talga

Talga Group Ltd

The Power of the Nordics: Building Better Battery Anodes

22 August 2022



Cautionary Statement and Disclaimer

Talga Group Ltd ACN 138 405 419 (the Company) is the issuer of this presentation.

Niska Scoping Study

The Niska Scoping Study is a preliminary technical and economic study of the potential viability of developing the Nunasvaara North, Niska South and Niska North graphite deposits by constructing an integrated mining and refining operation to produce Talga's anode products for Li-ion batteries. It is based on low level technical and economic assessments that are not sufficient to support the estimation of ore reserves or to provide assurance of an economic development case. Further evaluation work and appropriate studies are required before the Company will be in a position to estimate any ore reserves or to provide any assurance of an economic development case or certainty that the conclusions of the Scoping Study will be realised. The Scoping Study is based on the material assumptions outlined in the announcement of 7 December 2020. These include assumptions about the availability of funding. While Talga considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved. To achieve the range of outcomes indicated in the Scoping Study, funding in the order of US\$1,000 million plus contingencies may be required. Investors should note that there is no certainty that the Company's existing shares. It is also possible that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of the Company's existing shares. It is also possible that the Company could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the project. If it does, this could materially reduce the Company's proportionate ownership of the deposits covered by the Niska Scoping Study. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

The Company first reported the Niska Scoping Study production targets and forecast financial information referred to in this presentation in accordance with Listing Rules 5.16 and 5.17 in its announcement titled "Niska Scoping Study Outlines Pathway to Globally Significant Battery Anode Production" dated 7 December 2020. The Company confirms that all material assumptions underpinning those production targets and forecast financial information derived from those production targets continue to apply and have not materially changed.

Forward-looking statements

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Introduction to Talga Group

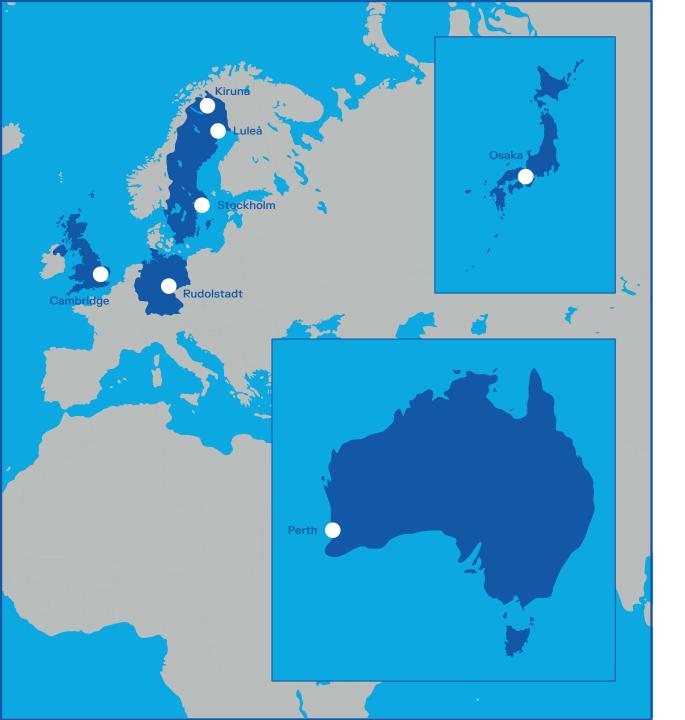
Building an integrated mine-to-anode supply chain using wholly-owned technology and highgrade Swedish natural graphite

Uses clean Nordic renewable energy and innovative processes to deliver battery materials with world-leading green credentials

Built and operating Europe's first Li-ion battery anode plant (in Luleå, Sweden), producing qualification material for cell makers now

Plans for commercial scale production starting in 2024 at ~16GWh/annum rate with expansion in 2025/2026 to total >100GWh/a





