

ASX ANNOUNCEMENT

29 June 2023



Orexlore unlocking Critical Minerals

Highlights

- Orexlore demonstrating further commercial traction through securing two key contracts in the critical minerals sector:
 - Agreement to scan approximately 2,500m of core for **Green Critical Minerals Limited (ASX: GCM)**, following the successful completion of an initial order to scan 300m of core (combined value of \$226k); and
 - Agreement to scan 900m of core for **Northern Minerals Limited (ASX: NTU)**, extending the 420m of core scanned to date (combined value of \$130k).
- Orexlore technology appears to be uniquely well suited to the deposits and mineralogy of this critically important high growth sector.
- Multiple revenue-generating Orexlore solutions under commercial development with customers including ore sorting, assay proxies, and grade control.
- Research and Development on critical minerals accelerates:
 - In collaboration with Uppsala University, scanning samples from **Talga Group Limited's (ASX: TLG)** Swedish resources; and
 - Lithium scanning technologies development grant received of \$77k (SEK 550k) with Swedish lithium producer, supported by Sweden's **Vinnova** innovation agency.

Perth, Australia: 29 June 2023 – Orexlore Technologies Limited (**ASX: OXT**) (“Orexlore” or the “Company”), a mineral scanning technology company focused on the global mining and metals sector, is pleased to announce the uptake and development of solutions for the critical minerals industry.

Critical minerals are those which underpin the global energy transition towards clean energy technologies from wind turbines to new electricity networks and electric vehicles. Demand is rapidly increasing for the development of resources such as copper, nickel, cobalt, manganese, graphite, lithium and rare-earth elements. Orexlore is proud to assist with projects exploring for and mining these resources as part of our commitment to increasing the sustainability of the mining industry and enabling improved ESG outcomes for our customers.

Green Critical Minerals have extended their engagement for a further 2,500m of core scanning, in addition to 300m already scanned in 2023 via our laboratory service. This order brings the total value of the engagement to approximately \$226k and encompasses scanning of graphite bearing drill core and the delivery of ore-sorting evaluation, grade proxy modelling and emerging graphitic flake analysis solutions using the rich data set captured by the Company's GeoCore X10® hardware.

Northern Minerals have extended their engagement for an additional 900m of core scanning, following the 420m already scanned to date. This order brings the total value of



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the engagement to approximately \$130k and encompasses scanning of rare-earth bearing drill core and crushed samples. The project focuses on delivering two Orexplore solutions - ore-sorting evaluation and a proof of concept for operational grade control.

Research and Development

With Talga Group and Uppsala University, Orexplore's Research and Development team is working on the analysis of graphite bearing drill core samples, using advanced data modelling techniques.

Commercial scanning of lithium ores is also being undertaken in addition to the commencement of a project, sponsored by Vinnova. This project, ULiBS, which commenced in Q2FY23 will provide circa SEK 550k to Orexplore for further development of lithium core scanning technologies. Orexplore will utilise its GeoCore X10® to provide x-ray transmission (**XRT**), laser induced breakdown spectroscopy (**LIBS**) and x-ray fluorescence (**XRF**) scanning to quantify the proportions of gangue minerals, petalite-spodumene and quartz-feldspar in an LTC-type granitic pegmatite environment.

The project will be carried out over three years (2023-2025) and Orexplore will contribute to the project via scanning and R&D activities. Project partners include Uppsala University and a Swedish lithium producer. The ULiBS project is funded by the strategic innovation program Swedish Mining Innovation, a joint venture by Vinnova, Formas and the Swedish Energy Agency (grant no. 2022-03373).

Unique Capabilities

The Company's GeoCore X10® drill core scanner applies proprietary technology to investigate the properties of core samples and is well suited to power new-to-industry solutions into the base and precious metals industries where demand continues to grow as well as rapidly expanding markets such as graphite and rare-earth production.

The GeoCore X10® drill core scanner utilises a high energy x-ray source to provide XRT analysis for the purpose of highly accurate 3D computed tomography imaging (**CT**), in addition to XRF spectroscopy, which provides information about the elemental composition of the rock.

The XRT system also provides dual energy imaging, which is utilised in the identification of density, rock structures, textures, mineralisation signatures and heavy particles including sulphides or metals. Recently, analysis has been developed to apply this technology to the identification of graphite located in flakes and schists. The 200 µm scale voxel grid allows the identification of valuable large graphite flakes (see Figure 1) and the development of calibrated assay-proxy estimates for graphite grade; allowing large scale analysis of core to drive the Company's Smart Sample Optimisation solution.

