21 NOVEMBER 2013 ASX: TLG



#### TALGA AGM PRESENTATION

Talga Resources Ltd ABN 32 138 405 419

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#### Corporate Information

ASX Code TLG

Shares on issue 84.8m

Options (unlisted) 3.75m

Company Directors

Keith Coughlan

Non-Executive Chairman

Mark Thompson

Managing Director

**Piers Lewis** 

Non-Executive Director

Talga Resources Limited (ASX:TLG) ("Talga" or "the Company") is pleased to provide a copy of the presentation to be delivered today by Managing Director Mr Mark Thompson at the Company's Annual General meeting in Perth.

The presentation summarises Talga's graphite and iron ore projects in Sweden and gold projects in Australia and will be available on the Company's website <a href="https://www.talgaresources.com">www.talgaresources.com</a>

"Talga Resources AGM Presentation"
 21 November 2013.

For further information, contact:

Mark Thompson

Managing Director Talga Resources Ltd

Tel +61 (08) 9481 6667 Email admin@talgaresources.com

ASX Code: TLG







\* Cover picture; disseminated copper sulphides in felsite, Vittangi project.



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# **Executive Summary**

TALGA

- ▶ Talga Resources Ltd ("Talga") is a **mineral exploration** & **development** company listed on the Australian Stock Exchange ("ASX") since July 2010.
- The Company wholly owns multiple graphite, iron ore and copper/gold projects in Sweden gained through the acquisition of a Teck Resources subsidiary in 2012, as well as Australian gold assets owned since listing.
- ➤ Talga's **graphite deposits** include the world's **highest grade JORC resource** of **7.6Mt at 24.4% graphite "Cg"** at Nunasvaara, plus a **coarse flake graphite JORC resource** of **4.3Mt at 7.1% Cg** at Raitajärvi. Additional **117-178Mt at 17-23% Cg** in JORC compliant exploration targets¹ provides further scope for increasing resources if required.
- Talga's skarn magnetite iron deposits have combined total JORC mineral resources 235.6Mt @ 30.7% Fe with 87.0Mt @ 28.3% Fe in JORC Indicated category.
- ▶ Upcoming material catalysts, including **economic studies** on two graphite projects and further finance expected from **divestment of gold and iron** projects.

<sup>&</sup>lt;sup>1</sup> Exploration Targets: The estimates of exploration target sizes in this announcement are in accordance with the guidelines of the JORC Code (2004) and should not be misunderstood or misconstrued as estimates of Mineral Resources. The potential quantity and quality of the exploration targets are conceptual in nature and there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

# Talga Resources Corporate Overview



Board of Directors				
Keith Coughlan*	Non-executive Chairman	Perth		
Mark Thompson	Managing Director	Perth		
Piers Lewis	Non-executive Director	Perth		

<sup>\*</sup> Appointed 26 Sept 2013



<b>Capitalisation Summary</b>	
Ordinary Shares ASX:TLG	84.8M
Unlisted Options <sup>1</sup>	3.75M
Cash (at 30 Sept 2013) <sup>2</sup>	\$0.4M
Debt	\$0.0M
Market Capitalisation (undiluted @ \$0.06)	\$5.0M

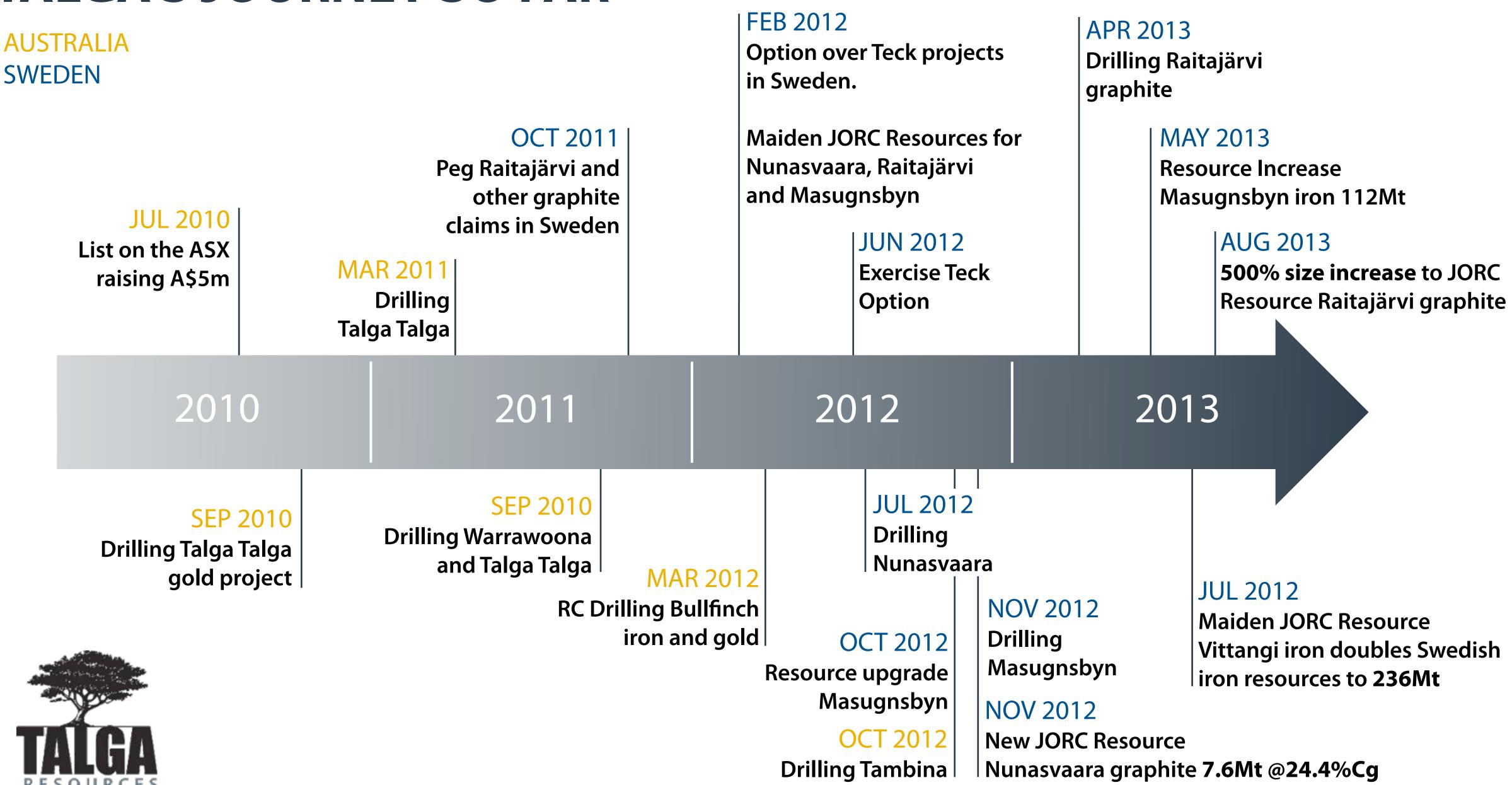
Top Shareholders (+3%) at 20 September 2013		
Lateral Minerals Pty Ltd (Mark Thompson)	10.9%	
Yandal Investments Pty Ltd	4.2%	
Hereford Group Ltd	4.0%	
Two Tops Pty Ltd	3.5%	
Mr Kin Chun Wong	3.1%	

Top 20 own 50.0%

<sup>&</sup>lt;sup>1</sup>2.75m @ 40c director exp 30.11.2014, 0.5m @ 35c employee exp 21.7.2015, 0.5m @ 45c employee exp 3.10.2016

<sup>&</sup>lt;sup>2</sup> In October 2013 \$1.06 million in proceeds received from a fully underwritten entitlement offer

### TALGA'S JOURNEY SO FAR



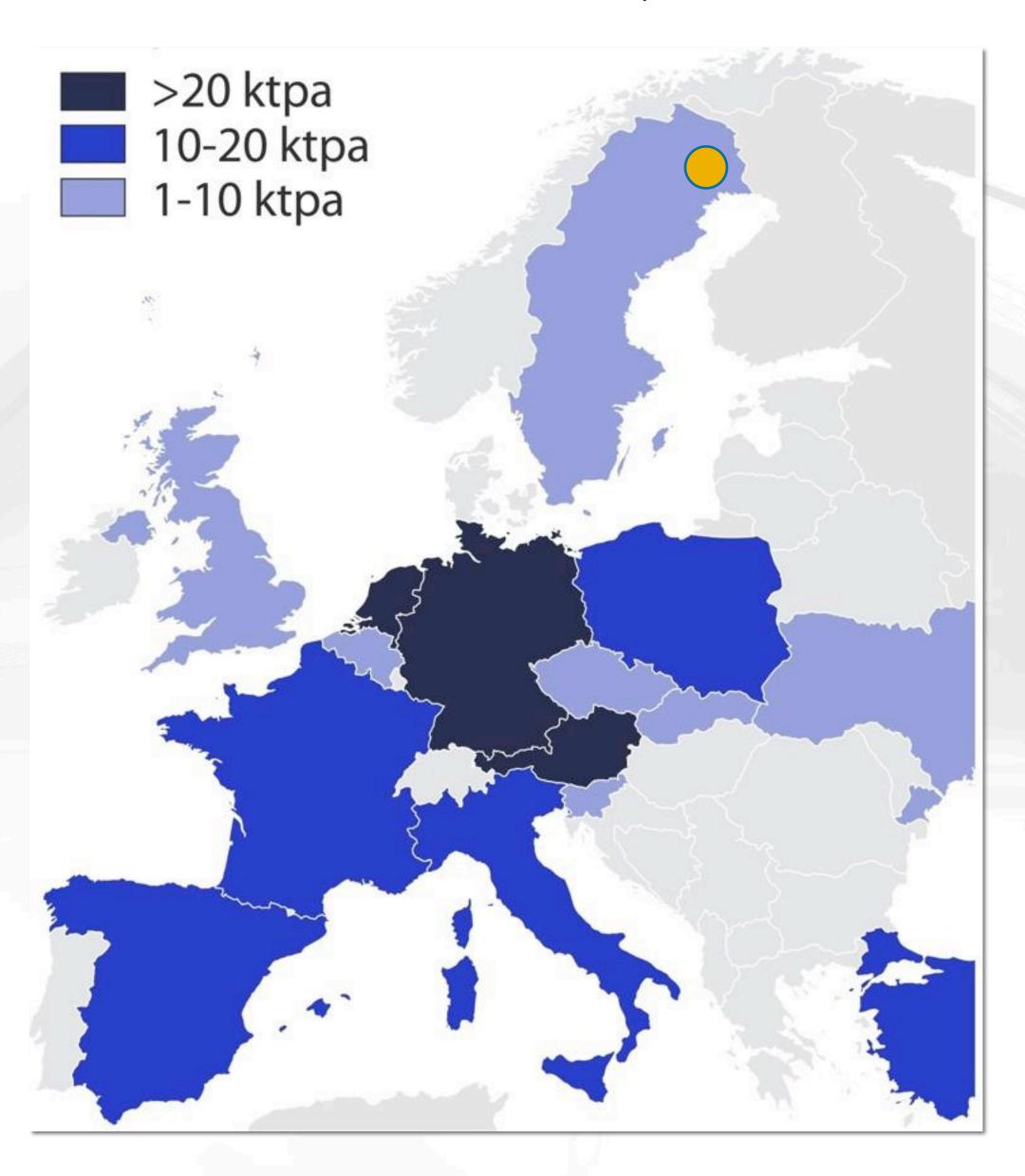


# Sweden is Proximal to Major Graphite Markets

- ▶ EU consumes 20% of world's natural graphite production, and imports 95% of its needs (vast majority from China).
- ▶ EU has classified graphite as a "critical raw material".
- ▶ EU graphite consumers looking for **new reliable supply** outside of China.
- Sweden is currently a major supplier of iron ore, copper, gold and other minerals to the EU markets and is a historic graphite producer.
- Graphite deposits in Sweden can enjoy a distinct order/ delivery time advantage compared to China and other jurisdictions.