Talga Operations

Perth, Australia

Group head office

Luleå & Kiruna, Sweden

Anode production & graphite deposits

Cambridge, UK

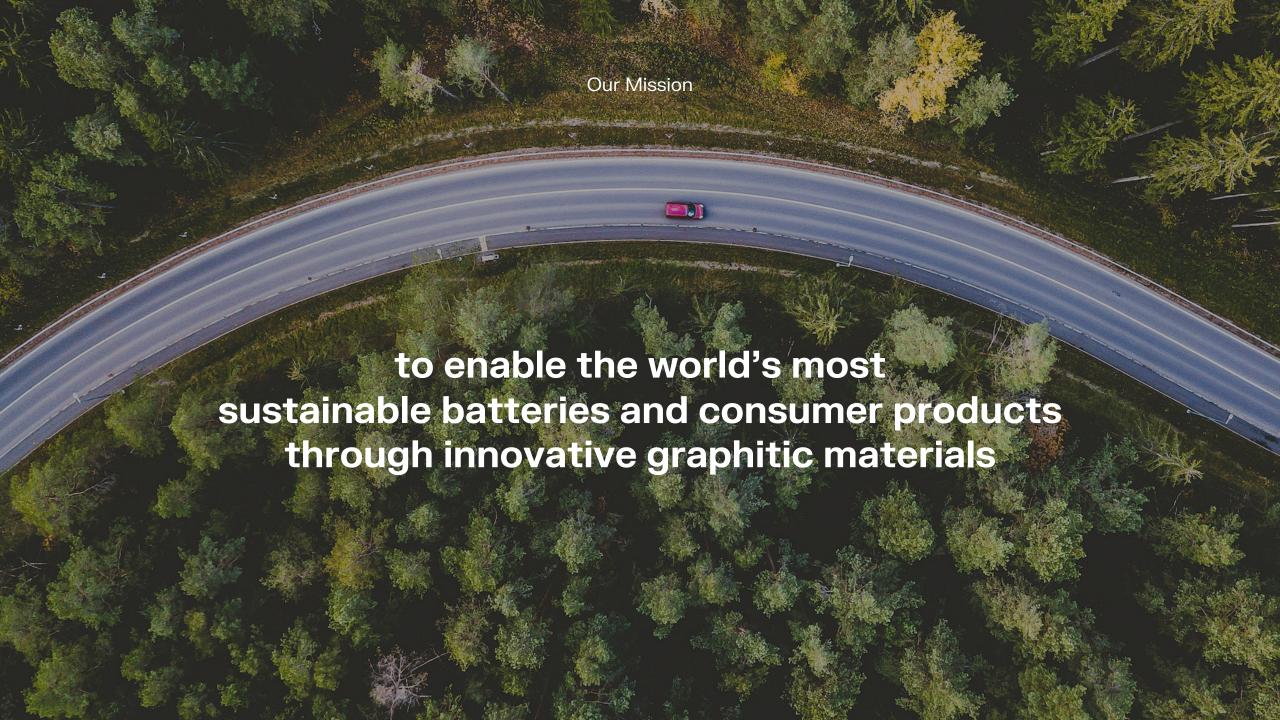
Product and R&D technology center

Rudolstadt, Germany

Production process pilot facility & EU customer network

Osaka, Japan & Hong Kong

Commercial offices & product development



Quality ESG Culture

- 1st resource company committed to EU
 Principles for Sustainable Raw Materials
- High standard of corporate governance with established ESG framework
- Social and Environmental Management Systems and Policies accord 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 impact on the environment



Electric Vehicle Anode 'EVA' Plant, Sweden

- ✓ First Li-ion battery anode plant in Europe
- ✓ Vital facility for advanced stage of customer qualification process, purchase agreements and financing
- ✔ Production of Talnode®-C using Vittangi graphite commenced in April 2022
- Proprietary in-house process and production technology proven at scale
- ✓ In-house Battery Laboratory, Powder Laboratory and Technology Centre
- Operational and quality control skills readied for commercial development









Talnode®-C attractive performance characteristics



Energy Density

High energy density for increased range or lighter weight.



Faster Charging

Fast charge rate outperforms existing commercial anodes.



Lower Cell Resistance

High conductivity material decreases thermal build up, improving safety.



Cold Temperature Performance

Outstanding cold condition capacity retention.



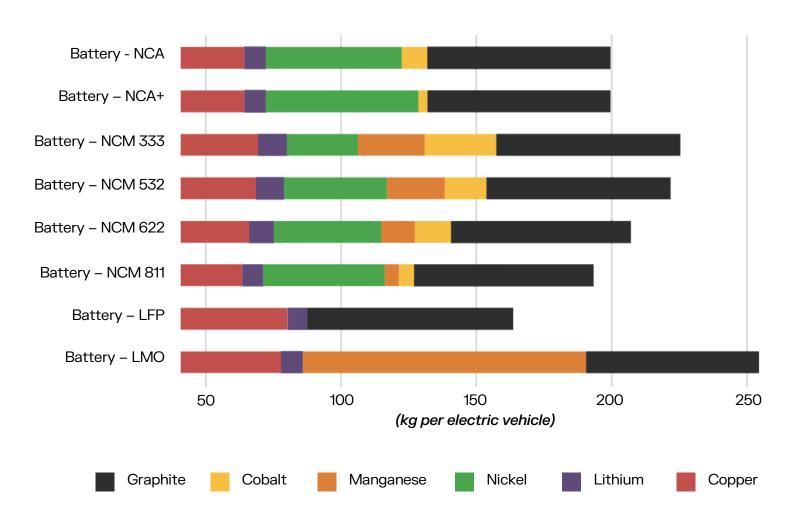
Regenerative Braking

High energy recovery compared to existing commercial anodes.



