#### 6 DECEMBER 2013



#### MINESITE INVESTOR FORUM PRESENTATION

Talga Resources Ltd ABN 32 138 405 419

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Corporate InformationASX CodeTLGShares on issue85.1mOptions (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 delivered today (UK time) by Managing Director Mr Mark Thompson at the 96<sup>th</sup> Minesite Forum in London.

The presentation summarises Talga's graphite and iron ore projects in Sweden and gold projects in Australia and will soon be available on the Company's website <u>www.talgaresources.com</u>

For further information, contact:

Mark Thompson Managing Director Talga Resources Ltd

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

#### ABOUT TALGA

Talga Resources Limited (**Talga**) (ASX: "TLG") is a diversified mineral explorer and developer with a portfolio of 100% owned graphite, iron, copper/gold projects in Sweden and gold projects in Western Australia.

The main focus is the development of graphite resources in northern Sweden utilising the advantages of exceptional grade deposits, low cost power, established quality infrastructure and short transport distance to high demand markets in Europe.

# RESOURCES

#### TALGA RESOURCES LTD

# Minesite Presentation

5 December 2013



## 200 kta

European natural graphite consumption

2.1MtTotal JORC contained graphite

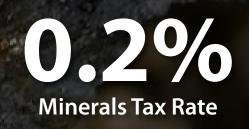
2-3km Distance to sealed road

20-25km Distance to rail

1-2 days Delivery time to market

100% Owned by Talga

22% **Corporate Tax Rate** 





\* Cover picture; graphite in outcrop, Nunasvaara deposit.

#### **Forward Looking Statements and Disclaimer:**

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#### **Executive Summary**

- 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 Swedish assets include the world's highest grade JORC/NI43-101 **Graphite resource** and a suite of skarn magnetite **iron deposits** with combined total JORC mineral resources 235.6Mt<sup>1</sup> located adjacent to existing infrastructure.
- The focus is to develop the graphite deposits due to their lower cost capital 'footprint', exceptional location and outlook for graphite demand.
- Upcoming material catalysts include results from economic studies on graphite projects and further finance expected from **divestment of gold and iron** projects.

<sup>1</sup> See appendices for details of JORC (2004) resources.







## Talga Resources Corporate Overview

#### **Board of Directors**

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

\* Appointed 26 Sept 2013

#### Share Price over previous 12 Months ASX:TLG High: 0.33 0.30 many more 0.25 0.20 0.15 0.10 0.05 `12 Dec 13 Feb May Sep Oct Mar Apr Jun Ju Aug Volume 1.5M 1.0M 0.5M

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



Capitalisation Summary A	SX:TLG	
Ordinary Shares		85.1M
Unlisted Options <sup>1</sup>		3.75M
Cash (at 30 Sept 2013) <sup>2</sup> AUD \$		\$0.4M
Debt		\$0.0M
Market Capitalisation (undiluted @	\$0.06)	\$5.1M

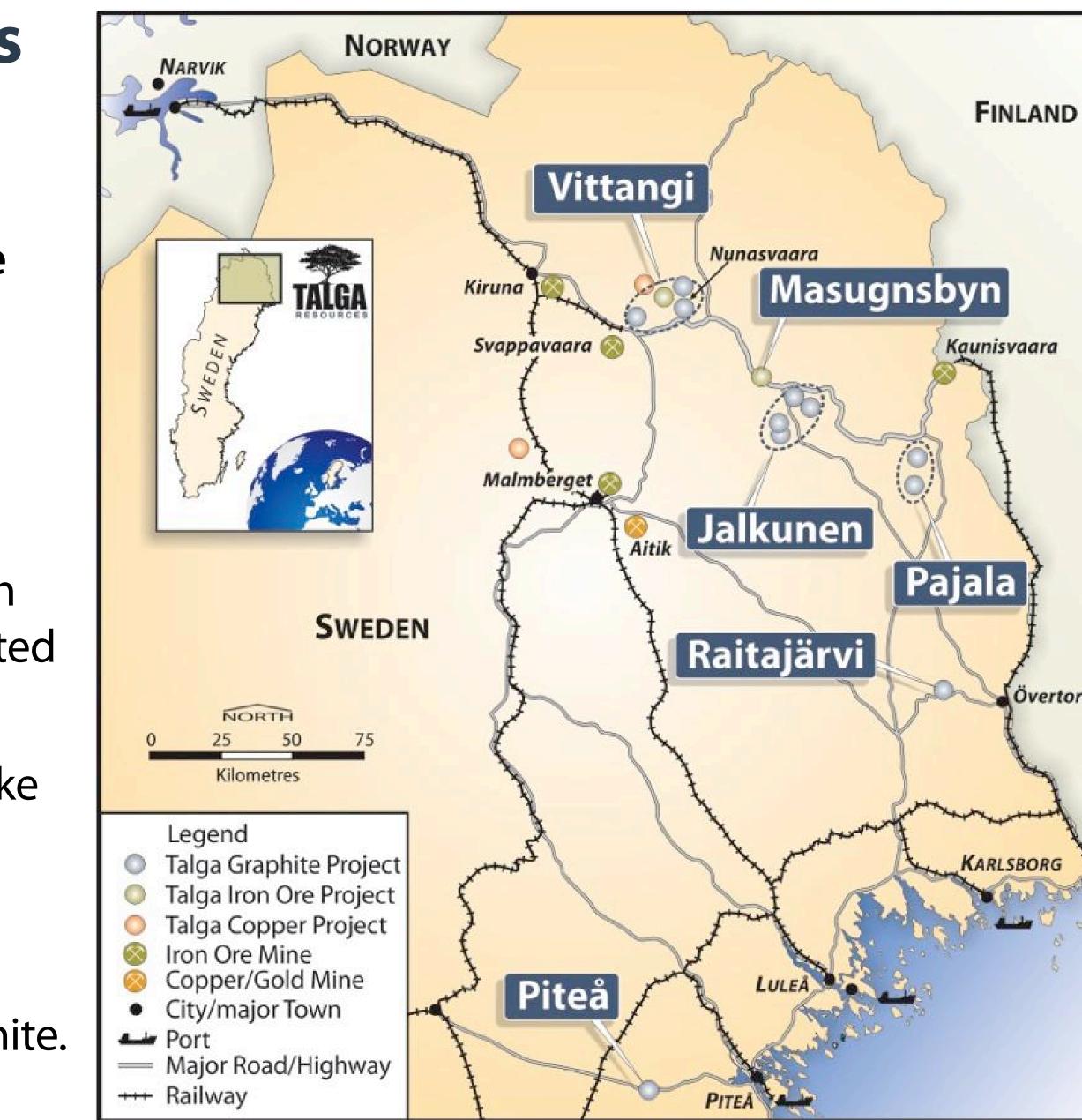
Top Shareholders (+3%) at 20 September 2013			
Lateral Minerals Pty Ltd (Mark Thompson)	10.9%		
Yandal Investments Pty Ltd	4.2%		
Hereford Group Ltd	4.0%		
Two Tops Pty Ltd	3.5%		
Mr Kin Chun Wong	3.1%		

**Top 20 own 50.0%** 



#### **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.







# Why Graphite?

- 80% of world's natural graphite supply (including 95% of some types) is dependent on China.
- Lower exports in recent years under higher export tariffs, taxes and labour costs.
- Increasing state control over supply to retain for domestic consumption have also impacted.
- Situation recognised by USA, UK and EU agences who have classified graphite a Top 10 "Strategic Mineral".
- Even in depressed 2013 prices exceed historic levels and growth outlook positive.

