



## MAGNUM SIGNS A SERVICE AGREEMENT WITH TYMLEZ TO PROVIDE GUARANTEE OF ORIGIN FOR GREEN PIG IRON

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### HIGHLIGHTS

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Note that this announcement replaces the announcement made on 27/07/2022 at 5:53 pm

- Agreement signed with TYMLEZ to provide immutable and auditable database of the full production and supply chain for the Nevada Iron **HIGH PURITY PIG IRON PLANT**;
- Magnum to receive investment grade production reporting with **GUARANTEE OF ORIGIN CERTIFICATES** to ensure **NO CARBON TAXES** when used in the downstream production of **GREEN STEEL**;
- The TYMLEZ Platform will digitally twin the full **PIG IRON PRODUCTION AND SUPPLY CHAIN** comprising biomass harvesting, biochar production and transport, iron ore mining and beneficiation, and high purity pig iron production via proven **HISMELT TECHNOLOGY**;
- This digital twin to validate and demonstrate to **ESG INVESTORS** that the production of **MAGNUM'S PIG IRON** will be **CERTIFIED AS 100% GREEN NET CARBON NEUTRAL PIG IRON**;
- Digital twin to demonstrate how **BLOCKCHAIN TECHNOLOGY** will produce an immutable and auditable database.

### Certification of Net Zero Green Pig Iron

Magnum Mining & Exploration (ASX: MGU, "Magnum" or "the Company") is pleased to report the award of a contract to TYMLEZ (ASX: TYM) to produce a digital twin of the full production chain for the Nevada Iron pig iron plant. This contract is of significant importance for MGU as the company progresses towards building the first fully verifiable and auditable green pig iron plant in the United States using leading edge technologies, such as the TYMLEZ blockchain platform. This digital twin will highlight our commitment to the production of true green net zero pig iron and demonstrates to existing investors, future investors and customers that Magnum is situated to lead in the production of fully transparent and auditable carbon neutral and potentially carbon negative pig iron.

The TYMLEZ platform will produce and mint investment grade Guarantee of Origin certificates for each tonne of iron ore produced. Each certificate will, importantly, contain the

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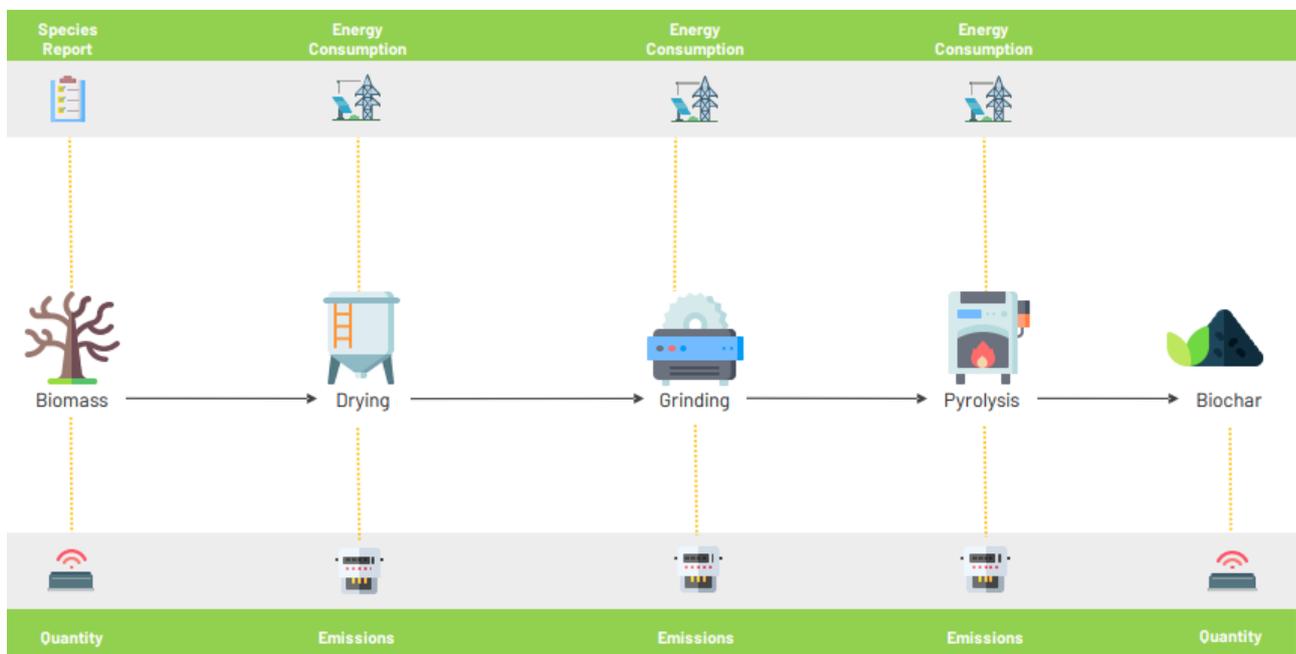
make up of each tonne of Pig Iron, detailing the carbon metrics for each step of the supply chain from raw materials through to end product, all on an immutable blockchain platform.