Graphite in Li-ion batteries

Graphite (as the anode) is main volume mineral in commercial Li-ion batteries

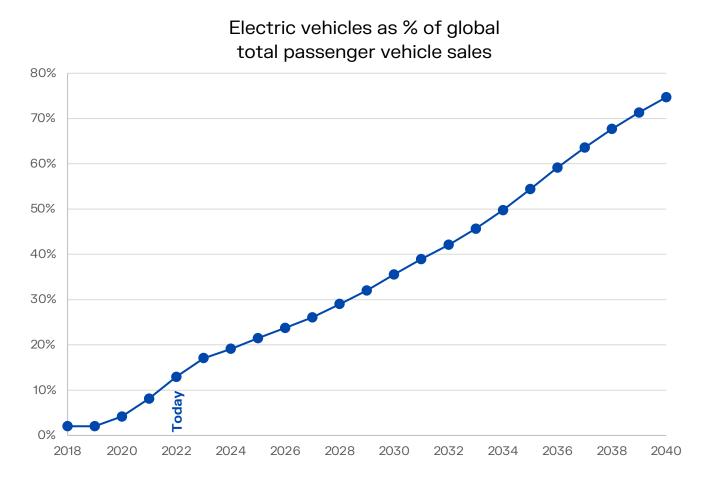






Battery Megatrend Driven by Electrification

Demand for Li-ion battery materials rapidly increasing across many transport applications



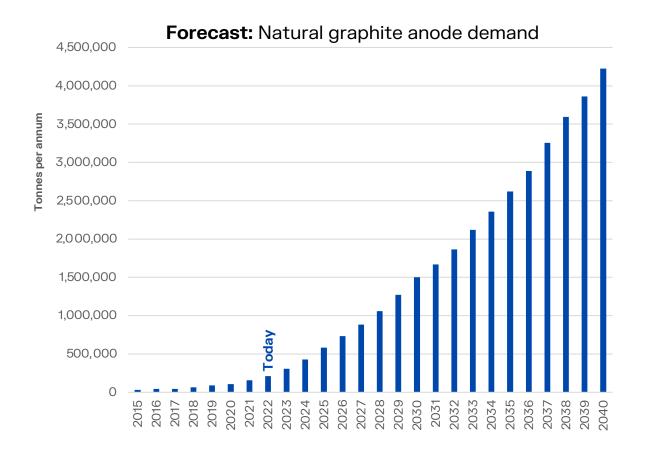
Electric ferry ships in Oslo, 22 August 2022 showing Cavotec battery charger connection.

Source: Rho Motion Q2 EV Battery Outlook, July 2022. Includes full and plug in hybrid electric vehicles



Driving immense new graphite anode demand

Battery anode demand disrupting 1Mtpa natural graphite market and supply chain



- Almost all existing and new battery manufacturing capacity uses graphite anodes
- Natural graphite increasing market share due to better environmental footprint, lower cost and fast charge capability
- Silicon is an additive to graphite anodes for enhancement while not replacing graphite

Rising energy and input costs (needle coke, coal) used to make synthetic graphite expected to be a further fundamental catalyst for natural graphite anode demand¹

Graph Data Source: Benchmark Mineral Intelligence. (1) Fastmarkets, Rising synthetic graphite costs may push battery makers to rely on natural material



Vast battery demand in Europe

Planned battery capacity >1TWh by 2030 requires >1.2Mt graphite anode per annum

VOLKSWAGEN















































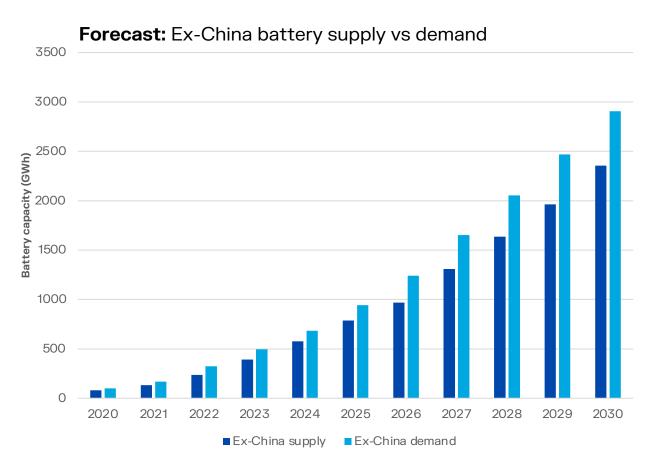






Looming supply shortages

Demand for Li-ion battery highlights need for local production



- Onshore EU/ US battery capacity is lagging aggressive OEM 2030 electrification plans.
- Ex-China battery supply deficit of 551 GWh by 2030
- Battery supply deficit is most acute in the EU
- Localised EU production of battery materials will strengthen supply chain integrity