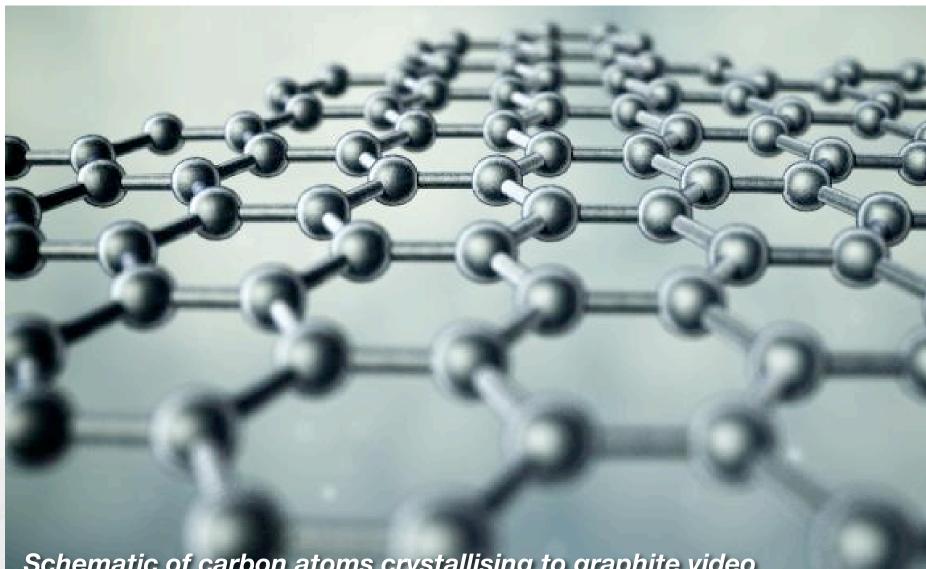
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Of the world's natural graphite supply is mined in China.



### What is Graphite?

- Graphite is a shiny grey mineral that can occur in **nature** when carbon in rocks becomes crystalline.
- Graphite consists of parallel sheets of carbon atoms in a hexagonal array and requires considerable pressure and temperature to form. A single sheet is called graphene.
- Graphite has unique properties including very high thermal and electrical conductivity.
- Graphite is used in thousands of applications and products with major consumption by the steel and manufacturing industries.
- Graphite is finding new markets from new uses in products as diverse as insulation panels and battery/energy technologies.



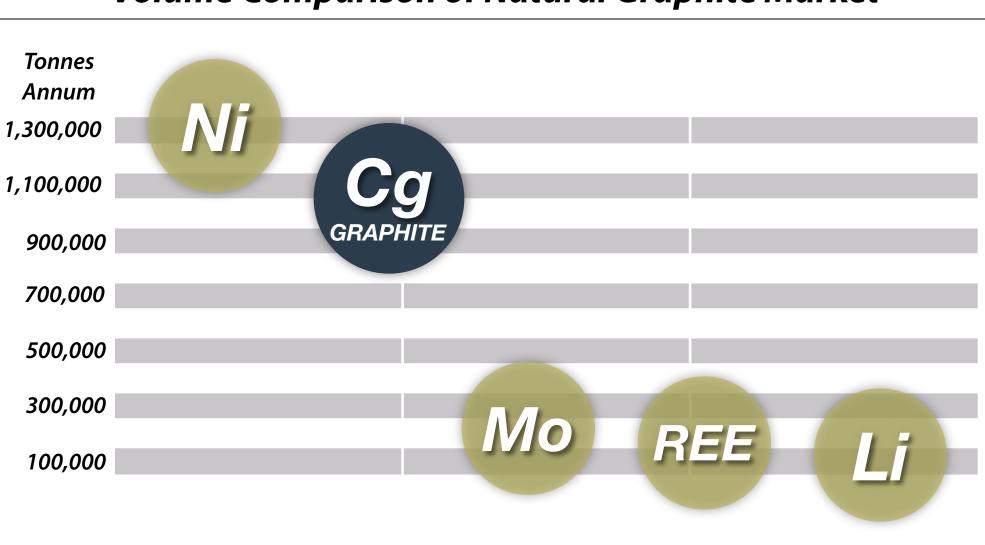


### Natural graphite market

- Natural graphite market (1.0Mt/yr) worth US\$1B/yr with main consumption in steel and refractories, batteries, automotive parts and lubricants.
- 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.

#### Volume Comparison of Natural Graphite Market





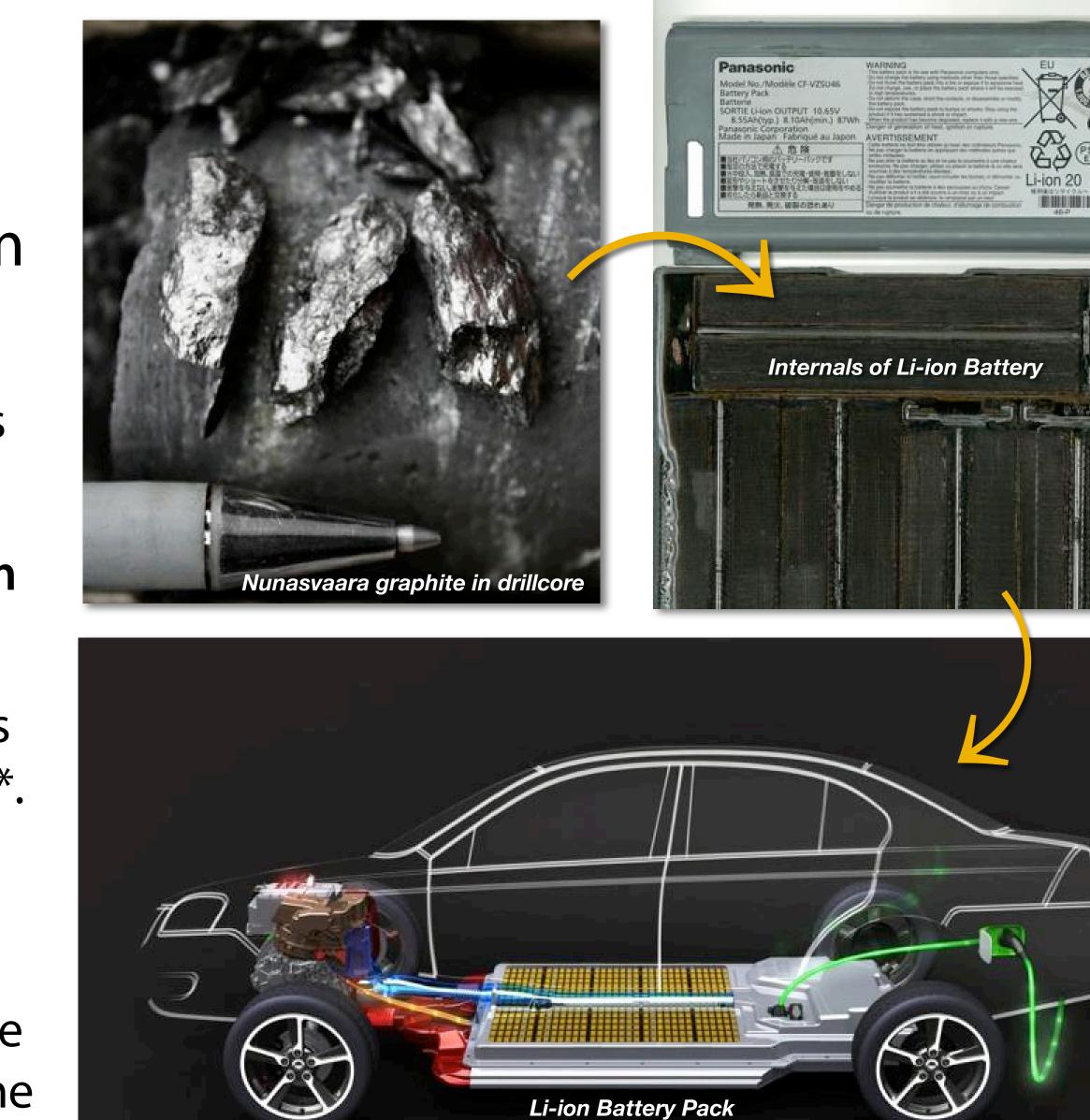




### **New Demand Driver**

# **10X** More graphite than lithium in a Li-ion Battery.

- 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.
- **Rapid growth**; global graphite-rich anode materials market **US\$500M** (2012), up from **US\$375M** (2011)\*.
- Electric vehicles can use up to 100kg graphite per vehicle in batteries alone.
- Increases in mobility of energy, green power storage and graphene mean graphite is a commodity in tune with big themes; energy and technology materials.



