

TALGA RESOURCES

Research Note



A PLAY ON GRAPHENE

Investment Highlights

- Talga Resources (TLG) is a graphite company that represents a unique play on the anticipated commercialisation of large scale graphene and ultra-thin graphite applications. Its unique position stems from the potential ability to extract commercial quantities of graphene as well as ultra-thin graphite from two of its five graphite projects in Sweden, including the world's highest grade natural flake graphite project at Vittangi (Nunasvaara). While most graphene production processes are currently high cost in nature, TLG's process involves one-step liberation directly from saw-cut blocks of ore, giving it the ability to be a low cost producer of bulk quantities of graphene and graphite. We view the advantage provided by its assets natural endowment plus the discovery of its unique liberation process, combined with its commercial approach to building relationships in an embryonic industry focused on R&D, as commendable. We therefore initiate on the stock with a Speculative Buy recommendation.**
- Graphite projects:** TLG has five wholly owned graphite projects, each comprising multiple deposits, in the Norrbotten County of northern Sweden. Two of the five projects (Vittangi and Jalkunen) exhibit high grade microcrystalline flake while the remaining three (Raitajarvi, Pitea and Pajala) have large flake characteristics. The Vittangi project contains the Nunasvaara deposit, which, according to TLG has a JORC Mineral Resource grade of 24.4% making it the highest grade JORC natural flake graphite Resource in the world.
- Process:** TLG's unique process to recover the graphite and graphene products involves mining of the ore using a saw-cut method to produce large blocks of ore. These are transported to the processing facility where the blocks are treated directly using electrochemical exfoliation (the ore acts as an electrode) at ambient temperature and pressure to achieve liberation without the usual crushing and grinding required. This single stage exfoliation has been shown to liberate both the ultrafine graphite flakes in addition to a proportion of graphene product.
- Pilot Plant:** In March 2015, TLG announced its intention to establish a Pilot scale test-work facility in Germany with an expected capacity of 100-200t per annum of output. TLG selected the Rudostaldt chemical processing estate in the State of Thuringia in Germany as the site for these operations. In September 2015, TLG announced that pilot plant processing of its trial mined graphite had commenced.
- Marketing:** With the primary focus of the Company on eventual low cost commercial scale graphene and ultra-thin graphite production, the marketing effort thus far has been focussed on securing technological and research relationships in order to prove concept and optimise the flow sheet. In addition, TLG has been engaging with a number of end-users conducting product R&D involving graphene and has been providing samples in order to further develop the relationships.
- Catalysts:** The clear short term catalyst for TLG is the successful demonstration of large scale, low cost graphene and ultra-thin graphite production at its pilot plant through the various phases, combined with the relationships developed with end-users developing near term commercial scale applications. While the Company is currently providing samples free of charge, a further catalyst will be the transition to a revenue model coupled with the successful conclusion of pricing point/s for the graphene products produced. Longer term, the decision to proceed with a full scale plant development is expected to be a key milestone, as we expect this will be timed with a ramp-up in demand from identified end-users requiring bulk volumes of these materials for commercial applications.

20 November 2015

12mth Rating Speculative Buy

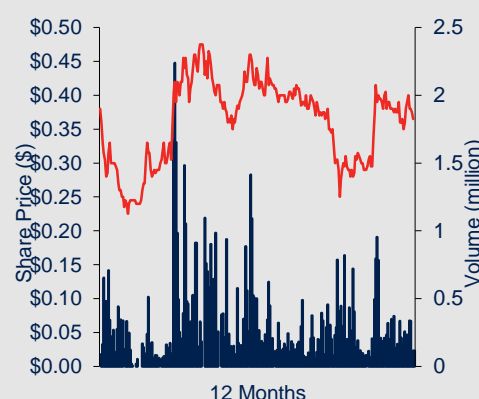
Price	A\$	0.36
RIC: TLG.AX		BBG: TLG AU
Shares o/s	m	139.4
Free Float	%	89.8
Market Cap.	A\$m	52.3
Net Debt (Cash)	A\$m	(4.0)
3m Av. D. T'over	A\$m	0.087
52wk High/Low	A\$	0.50/0.215

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Disclosure: Patersons Securities Ltd acted as Lead Manager to a Share Placement of 20 million shares at A\$0.085/share to raise A\$1.7m in March 2014. It received fees for this service.

