

Enhancing sustainability through new European battery materials

Green Auto Summit Stuttgart, Germany Talga Group (ASX:TLG)

#### 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 Niska Scoping Study will be realised. The Niska 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 Niska Scoping Study will be achieved. To achieve the range of outcomes indicated in the Niska 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 will be able to raise 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 Niska Scoping Study.

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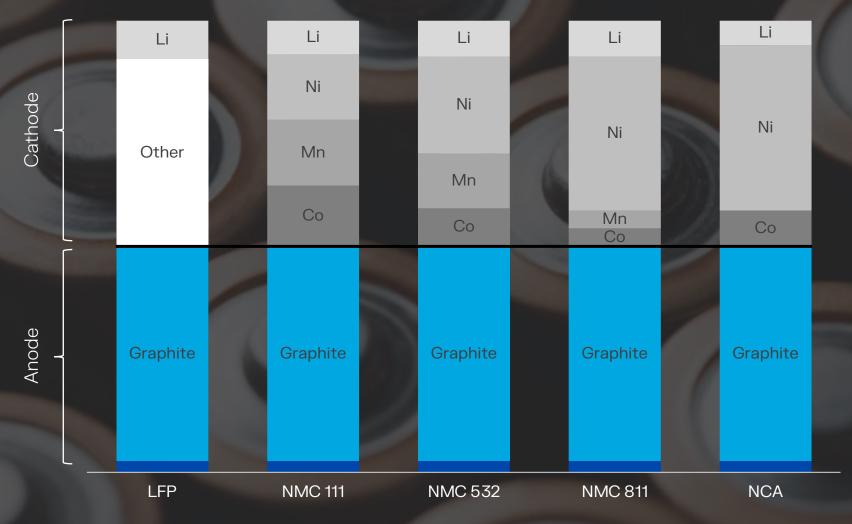
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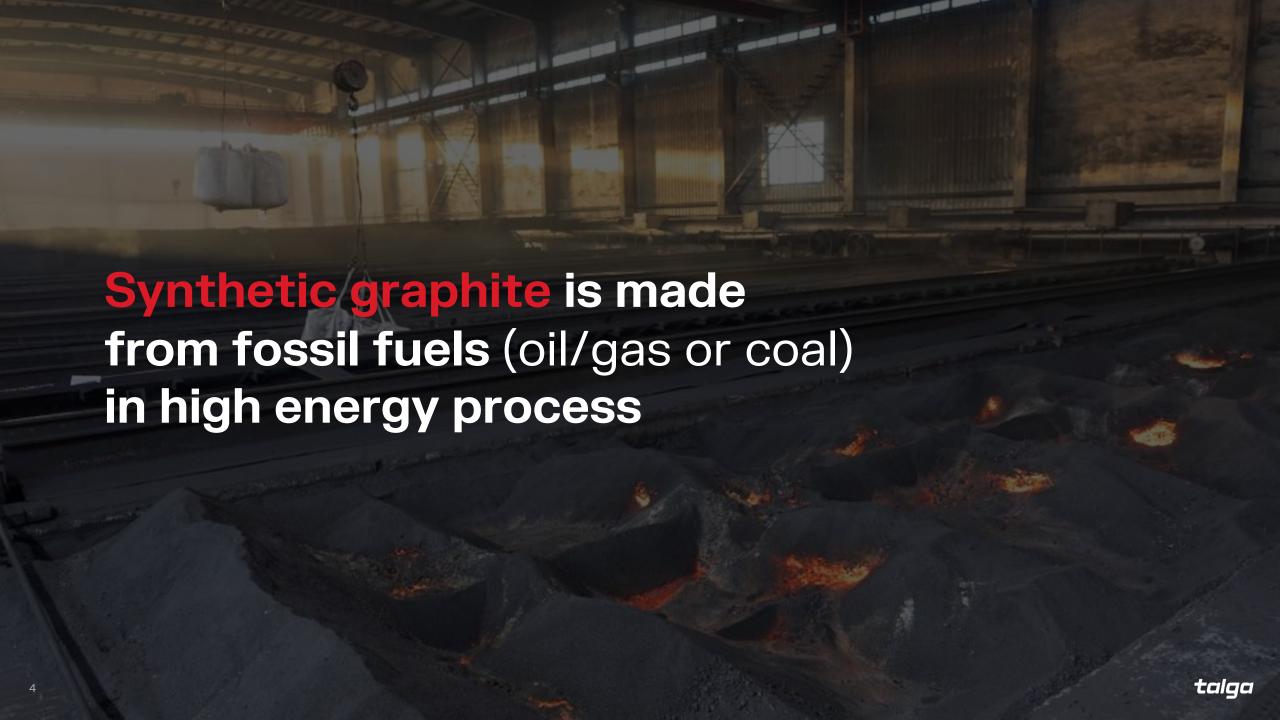
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## Graphite is largest volume material of Li-ion cell



