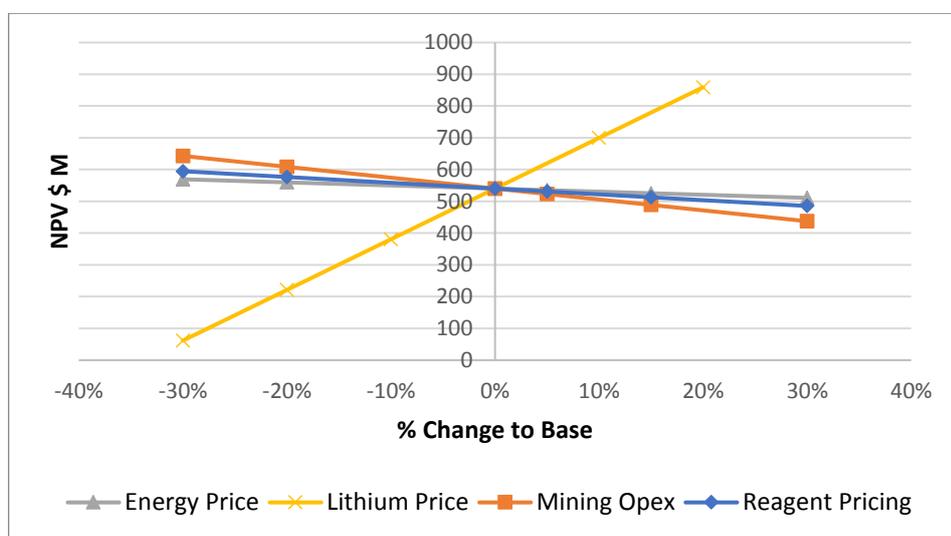
**Economic**

- *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.*
- *NPV ranges and sensitivity to variations in the significant assumptions and input.*

The results of the techno-economic evaluation demonstrate that the project is economically viable based on the designs established and the assumptions used in this study. The table below shows that the financial result is positive when considering the time value of money. At a discount rate of 8 per cent, the NPV is 540 million USD and the post-tax IRR is 20.9 per cent.

Criteria	JORC Code explanation	Commentary		
	Metric	Value	Metric	Value
	NPV @8% Discount	\$540 M	Project Breakeven (IRR=0% ) \$/t Li <sub>2</sub> CO <sub>3</sub>	\$5,200 /t
	NPV @ 10% Discount	\$392 M	Avg Li <sub>2</sub> CO <sub>3</sub> Production (yr. 3-20)	20,800 tpa
	IRR (Pre-tax)	21.6 %	Avg Potash Production (yr. 3-20)	12,954 tpa
	IRR (Post Tax)	20.9 %	Avg Production Cost (without credits)	\$ 5,211 /t
	Capital Expenditure	\$393 M	Avg Production Cost (with credits)	\$3,483/t
	Total Mined Ore	34.4 Mt	Life of Mine	21 Years
	Peak Mill Feed	1.8 Mtpa	Avg Mill Rate (yr. 3-20)	1.68 Mtpa

Sensitivity analysis shows that the project is most sensitive to changes in the price of lithium, as presented in the figure below.



**Social**

- *The status of agreements with key stakeholders and matters leading to social licence to operate.*

The Cinovec project has been included in the Czech Government programme for the restructuring of the region Usti in the context of Government support of the regions damaged by the former coal mining. The projects included in this Government programme will have the full support of the Central Government, regional Governments and all the social partners within the region. The Ministry of industry, in collaboration with the Ministry of Foreign Affairs also prepare a Memorandum of cooperation between the Czech Republic and Australia in which the Government of the Czech Republic declares full support for the Cinovec project.

**Other**

- *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:*
- *Any identified material naturally occurring risks.*
- *The status of material legal agreements and marketing arrangements.*
- *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to*

There is a clear process for the award of Mining Permits in the Czech Republic. These include placing the reserves on "State Balance" which has largely been completed. Subsequently a Preliminary Mining permit is issued. This has been received for a portion of the deposit and work is on-going to gain a permit for the remaining area. Subsequent to this, a Mining Permit can be issued once all other requirements are met, ie an approved EIA, land zoning change for certain works etc.

Criteria	JORC Code explanation	Commentary																													
	<p><i>expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</i></p>	<p>The lands needed for the construction of the mine, the transport pipeline and the processing plant are mostly owned by the state and a private owner Forests North, who are all supportive of the project.</p> <p>Marketing agreements need to be entered into by the Company. The Company has commenced discussions with offtakers and with the forecast supply/demand curve is confident that any battery grade lithium will be readily sold into the market.</p>																													
<p><i>Classification</i></p>	<ul style="list-style-type: none"> <li><i>The basis for the classification of the Ore Reserves into varying confidence categories.</i></li> <li><i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> <li><i>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</i></li> </ul>	<p>The classification of the Ore Reserves is shown below:</p> <table border="1" data-bbox="486 869 1544 1227"> <thead> <tr> <th colspan="5">CINOVEC ORE RESERVES SUMMARY</th> </tr> <tr> <th rowspan="2">Category</th> <th>Tonnes</th> <th>Li</th> <th>Sn</th> <th>W</th> </tr> <tr> <th>(Millions)</th> <th>%</th> <th>%</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Proven Ore Reserves</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Probable Ore Reserves</td> <td>34.5</td> <td>0.30</td> <td>0.09</td> <td>0.03</td> </tr> <tr> <td><b>Total Ore Reserves</b></td> <td><b>34.5</b></td> <td><b>0.30</b></td> <td><b>0.09</b></td> <td><b>0.03</b></td> </tr> </tbody> </table> <p>This reflects the Competent Persons view of the deposit.</p> <p>All Ore Reserves declared are Probable Ore Reserves and are derived from Indicated Mineral Resources. The classification is based on two factor being:</p> <ul style="list-style-type: none"> <li>Engineering study work has only progressed to preliminary feasibility levels of accuracy thus confidence levels in the engineering and costing are only appropriate for Probable Ore Reserves.</li> <li>The Mineral Resources converted to Ore Reserves are all at the Indicated level of confidence which will only support conversion to Probable Ore Reserve.</li> </ul>	CINOVEC ORE RESERVES SUMMARY					Category	Tonnes	Li	Sn	W	(Millions)	%	%	%	Proven Ore Reserves	0	0	0	0	Probable Ore Reserves	34.5	0.30	0.09	0.03	<b>Total Ore Reserves</b>	<b>34.5</b>	<b>0.30</b>	<b>0.09</b>	<b>0.03</b>
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<p><i>Audits or reviews</i></p>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Ore Reserve estimates.</i></li> </ul>	<p>No external audits of the ore reserve have been undertaken to date</p>																													
<p><i>Discussion of relative accuracy/ confidence</i></p>	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within</i></li> </ul>	<p>The accuracy and confidence level of the selected modifying factors are considered to be commensurate with a preliminary feasibility study.</p> <p>The accuracy and confidence in the cost estimation, which is based primarily on the work</p>																													

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	<p><i>stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</i></p> <ul style="list-style-type: none"> <li>• <i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li>• <i>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</i></li> <li>• <i>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<p>completed by the various consulting groups are considered to be at pre-feasibility study levels of accuracy, typically to <math>\pm 25\%</math> accuracy.</p>