An investment in this company should be considered speculative and note assumptions employed are contingent on broader market conditions remaining buoyant. These can change at short notice. Recommendations are current at the time of publication.

12 Month Share Price Performance



EXECUTIVE SUMMARY

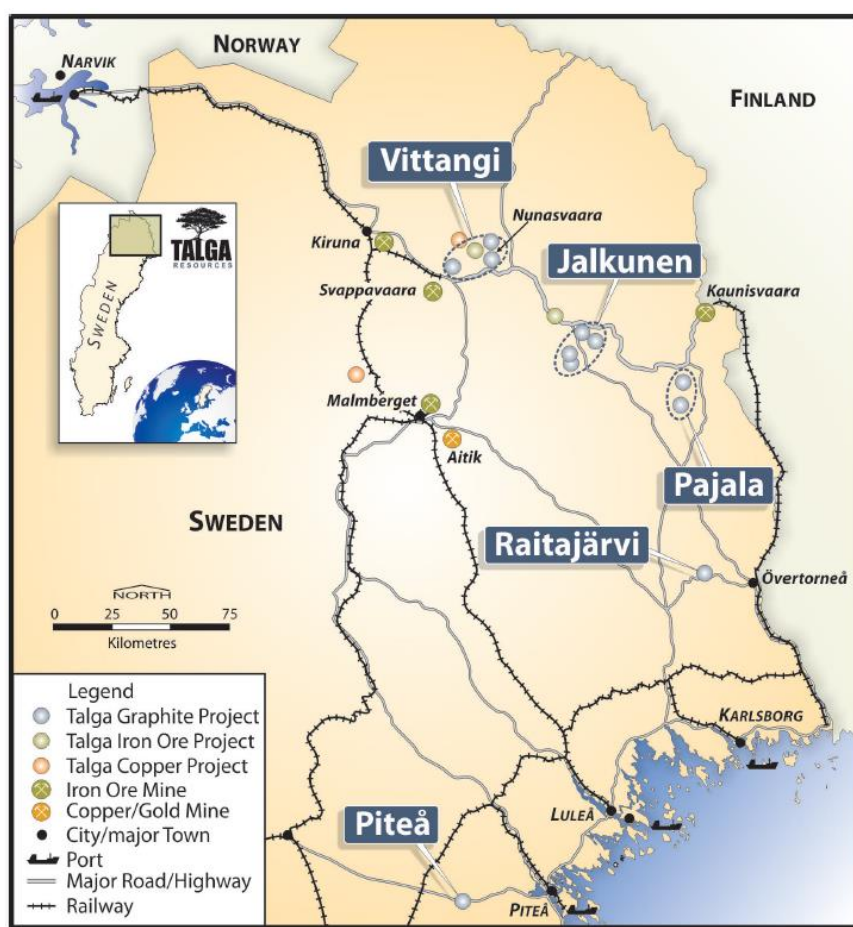
TLG is a graphite and graphene focussed Company, with five wholly owned graphite mineral projects located in Sweden (Figure 1). Two of the projects (Vittangi and Jalkunen) have particular attributes, being high grade (according to TLG Vittangi is the world's highest grade JORC or Canadian equivalent graphite resource at 24.4%), with high rock competence and highly conductive particle morphology (Figure 2). This allows for the unique outcome of liberating graphitic carbon products (graphene and ultra-thin graphite) directly from the graphite ore using a one-step electrochemical exfoliation processing route (no crushing or grinding required). In October 2014, TLG completed a Scoping Study over the Vittangi Graphite and Graphene Project indicating a pre-tax NPV of A\$490m, with indicated production of 46kt of graphite product and 1kt of graphene. The Company has subsequently trebled its global resource with the announcement (27 August 2015) of the Maiden JORC Mineral Resource at Jalkunen of 31.5Mt @14.9% graphite. This took its global JORC Mineral Resource across three projects (including both 2004 and 2012 based JORC requirements) to 43.4Mt for 6.85Mt of contained graphite.