250% of battery active material is graphite

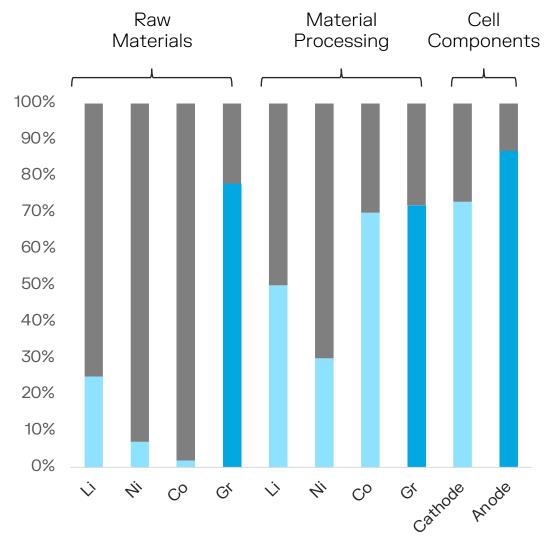


## Graphite has major carbon footprint in cell





# Graphite supply chain concentrated in China **New restrictions on Chinese** exports starting 1 Dec, 2023



Notes: Li: lithium; Ni: Nickel; Co: Cobalt; Gr: Graphite. Geographical breakdown refers to the country where production occurs. Mining based on production data. Mineral processing is based on refining production capacity data. Cell component production is based on cathode and anode material production capacity data.



# EU recognises supply chain risk, natural graphite listed as strategic and critical material

Battery passport legislation and Critical Raw Materials Act setting new compliance targets including:

>10% local extraction by 2030

>40% local processing by 2030

Mandatory declaration of carbon footprint in 2025

Talga is building a new, clean, integrated, secure graphite anode supply chain in Europe



A fully integrated battery anode supply chain in Sweden

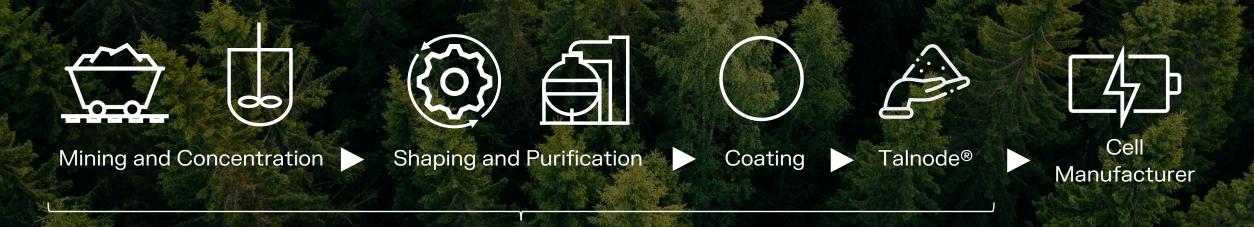




## 100% owned technology

Talga develops products and processes across its operations (Sweden, UK, Germany & Australia)

## One-stop Shop = Full control of anode supply



Talga in Sweden

talga

## Vittangi Anode Project north Sweden

Integrated mine-to-anode refinery producing 19,500tpa anode (Stage 1) for 24 years