#### **Europe Natural Graphite Imports**

(,000t/annum) Industrial Minerals 2012 Report Data Subset 1+2



# Established bulk commodity mining and transport infrastructure



# Direct Road and Rail Advantages

 Graphite projects located proximal to high quality sealed roads and open access heavy haulage railway.

 Option to road/rail direct to major customers as Sweden links to mainland Europe markets.

▶ Potential \$100-200/tonne **cost advantage** on delivered graphite compared to shipments from China or other jurisdictions.

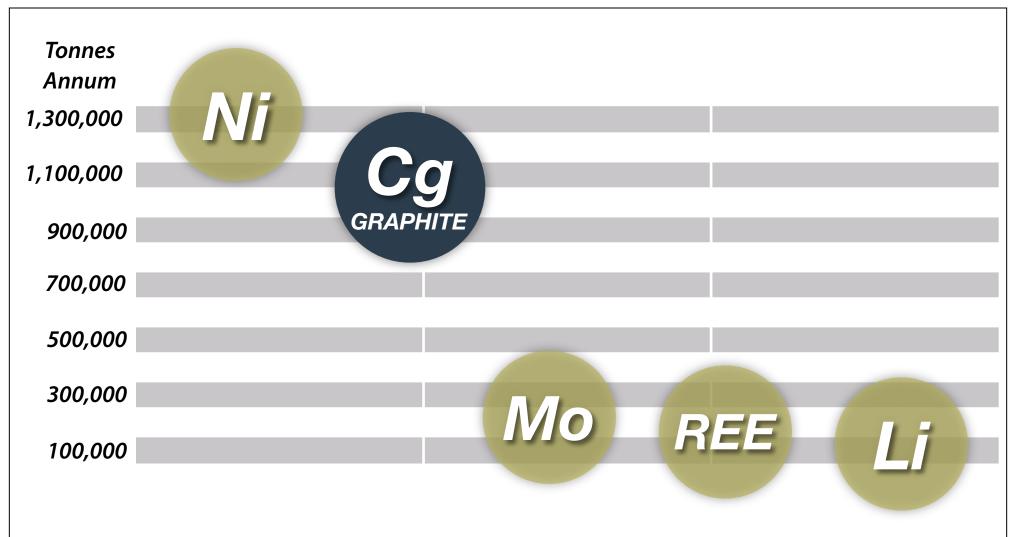


Road through Vittangi project

# Natural graphite market

- Natural graphite market (1.0Mt/yr) worth US\$1B/yr with main consumption in steel and refractories, batteries, automotive parts and lubricants.
- Annual consumption is split approximately 45% for microcrystalline flake (particle size <75 micron; also called amorphous in the trade) and 55% for macrocrystalline flake (>75 micron size, also generically called just flake).
- Graphite is most commonly sold as a concentrate by private contract and therefore prices are not transparent. Industry prices are surveyed and published by **Industrial Minerals** magazine.
- Graphite price is determined by particle (flake) size, carbon content (purity) and in some products; shape. Most natural graphite is sold to traders who upsell to refiners/purifiers, polishers and shapers before it is retailed to end user.
- ▶ Historical graphite market growth related to diverse industrial demand of 3-5% annum; new markets growing 7-10% annum.

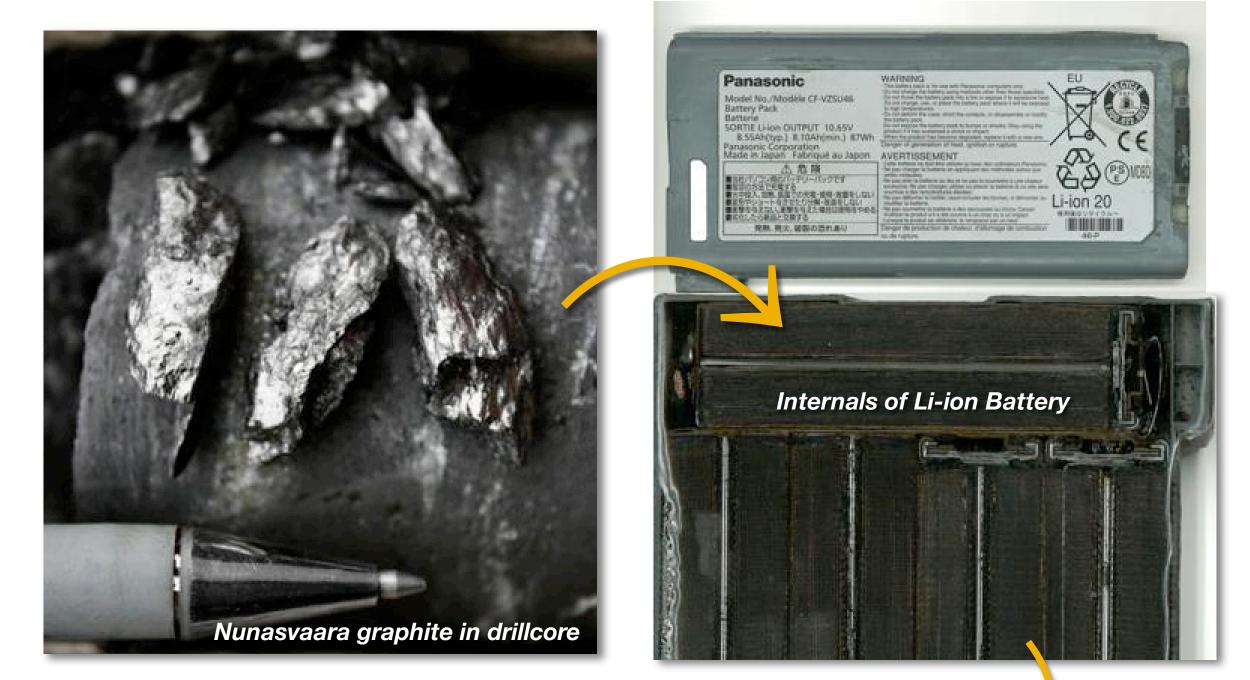
#### **Volume Comparison of Natural Graphite Market**

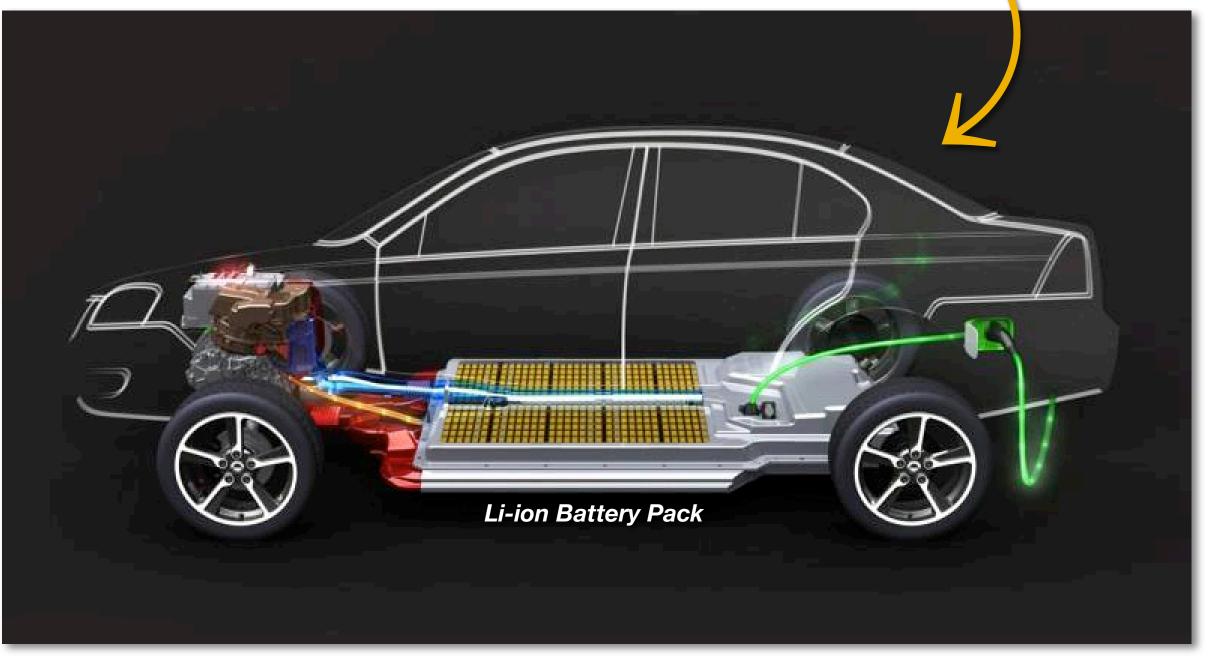




### **New Demand Driver**

- Graphite is a significant component of many types of battery, particularly Li-ion.
- Commonly there is 10x more graphite than lithium in a Li-ion battery anode.
- ▶ Battery grade graphite is currently made by shaping and treating large flake graphite.
- Rapid growth; global graphite-rich anode materials market US\$500M (2012), up from US\$375M (2011)\*.
- ▶ Electric vehicles currently use 10kg to 90+kg graphite per vehicle in batteries alone.
- Increases in mobility of energy plus use of graphite, storage devices, graphene and other new technologies offer a **carbon age** that is expected to impact positively on future demand for natural graphite.