Graph Data Source: UBSe



Europe's natural graphite resources

European Graphite Mineral Resources classified to JORC or NI43-101 standards

	Company	Project Mineral Resource		Contained Graphite (Million tonnes)	equivalence ²	
1	Talga	Vittangi	30.1Mt @ 24.1%Cg	7.2	→ 4,625 GWh-eq	
2	Talga	Jalkunen	31.5Mt @ 14.9%Cg	4.7	→ 3,055 GWh-eq	
3	Oy Fennoscandian Resources	Aitolampi	26.7Mt @ 4.8%Cg	1.3		
4	Leading Edge	Woxna	13.3Mt @ 7.6%Cg	1.0		
5	Mineral Commodities	Traelen	1.8Mt @ 23.6%Cg	0.4		
6	Talga	Raitajärvi	4.3Mt @ 7.1%Cg	0.3	→ 195 GWh-eq	
				i	7,875 GWh	

Talga is in the process of expanding its Vittangi Graphite Resource and has defined a JORC Exploration Target approximately **6-7 times larger** (170 - 200 million tonnes at 20 - 30% graphite)¹ yet to be drilled out.

Note that the potential quantity and grade of the Exploration Target is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.



Battery Capacity

equivalence

Talga and Nordic Region – Unique Advantages

- Integrated operations
 - Complete mine-to-anode business captures greater portion of EV battery value chain
- Local to Europe Cell Manufacturers

 Vittangi mine and Luleå anode plant in Sweden, with direct road/rail links to customers
- Green Anode
 Cradle-to-gate Life Cycle Assessment by Hitachi ABB¹ confirms world-class green anode product made entirely by renewable energy
- Proprietary, innovative know-how to make natural graphite into high quality and high performance battery materials



Reliable clean energy

- Talga projects use north Sweden's renewable energy (hydropower and wind)
- Significantly greener than the average EU power grid and current China materials sites
- Transmission infrastructure is highly reliable and resistant to climate change (last significant power outage in Luleå was 1979!)
- Low cost, providing advantages for Nordic region's ability to deliver high-quality, cleaner battery materials at lower cost





Unique raw material

- Vittangi graphite has exceptional **high grade** (mineral resource 24.1% Cg), **crystallinity**, **conductivity** and natural **battery-size flake**
- Means 100% of graphite deposit suits making battery anode
- Together with innovative processing provides outstanding anode yields per tonne and avoids low-value industrial by-products
- Current production plans based off a tiny fraction of overall larger deposit
- Also can be used as source of graphenesilicon composite anodes and conductive additives for cathode

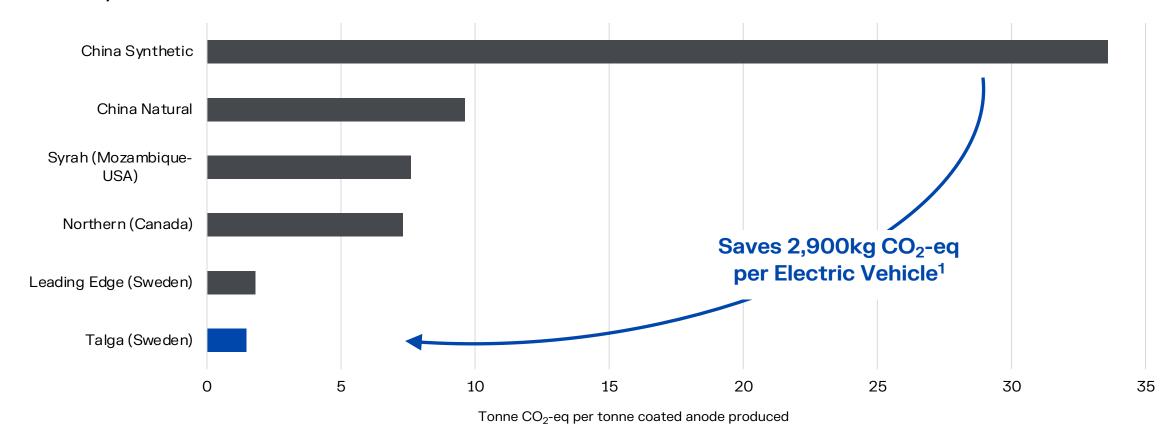
High quality supply chain

- Northern Sweden location gives highly secure and stable access to mainland Europe
- Established road and rail links (no shipping required) to many battery makers
- 24-48 hours drive to any customer in Europe
- Shorter supply chain dramatically reduces carbon footprint of products
- High transparency ensures high quality of supply and production