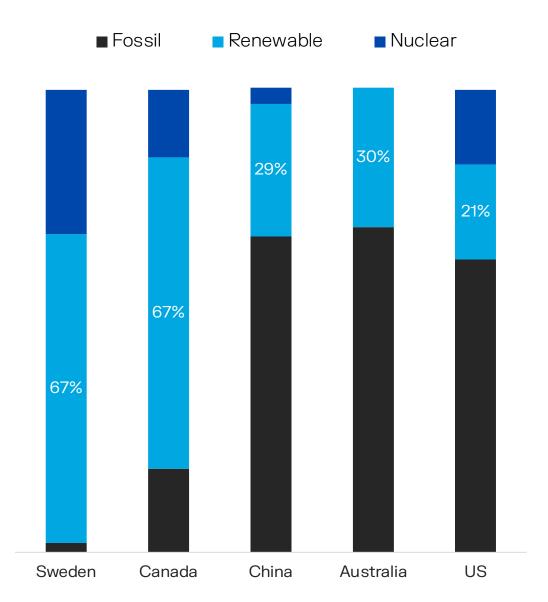
Europe's largest and highest grade graphite deposit (Vittangi): 35.0Mt at 23.8%Cg, containing 8.3Mt graphite

Advanced transport and logistics, with direct road and rail to rest of Europe (1-2 days delivery) from Luleå

Plans for major expansion to >100,000tpa anode



## Powered by reliable clean electricity 100% hydropower used in Talga anode production Source: Electricity generation mix 2021, graph produced using data points from Fastmarkets and IEA.





## Cleaner anode production

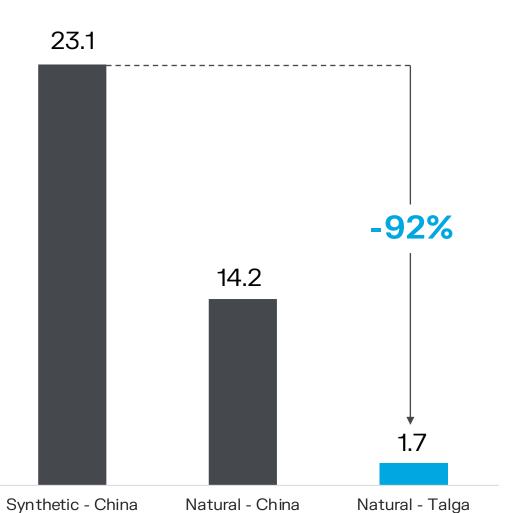


-92% less emissions

Super *high-grade* graphite, *renewable* energy and high-yield *processing technology* result in ultralow carbon footprint

The peer-review LCA was conducted according to ISO 14040:2006 and ISO 14044:2006 standards

CO<sub>2</sub>-eq per kg of anode active material





#### Talnode®-C

## Flagship graphite anode







Coated active anode with excellent capacity, good 1st-cycle efficiency and ultra-low  $CO_2$ .

Fast charging capability with excellent power density and low resistivity.

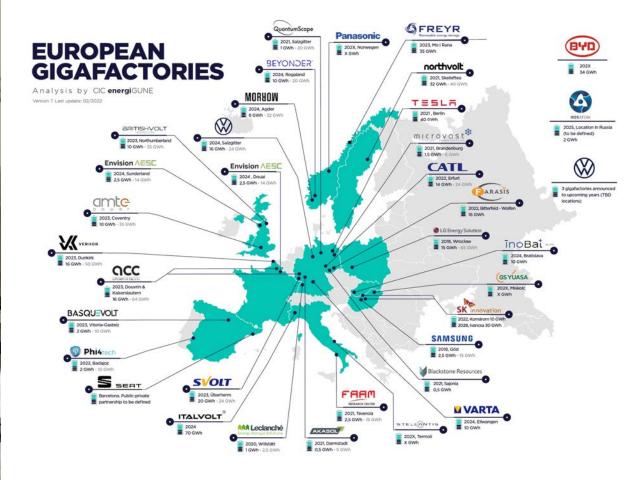
Low temperature performance maintains capacity at freezing temperatures.