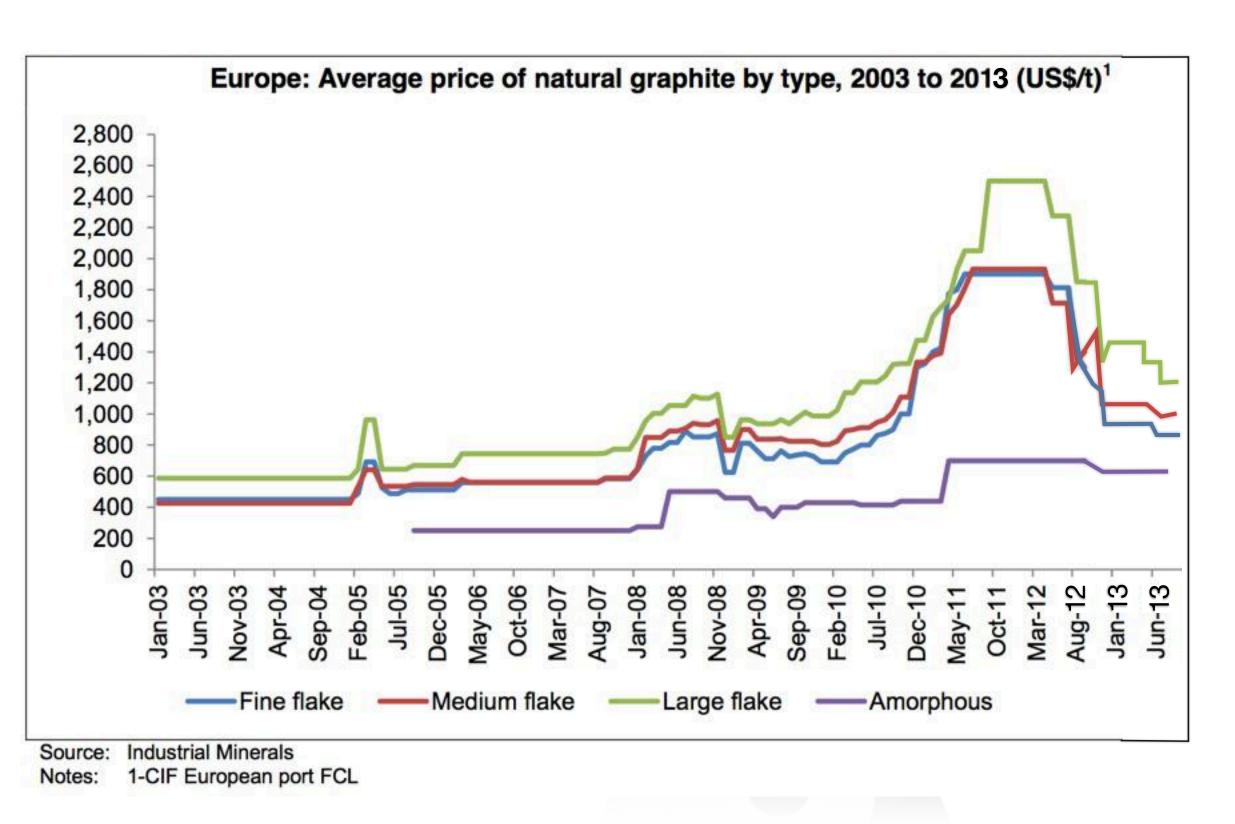




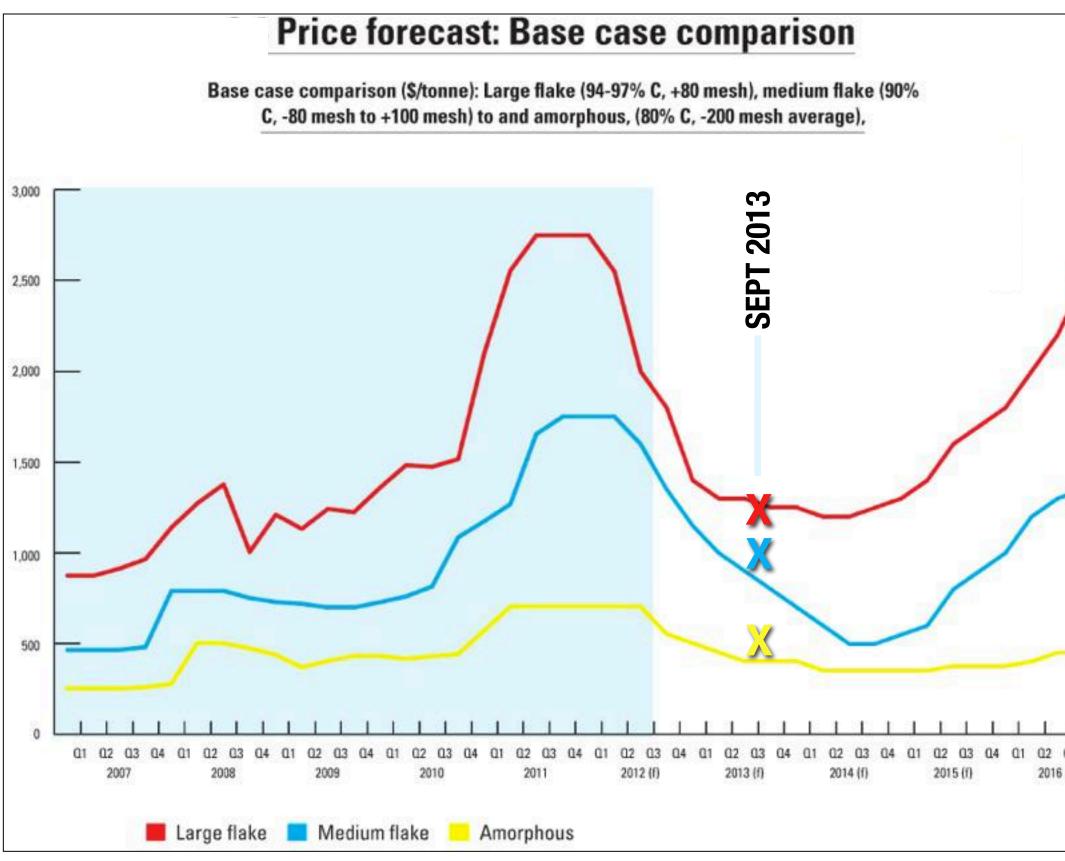


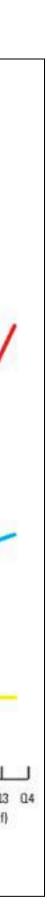


# **Graphite Price Trending Above Historic Levels; future trend up.**



After record prices in 2011-12 prices for all graphite types declined but stabilised far above long term historical levels. Price forecast by Industrial Minerals shows expected trends Note that price falls and trends are correlated but not all intact but the larger volume market types have traded above graphite types declined at the same rate due to diversity of **expected** levels since forecast in Dec 2012. market segments and changes in supply from China.