Delivering Cleaner Anode

Talnode®-C cradle-to-gate LCA accords to ISO 14040-14044 and German Association of Auto Industry



Ref 1. 76kWh battery

Source: Talga – Life Cycle Assessment by Hitatchi ABB Power Grids (ASX:TLG 12 Aug 2021); Leading Edge Materials – public announcement 21 June 2021; Northern Graphite – public announcement 14 Feb 2022; China Natural – Engels et al, 2022, "Life cycle assessment of natural graphite production for lithium-ion battery anodes"; Syrah Resources, public announcement 27 April 2022; China Synthetic (ASX:TLG 15 Dec 2020, Investor Presentation, Source: Recruit Report). Data current as of 30 June 2022.



Vittangi Anode Project: Overview

▶ Talga has completed a Detailed Feasibility Study (DFS) for an integrated mine-to-anode operation producing Talnode®-C in Sweden

> Features:

- responsible mining of unique, natural graphite
- 100% renewable electricity
- Secure, short and controlled supply chain within Europe (1-2 days drive to customers)
- The Vittangi Anode Project comprises:
 - Vittangi Graphite Mine: Mining of 100Ktpa high-grade ore to produce natural graphite concentrate (Upstream)
 - ▶ Luleå Anode Plant: Refining (shaping, purification & coating) of concentrate into 19,500tpa active anode material for sale to battery cell makers (Downstream)



Vittangi graphite mine and concentrator





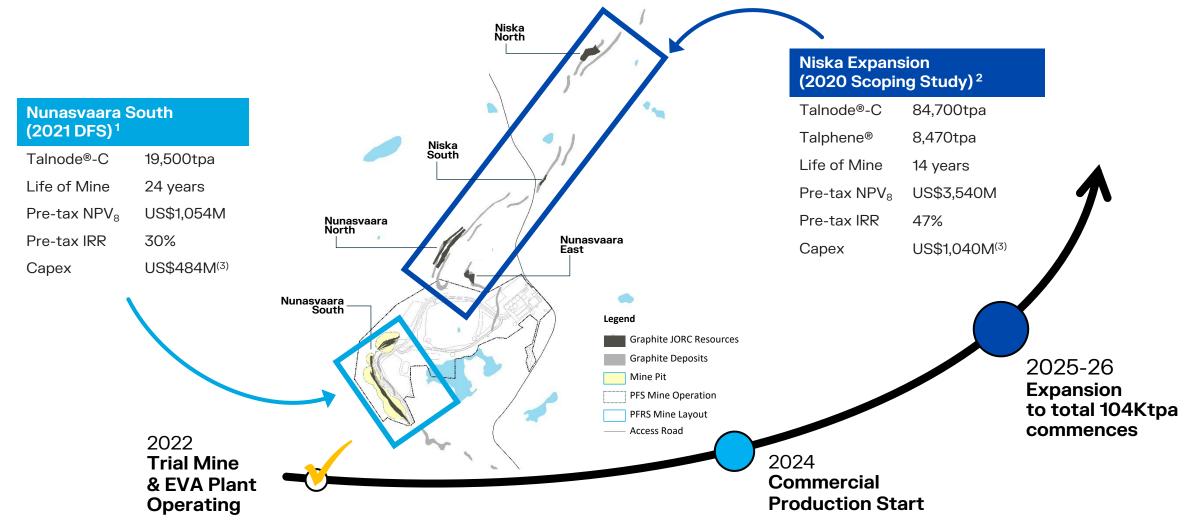
Luleå Anode Plant



Battery Manufacturing plant, (includes planned, announced and under construction facilities).

Path to >100,000tpa anode production

Niska adds to Vittangi to make Talga one of the largest anode producers outside China





Commercial Mine Permitting

- ✓ Fully permitted trial mine for open pit extraction of ~25,000 tonnes graphite ore underway now
- ✔ Permit court process progressed to final steps with Vittangi site visit Sept 2022 and decision hearing in Q1 2023
- ✓ The environmental and Natura 2000 permits are expected to be decided together, followed closely by the exploitation decision
- ✔ Positive submissions from Norrbotten County
 Administrative Board stating Project's environmental
 permit could be approved with appropriate conditions
- ✓ Exploitation applications for Niska Stage 2 (additional 85,000tpa) submitted in August 2021
- ✓ Environmental permit for Luleå anode refinery production site submitted in June 2022







Vittangi Trial mine 2022





Left top and bottom: Vittangi Graphite Project 2022 trial mine operations include lining of ore, waste and topsoil stockpile areas and commencement of excavations

Below: exposed high-grade graphite ore body



Anode Product Commercial Strategy

Following product positioning, pricing strategy and test programs Talga is in final Talnode® qualification stages with numerous customers