Swelling similar to synthetic graphite. EU origin and compliance.

# Talnode® validated by numerous customers under NDAs

- Cell manufacturers
- Anode manufacturers
- Auto OEMs

Map showing current and planned European Li-ion battery factories and capacity in 2022. Source: CIC energiGUNE





## **EVA Qualification Plant**

Luleå, northern Sweden



Producing large scale Talnode®-C samples for battery customer qualification (B-C)



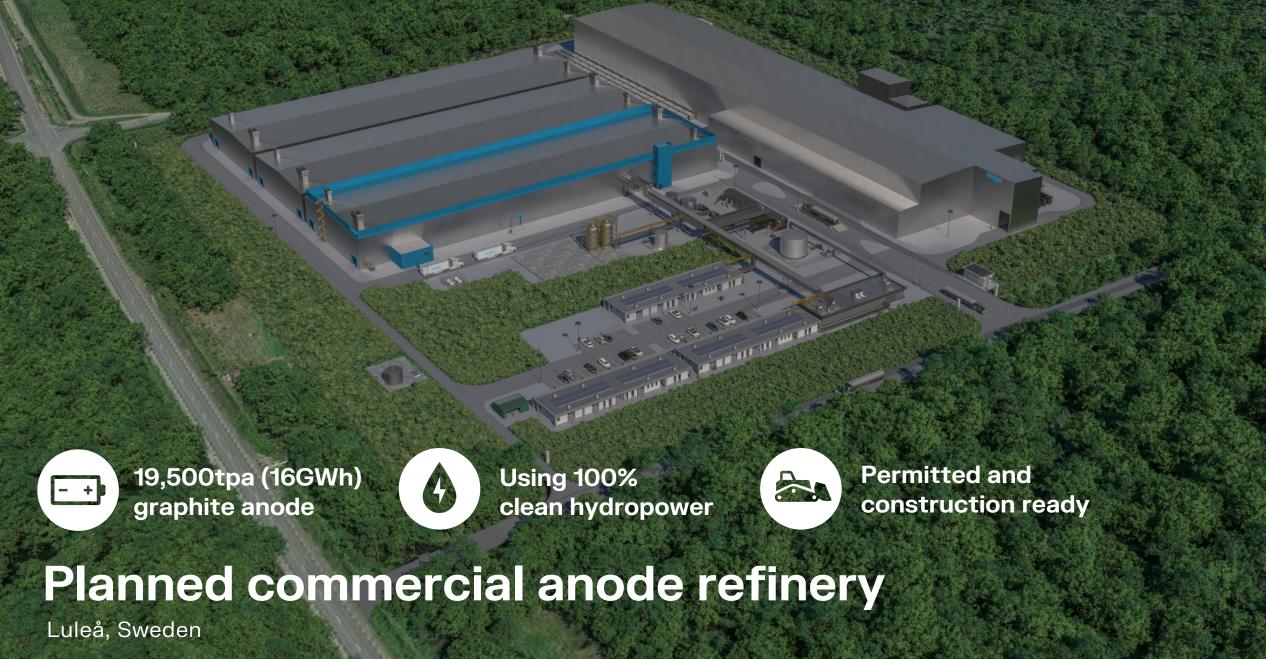
In-house battery lab and quality control













## Vittangi Anode Project Financing

Target total debt (60%) and equity (40%)

**Debt financing consortium selection finalised** 

**European Investment Bank €150 million senior** debt funding approved\*





**Key Project Partners** 







### **Next Gen Products**

## Talnode®-Si Silicon anode

Composite silicon-graphite additive with ~50 wt% silicon to produce high energy density (~1,900 mAhg) drop-in additive

#### Solves

Energy density, industrial scalable process and competitive cost

#### Stage

Pilot operating. Engineering and financial feasibility studies under way for commercial plant

## Talphite®, Talphene® **Graphene**

Products in R&D include conductive additives for cathode, solid-state anodes and recycling of graphite

