SOVEREIGN METALS LIMITED

31 March 2022

SOVEREIGN PRESENTS KASIYA'S LOW CARBON FOOTPRINT NATURAL GRAPHITE AT UK HOUSES OF PARLIAMENT

- Potential for Sovereign to become an important supplier of low carbon footprint natural graphite to the UK presented at a Roundtable on behalf of the All-Party Parliamentary Group for Critical Minerals organised by the Critical Minerals Association
- The Company showcased how its natural graphite and rutile products could help tackle climate change and bring significant benefits to Malawi through job creation, community initiatives and fiscal benefits
- Independent Life Cycle Assessment Study demonstrates potential for high quality natural graphite concentrate produced as a by-product from Kasiya to have a significantly lower carbon footprint than natural graphite from China
- China currently produces over 75% of the world's natural graphite, almost 80% of the world's synthetic graphite and 100% of the world's natural graphite anodes used in lithium-ion batteries
- Each tonne of graphite produced from Kasiya is expected to have a Global Warming Potential of only 0.2 tonnes CO_2e which represents 80% lower greenhouse gas emissions compared to natural graphite produced in the Heilongjiang Province, China
- Recent peer-reviewed independent studies published in the Journal of Industrial Ecology estimate Global Warming Potential of synthetic graphite at 20.6 tonnes CO_2e i.e., 103x that of Kasiya's natural graphite
- Kasiya's graphite characterisation shows a coarse flake, high purity and highly crystalline product which should be suitable for lithium-ion batteries and wider industrial uses

Sovereign Metals Limited (ASX:SVM; AIM:SVML) (the Company or Sovereign) is pleased to announce that it has presented at a Roundtable on behalf of the All-Party Parliamentary Group (APPG) for Critical Minerals at the UK Houses of Parliament. The APPG for Critical Minerals was established in March 2020 with the purpose to highlight the UK's need for a secure, sustainable supply of critical minerals to deliver the nation's industrial strategy which has since transitioned into the Plan for Growth: "Build Back Better".

Sovereign's Chairman Ben Stoikovich presented the potential for the Company's Kasiya Rutile Project (Kasiya) in Malawi to become an important supplier of low carbon-footprint natural graphite to the UK.

A recent Life Cycle Assessment Study (LCA or Study) has concluded that Sovereign's production of natural graphite by-product from Kasiya is expected to have a substantially lower Global Warming Potential (GWP) compared to natural graphite produced in China.

Sovereign's Chairman Ben Stoikovich commented: *"The importance of sustainable supply chains for clean-tech solutions such as lithium-ion battery powered electric vehicles cannot be underestimated. As such, Kasiya could become globally strategically important as it has the potential to supply not one, but two, critical raw materials to world economies looking at building a sustainable future and tackling climate change."*

ENQUIRIES

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BENCHMARKING SOVEREIGN'S NATURAL GRAPHITE GWP

The LCA benchmarked the GWP of Sovereign's natural flake graphite product versus natural flake graphite concentrate produced in the Heilongjiang Province, China. This benchmark was chosen as a comparison point as it is one of the largest global production centres for natural flake graphite.

The Study made efforts to ensure maximum comparability for the benchmarking exercise meaning that the Study focused on graphite produced at site and does not include transportation. The Study concluded that Sovereign's natural flake graphite concentrate has significantly lower greenhouse gas emissions than the Chinese produced natural flake graphite concentrate from the Heilongjiang Province.

Each tonne of Sovereign's natural graphite is estimated to have a GWP of 0.2 tonnes CO_2e (carbon dioxide equivalent) – 5x lower than producing natural flake graphite concentrate in the Heilongjiang Province, China which is estimated to have a GWP of 1.1 tonnes CO_2e for each tonne produced.

The significantly lower GWP for Kasiya graphite is due to the fact that it is hosted in soft, friable saprolite material which will be mined via hydro methods (high pressure water monitors) powered by renewable energy sources - hydro power from the Malawi grid and on-site solar power. This is opposed to the production in Heilonjiang Province, China where hard-rock ore requires drilling, blasting, excavation, trucking, crushing and grinding – overall high CO_2e activities.