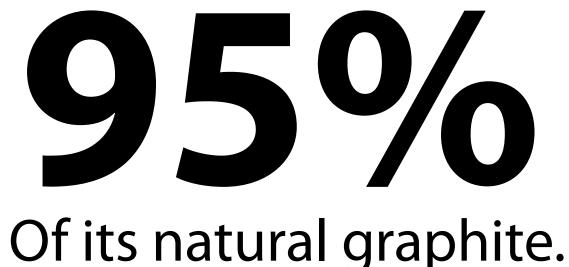






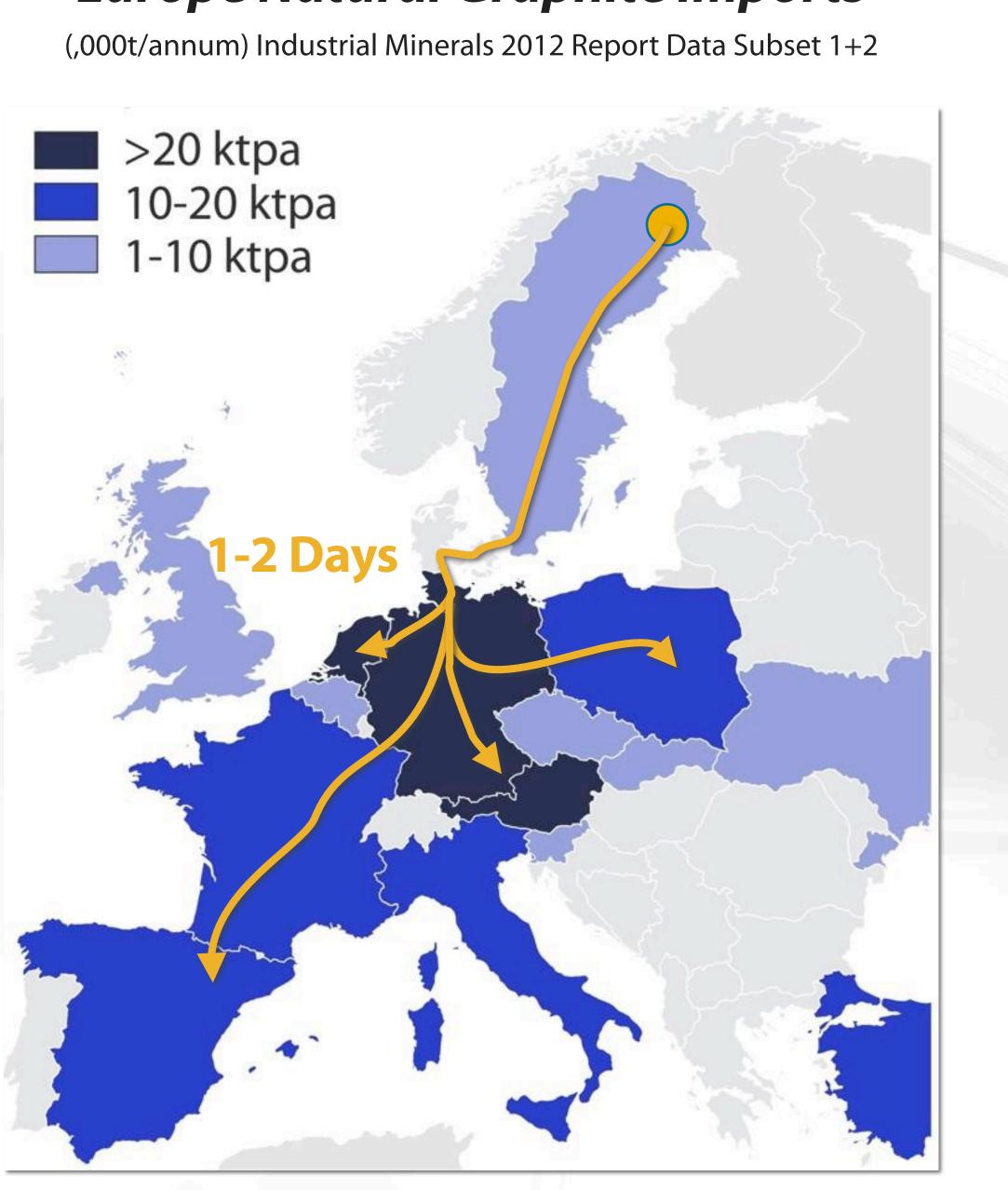


# **EU zone imports**



- 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".
- Graphite consumers looking for reliable and quality 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**



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Corporate tax rate 22%, Mineral Production tax 0.2%. Established bulk commodity infrastructure with open access rail, road and ports. Low cost power from hydroelectricity and nuclear grid. Well established quality mining province with highly skilled workforce, neighbouring producers and support industries. Fennoscandian Shield hosts world-class mineral deposits but remains underexplored relative to peers. Ranked 2<sup>nd</sup> best mining jurisdiction in world by Fraser Institute 2012-13

The 36Mtpa 'Aitik' Cu-Au mine, northern Sweden.



## **Established bulk commodity mining and transport infrastructure**







#### **Direct Road and Rail Advantages**

- Talga's 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 EU delivery compared to shipments from China or other jurisdictions.

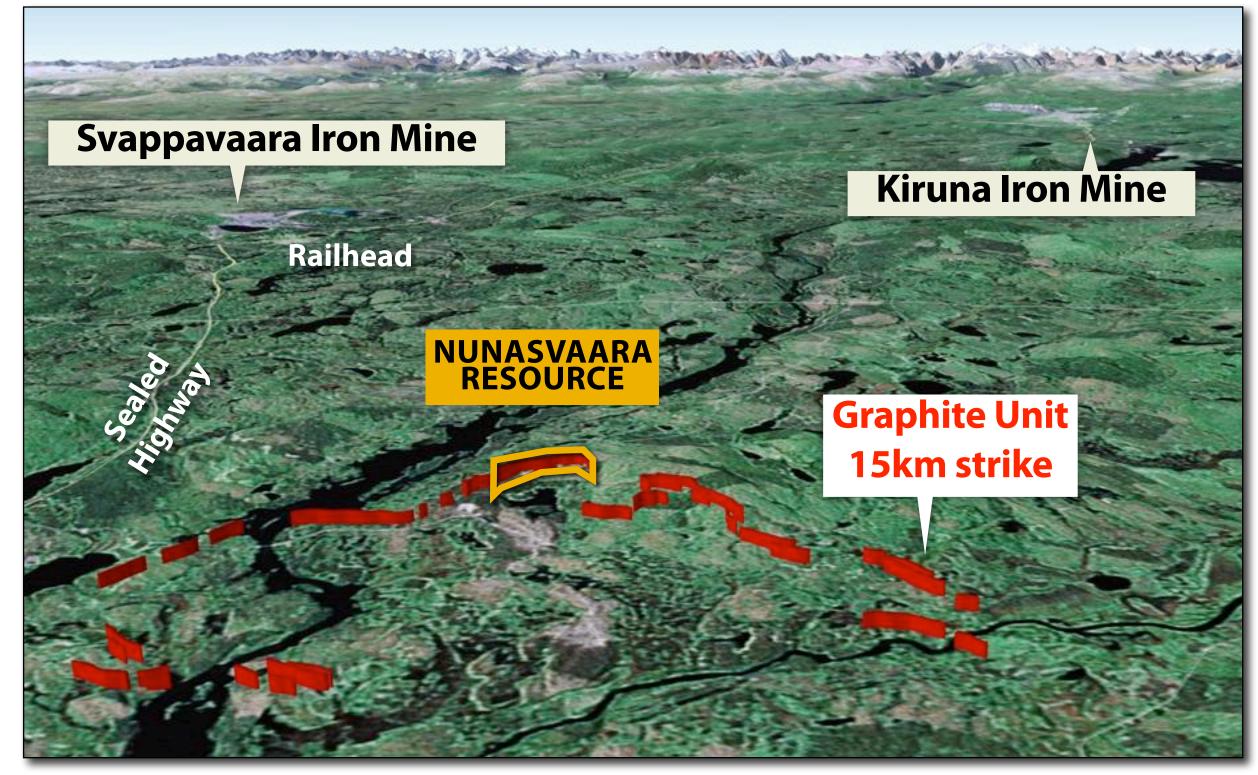






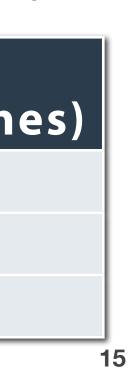
#### Vittangi Project - Nunasvaara Graphite Deposit

- World's highest grade JORC/NI43-101 resource. Total JORC resource 7.6Mt @ 24.4% Cg (see table for details), suits open pit development.
- Graphite unit commences at surface and extends over 15km strike. Talga rock chips average 26.2% Cg with grades up to 46.7% Cg. 92% of graphite unit yet to be drill tested. Resource mineralisation from surface to 165m depth and remains open.
- Development advantages of exceptional grade, open-pit bulk mining option, low-cost grid power and nearby road/rail/port options (2-3km to road, 25km to rail).
- PEAS underway to scope 400ktpa milling rate to produce **50-70ktpa concentrate** for sale. **Pit** optimisation and mine scheduling work completed. Product specification studies, metallurgy and final economic inputs are pending. Results expected Q1 2014.