#### **Solves**

Conductivity, CO<sub>2</sub>, energy density, lithium-metal issues and environmental regulations

#### Stage

Lab scale tests and results



### Silicon Anode Pilot Plant

Talga Advanced Materials Gmbh, Germany



Producing Talnode®-Si samples for battery customer qualification and commercial discussions



Feasibility studies and work underway to support commercialisation including site selection



## Talga

#### **Corporate overview**

Capital Structure	
Market Capitalisation	\$391.4M
Listed Shares	360.7M
Unlisted Options	13.4M <sup>1</sup>
Cash as at 30 June 2023	\$38.6M

Major shareholders	
Kinetic Investment Partners	4.7%
Mark Thompson - M Director	4.0%
Pentwater Capital Management	3.6%
UBS AG (Private Banking)	3.2%
Ellerston Capital	1.7%
Yandal Investments	1.7%

Talga entered the ASX 300 on 20 March 2023, with research coverage by the following brokers:



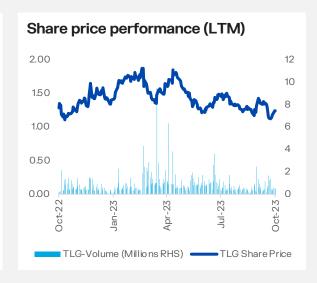
















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## Experienced Board and Management Team

#### Strong technological and operational leadership with on the ground European presence



#### **Terry Stinson** Non-Executive Chairman

Over 35 years' Executive and Non-Executive Director experience. working for global innovation companies. Formerly the CEO and Managing Director of Orbital Corporation, VP for Global Fuel Systems at Siemens AG and CEO of Syneriect, Currently the Non-Executive Chairman of Carnegie Clean Energy Limited and Non-Executive Director of Aurora Labs.



#### **Mark Thompson** Managing Director & Founder

Over 30 years' global experience in the mineral industry including resource project development. technology and management. Founded Talga in 2009 and listed the company on the Australia Securities Exchange in mid 2010. A member of the Australian Institute of Geoscientists and the Society of Economic Geologists.



#### **Grant Mooney**

Non-Executive Director

Strong corporate advisory background with extensive experience in equity capital markets. corporate governance and M&A transactions. A member of the Institute of Chartered Accountants in Australia, Currently a Non-Executive Director of several ASX listed companies.



#### **Steve Lowe**

Non-Executive Director

Strong business management and taxation background with more than 20 years' experience consulting to corporate and high wealth clients. A member of the Australian Institute of Company Directors.



#### **Ola Rinnan**

Non-Executive Director

Extensive commercialisation and leadership experience across the energy, banking and finance sectors. Has held numerous board positions for European listed companies and financial institutions including Non-Executive Directorships in Smedvia group companies and DFCU Bank.



**Per-Erik Lindvall** Talga AB Chairman

A well-known business leader in northern Sweden with a long standing background in the Swedish mining industry including as former Vice President of LKAB. Per-Erik also holds several board assignments and has for many vears been a driving force in creating a new. sustainable industrial cluster in northern Sweden.



**Melissa Roberts** Chief Financial Officer

Over 20 years' experience in the global resources industry across corporate and commercial roles, most recently with global mineral sands and rare earths producer Iluka Resources. Prior to this, Melissa worked with a range of European energy companies after commencing her career with Australian listed company, Wesfarmers.



**Martin Phillips** 

Chief Operating Officer & European CEO

Experienced commercial and project manager with over 25 years of global metals and mining sector experience. Previous positions include engineering and management roles in battery recycling programs and smelting innovations at MIM's Mt Isa and UK operations. Mr Phillips was former Commercial Manager of Iluka Resources Ltd.



**Dean Scarparolo** Company Secretary

A wealth of experience in developing and managing finance departments of ASX listed resource companies. A member of CPA Australia with over 25 years in roles spanning exploration, development and operations across Australia, Africa and Europe.

## Technical and Environmental Leadership Team

#### Decades of experience across battery and advanced material sciences, and environmental management



**Dr Anna Motta**Head of Talga Technologies
and Advanced Materials

A chemist with over 20 years of expertise in carbon nanomaterials and extensive experience in managing R&D programs. Heads up Talga's technologies and advanced materials unit focusing on the development of next generation products.