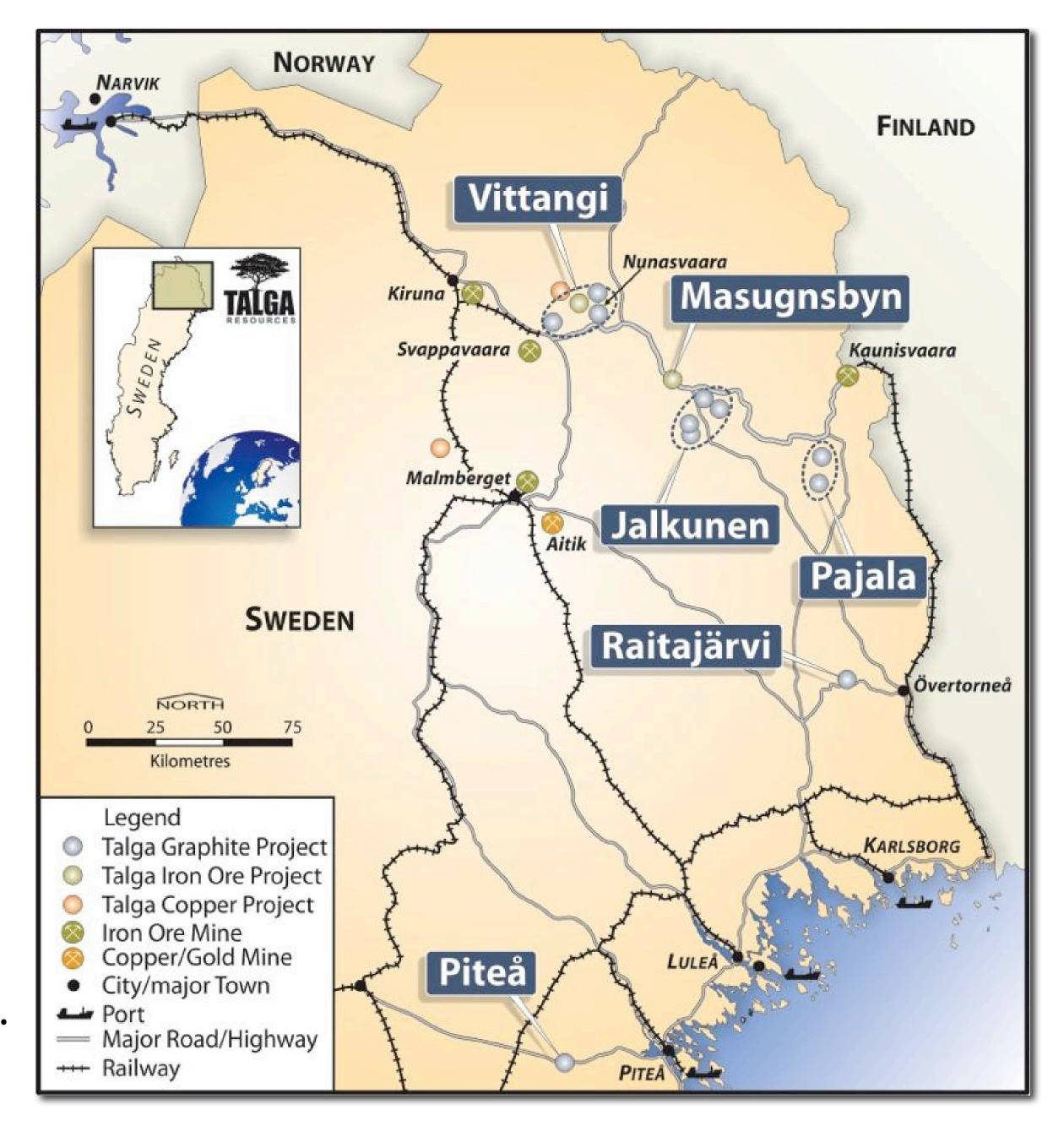




\*IDC Energy Insights "Business Strategy: Lithium Ion Manufacturing Global"

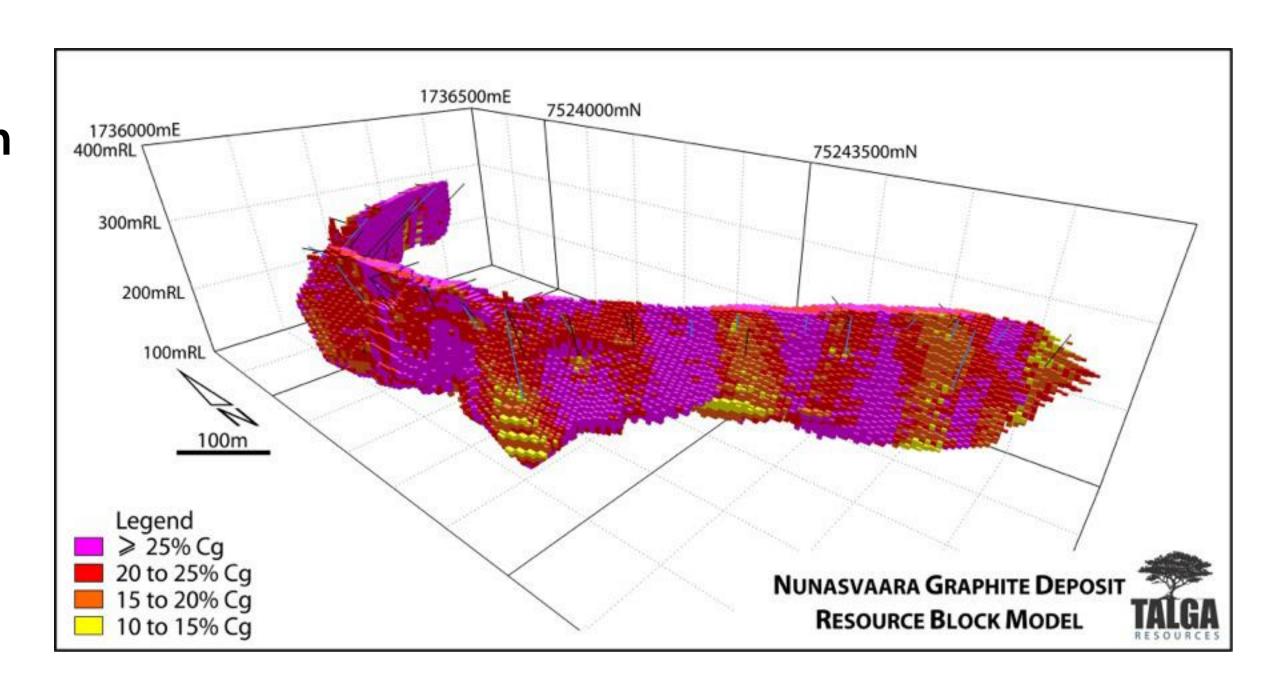
# Talga's Swedish Graphite Projects

- ▶ 100% ownership of five graphite projects with multiple deposits offering a full range of market size specifications.
- Two advanced stage projects in the development pipeline. These are drilled to JORC Indicated status and preliminary economic studies are underway;
  - Nunasvaara is a microcrystalline flake deposit with the highest resource grade in the world. It is located within the Vittangi project.
  - Raitajärvi is a coarse flake deposit with 49% of flake classified large to jumbo size.
- Piteå is our third high priority project; At an earlier stage of drilling but exceptionally well located and contains predominantly XL-size (jumbo) flake graphite.



# Vittangi Project - Nunasvaara Graphite Deposit

- Current total JORC resource 7.6Mt @ 24.4% Cg.
- Mineralisation commences at surface. Current strike 1.2km and open; average true width over strike 20m (range 10-50m). Drilled to 165m depth and remains open.
- Predominantly microcrystalline graphite for bulk volume industrial market. China exports have dropped, prices 60% above long term average.
- Utilisation of the resource is aided by exceptional grade, open-pit bulk mining option, low-cost grid power and nearby road/rail/port options.
- Potential 10+ year mine life at 400ktpa milling rate to produce 50-70ktpa concentrate defined from first drill program.
- A scoping study has commenced, with first phase pit
   optimisation and mine scheduling work completed.
   Product specification studies, metallurgy and final economic inputs are pending. Results expected Q1 2014.



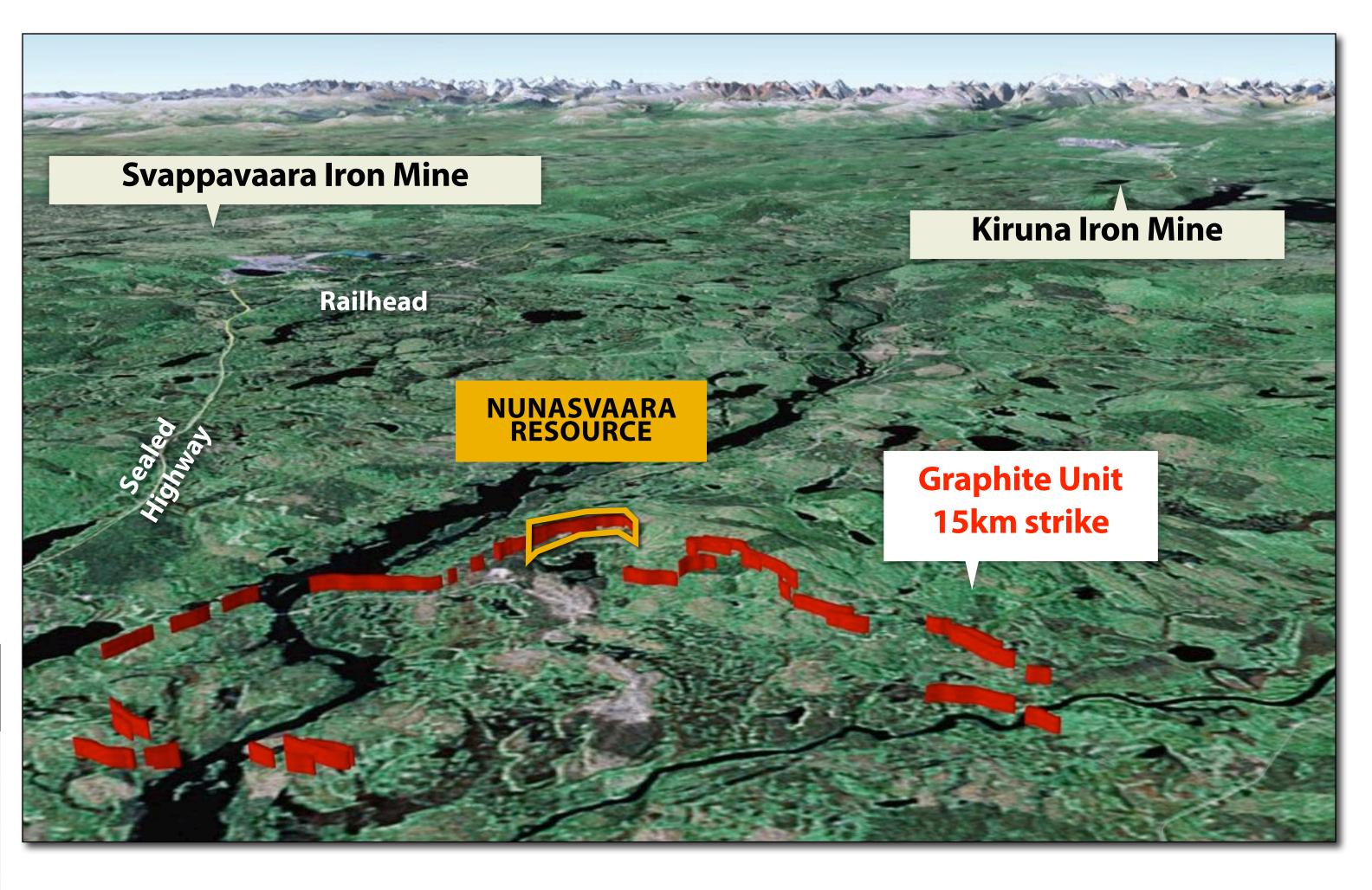
Nunasvaara Mineral Resource (10% Cg lower cut-off grade) Nov 2012

JORC	Tonnes	Grade	Contained
Classification	(Mt)	(%Cg)	Graphite (tonnes)
Indicated	5.6	24.6	1,377,600
Inferred	2.0	24.0	480,000
Total	7.6	24.4	1,857,600

## Nunasvaara growth potential

- Nunasvaara graphite unit extends over 15km strike. Talga rock chips average 26.2% Cg with grades up to 46.7% Cg.
- Less than 8% of graphite unit drill tested to date.
- Additional JORC Exploration Target<sup>1</sup> of 34-51Mt @ 20-25% Cg for 0-100m portion only defined along strike. Further satellite deposits exist nearby.