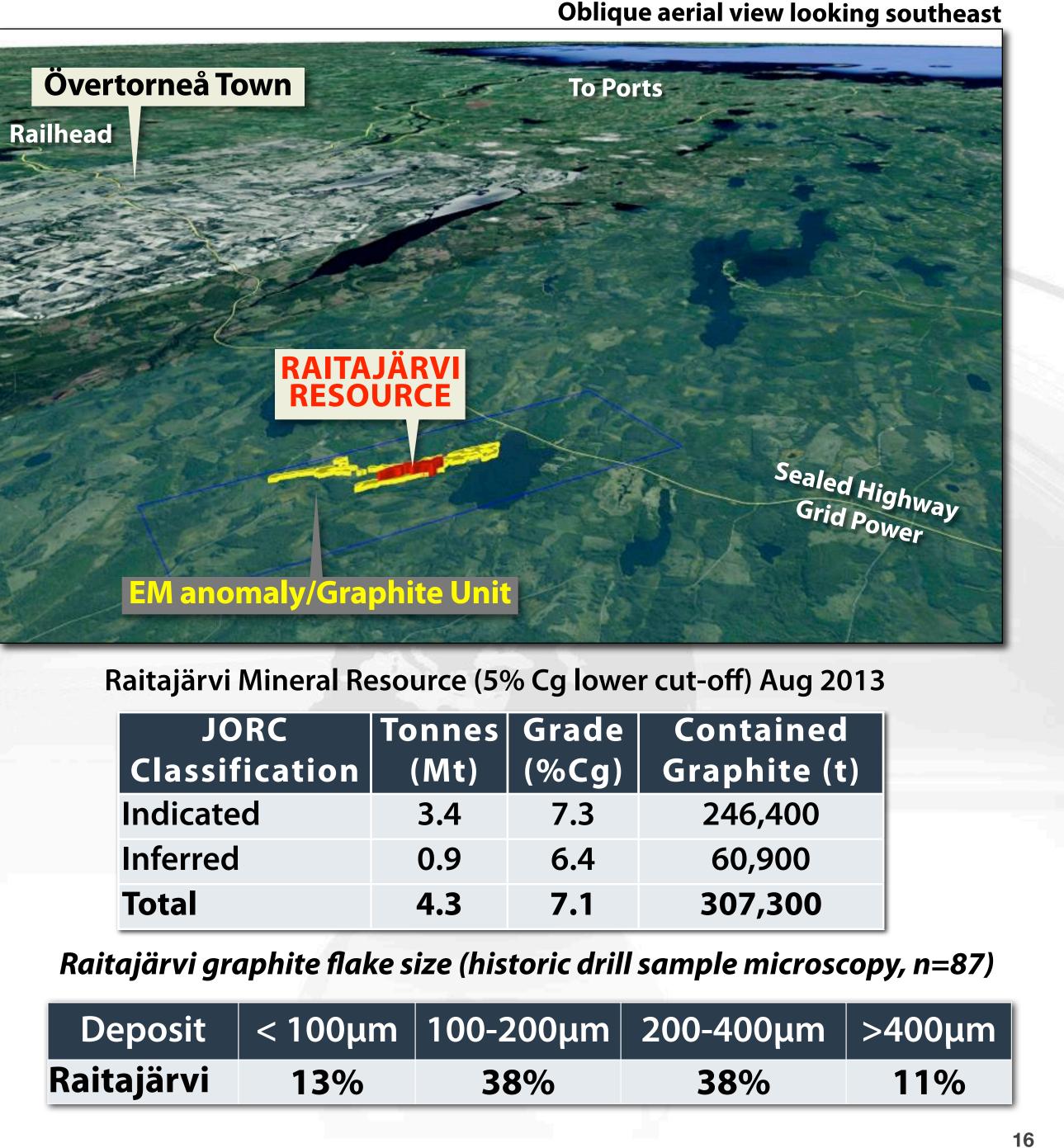
#### Nunasvaara Mineral Resource (10% Cg lower cut-off grade) Nov 2012

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



#### **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 ("μm") and 49% >200µm.
- 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.

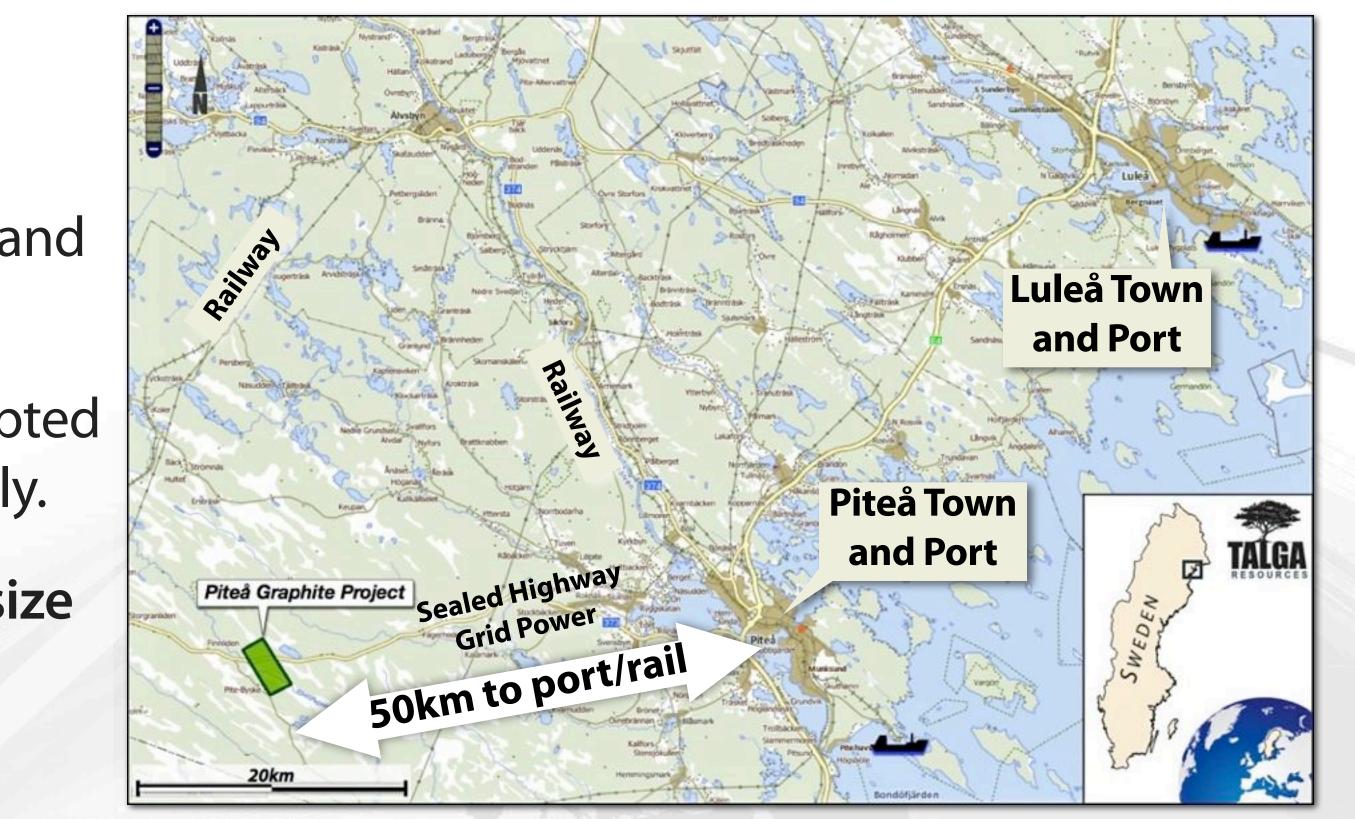


JORC	Tonnes	Grade	Contained
Classification	(Mt)	(%Cg)	Graphite (t)
Indicated	3.4	7.3	246,400
Inferred	0.9	6.4	60,900
Total	4.3	7.1	307,300