In addition to the results of the LCA, the Company's research noted a report published in the Journal of Industrial Ecology estimating the GWP of synthetic graphite production. Synthetic graphite is manufactured by high-temperature treatment of by-products of hydrocarbon refining such as petroleum coke and coal tar pitch. Currently, the highest purity synthetic graphite is produced from petroleum needle coke which is a complex, emission, and energy intensive process which is estimated to have a GWP of 20.6 tonnes CO_2e for each tonne produced.

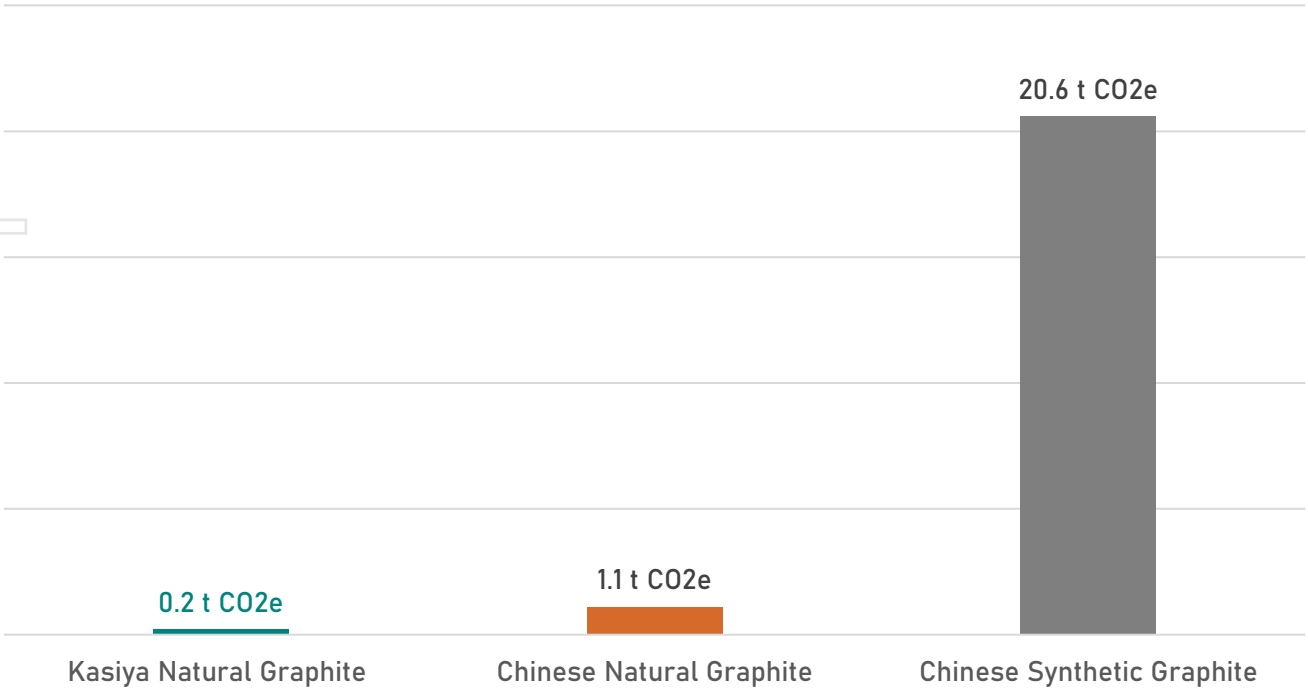


Figure 1: GWP of Kasiya's natural graphite vs. natural graphite produced in Heilongjiang Province, China and synthetic graphite produced in China
(Sources: Minviro Ltd; Journal of Industrial Ecology)

LOW CARBON-FOOTPRINT NATURAL GRAPHITE - CRUCIAL FOR SUSTAINABILITY

The lithium-ion battery sector is the main emerging market for flake graphite. Greater capacity batteries, such as those required for electric vehicles, are expected to drive significant demand for graphite over the coming years. It is forecast the battery sector will drive the largest demand for graphite by 2028, with graphite making up to 50% of the composition of a lithium-ion battery.