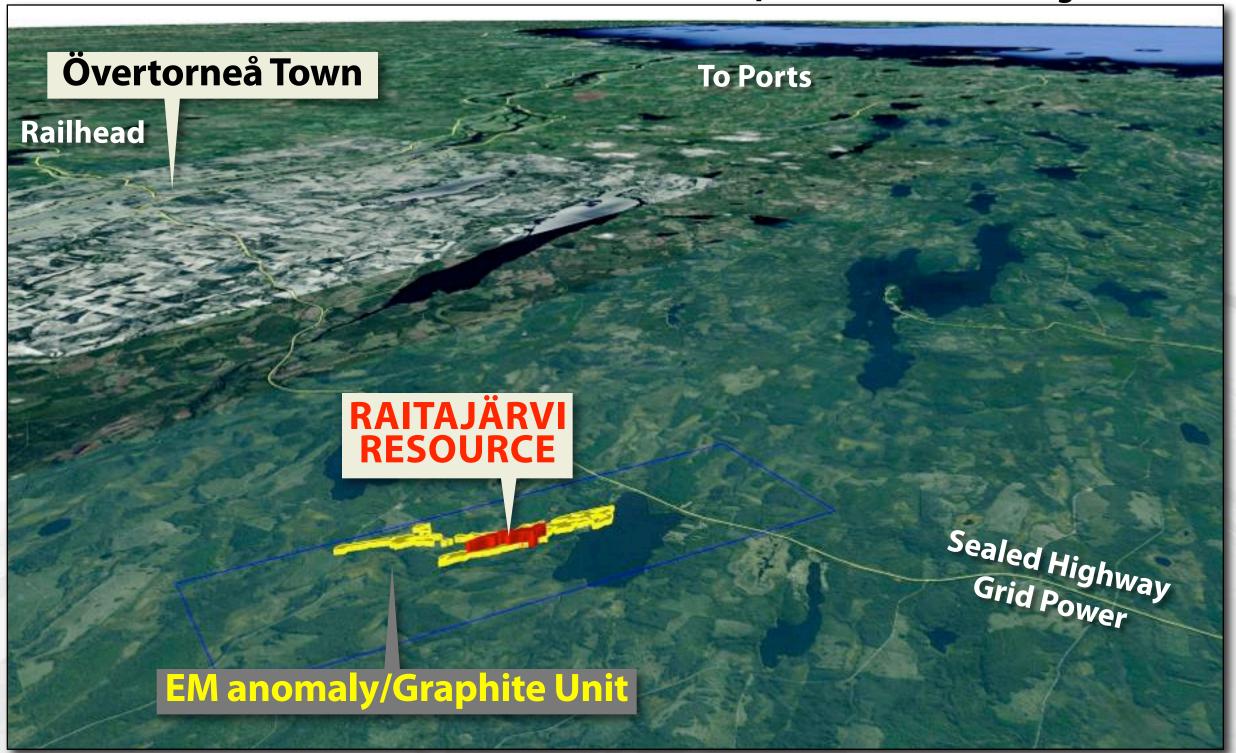
Project	Exploration Target <sup>1</sup>	Tonnage Range (Mt)	Grade Range (%Cg)
	Nunasvaara	34-51	20-25
Vittangi	Mörttjärn	10-16	15-20
	Maltosrova	2-3	20-30
Total 0-	100m depth	46-70Mt	15-25%Cg



<sup>&</sup>lt;sup>1</sup> Exploration Targets: The estimates of exploration target sizes in this announcement are in accordance with the guidelines of the JORC Code (2004) and should not be misunderstood or misconstrued as estimates of Mineral Resources. The potential quantity and quality of the exploration targets are conceptual in nature and there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

## Raitajärvi Graphite Project

- Advantageously located 2km from the Överkalix -Övertorneå Highway and grid power, 25km to town and railway, 130km to port.
- Current total JORC resource of 4.3Mt @ 7.1% Cg.
- A high proportion of resource is coarse flake and at JORC Indicated status. Less than 25% of EM anomaly drill tested.
- ▶ 87% of graphite flake size >100 micron (" $\mu$ m") and 49% >200 $\mu$ m.
- ▶ Historic metallurgical tests produced excellent results with graphite concentrate grading 90-94% C from simple (unoptimised) flotation and 99% C in basic enrichment test.
- Potential 10+ year mine life at 400ktpa milling rate to produce 25ktpa coarse flake graphite concentrate. Scoping study planned to commence.



Raitajärvi Mineral Resource (5% Cg lower cut-off) Aug 2013

JORC	Tonnes	Grade	Contained
Classification	(Mt)	(%Cg)	Graphite (t)
Indicated	3.4	7.3	246,400
Inferred	0.9	6.4	60,900
Total	4.3	7.1	307,300

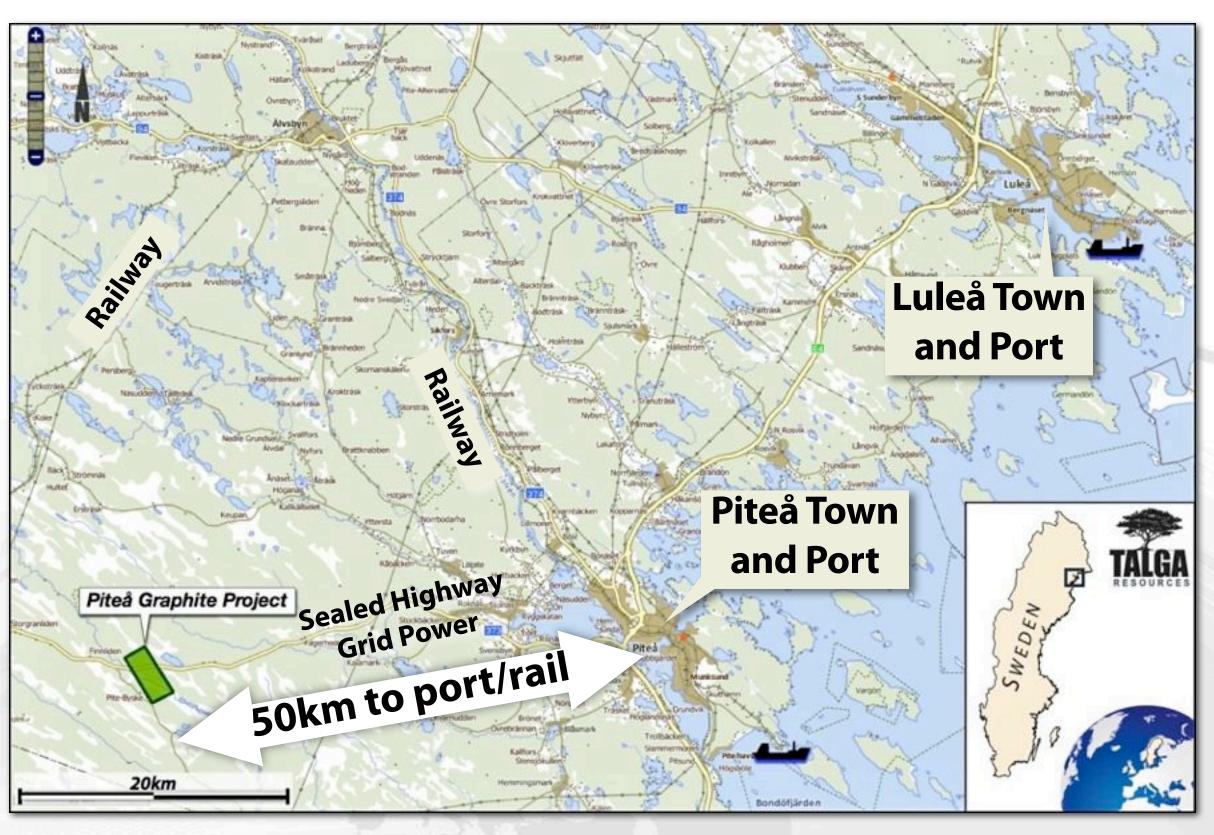
Raitajärvi graphite flake size (historic drill sample microscopy, n=87)

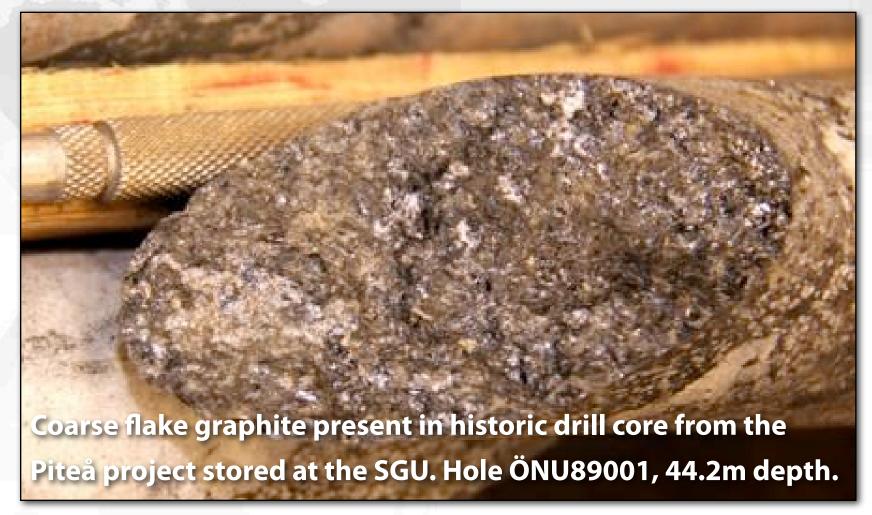
Deposit	< 100µm	100-200μm	200-400μm	>400µm
Raitajärvi	13%	38%	38%	11%