Formerly the manager of several research programs at Cambridge Graphene Centre with particular focus on industry partnerships and technology transfer. Previous positions include science and management roles at the National Research Centre of Finland and the University of Cambridge.



**Nishida Tatsuya**Chief Scientific Advisor
Battery technologies

Mr Tatsuya holds more than one hundred patents listed in China, Japan, Korea, the US and EU.

His distinguished career includes the foundational work of commercialising graphite anodes and over 20 years' experience in commercial anode and battery technologies with world leading Japanese battery anode company Hitachi Chemical (now part of the Showa Denko Group).



Dr Karanveer S. Aneja Senior Scientist Materials

Dr. Karanveer S. Aneja is a Senior Scientist at Talga Technologies Limited, based in Cambridge UK, and overlooks Talga's composite and coating product development activities. Dr Aneja has a background in Metallurgical Engineering and Material Science with a specialisation Corrosion Science. He was awarded the "Prime Minister's Fellowship" for his doctoral research at IIT Bombay, the highest and most prestigious fellowship in India.

Dr Aneja's work at Talga involves developing graphene functionalities for use in large volume applications such as protective coatings and has resulted in 5 graphene product patent applications. He has also coauthored several scientific papers on use of graphene in protective coatings.



Peter French
Environmental & Community
Manager

Experienced environmental professional with 25 years' experience in the mining and industrial sector.
Responsible for managing permitting, environmental and social performance functions for Talga's Sweden operations.

Previously worked as an independent consultant to a range of mining operations and has spent the most of the past 15 years managing permitting processes for mining and industrial sites, often in a seconded capacity. Earlier positions include mine rehabilitation roles within the mineral sands industry.



## 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 124678	Tonnes	Graphite (% Cg)
Vittangi (JORC 2012)	35,020,000	23.8
Indicated	26,691,000	24.3
Inferred	8,329,000	22.1
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	70,820,000	18.8

Note:

- 1. Mineral resources are inclusive of ore reserves.
- 2. Mineral Resources are reported at various cut off grades: Vittangi 12.5% 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.



### JORC Exploration Target

2021 Exploration Target Vittangi Graphite Project		
Vittangi (JORC 2012)	Low	High
Tonnage Range	170Mt	200Mt
Grade Range	20% Cg	30% Cg

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.

Talga completed new ground electromagnetic geophysical ("EM") surveys of graphite targets at Vittangi following the 2020 upgrade of the Vittangi graphite resource. The EM survey results have been reviewed in combination with prior Talga geochemical samples collected from the surface within the conductors, which averaged 26.2% graphite ("Cg") (ASX:TLG 15 Nov 2012). Modelling of this data in conjunction with positive outcomes of the Niska underground mining scoping study have enabled a revised JORC-compliant Exploration Target estimate totalling 170-200Mt at 20-30% Cg at Vittangi (ASX:TLG 20 Jul 2021). This is a significant increase from the previous 26-46Mt at 20-30% Cg (ASX:TLG 17 Sep 2020). The majority of this estimate is proximal along strike and down dip from Talga's existing Vittangi JORC (2012) graphite resources of 30.1Mt @ 24.1% Cg. Additional targets are located along the mapped graphite units around the greater Nunasvaara Dome area.

New rounds of diamond core drilling commenced at Vittangi in mid-2021. The staged 69 hole diamond drilling program totalling ~8,000m tested parts of the JORC Exploration Target as down-dip extensions of the current JORC Resources as well as shallow subcrop targets between Nunasvaara North and Niska South. Reviews of JORC Exploration Targets will be undertaken where significant changes are indicated by continued exploration.

See Talga's ASX announcement dated 20 July 2021 for further information.



#### **Competent Person Statements**

The Vittangi Mineral Resource estimate was first reported in the Company's announcement dated 6 October 2023 titled 'Talga boosts Swedish battery graphite'. 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 presentation 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.