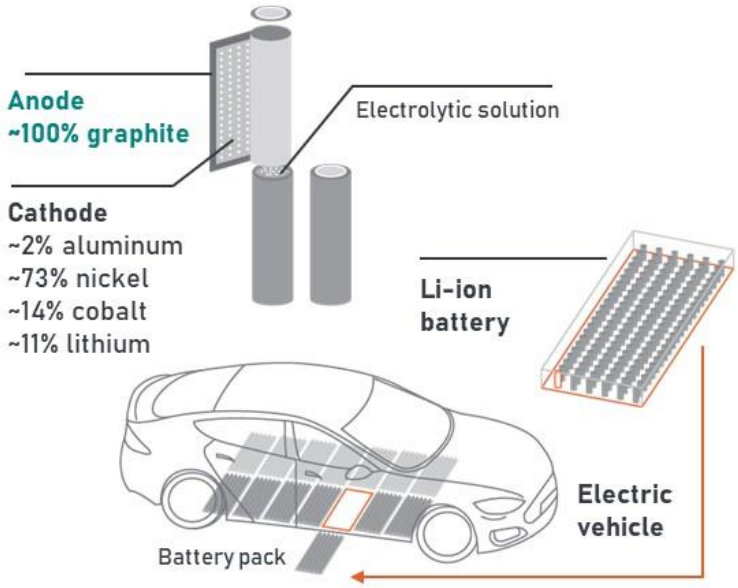


Figure 2: As the anode material, graphite can account for up to 50% of the composition of a lithium-ion battery used in an electric vehicle

Currently, China is the world's largest supplier of natural flake graphite. In 2020, leading data provider and market intelligence publisher Benchmark Mineral Intelligence reported that China produced 86% of all lithium-ion battery anodes from natural and synthetic graphite and 100% of all the world's natural graphite anodes.

Industry's interaction with supply chain participants indicates the progression towards higher proportions of natural graphite used in battery anodes will be supported by its lower cost and superior environmental credentials. Environmental footprint of electric vehicles will become increasingly important as electric vehicle penetration of the overall automobile market accelerates.

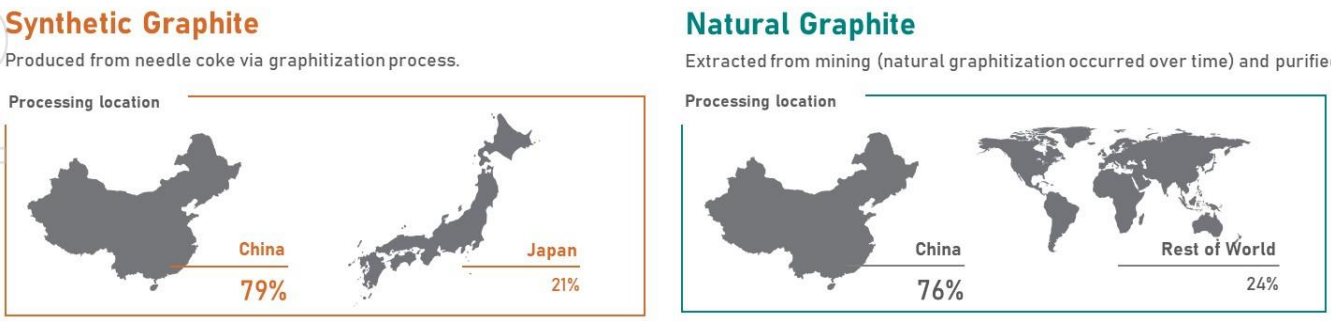


Figure 3: Synthetic and natural graphite production
(Source: Sources: Morgan Stanley Equity Research "Better Anode, Safer Batteries", June 2019; Deutsche Rohstoffagentur "Supply and Demand of Natural Graphite", July 2020)