# Piteå Jumbo Flake Project

- Located on sealed road **50km from port** of Piteå and adjacent to grid power.
- ▶ 3 historic drillholes targeting base metals intercepted coarse flake graphite within a 4 x 1km EM anomaly.
- > 70-90% of flake graphite at Piteå exceeds 300 μm size ("jumbo").
- Such large flake graphite is premium product for spherical graphite production and commands higher prices (> \$2500/t).
- Blue sky growth project
- Location and size advantages worth exploring.
- Plan to expand target
   zone and drill test in 2014

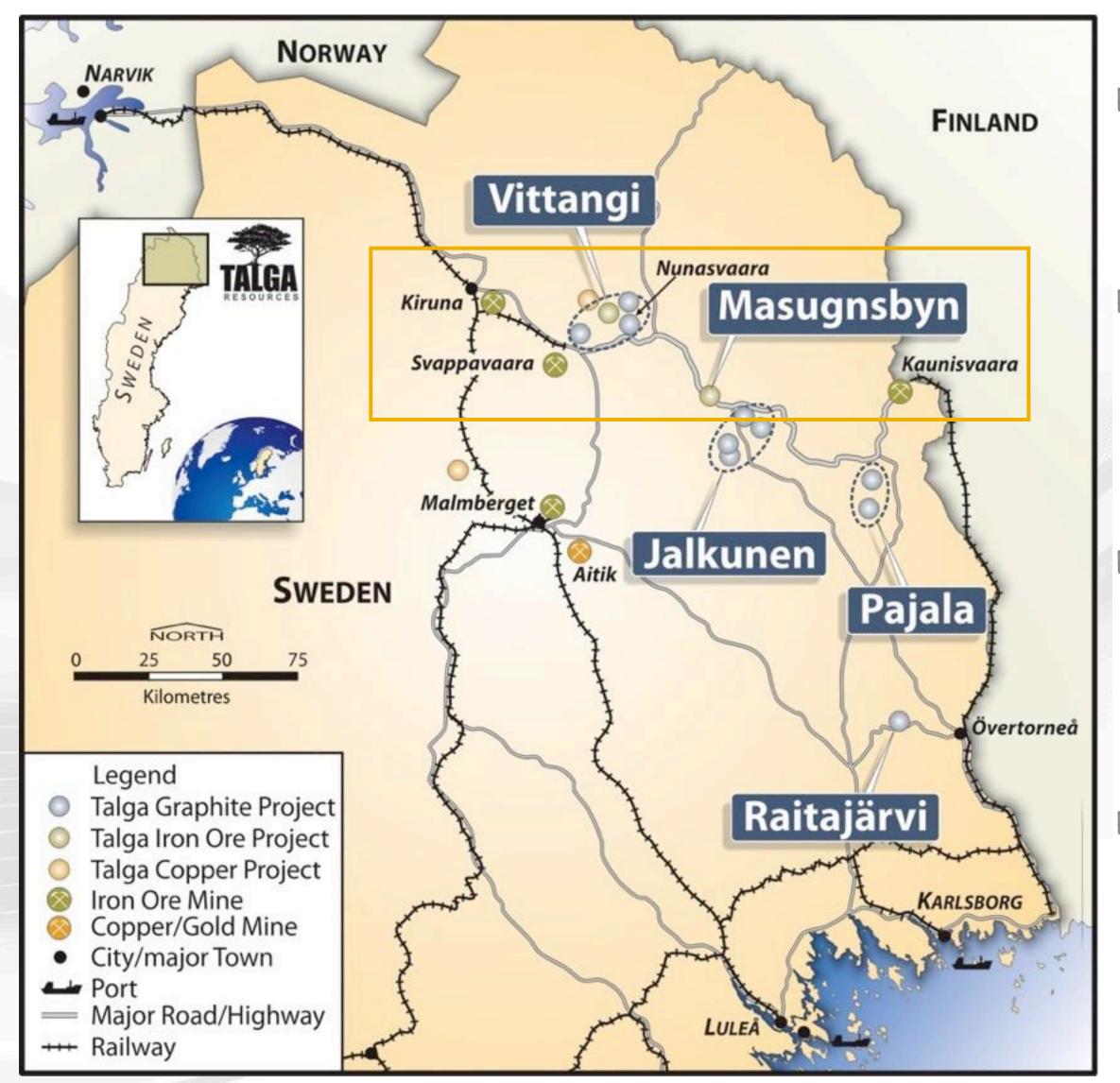
	Flake Size		
Sample	100-300	300-600	> 600
	μm	μm	μm
ÖNU89001 27.2m	10%	50%	40%
ÖNU89001 44.2m	10%	70%	20%
ÖNU89002 53.6m	20%	70%	10%
<i>ÖNU89002</i> 103.0m	20%	70%	10%
<i>ÖNU89002</i> 107.6m	30%	60%	10%