The TYMLEZ Platform will report the entire as real-time digital counterpart for pig iron production process including biomass harvesting, biochar production and transport, iron ore mining and beneficiation, and pig iron production via already proven HIs melt technology.

### Biochar Production

Sustainably produced, locally sourced biomass e.g. forestry and agricultural waste, will be certified via internationally accredited carbon accounting regulations to have net-zero emissions of carbon dioxide when combusted as the biomass waste would have emitted carbon dioxide when burnt or composted.

This certified biomass will be dried (to remove moisture), ground and pyrolised (to remove oils and gasses) to produce a biochar comprising mostly solid carbon.



**Figure 1: Production Chain for Biochar Production**

### Iron Ore Concentrate Production

At the Buena Vista iron ore mine, iron ore will be delivered by a fleet of bio-diesel and/or battery powered mobile trucks and shovels to a Run of Mine stockpile and crushed. The crushed ore will be fed into a grinding mill and the iron will be magnetically separated to produce a concentrated iron ore.

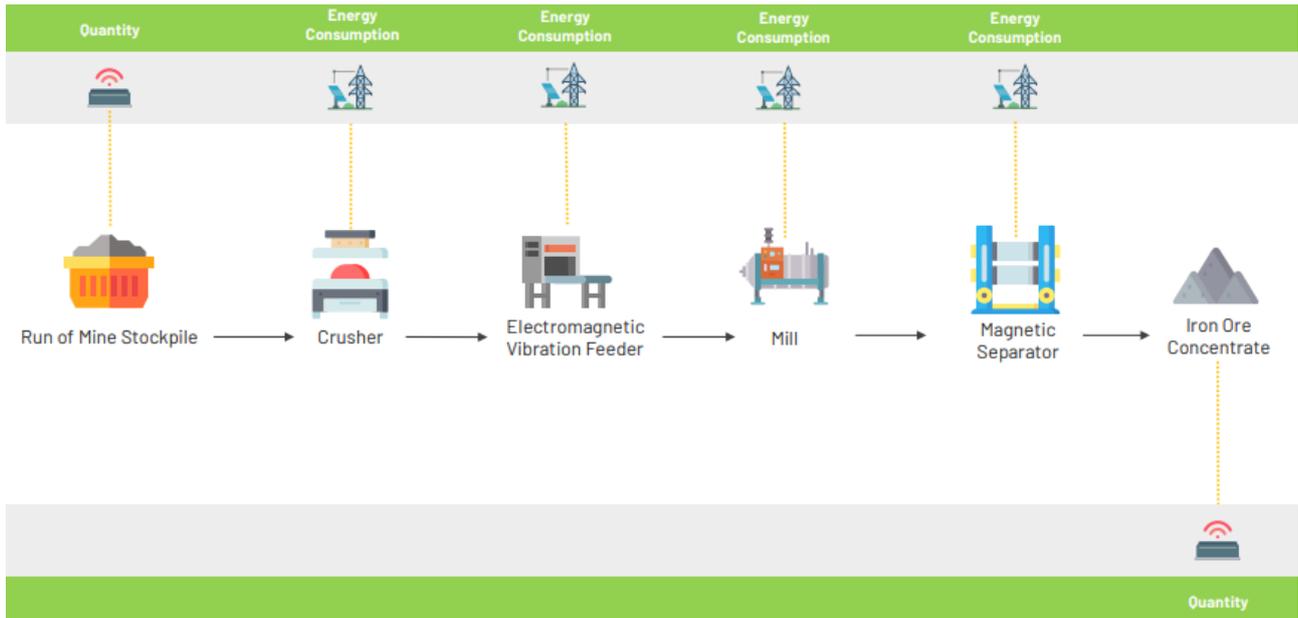


Figure 2: Production Chain for Iron Ore Concentrate