TLG has developed a pilot testwork facility in Germany to prove the processing technique, test its scalability and provide early commercial sample volumes of graphitic products in order to develop strong customer relationships and bridge the gap in availability of supply as R&D is conducted into new commercial applications.

In a validation of the work TLG has conducted to-date, it has been recently inducted as an Associate Member of the European Union founded 'Graphene Flagship' program, joining the likes of Bosch and LEGO. In addition the Company recently signed a Collaboration Agreement with Tata Steel UK Limited to jointly explore opportunities across graphene supply, processing and development of graphene applications.

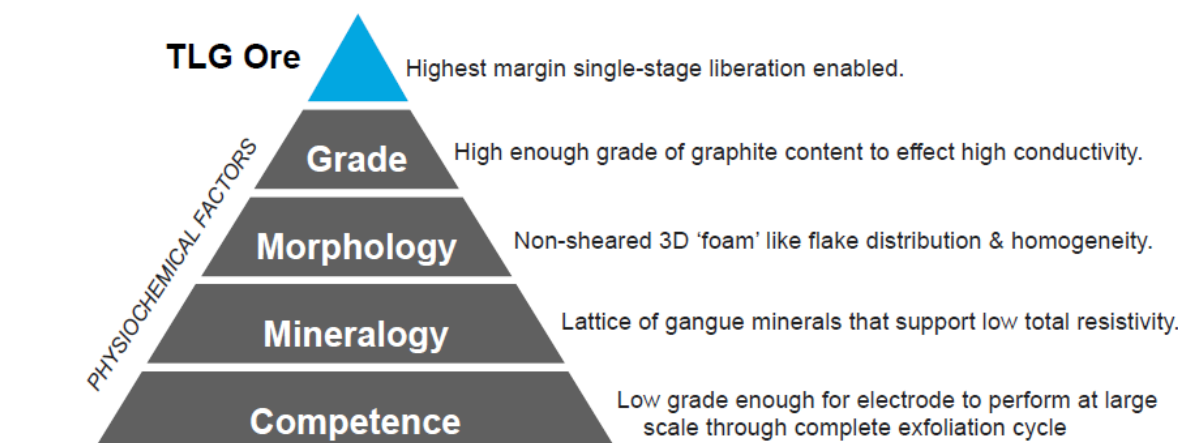
We consider TLG as well placed to provide a low-cost bulk graphene and ultra thin graphite supply into existing and new growth markets. We initiate coverage on TLG with a Speculative Buy recommendation.

Figure 1: Location of graphite projects in Sweden



Source: Talga Resources

Figure 2: Attributes of the ore from Vittangi



Source: Talga Resources

DESCRIPTION OF ASSETS AND OPERATIONS

Graphite and Graphene Projects in Sweden

TLG has five wholly owned graphite projects, each comprising multiple deposits, in the Norrbotten County in northern Sweden. Two of the five projects (Vittangi and Jalkunen) exhibit high grade microcrystalline flake while the remaining three (Raitajarvi, Pitea and Pajala) have large flake characteristics.