# Talga's Swedish Iron Projects

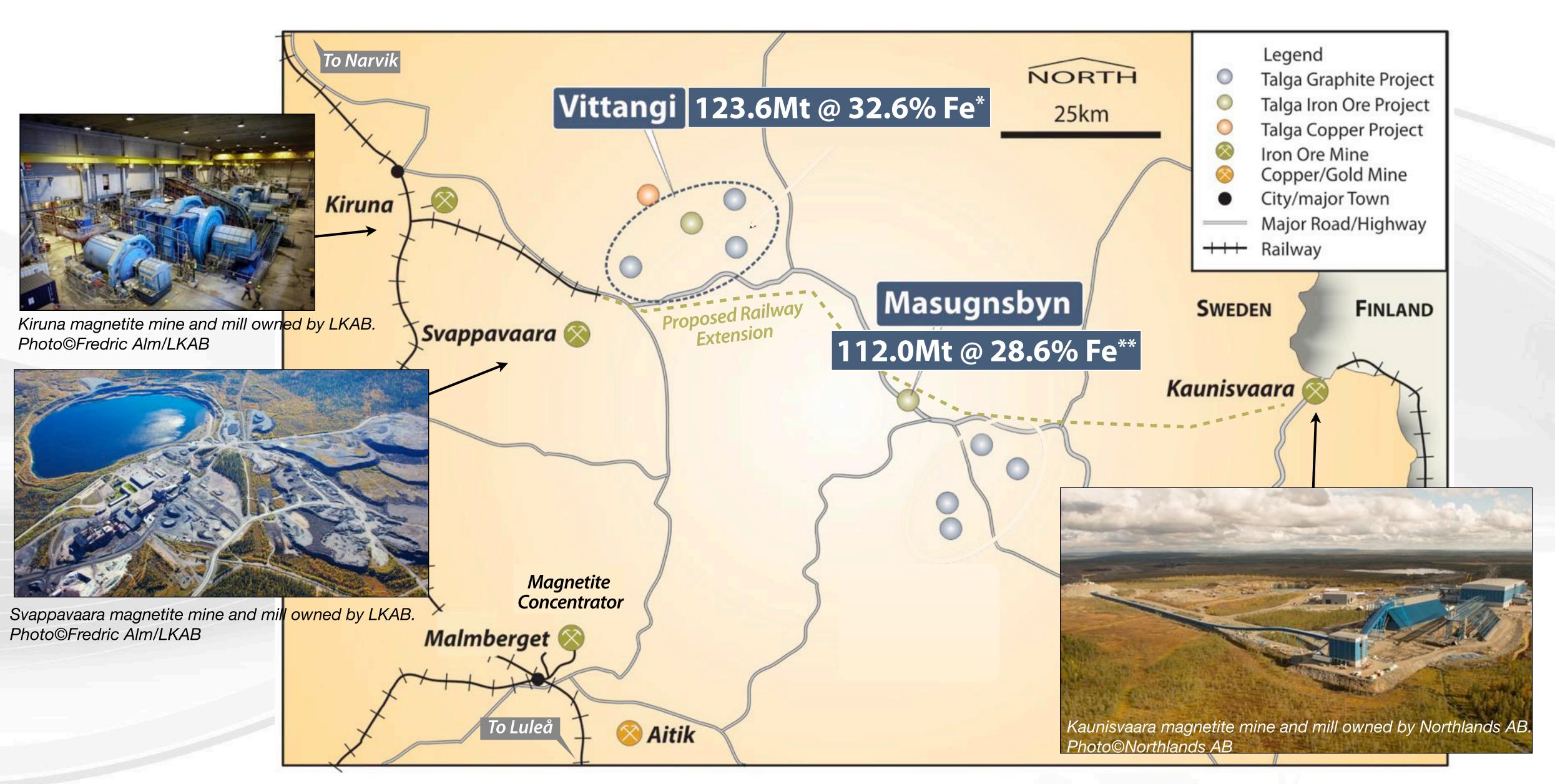


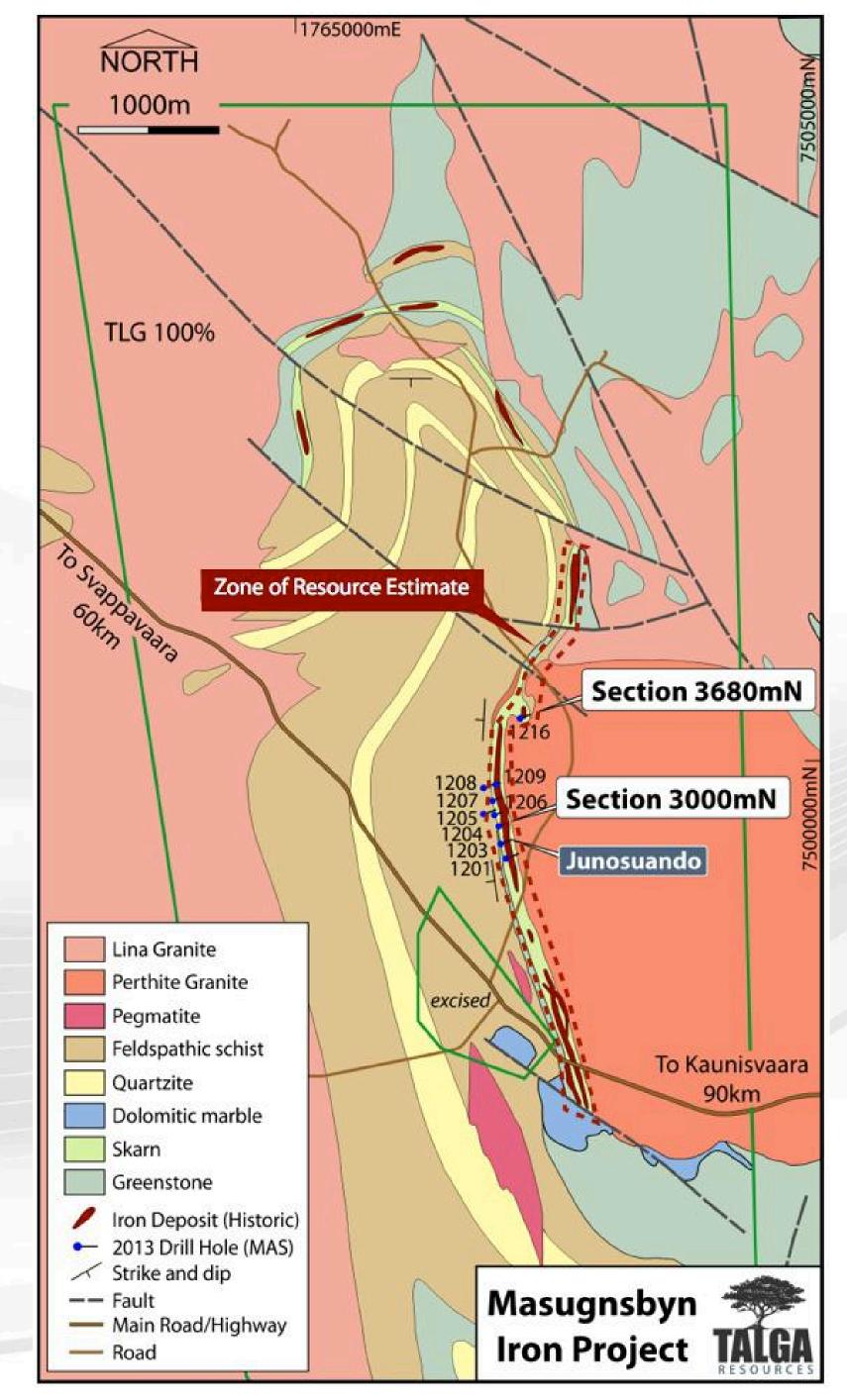


- ▶ Talga's skarn iron deposits are well located adjacent to high quality transport & power supplies, and are situated between producing magnetite iron mines.
- ▶ In **skarn** type deposits the iron is emplaced by magmatic-hydrothermal activity at high temperature. As a result the coarser magnetite grain size can have substantial advantages over sedimentary style deposits (BIF type).
- Currently the most advanced project is Masugnsbyn with a JORC resource 112Mt @ 28.6% iron as magnetite\* ("Fe"). Additional JORC resources total 124Mt @ 32.6% Fe at Vittangi, with further growth targets defined.
- ▶ Talga is targeting modest but high grade magnetite concentrate production, and believes the total JORC resource inventory of 236Mt @ 30.7% Fe is strategically located to become a supplier to the Middle East and Asia.

<sup>\*</sup>Fe or Fe<sub>mag</sub>, both refer to the calculated iron grade which is total iron less forms of iron other than magnetite (sulphides, silicates etc).

#### Magnetite mining district with established milling and transport infrastructure





# Masugnsbyn Project - Work to Date

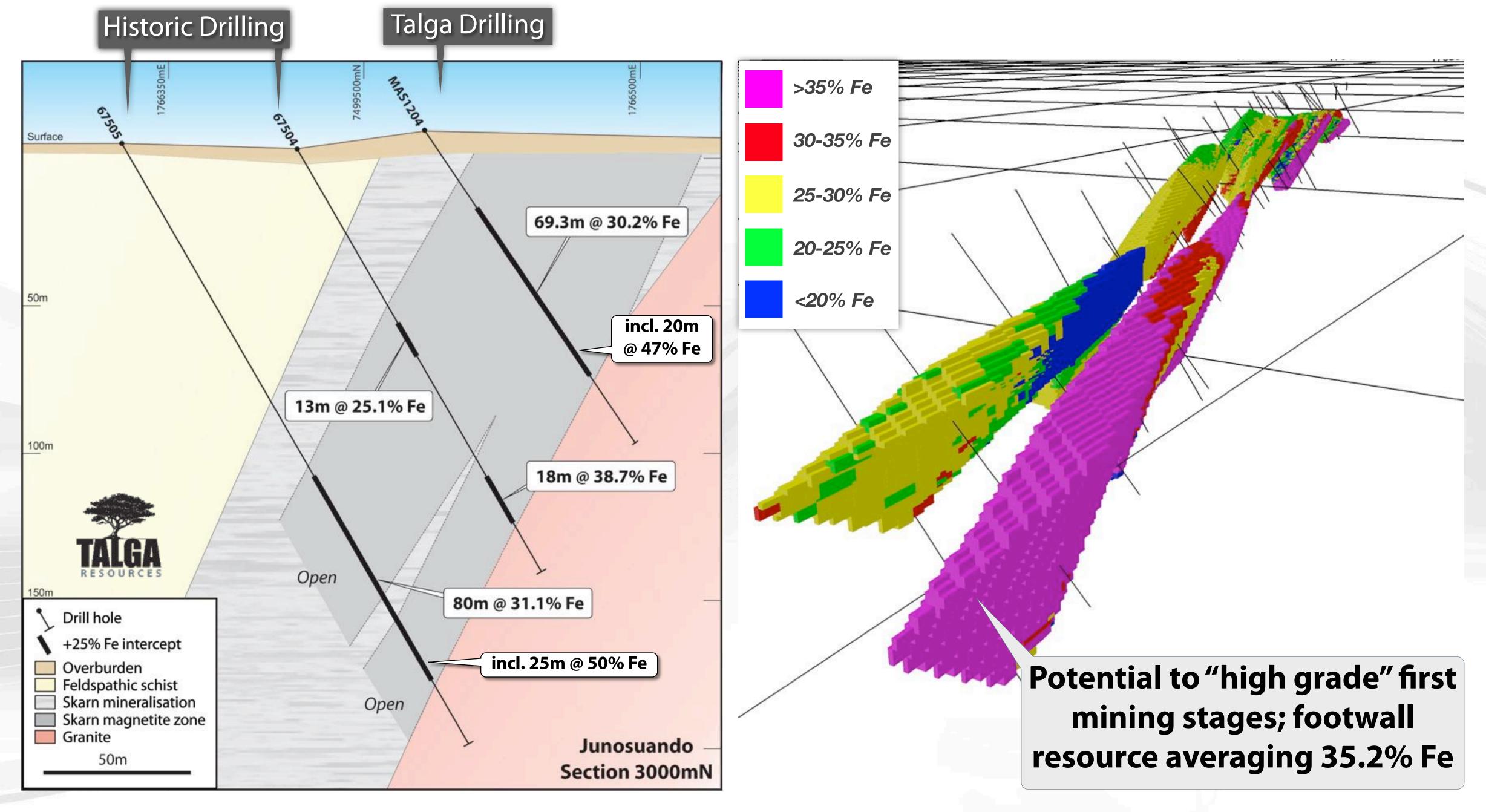
- Tested by the Swedish Geological Survey ("SGU") last in 1965-1970.
- 68 historic diamond core holes focussed on the largest single deposit, Junosuando, over approximately 3km strike.
- Talga completed a further nine diamond core holes in Oct 2012 to upgrade the deposit to JORC Code Indicated and Inferred status.
- Remains open at depth and along strike. Zoned mineralisation suggests early production can be scheduled to mine higher grade footwall zone.



### **JORC Resource May 2013**

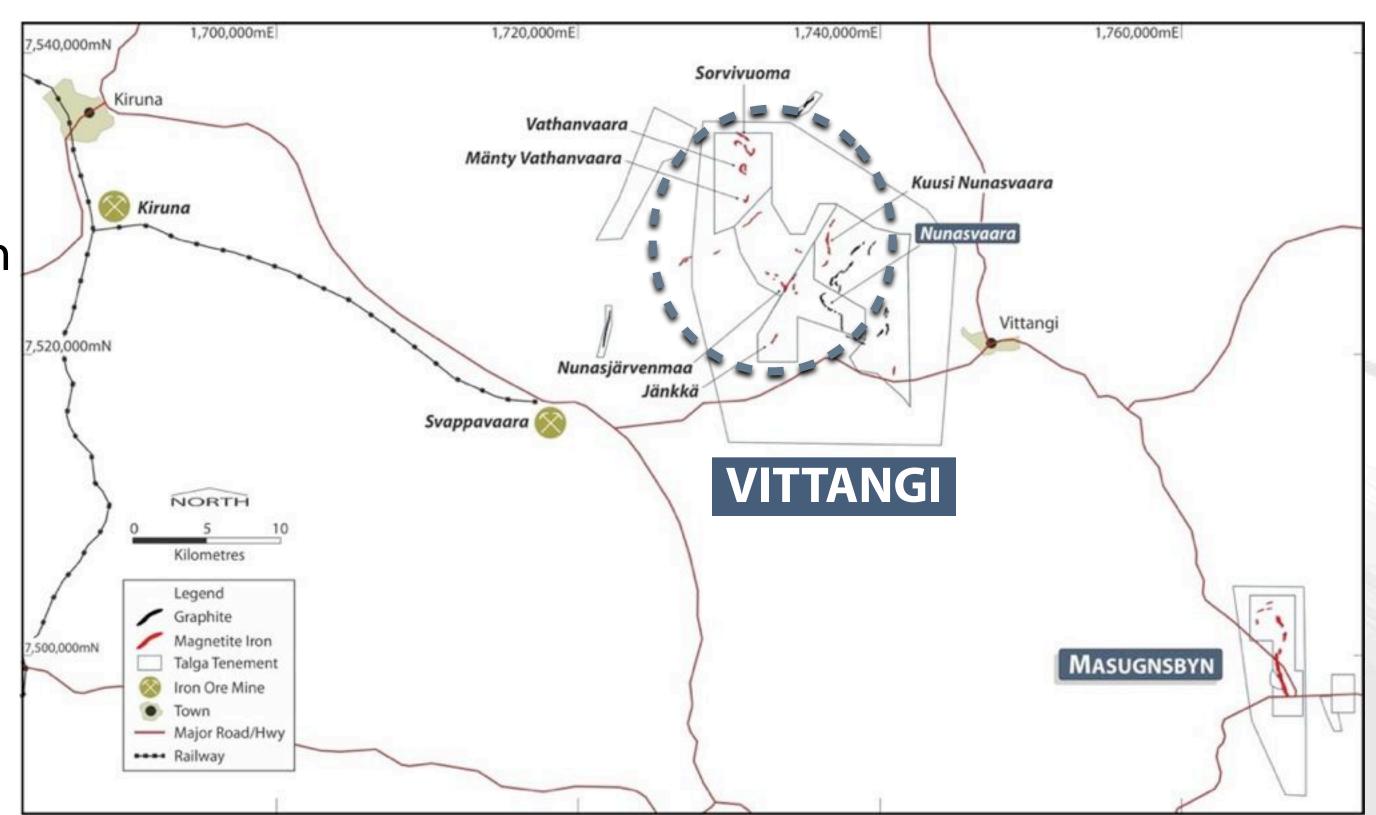
Masugnsbyn Global Resource (See Appendix for details)

Resource Classification	Tonnes (Mt)	%Fe
Indicated	87.0	28.3
Inferred	25.0	29.5
Total	112.0	28.6



# Vittangi Project - Iron

- The Vittangi project comprises five skarn iron deposits defined by the Swedish Geological Survey in the 1970's with geophysics, trenching and 37 diamond drill holes for 6,055 metres.
- Based on this work JORC compliant maiden Inferred Resources totalling 123.6Mt @ 32.6% Fe have been estimated by Talga, bringing the Company's total Swedish iron resources to 235.6Mt @ 30.7% Fe.
- ▶ The historic exploration data also defined additional JORC compliant Exploration Targets¹ of 50-83Mt grading 30-35% Fe within the project.
- Favourably located 30km from railhead and LKAB magnetite mill at Svappavaara.