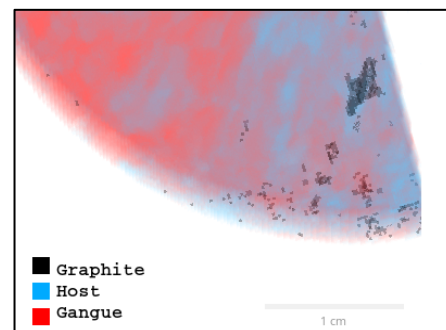


Figure 1 - Green Critical Minerals - graphite flakes



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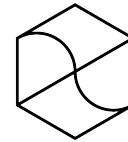
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The GeoCore X10® appears, through work carried out to date, to be highly applicable to the identification and classification of rare-earth mineralisations - creating value through our emerging Ore Sorting Simulation, Grade Control and Log Checker products, which generate automated downhole reporting.

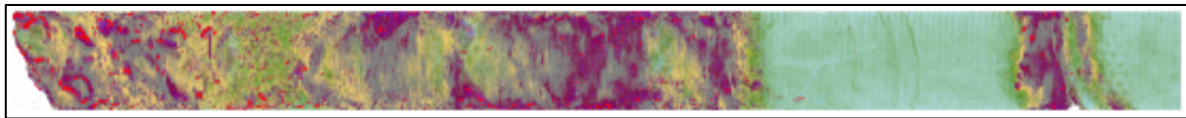


Figure 2 - Scan of heavy rare-earth mineralisation

Occupying a market niche with our offering of high energy excitation for XRF, the GeoCore X10® can directly measure responses from rare-earth elements (REE) and offers excellent discrimination compared to other technologies.

Providing orebody scale sortability information and the ability to undertake high volume operational grade control through our technology can transform the techno-economics of projects enabling companies that are developing critical mineral resources.

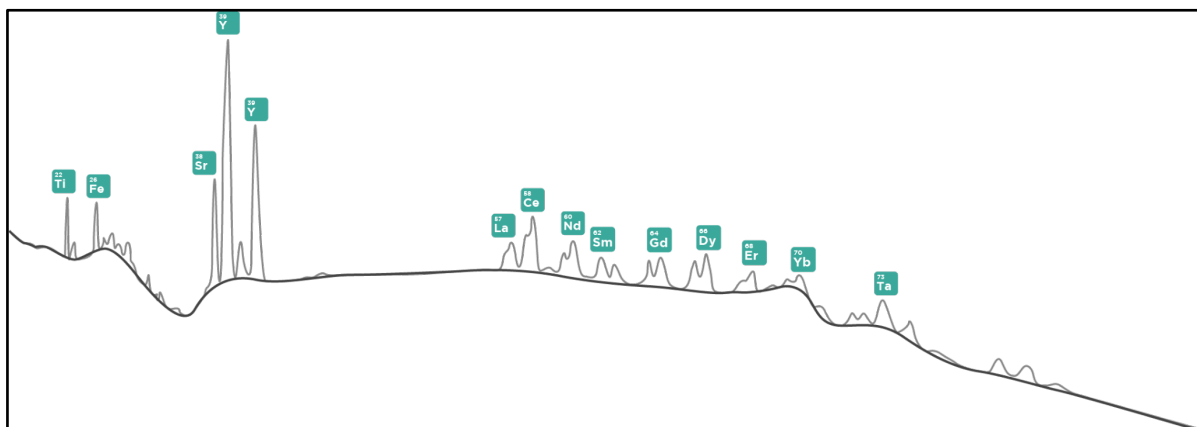


Figure 3 - High energy fluorescence spectra for xenotime REE mineralisations

Prospective Market

The energy sector, driven by the clean energy transition worldwide is quickly emerging as a major consumer of metals which are required for the mass deployment of technology such as electric cars, wind power, and solar photovoltaics. These technologies have substantially higher demand for critical minerals compared to fossil-fuelled equivalents. It is estimated that demand for copper, nickel, cobalt, lithium, graphite and rare-earth metals will grow very significantly in the next 20 years. (See Figure 4 below - source: IEA 2021).