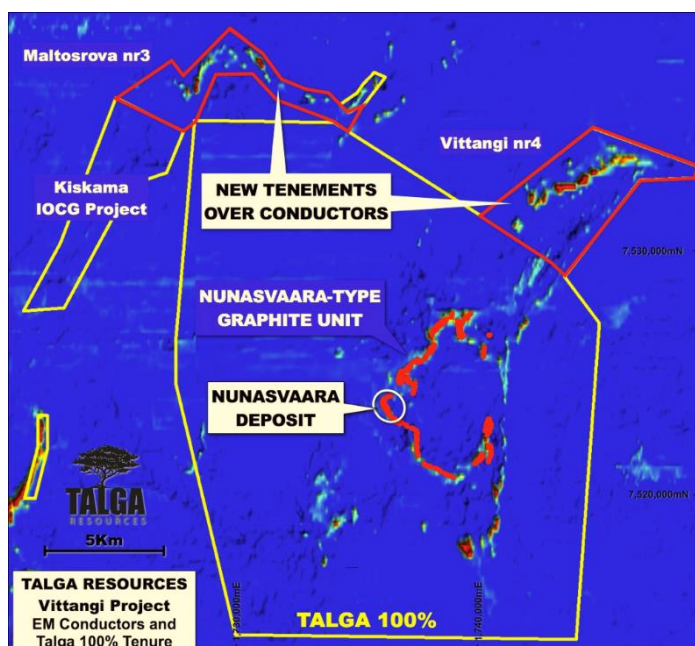
Vittangi Project

The Vittangi Project covers exploration permits spanning some 400km² and is located approximately 20km east of LKAB's iron ore mine and rail head at Svappavaara includes the Nunasvaara deposit which according to TLG is the highest grade natural flake deposit in the world at an average grade of 24.4% Contained graphite (Cg).

The deposits were first discovered in 1898 with early exploration work including trenching during 1916-1918 with more detailed work including geophysics, trenching, core drilling, and bulk sampling occurring between 1970-1982, leading to the definition of an initial Resource of 1.1Mt at 27.8% Cg, to a depth of 70m using a 25% Cg lower cut-off. TLG undertook a 19 diamond hole drilling program during 2012 which led to the calculation of a JORC compliant Indicated and Inferred Mineral Resource of 7.6Mt at 24.4% Cg for 1.86Mt of contained graphite (using a 10% Cg lower cut-off grade). The highest grades encountered were up to 46.7% Cg. The resource was defined over a strike length of 1.2km with a width ranging from 10-50m and to a depth of 165m (remains open). The Nunasvaara graphite unit extends over 32km of strike, with little to no drilling, providing considerable exploration upside. While the flake graphite is ultra-high grade, it is dominated by microcrystalline flake.

The ore body is located close to infrastructure, being only 3km from grid power and the highway and is also located close (15-23km) to two towns.

Figure 3: Location of Vittangi Project



Source: Talga Resources

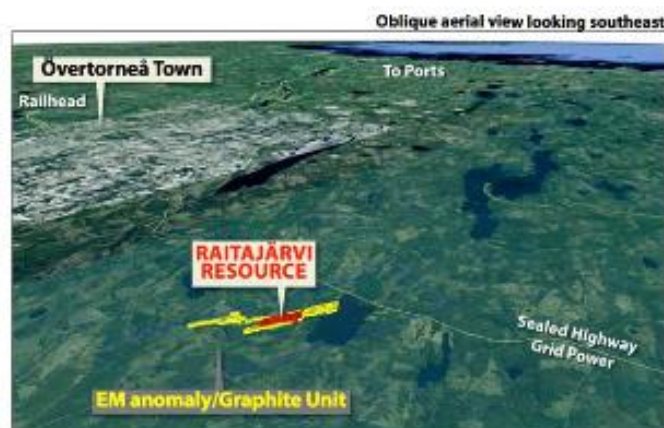
Raitajarvi

The Raitajarvi deposit covers two exploration permits spanning 17km² and located 2km from the sealed highway and 25km from the nearest railhead near the town of Overtornea. The deposit holds a JORC Indicated and Inferred Mineral Resource of 4.3Mt at 7.1% Cg for 307kt of contained graphite.

The graphite was first discovered in the late 1800's with exploration work being conducted by the Swedish Geological Survey between 1974-1978 (ground based geophysics) and then again between 1989-1992 (20 diamond drill holes and 5 trenches) to outline an initial Resource of 0.6Mt at 8.9% Cg. Thin section analysis was conducted on 87 samples and determined 87% of the graphite flakes were greater than 100 microns. Preliminary metallurgical work demonstrated 99% Cg purity could be achieved in concentrates.