Qualification requires extensive large-scale samples (EVA plant) and bespoke product development

Current qualification processes include:

- 11 Automotive companies
- 37 Battery manufacturers and associated value chain players

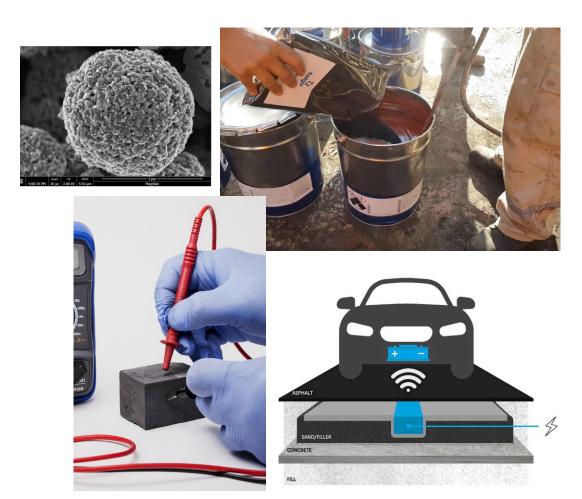
Talga continues to advance discussions for commercial agreements and, given current market dynamics, is well positioned to optimise agreement terms



Material Technologies - adding value

Graphene and advanced materials expand Talga's addressable markets and opportunities to derive further efficiency and commercial gains from Vittangi

- ✓ Talnode®-Si graphene-silicon composite anode in scaleup and feasibility stages
- ✓ CALIBER study: technical and commercial feasibility of producing conductive additives in UK, targeting lower or replaced carbon black based additives in cathodes.
- ▼ RELOAD study: recycling graphite from spent batteries to make new battery additives
- ✓ UK-CSi study: silicon anode production process development using graphite ore as silicon source
- ✓ Talcoat® ship trial ongoing. Other coating products include anti-foul and powder coatings
- ✓ Talcrete® graphene in concrete development continuing for strength and conductive apps





Anode Plant site - Luleå Industrial Park, Sweden





Anode plant planned for production start 2024



Project Funding – European Financiers



- ➤ Swedish Export Credit Agency (SEK), Letter of Interest to support financing of Vittangi Project.
- Swiss Export Risk Insurance (SERV), Letter of Support to finance a portion of construction costs of Vittangi Project. Swiss content linked to ABB, preferred major contractor.
- ▶ Nordic Investment Bank, Letter of Interest to finance construction of Vittangi Project.
- Talga is targeting securing further project funding support from other European Export Credit Agencies (ECAs).
- Critical Mineral development and funding support: The European Commission has established active mandates to support the development of natural graphite in Europe.

European Critical Minerals and Battery Development & Funding Initiatives



The European Commission provides funding support under the Important Projects for Common European Interest and European Battery Innovation programs.

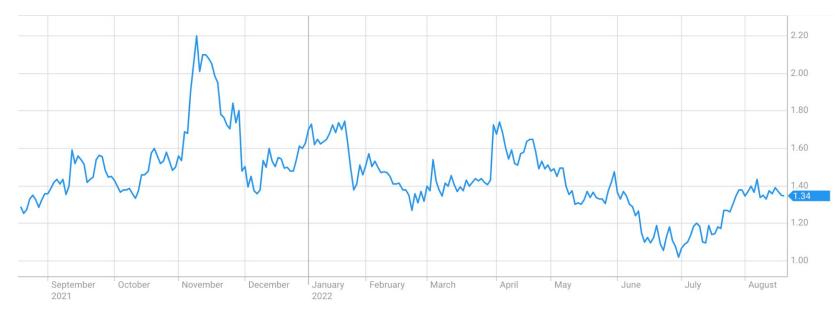


The European Investment Bank, the world's largest multilateral development bank, is targeting to make climate related investments of >€1 Trillion by 2030.



Corporate Overview

ASX:TLG



STOCKMARKET CODES/TICKERS

Primary listing in Australia on the ASX (**TLG**) with OTC trading in Germany (**TGX**) and US (**TLGRF**)

CAPITAL STRUCTURE

Market Capitalisation: \$404.1M

Listed Shares: 304.9M

Unlisted Options: 13.4M (1)