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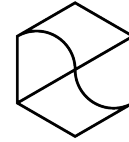
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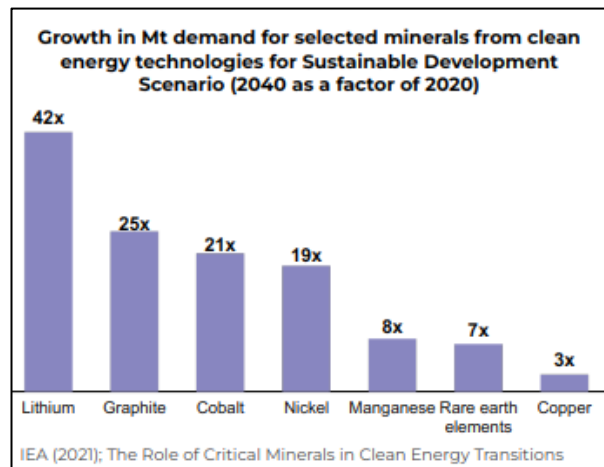


Figure 4 – Growth in critical minerals

Today's mining industry is not well equipped to deliver the inputs required for the energy transition and the adoption of new workflows and technologies is required to drive improvements in efficiency and efficacy of exploration and production of critical mineral resources. Orexplore offers solutions across the mining value chain from exploration targeting to operational grade control through to end-of-mine acid rock drainage monitoring, all of which are applicable to this emerging high-growth sector.

The development of these solutions and emerging adoption of the technology platform in the critical minerals sector is significant to Orexplore in that it represents a multi-customer commercial uptake of new solutions not offered to the industry previously and helps to position the Company within this high-growth well-supported emerging sector.

Orexlore's Managing Director, Brett Giroud, commented:

"Our proprietary technology, proven through commercial engagements with precious and base metals clients, has shown to offer highly valuable advantages to the critical minerals industry. GeoCore X10® hardware is able to directly sense across the range of rare-earth elements and is suited to both exploration and operational applications throughout the value-chain. Recent work on several graphite deposits shows that we can provide information which was previously unavailable, at scale and offer an opportunity to transform our client's projects and processes."

"Expansion into the critical minerals space is highly aligned with Orexplore's ESG goals and it is exciting to release our solutions in this space. Mining is critical to decarbonisation and I look forward to helping our clients on their journey to deliver the minerals required for the global energy transition."

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This ASX announcement was authorised for release by the Board of Orexplore Technologies Limited.



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About Orexplore Technologies

Orexplore Technologies Limited (ASX: OXT) is a globally focused mineral technology business concentrated on advancing the commercialisation of its Technology Platform across the mining value chain within the global metals and mining sector. The Company's Technology Platform consists of the GeoCore GX10® hardware product and Orexplore Insight user interface software, that is continually advancing through its in-house multi-disciplinary research and development team based in Stockholm, Sweden.

Orexplore's first product, the GeoCore X10®, is a transportable X-ray rock mass scanning technology that converts drill core samples into a three-dimensional data set to provide a "through the rock" image of internal structures and texture in addition to elemental detections, and density.

The Company maintains core-scanning laboratories in Stockholm, Perth, and Santiago, where it undertakes scanning operations, and in its headquarters in Perth, Western Australia. Orexplore's talented global team includes consulting geologists, engineers, data scientists and physicists, and technology delivery experts. The Company continues to advance its solutions through development and delivery of customer Value Propositions powered by its products.

For further information:

investors@orexplore.com

Brett Giroud
Managing Director
Ph: +61 8 9469 2900

Greg Haskis
Chief Financial Officer
Ph: +61 8 9469 2900

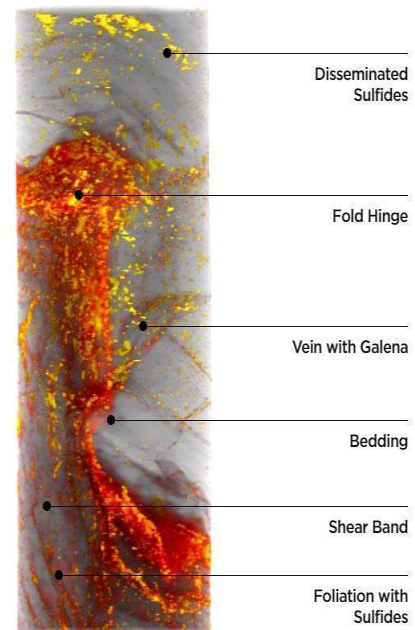
Media enquiries:

Elodie Castagna
FTI Consulting
Ph: +61 8 9321 8533

Steve Suleski
FTI Consulting
Ph: +61 8 9321 8533

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