TLG undertook a 28 diamond hole drill program in March-April 2013, which resulted in the calculation of a JORC Indicated and Inferred Mineral Resource of 4.3Mt at 7.1% Cg. The deposit remains open at depth and along strike.

Figure 4: Location of Raitajarvi Project



Source: Talga Resources

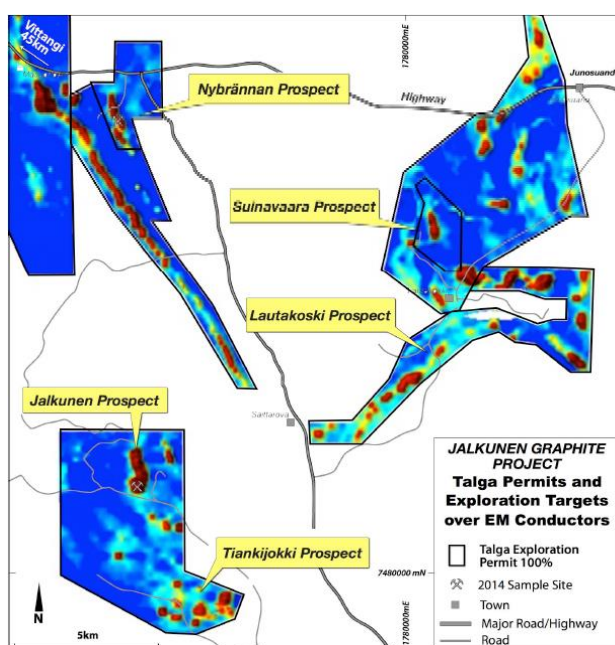
Jalkunen

The Jalkunen Project is located around 50km southeast of the Nunasvaara deposit and comprises exploration permits spanning 88km² containing five graphite prospects (Figure 5). The graphite prospects have been defined by historical trenching, geophysics and drilling.

The Jalkunen prospect (one of the five prospects in the Jalkunen Project) is a 2km long conductor identified by the Swedish Geological Survey in 1986. The unit was tested by three diamond drill holes and interpreted to contain a low lying graphite unit indicating an ultra-low strip ratio if mined.

TLG pegged the project in 2011 and conducted follow-up exploration work including diamond drilling in 2015, enabling the determination of a Maiden JORC 2012 compliant Inferred Mineral Resource of 31.5Mt at 14.9% Cg for 4.7Mt of contained graphite (using a 10% Cg lower cut-off). Metallurgical testwork and further technical analysis has indicated that the Jalkunen ore consists primarily of sub-100 micron flakes with a small proportion of larger flakes up to 400 microns. Importantly, the testwork confirmed that the Jalkunen ore is amenable to the same one-step liberation method as at Vittangi.

Figure 5: Graphite deposits comprising the Jalkunen Project



Source: Talga Resources

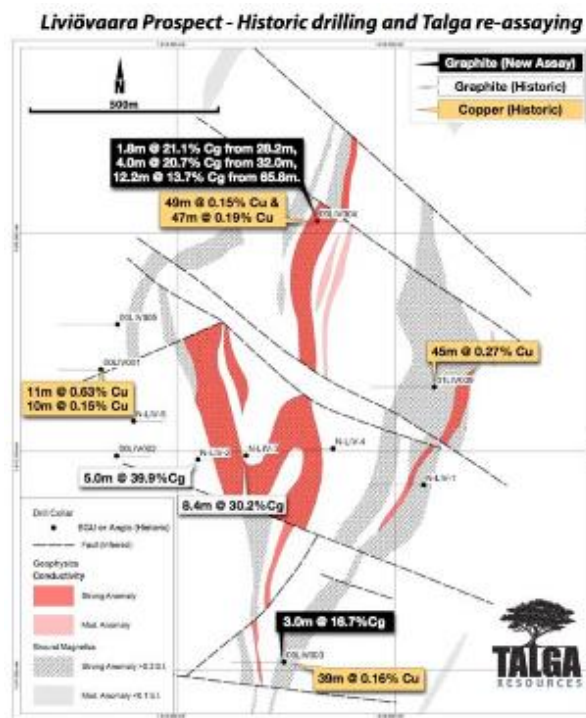
Pajala

The Pajala project lies approximately 40km southeast of the Jalkunen project and consists of two graphite prospects previously defined by historical drilling over a combined strike length of 1.8km.