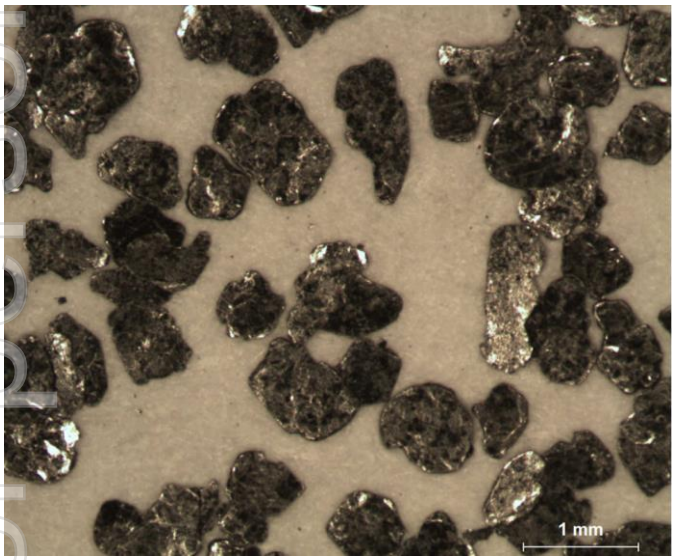
KASIYA'S GRAPHITE BY-PRODUCT CHARACTERISATION DEMONSTRATES SUITABILITY FOR WIDE RANGE OF END USES

Initial metallurgical and characterisation work on graphite from Kasiya shows a very high-quality product with premium chemical characteristics and high crystallinity and specification indicating that product should be suitable for lithium-ion battery uses and traditional industrial applications – subject to further downstream testwork and analysis.

Sovereign has developed a comprehensive bulk scale metallurgy and downstream test work program to build on these initial results and confirm the commercial potential of the graphite by-product from Kasiya.

Graphite rich mineral concentrate will be produced from the light fraction of the rutile gravity spiral tails and processed in a separate graphite flotation plant to produce a high quality graphite by-product. A very coarse-flake and high-grade graphite product at 96% total graphitic carbon (TGC) can be produced via this simple flowsheet. This product has over 60% in the large to super-jumbo fractions (+180µm) with overall graphite recovery from the raw sample to product of 62% (Table 1).

Overall, the graphite from Kasiya is very coarse flake and highly crystalline with a high purity. High purity and high crystallinity are important features required for use in lithium-ion battery anodes. The high crystallinity means that the graphite will have high electrical conductivity – a key requirement. High purity means the material will be easier to upgrade to 99.95% TGC, the minimum requirement for lithium-ion battery anodes.



Figures 4 & 5: Very coarse-flake graphite in +600µm sample fraction (L), graphite floating on soaking drill sample (R)

Table 1: Graphite Specifications				
Particle Size		Carbon	Weight Distribution	Flake Category
Tyler Mesh	Micron (µ)	(%)	(% w/w)	
+32	+500	96.0	5.4	Super Jumbo
-32 +48	-500 +300	96.6	25.1	Jumbo
-48 +80	-300 +180	96.7	30.9	Large
-80 +100	-180 +150	96.8	10.9	Medium
-100 +150	-150 +106	96.11	14.4	Small/Medium
-150 +200	-106 +75	95.8	7.5	Small
-200	-75	93.8	5.8	Amorphous
Total		96.3	100	

Forward Looking Statement

This release may include forward-looking statements, which may be identified by words such as "expects", "anticipates", "believes", "projects", "plans", and similar expressions. These forward-looking statements are based on Sovereign's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Sovereign, which could cause actual results to differ materially from such statements. There can be no assurance that forward-looking statements will prove to be correct. Sovereign makes no undertaking to subsequently update or revise the forward-looking statements made in this release, to reflect the circumstances or events after the date of that release.

This ASX Announcement has been approved and authorised for release by the Company's Managing Director, Dr Julian Stephens.