Deposit	< 100µm	100-200µm	200-400µm	>400
Raitajärvi	13%	38%	38%	119

# Piteå Jumbo Flake Project

- Located on sealed road 50km from port of Piteå and adjacent to grid power.
- A historic drillholes targeting base metals intercepted coarse flake graphite within a 4 x 1km EM anomaly.
- 80% of flake graphite at Piteå exceeds 300 μm size (80% +50 mesh, aka "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

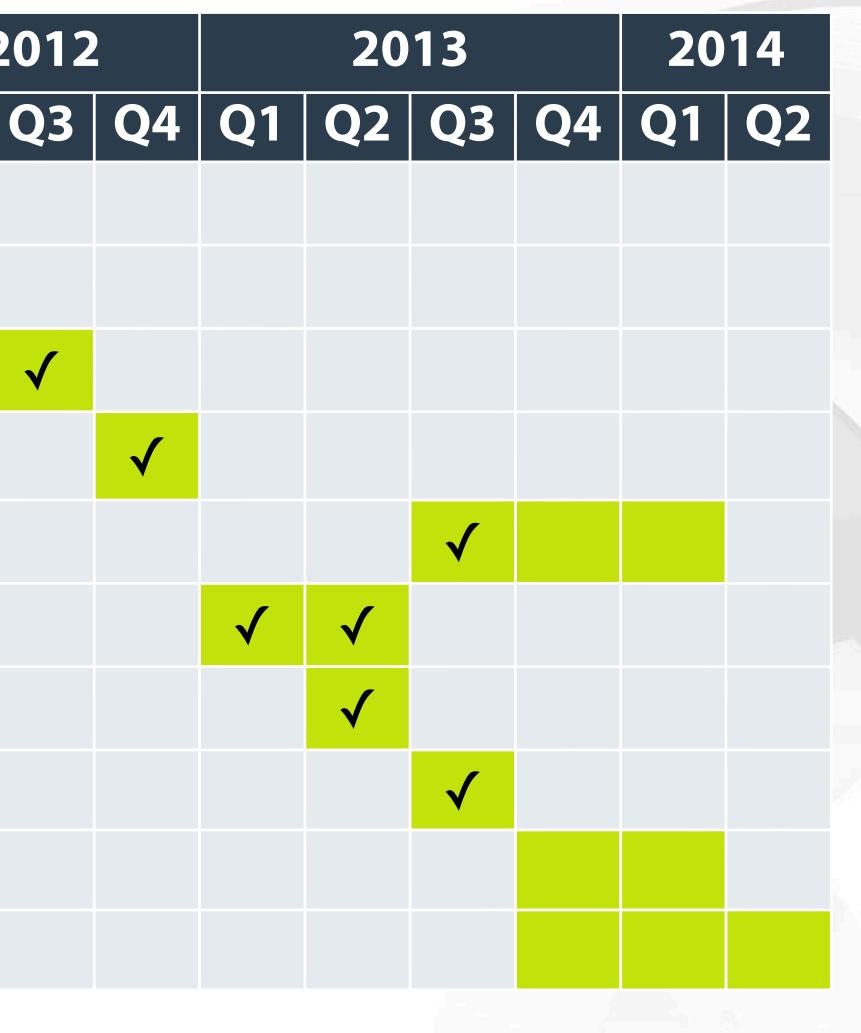




## Indicative Path to Next Graphite Milestones

Activity		2
Nunasvaara Geophysics	$\checkmark$	
<b>FCL Sweden Ltd Acquisition</b>	$\checkmark$	
Nunasvaara Drill Phase 1		
Nunasvaara Results & Resource		
Nunasvaara Scoping Study		
Drilling Raitajärvi Phase 1		
Raitajärvi Results/Resource		
Raitajärvi Resource		
Marketing Deal/Offtake Option		
Raitajärvi Scoping Study		





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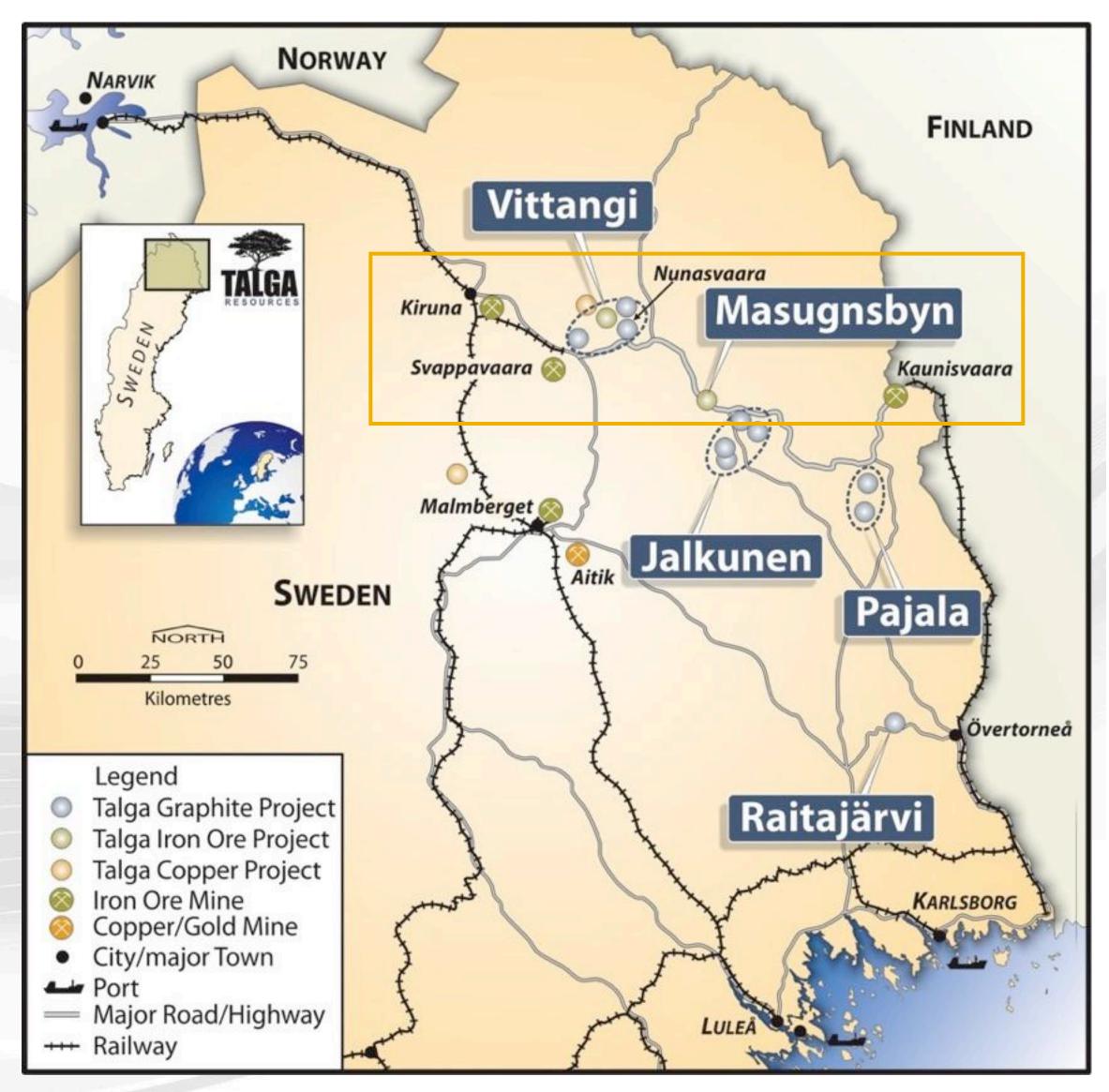
Talga's Graphite Development Advantages Highest grade open pit graphite resource in world. Located on road and rail routes to major markets. Advanced stage/PEAS underway; further major drilling not required. Low cost capex and bottom of cost curve expected. Highly ranked low-risk mining and corporate jurisdiction, Sweden. **Catalysts/Events** Preliminary economic assessment imminent. Significant new shareholders entering stock.