The Liviovaara prospect was identified by the Swedish Geological Survey and Anglo American as containing copper, gold and graphite mineralisation. A drill program consisting of 13 holes identified high grade graphite zones, including 5m @ 39.9% Cg and 8.4m @ 30.2 Cg. Selective sampling conducted by TLG once the project was pegged, indicated additional graphite intervals including 1.8m @ 21.1 Cg, 4.0m @ 20.7% Cg and 12.2m @ 13.7% Cg.

The Lehtosolka prospect was identified by a historic five diamond hole program that resulted in graphite intervals including 19.5m @ 7.5% Cg.

Figure 6: Pajala Graphite Project

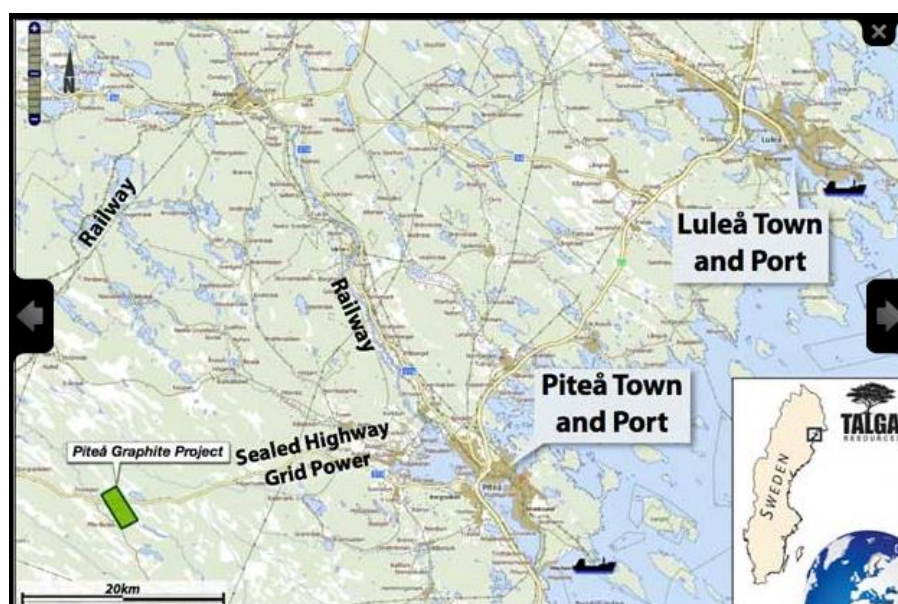


Source: Talga Resources

Pitea

The Pitea project is located 40km by road from the port of Pitea. The graphite prospect was identified by the Swedish Geological Survey. Two historic diamond drill holes intersected graphite mineralisation and follow-up sampling indicated a large proportion (70-90%) of large and jumbo (>300 micron) flakes are present.

Figure 7: Location of Pitea Graphite Project



Source: Talga Resources

JORC Mineral Resources and Exploration Target

The current combined total JORC compliant (2004 and 2012 combined) is represented in Figure 8. This Resource covers three of the five graphite projects and is further supplemented by the Exploration Target in Figure 9.