### Hismelt Pig Iron Production

The biochar and iron pre concentrate will be delivered to the Magnum Hismelt pig iron plant where the iron ore will be reduced by the carbon in the biochar to produce high purity pig iron comprising 96% iron and 4% carbon. All carbon relative data along the production process will be captured by the TYMLEZ blockchain platform.

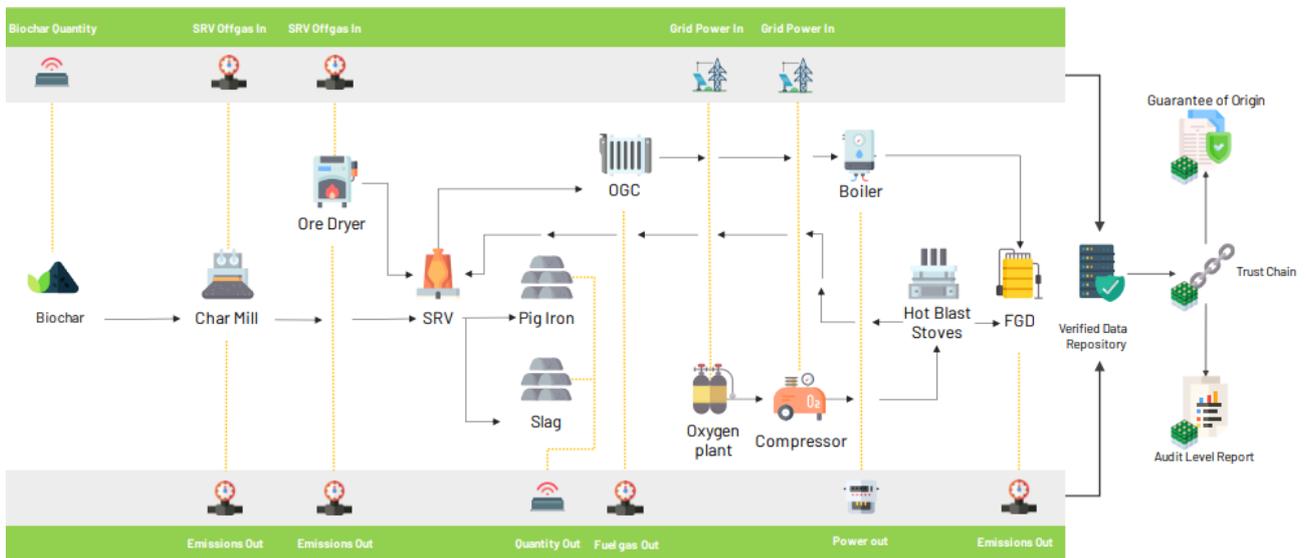


Figure 3: Production Chain for Hismelt High Purity Pig Iron

### Blockchain Technology and Digital Twin

The data collected from the biochar, concentrate and pig iron production chains will be stored in a verified data repository, and along with the certified and guaranteed source of origin of the biomass, will form an immutable and auditable data trail that will be used to certify that the pig iron can be produced with “net-zero” carbon dioxide emissions. Each tonne of virtual pig iron will have a Guarantee of Origin Certificate that will show its carbon content from the entire production process.

This document has been authorised for release to the ASX by the Company's Board of Directors.

**BY ORDER OF THE BOARD**

A handwritten signature in black ink, appearing to be 'JD', written in a cursive style.

John Dinan  
Company Secretary

29/07/2022

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Magnum Mining & Exploration Limited (ASX: MGU)