Cash as at 30 June 2022: \$13M

MAJOR SHAREHOLDERS

Mark Thompson – M. Director 4.7%

Kinetic Investment Partners 4.4%

Pentwater Capital Management 2.0%

Yandal Investment Pty Ltd 1.6%

TD Ameritrade, Inc. 1.6%

TOP 20 SHAREHOLDERS 27.7%

Total number of shareholders 11,834





Talga Group Ltd

ASX Code: TLG

Group Head Office: Suite 3.03, Level 3

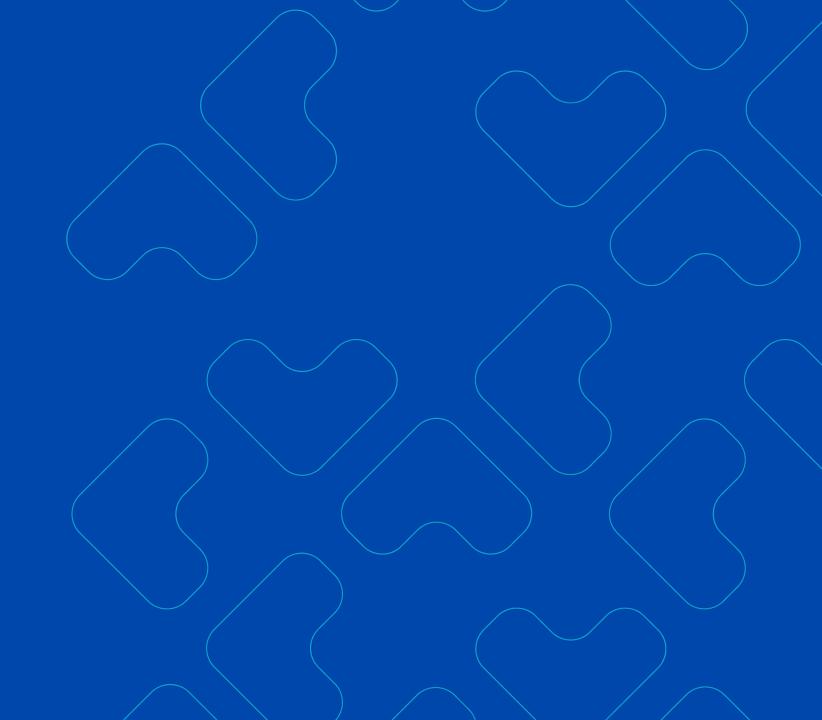
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West Perth, Australia

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Email Address: info@talgagroup.com

Website: www.talgagroup.com



JORC Graphite Reserve and Resources

Ore Reserve 3.5	Tonnes	Graphite (% Cg)		
Nunasvaara (JORC 2012)	2,260,140	24.1		
Probable	2,260,140	24.1		

Mineral Resources 1.2.4.6.7.8	Tonnes	Graphite (% Cg)		
Vittangi (JORC 2012)	30,100,000	24.1		
Indicated	22,600,000	24.9		
Inferred	7,500,000	21.8		
Jalkunen (JORC 2012)	31,500,000	14.9		
Inferred	31,500,000	14.9		
Raitajärvi (JORC 2004)	4,300,000	7.1		
Indicated	3,400,000	7.3		
Inferred	900,000	6.4		
Total Mineral Resources	65,900,000	18.6		

Note:

- 1. Mineral resources are inclusive of ore reserves.
- 2. Mineral Resources are reported at various cut off grades: Vittangi 10% Cg, Jalkunen 5% Cg and Raitajärvi 5% Cg.
- 3. Ore Reserve is reported at a cut off grade of 12% Cg.
- 4. Errors may exist due to rounding.



Vittangi Graphite Growth

Resource upside with ability to support and expand European battery supply chain for decades

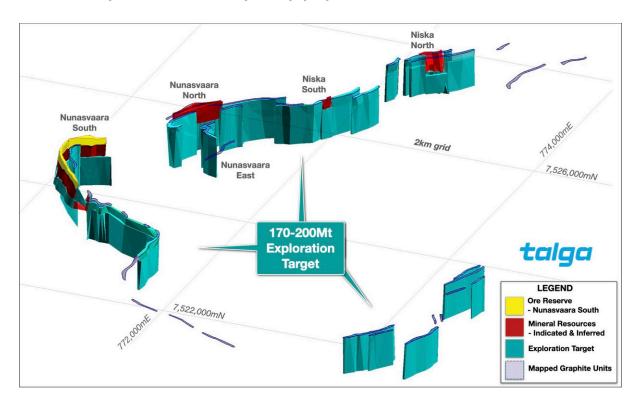
Vittangi Stage 1 DFS based solely on Ore Reserve (yellow zone in figure to right) constrained to market-entry target ~20Ktpa anode production for at least 20 years

Talga anode customer expressions of interest now exceed this by order of magnitude

Vittangi total global resource (red zone in figure) now **30.1 million tonnes at 24.1% Cg** open along strike and depth.

Only fraction of known 15km graphite unit and JORC Exploration Target (aqua colour zone in figure) has been drill tested to date

Exploration and resource growth ongoing to underpin potential expansion options, permitting and meet growing market for Talga clean anode



Note that the potential quantity and grade of the Exploration Target is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.