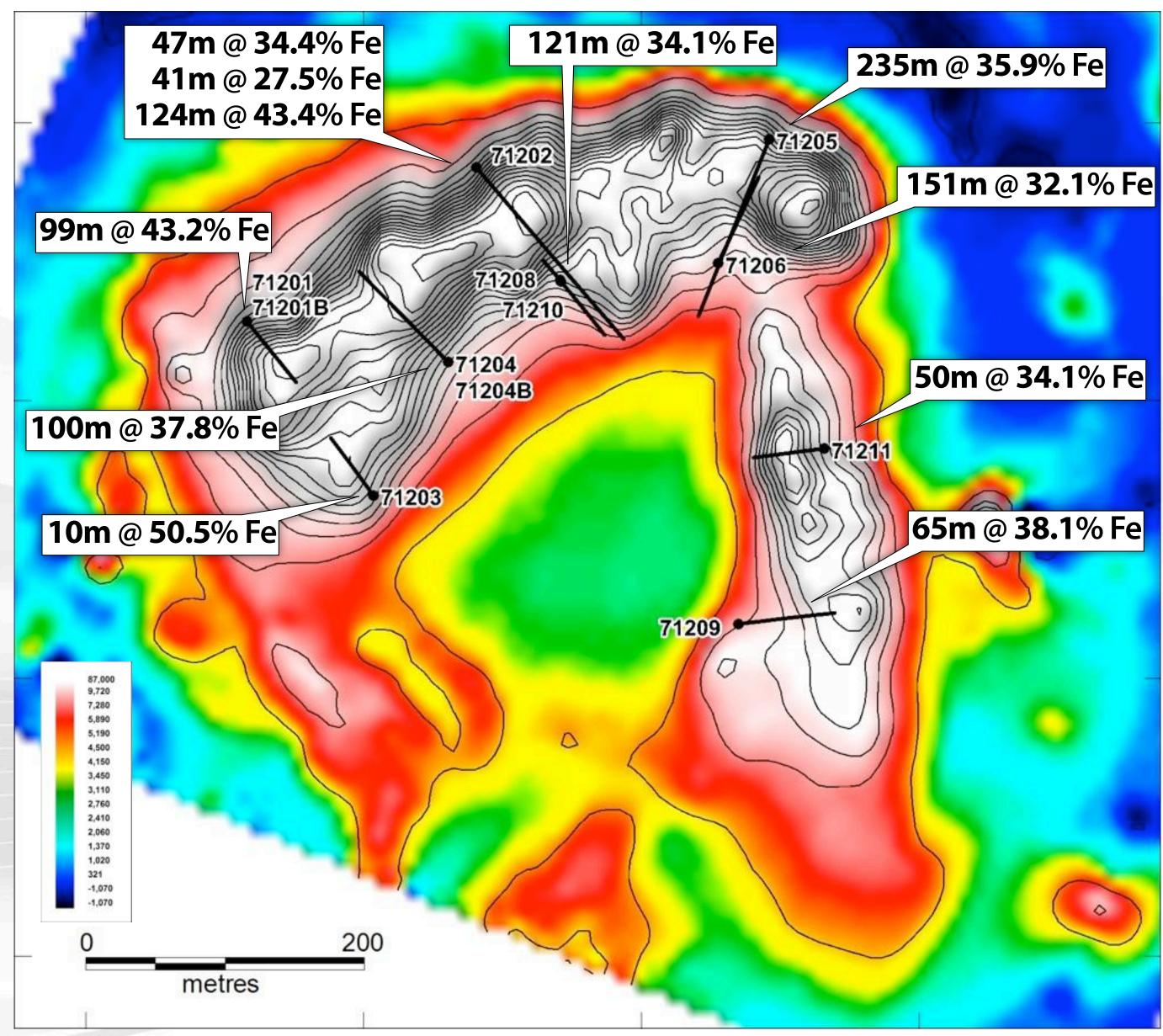


#### Vittangi iron project In-Situ JORC Resources July 2013

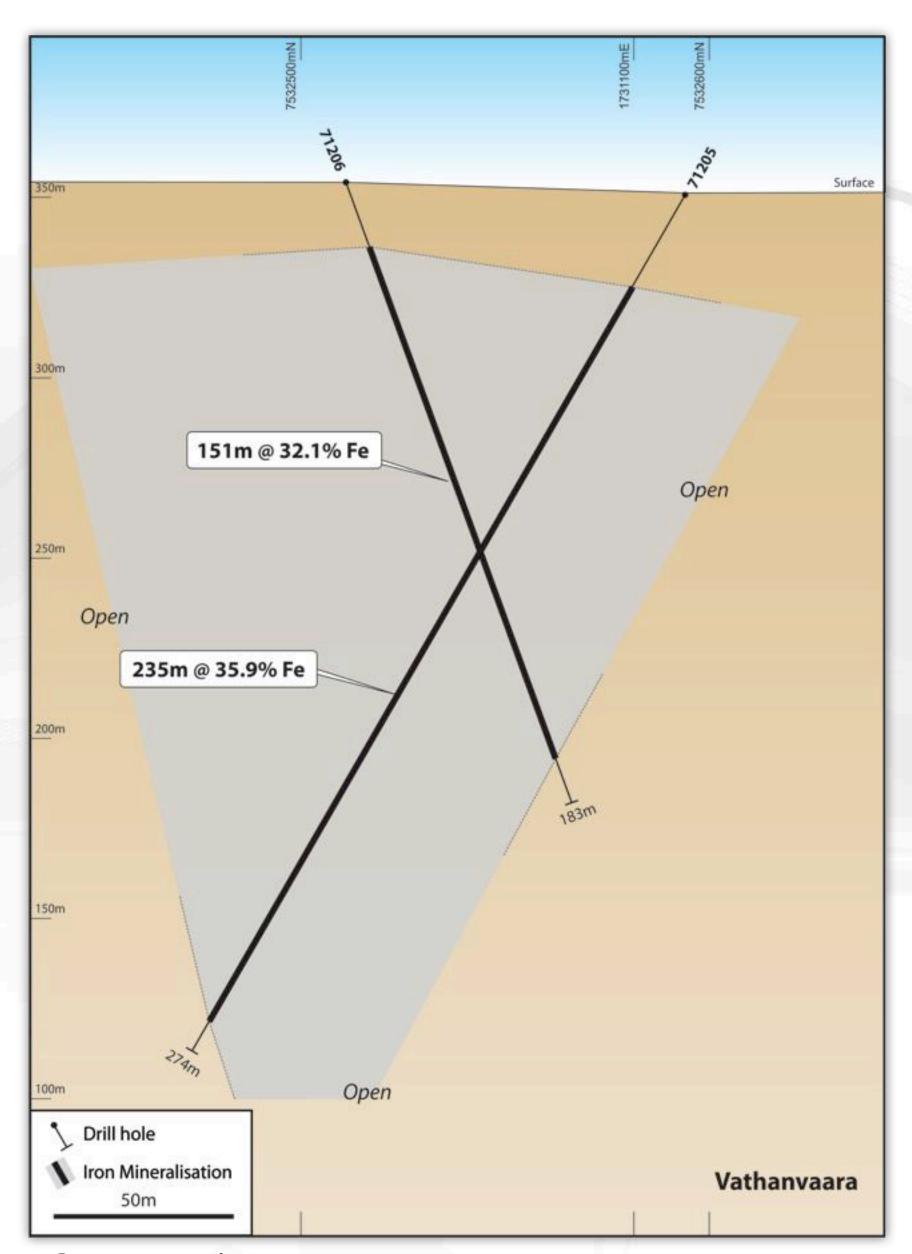
Deposit	Tonnes (Mt)	Grade %Fe	JORC Category
Vathanvaara	51.2	36.0	Inferred Resource
Kuusi Nunasvaara	46.1	28.7	Inferred Resource
Mänty Vathanvaara	16.3	31.0	Inferred Resource
Sorvivuoma	5.5	38.3	Inferred Resource
Jänkkä	4.5	33.0	Inferred Resource
Total	123.6	32.6	

<sup>&</sup>lt;sup>1</sup> Exploration Targets: The estimates of exploration target sizes in this announcement are in accordance with the guidelines of the JORC Code (2004) and should not be misunderstood or misconstrued as estimates of Mineral Resources. The potential quantity and quality of the exploration targets are conceptual in nature and there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

# Vittangi project, Vathanvaara deposit



Historic drill intercepts on ground magnetic image.



Cross-section 71205-06

Svappavaara magnetite mine and mill owned by LKAB, approximately 30km by road from the Vittangi project and 60km from Masugnsbyn project. After an earlier phase of open pit mining the mill remained operational for Kiruna ore. The open pit is currently being dewatered to be put back into production. Photo©Fredric Alm/LKAB.

