Talga Group Ltd
Sustainable batteries for a greener Europe

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Graphite is the most abundant active material in lithium-ion batteries by volume
Swedish graphite for greener batteries

Natural graphite is included in the 2020 EU list for Critical Raw Materials

Sweden has world-class natural graphite deposits at Vittangi in Norrbotten

Swedish natural graphite can enable the long term green electrification of Europe

Allows EU to decrease dependency on imported natural graphite and synthetic graphite made from crude oil and with coal power

A strong contribution to achieving Swedish, European and global climate goals
EV sales drive battery boom

Battery and hybrid car sales are increasing rapidly across the world

Source: Schmidt Automotive Research - Western Europe 18 Markets, BEV Mix (October 2021)
Increasing demand for anode material

Europe currently consumes ~ 85,000 tons / year processed, active anode material

~ 1,200,000 tonnes of anode material will be needed in 2030

Nearly 100% of current material is imported from outside the EU (mainly China)

Imported synthetic anode is made from crude oil and with coal power and carries high carbon footprint

Unlike other battery minerals, graphite anode cannot be recycled for batteries on scale

Source: Benchmark Mineral Intelligence, Lithium Ion Battery GigaFactory Assessment, July 2022
Fast-growing European battery market requires 1.2Mt anode/annum by 2030

Source: Cio Energetique, June 2022, Benchmark Mineral Intelligence, January 2022, Benchmark Mineral Intelligence, Lithium Ion Battery Gigafactory Assessment, July 2022
Our Mission

to enable the world’s most sustainable batteries and consumer products through innovative graphitic materials
Talga introduction

Talga is building a European supply chain of battery and advanced materials critical to the green transition

Vertical integration with 100% ownership of mineral resources, processing and product technology provides full transparency and control over value chain from mine to product

Localised anode production to provide reliable and green supply for European battery manufacturing

Strong in-house expertise spans mineral exploration and mining, processing technology, advanced product R&D and battery markets

Listed on Australian Securities Exchange
Talga Operations

Perth, Australia
Group head office
Luleå & Kiruna, Sweden
Anode production & integrated graphite mine
Cambridge, UK
Battery anode product & technology center
Rudolstadt, Germany
Metallurgical process pilot facility & EU customer network
Osaka, Japan
Commercial office and product development
Quality ESG Commitment

- Committed to EU Principles for Sustainable Raw Materials
- High standard of corporate governance with established framework
- Social and Environmental Management Systems and Policies in place accords to Equator Principles
- Sustainability and People report published annually. Environmental studies and stakeholder consultations completed with diligence and care. 11 years of operating experience in Sweden
- Committed to positively contribute to development of communities and minimise adverse impact on the environment
Integrated and 100% controlled anode operation

Graphite concentrate

Precursor anode material

Active anode material

Mining and Concentration ➔ Shaping and Purification ➔ Coating ➔ Talnode® ➔ Li-ion Batteries

Natural graphite ore responsibly mined and concentrated at Vittangi.

Graphite concentrate downstream processed with proprietary shaping, purification and coating using clean hydropower to produce active anode material.

Talnode® is sold to OEMs and battery manufacturers.
Talga advantages for EU battery and EV market

- **24% grade**
  - Low-footprint, long life natural graphite supply in Sweden.

- **Checklist**
  - 100% of graphite used to make battery products.

- **Triangle**
  - Vertically integrated mine-to-anode plant offers 100% supply chain control.

- **Globe**
  - Within 24-hour drive to deliver to European battery makers.

- **Leaf and Plug**
  - Production using 100% sustainable, low-cost renewable power in Sweden.

- **Lightbulb**
  - Processing and products use green proprietary Talga technology.
Mine and Anode Plant Permitting

Fully permitted 2015/2016 Nunasvaara South trial mine successfully completed and rehabilitated

Fully permitted 2021/2022 Niska South trial mine to be completed in Q3 2022

Detailed Feasibility Study for Nunasvaara South commercial mine permits progressing for 19,500tpa anode production. Environmental permit has received positive submissions. Court hearing process to begin in Q3 2022

Niska expansion mining concession applications for additional 85,000tpa anode production submitted in August 2021

Luleå anode production site environmental permit submitted in June 2022

See ASX:TLG 1 July 2021 and ASX:TLG 21 April 2022
Electric Vehicle Anode Plant - Sweden

Located in Luleå, the EVA is the first coated anode production plant in Europe

- Fully commissioned in March 2022
- Plant produces coated active anode samples at large-scale quantities aligned with Automotive OEM battery customer qualification and procurement requirements
- Utilises leading technology and innovation
- 23 customers engaged and receiving product samples
- Includes quality control labs to complement Talga’s Cambridge tech facilities
Talga Electric Vehicle Anode Plant, Luleå Sweden

Images
Left: EVA main processing hall.
Top Right: Talga staff training on klin process stage.
Bottom right: Integrated EVA battery lab and quality control.
The world’s greenest anode

Talnode®-C is the world’s greenest anode for lithium-ion batteries. It is produced with:

- Responsible mining of unique, natural graphite
- 100% renewable electricity
- Secure, short and controlled supply chain within Europe

Hitachi Life Cycle Assessment shows production of 1kg Talnode®-C emits 1.47kg CO₂-eq¹ (a reduction of up 96% compared to current synthetic anode production²)

¹ Emissions from Chinese synthetic graphite anode production (ASX:TLG 16 December 2020, investor presentation, source: Recruit Report)
Developing future technology

Market focused R&D and development of next generation battery and advanced materials for future commercialisation

- Fast-tracked decision for mass-producible Talnode®-Si silicon anode
- Continued development of solid state Talnode®-E battery anode technology
- CALIBER cathode additive program
- Talphene® graphene product development across numerous commercial customer programs and in co-funded research projects
- Funded program to repurpose spent graphite anode into other battery and advanced materials
Operational Timeline

Following 10 years of exploration, mineral development, environmental studies and permitting work

- **Permit Applications**
  - **Nunasvaara**
    - mining exploitation concession application and Environmental permit submitted
  - **Niska**
    - mining exploitation concession applications for planned expansion submitted

- **2020**
  - Natura 2000 application

- **2021**
  - Permit Applications
  - Phase 1 **Nunasvaara** pending decision on permit applications
  - Luleå anode refinery permit

- **2023**
  - 19,500 tonne / year **Anode production** given that electricity will be available according to plan

- **2024**
  - Phase 2 **Niska** pending decision on permit applications

- **2025**
  - An additional 85,000 tonne / year **Expansion** of anode production is already being prepared

- **2026**
Partnerships for a Greener Future

Working with respected battery customers and development partners under public partnerships and non-disclosure, including global automotive OEMs and majority of European battery producers
Making green batteries a reality

The vision of a self sufficient and sustainable European battery industry can become real through EU advocacy of Swedish natural graphite as a key component of the solution.

A pronounced positive attitude to developing complete, robust value chains within the Swedish and European battery clusters will foster collaboration, win new business partners and open doors.

This in turn will help Europe lower emissions and succeed in the green transition.
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