- Massive growth profile; dominant land position on drilled EU graphite deposits.

- Strategic partnerships and non-core asset divestments to improve funding.



## **Talga's Swedish Iron Projects**



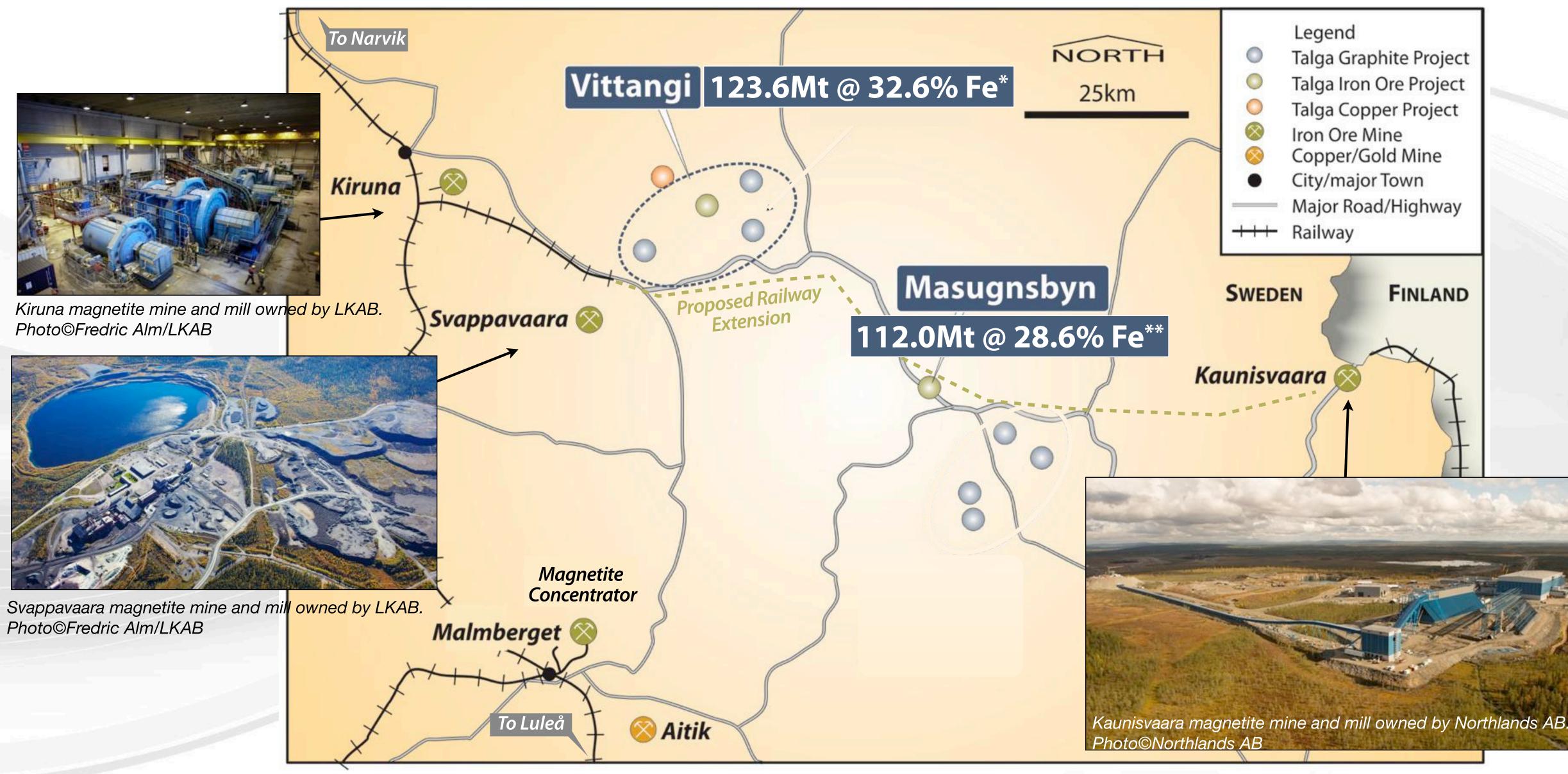
\*Fe or Fe<sub>mag</sub>, both refer to the calculated iron grade which is total iron less forms of iron other than magnetite (sulphides, silicates etc).

- Talga's skarn iron deposits are well located adjacent to high quality transport & power supplies, and are situated between producing magnetite iron mines.
- Currently the most advanced project is Masugnsbyn with a JORC resource 112Mt @ 28.6% iron as magnetite\* ("Fe"). Additional cluster of deposits at Vittangi have combined total JORC resources 124Mt @ 32.6% Fe, with further growth targets defined. See Appendix for resource details.
- Talga is targeting modest but high grade magnetite concentrate production, and believes the global total JORC resource inventory of 236Mt @ 30.7% Fe is strategically located to become a supplier to the Middle East and Asia.



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



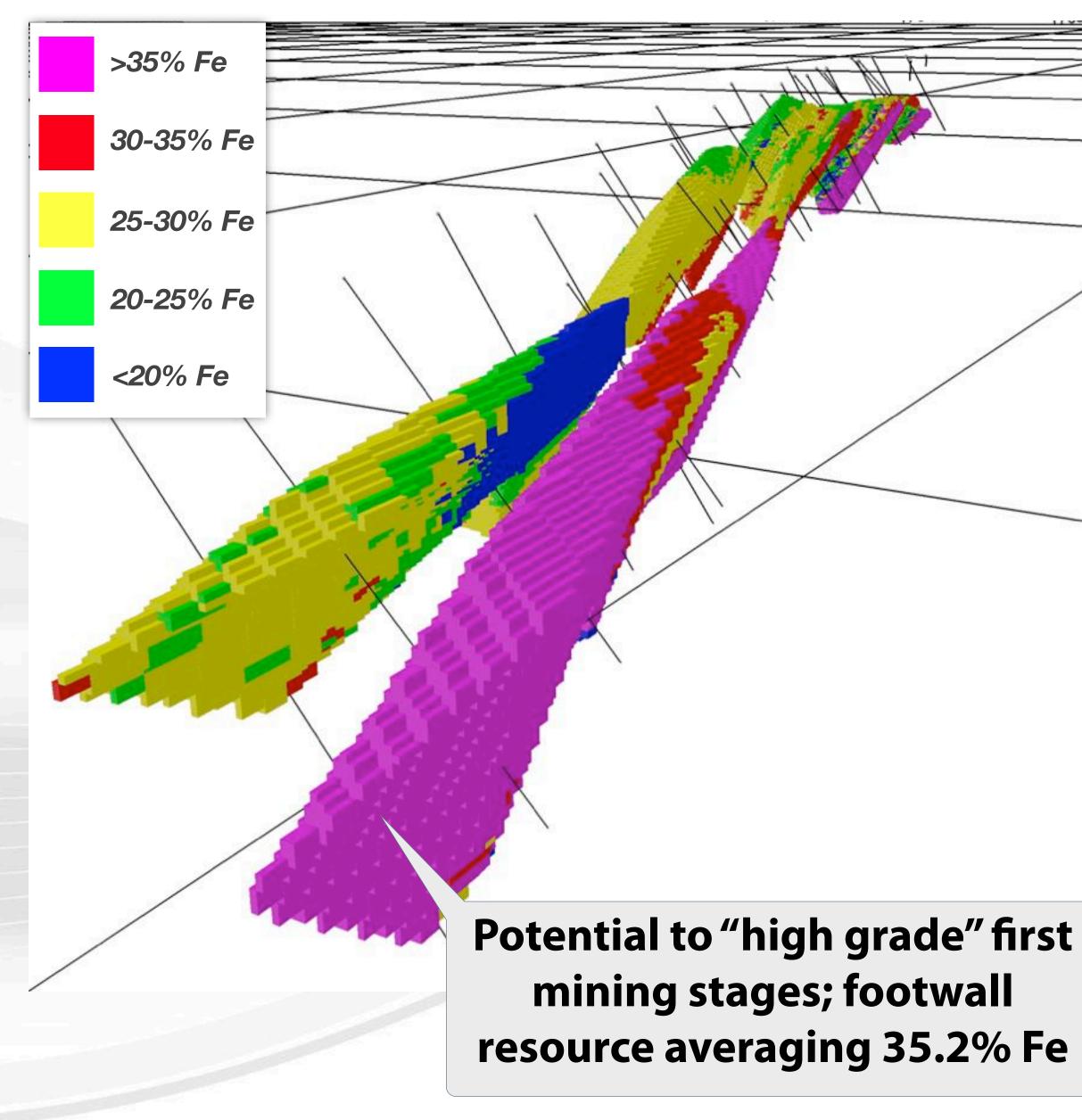
\*Combined total JORC Inferred Resources \*\*JORC Inferred and Indicated Resource. See following pages and Appendix for resource classification details.