# Iron Development Potential

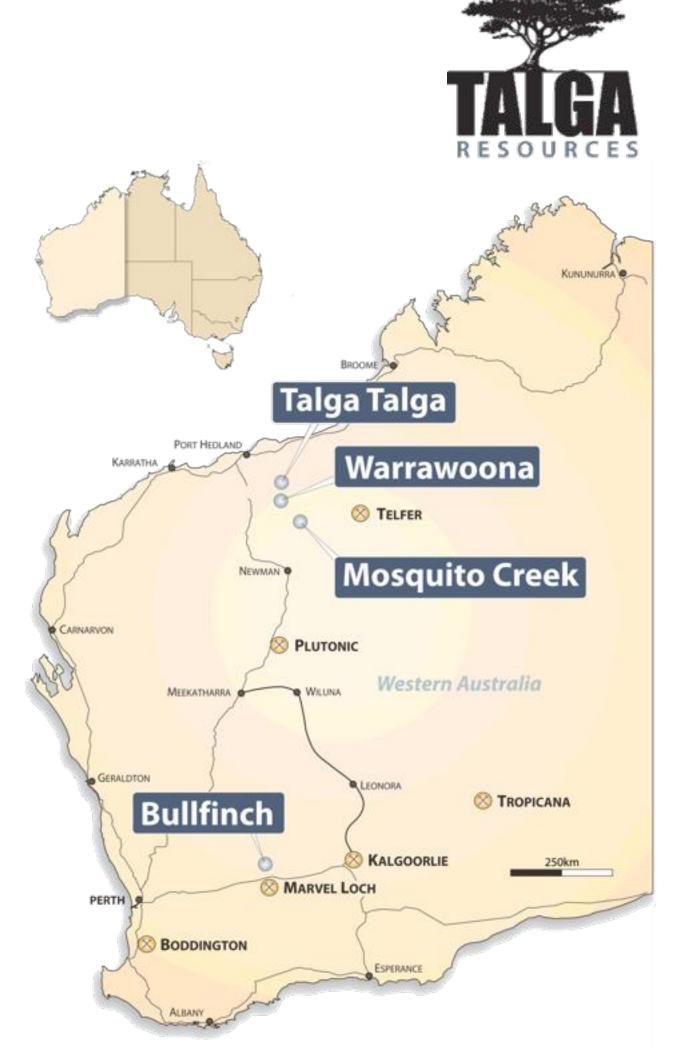
- Relatively simple and proven processing of the magnetite ore is expected to deliver a high quality concentrate at coarse grain sizes.
- Proximal to road and open access rail infrastructure.
- Rail lines connect to open access ports which currently load up Panamax to Cape-sized vessels.
- Located close to European and Middle East iron ore markets.
- Deposits situated between two magnetite concentrators belonging to LKAB and Northlands; toll treatment potential.

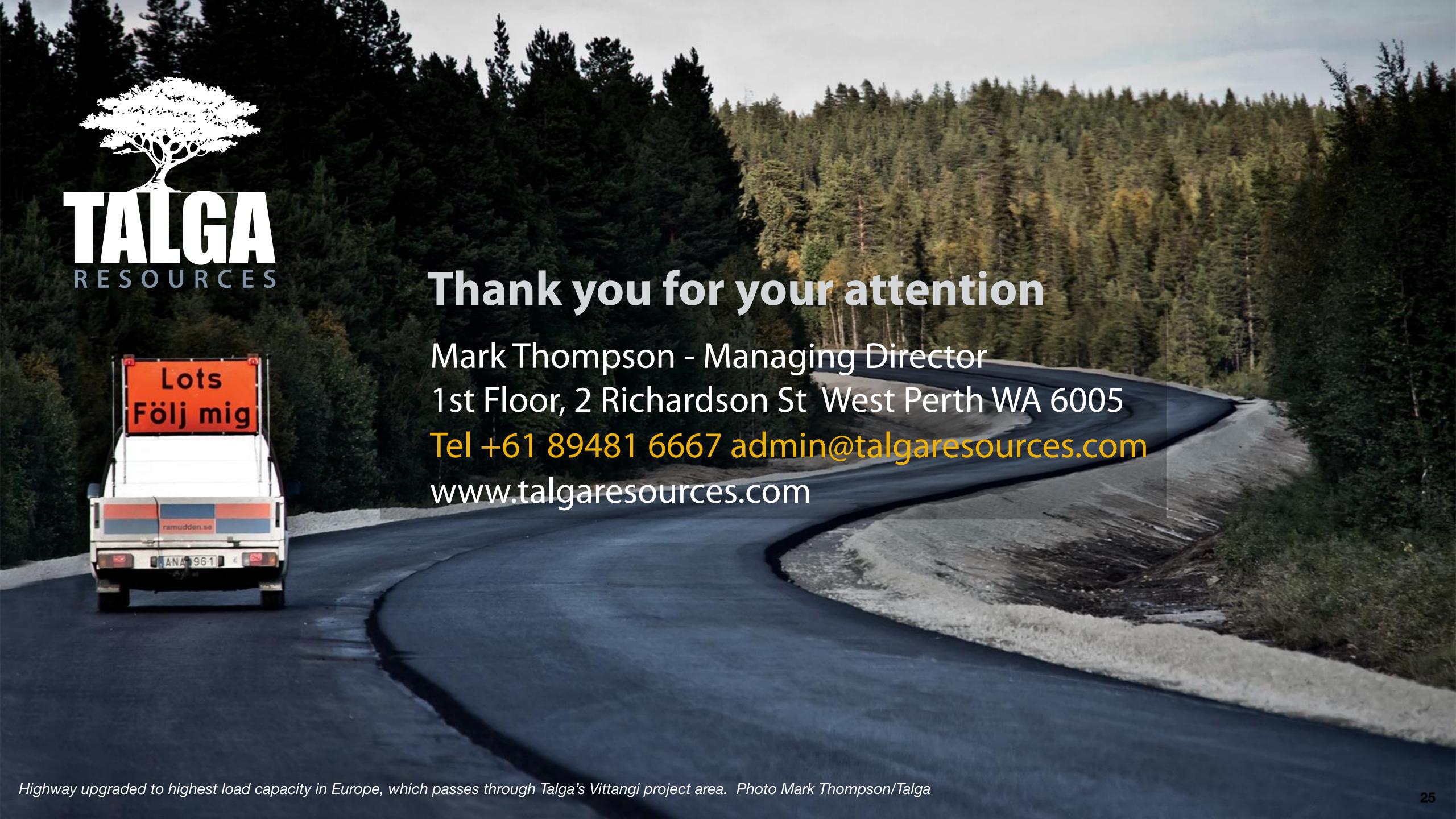
# **Australian Gold Projects**

- ▶ The company wholly owns multiple gold projects in Australia which consist of early to advanced exploration-stage projects with very high grades of gold in surface sampling and drilling.
- Highlights to date include drilling intercepts of **7m** @ **14.4g/t Au** and **3m** @ **24.8g/t Au** at Talga Talga, and the discovery of **gold-tellurium-bismuth** zones in the Ghooli dome at Bullfinch, where surface samples return up to **107.5g/t Te**, **34.6g/t Au** and **0.2% Bi**.
- The next steps on the projects are further drilling towards defining resources and bulk sampling to advance the near-surface gold towards short term production.
- ▶ The projects are 100% owned, and several projects are within trucking distance to operating gold mills.
- ▶ Talga is seeking to divest the WA gold projects in order to focus on its Swedish assets.





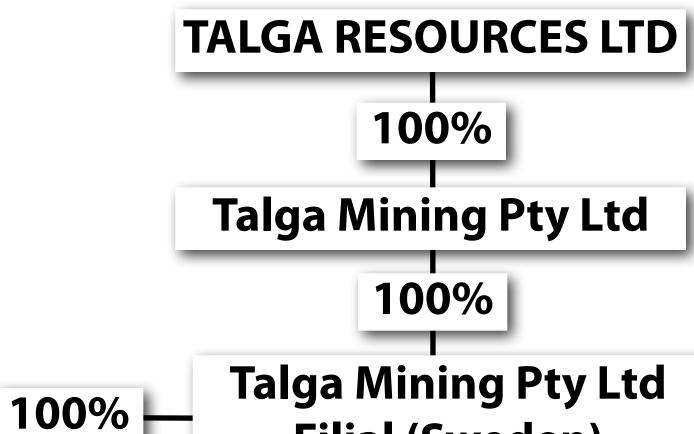




# Appendices

# TALGA

# Talga Asset Structure and JORC Resources



Filial (Sweden)

**Nunasvaara** Graphite Mineral Resource @ 10% Cg lower cut-off Nov 2012

**GRAPHITE** 

Classification	Tonnes	Graphite
	(Mt)	(%Cg)
Indicated	5.6	24.6
Inferred	2.0	24.0
Total	7.6	24.4

Raitajärvi Graphite Mineral Resource @ 5% Cg lower cut-off Aug 2013

Classification	Tonnes	Graphite
	(Mt)	(%Cg)
Indicated	3.4	7.3
Inferred	0.9	6.4
Total	4.3	7.1

Iron Mineral Resources @ 20% Fe lower cut-off July 2013

Deposit	Tonnes	Grade	JORC Category	
Deposit	(Mt)	%Fe	Jone Category	
Vathanvaara	51.2	36.0	Inferred Resource	
Kuusi Nunasvaara	46.1	28.7	Inferred Resource	
Mänty Vathanvaara	16.3	31.0	Inferred Resource	
Sorvivuoma	5.5	38.3	Inferred Resource	
Jänkkä	4.5	33.0	Inferred Resource	
Masugnsbyn	87.0	28.3	<b>Indicated Resource</b>	
Masugnsbyn	25.0	29.5	Inferred Resource	
Total	235.6	30.7		

#### Graphite market size classification.

Trade Name	microns	US Mesh Size
Amorphous/Ultrafine	<10	na
Amorphous/Fine	10-75	-200
Small	75-150	200-100
Medium	150-180	100-80
Large	180-300	80-50
XL/Jumbo	>300	50+

Source: Industrial Minerals Natural Graphite Report 2012 cross referencing various sources. Many terms are proprietary or mixed use; there are few if any industry standards in naming principles.

# Common natural graphite concentrate product sizes, grades and prices

Size (microns)	Size US Mesh	Purity % C	Quote US \$/tonne
300+	50+	94-97	>1800
100 200	-300 80-50	94-97	1350
100-300		90	1200
		94-97	1200
150-180	100-80	90	1025
		85-87	900
7F 1F0	200 100	94-97	1050
75-150	200-100	90	850
-75	-200	80-85	525

Source: Industrial Minerals Magazine Aug 2013.

Most prices FCL, CIF European Port.

Note prices averaged from low-high range and selected as common commercial products where natural graphite sold as concentrate. Many specialty grades with much higher prices are traded but do not represent the bulk of market demand.

# References & Qualified Persons



<sup>1</sup> Exploration Targets: The estimates of exploration target sizes in this announcement are in accordance with the guidelines of the JORC Code (2004) and should not be misunderstood or misconstrued as estimates of Mineral Resources. The potential quantity and quality of the exploration targets are conceptual in nature and there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

#### **Competent Person's Statement**

The information in this report that relates to Exploration Results is based on information compiled and reviewed by Mr Darren Griggs and Mr Mark Thompson, who are members of the Australian Institute of Geoscientists. Mr Griggs and Mr Thompson are employees of the Company and have sufficient experience which is relevant to the activity which is being undertaken to qualify as a "Competent Person" as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" ("JORC Code"). Mr Griggs and Mr Thompson consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to Resource Estimation is based on information compiled and reviewed by Mr Simon Coxhell of CoxsRocks Pty Ltd. Mr Coxhell is a consultant to the Company and a member of the Australian Institute of Mining and Metallurgy. Mr Coxhell has sufficient experience relevant to the styles of mineralisation and types of deposits which are covered in this document and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" ("JORC Code"). Mr Coxhell consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.