Figure 8: Combined Total Mineral Resource

Project	JORC Classification	Tonnes	Grade (%Cg)	Contained graphite (t)
Vittangi	Indicated and Inferred	7,600,000	24.4%	1,854,400
Raitajarvi	Indicated and Inferred	4,300,000	7.1%	305,300
Jalkunen	Inferred	31,500,000	14.9%	4,693,500
Total		43,400,000		6,853,200

Source: Talga Resources

Figure 9: Exploration Targets

Project	Exploration Target	Tonnes (0-100m depth)		Graphite (%Cg)	
		Min	Max	Min	Max
Vittangi	Nunasvaara	62,400,000	93,600,000	20	30
	Kotajarvi	16,640,000	30,160,000	20	25
	Maltosrova	20,800,000	52,000,000	20	25
Jalkunen	Tiankijokki	2,600,000	5,200,000	15	25
	Nybrannan	5,200,000	10,400,000	20	30
	Suinavaara	2,600,000	5,720,000	15	25
	Lautakoski	26,000,000	52,000,000	15	25
Total		136,240,000	249,080,000	18	25

Source: Talga Resources

Scoping Study completed on Vittangi Project

TLG completed an expanded Scoping Study over the Vittangi Project in October 2014. The Study, conducted by Snowdens Mining Industry Consultants and Independent Metallurgical Operations, considered an operation processing 250ktpa of ore with a diluted mining feed grade of 23.6% Cg. Estimated annual production was 40kt of ultrafine graphite concentrate (80-85%C purity), 6kt of Micronised high purity graphite (94-97%C purity), and 1kt of 'Very few layer' (1-5 layers) graphene. In reality, the graphene yield in processing was expected to generate 7ktpa of graphene product but for the sake of being conservative, given the infancy of the graphene market, it was decided to class 6ktpa of this 'unsold graphene' as the equivalent of Micronised high purity graphite.

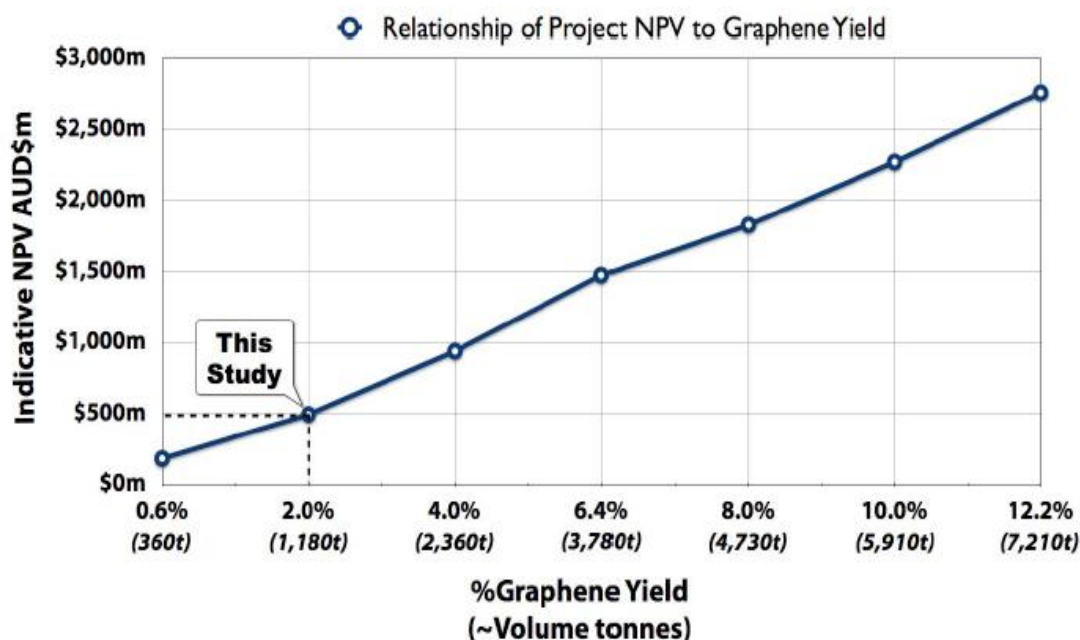
The estimated project economics for a 19.7 year mine life, indicated capital expenditure of A\$29.3m and A\$84/t operating costs per tonne of feed for a pre-tax NPV of over A\$490m and a 1.4 year capital payback. Product pricing assumptions used were US\$480/t for the ultrafine graphite concentrate, US\$1,600/t for the Micronised high purity graphite and US\$55,000/t for the graphene. Both the ultrafine graphite as well as the Micronised high purity graphite prices were accurate as at the date of the study, however the price assumed for the graphene was severely discounted compared to recorded market sales at the time in excess of US\$250,000/t. This was because graphene is a market in its infancy, is very opaque, and sales history was based on volumes for research and development rather than commercial quantities.