## Masugnsbyn Project - Work to Date



- 68 historic diamond core holes by SGU in 1965-1970 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 (2004) Resource May 2013**

Masugnsbyn Global Resource (See Appendix for details)

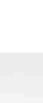
Resource	Tonnes	%Fe
Classification	(Mt)	90FE
Indicated	87.0	28.3
Inferred	25.0	29.5
Total	112.0	28.6





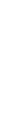








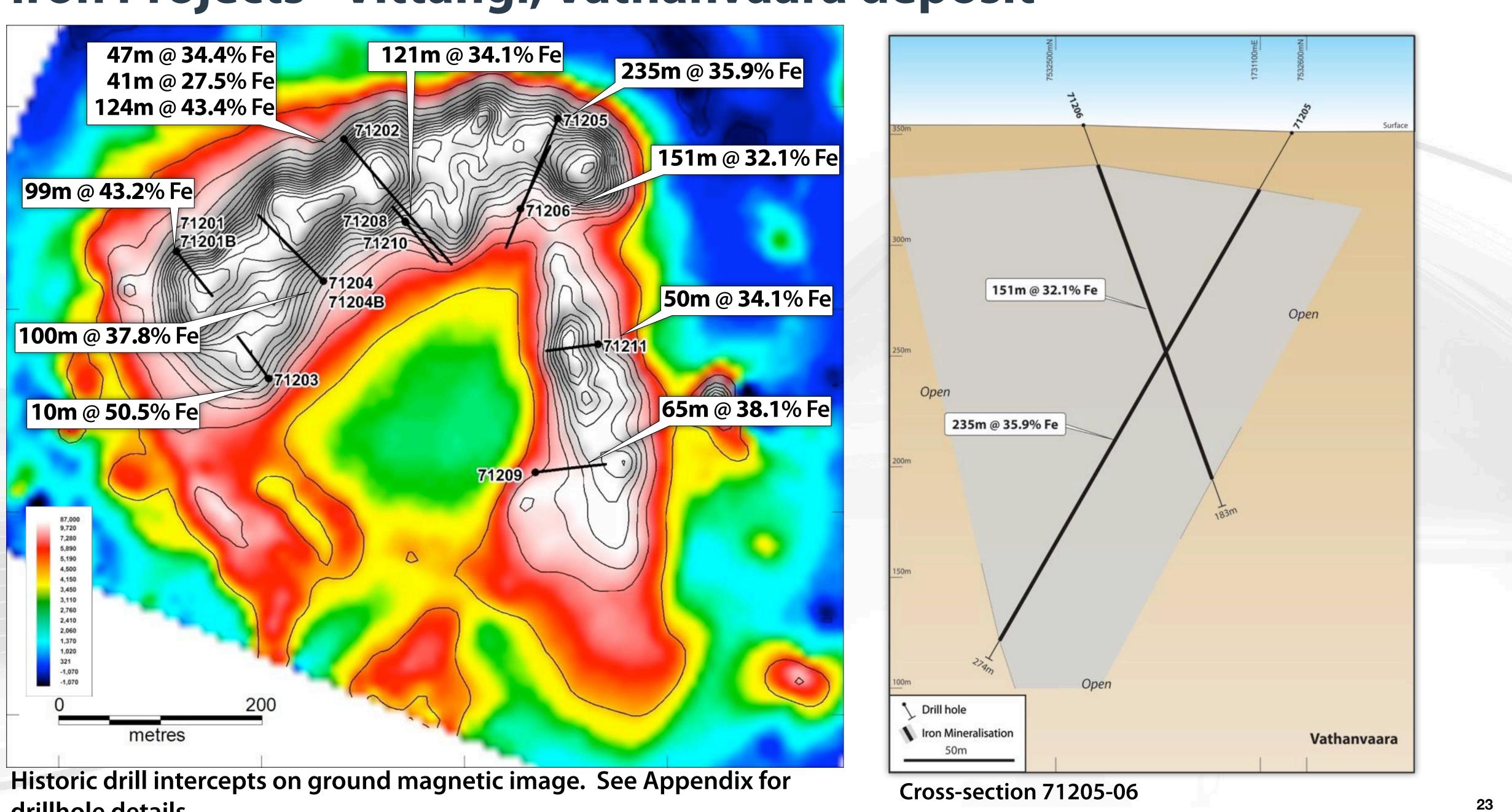








### Iron Projects - Vittangi, Vathanvaara deposit



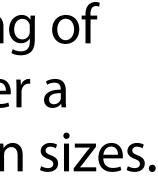
drillhole details.



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.

# Summary of 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.







#### **Contact us:**

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Tel +61 89481 6667 admin@talgaresources.com www.talgaresources.com





### Appendices

#### **Talga Asset Structure and JORC (2004) Resources**



100% -

**GRAPHITE** 

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

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

TALGA RESOURCES LTD		
100%		
Talga Mining Pty Ltd		
100%		





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

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







#### Vittangi Iron Project - Historic Drilling Highlights

Deposit	Hole ID	East (RT90)	North (RT90)	Hole Depth (m)	Azi	Dip	From (m)	Interval (m)	% Fe
Jänkkä	Jank 71001	1733109	7521322	161	112	-60	46	52	26.6
Kuusi Nunasvaara	72502	1736757	7527975	225	292	-60	104	56	26.3
Mänty Vathanvaara	71001	1731343	7530271	350	0	-60	63	100	30.2
Sorvivuoma	72201	1730764	7534130	165	0	-60	20	72	30.7
Sorvivuoma	72202	1730559	7534105	146	0	-60	45	42	35.4
Vathanvaara	71201B	1730729	7532465	150	150	-70	51	99	43.2
Vathanvaara	71202	1730896	7532577	334	150	-60	61	47	34.4
							134	41	27.5
							210	124	43.4
						incl	270	64	50.1
Vathanvaara	71204B	1730875	7532437	183	330	-60	50	100	37.8
Vathanvaara	71205	1731107	7532595	274	208	-60	30	235	35.9
Vathanvaara	71206	1731071	7532507	183	28	-70	19	151	32.1
Vathanvaara	71208	1730955	7532497	171	330	-80	9	121	34.1
Vathanvaara	71209	1731083	7532247	140	85	-60	75	65	38.1
Vathanvaara	71211	1731146	7532373	109	265	-60	40	50	34.1



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#### Graphite market size classification.

Trade Name	microns	US Mesh Size	
Amorphous/Ultrafine	<10	na	
<b>Amorphous/Fine</b>	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
180-300	80-50	94-97	1350
100-200	00-30	90	1200
150-180		94-97	1200
	100-80	90	1025
		85-87	900
75 150	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**

#### **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.