European Natural Graphite Peer Comparison

Company	Project	Study	Resource	Tonnage	Grade	Contained Tonnage	Information Source
Talga	Vittangi	DFS	Indicated	22,600,000	24.9	7,249,000	Talga Group, Company Announcement, 27 May 2022 https://talgagroup.eu-central-1.linodeobjects.com/app/uploads/2022/05/27124246/20220527VittangiResourceUpgrade_ASX.pdf
Taiga			Inferred	7,500,000	21.8		
Talga	Jalkunen	-	Indicated	-	-	4,693,500	Talga Group, Company Announcement, 27 August 2015 https://talgagroup.eu-central-1.linodeobjects.com/app/uploads/imports/asx- announcements/357c05f9-817b-416f-b7a9- 299eb85d5dd3/TalgaTreblesGraphiteResourcetoGlobalScale.pdf
Taiya	Jaikurien		Inferred	31,500,000	14.9%		
Beowulf (Oy Fennoscandian	Aitalampi	-	Indicated	11,000,000	4.9%	1,275,000	Beowulf Mining, Company Announcement, 30 October 2019 https://polaris.brighterir.com/public/beowulf_mining_plc/news/rns/story/w10096r
Resources AB)	Artolampi		Inferred	15,700,000	4.7%		
	Woxna	Producer	Indicated	9,810,000	7.5%	1,020,000	Leading Edge Materials, Company Announcement, 9 June 2021 https://leadingedgematerials.com/leading-edge-materials-announces-positive-preliminary-economic-assessment-results-for-its-woxna-graphite-anode-project-with-us317m-pre-tax-npv-and-42-9-pre-tax-irr/
Leading Edge			Inferred	2,510,000	8.1%		
			Measured	960,000	9.21%		
	Traelen	Producer	Measured	67,000	30.2%	434,000	Mineral Commodities, Company Announcement, 16 November 2021 https://www.mineralcommodities.com/wp-content/uploads/2021/11/Traelen-Maiden-Ore-Reserve.pdf
Mineral Commodities			Indicated	719,000	25.2%		
			Inferred	1,058,000	22.0%		
Talga	Raitajärvi	-	Indicated	3,400,000	7.3%	307,300	Talga Group, Company Announcement, 26 August 2013 https://talgagroup.eu-central-1.linodeobjects.com/app/uploads/imports/asx-
Talya			Inferred	900,000	6.4%		announcements/930169d0-25cf-407b-9738- 3e56a71d7375/500IncreaseinContainedGraphiteatRaitajarviProject.pdf



Competent Person Statements

The Vittangi Mineral Resource estimate was first reported in the Company's announcement dated 27 May 2022 titled 'Talga's battery anode growth ambitions boosted with 54% graphite resource increase'. The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcement and that all material assumptions and technical parameters underpinning the Resource estimate in the previous market announcement continue to apply and have not materially changed.

The Nunasvaara Ore Reserve statement was first reported in the Company's announcement dated 1 July 2021 titled 'Robust Vittangi Anode Project DFS'. The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcement and that all material assumptions and technical parameters underpinning the Reserve estimate in the previous market announcement continue to apply and have not materially changed.

The Jalkunen Mineral Resource estimate was first reported in the Company's announcement dated 27 August 2015 titled 'Talga Trebles Total Graphite Resource to Global Scale'. The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcement and that all material assumptions and technical parameters underpinning the Resource estimate in the previous market announcement continue to apply and have not materially changed.

The Raitajärvi Mineral Resource estimate was first reported in the Company's announcement dated 26 August 2013 titled '500% Increase to 307,300 Tonnes Contained Graphite in New Resource Upgrade for Talga's Swedish Project'. The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcement and that all material assumptions and technical parameters underpinning the Resource estimate in the previous market announcement continue to apply and have not materially changed.

The Company first reported the production targets and forecast financial information referred to in this announcement in accordance with Listing Rules 5.16 and 5.17 in its announcements titled 'Robust Vittangi Anode Project DFS' dated 1 July 2021 and 'Positive Niska Scoping Study Outlines Pathway to Globally Significant Battery Anode Production' dated 7 December 2020. The Company confirms that all material assumptions underpinning those production targets and forecast financial information derived from those production targets continue to apply and have not materially changed.

The Information in this presentation that relates to prior exploration results for the Vittangi Graphite Project is extracted from ASX announcements available to view on the Company's website at www.talgagroup.com, with information on the exploration target first released to ASX on 20 July 2021. The Company confirms that it is not aware of any new information or data that materially affects the exploration results included in the relevant original market announcements. The Company confirms that the form and context in which the Competent Person and Qualified Person's findings are presented have not been materially modified from the relevant original market announcements.