The Study considered only the JORC Indicated portion of the Vittangi Projects Nunasvaara Resource and was modelled as an open pit mining operation. The final pit depth strip ratio was estimated at 4:1 and mining was designed as a saw cutting operation with the cut blocks delivered to the plant to undergo one-step processing to achieve the liberation of all planned products. The liberation process therefore avoided the crushing and grinding stages normally associated with the commodity.

The sensitivity of the Study to the proportion of assumed graphene production and sales is shown in Figure 10. It indicates the conservative graphene yield used in the study of 2% to produce 1,180t of graphene to arrive at the Scoping Study indicative NPV of A\$490m, and shows how this NPV would increase to over

A\$2.5bn assuming the maximum graphene yield, at the time, in excess of 12% (to produce 7,210t of graphene).

Figure 10: Sensitivity of Project NPV to assumed graphene yield



Source: Talga Resources

Pilot Plant

In March 2015, TLG announced its intention to establish a staged Graphene pilot testwork facility in Germany with an expected full scale capacity of 100-200t per annum of output. While the Company still expects to build the full scale plant in Sweden, the decision to construct the pilot plant in Germany was motivated by the high level of interest shown in its potential product from graphene technologists and end-users based in Germany. A further consideration was the location of both of TLG's current operating graphene development programs at the Friedrich-Schiller University in Jena and the Centre for Advancing Electronics, Technical University of Dresden.

TLG selected the Rudostaldt chemical processing estate in the State of Thuringia in Germany as the site for its pilot plant. The site is 35km from TLG's research partner Friedrich-Schiller University at Jena and also near its second research group partners, the Dresden University and the Max Planck Institute, Mainz. Facilities at the site include a 1,248m² production area, 323m² administration area and 1,167m² of ore warehousing and preparation space (Figure 11).

TLG has also received access to the German government capital expenditure grants of up to 35% of fixed asset expenditure as well as up to 80% subsidy for its R&D.

In September 2015, TLG announced that pilot testwork processing of its trial mined graphite had commenced following a period of equipment commissioning and optimisation. Phase 1 pilot commissioning tests were reported to have delivered excellent performance and had achieved graphite concentrate grades of 98-99%C and produced both graphene powders and stable graphene dispersions. Phase 1 processed 10kg blocks of ore cut off from the larger mined ore blocks. Phase 2 equipment, which is designed to process 50kg blocks, is currently in the process of being assembled and installed and is, expected to be commissioned in the first half of 2016. Phase 3 is designed to process significantly larger blocks of ore and expected to be installed late in 2016.

Figure 11: Pilot Plant Facility



Source: Talga Resources

Trial Mining

TLG received permission for a trial mining program at Vittangi for 5,000t of ore before 2018 (the trial mining permit was issued by the Environmental Review Commission under TLG's existing exploration licence). Mining operations can be conducted for 12-16 weeks around mid-year. Phase 1 of the trial mining program commenced in June 2015 and the first phase aimed at removing 450t of ore was designed to test the mining method and outcomes.

The mining method selected was a saw cutting technique designed to remove the ore in the form of large blocks for transport, storage and processing (indicated in Figures 12-14). The blocks of ore are currently transported to the Pilot Plant Facility in Rudostaldt in Germany.

TLG plans a second mining campaign during mid-2016 under its trial mining licence using an optimised program. The intention is to extract sufficient ore to provide feed for the expansion plans at the Pilot testwork facility.

Figure 12: Saw cutting at Vittangi during first phase of trial mining



Source: Talga Resources

Figure 13: Saw cutting operations at Vittangi



Source: Talga Resources

Figure 14: Inspection of the saw-cut block prior to transport to Pilot Plant.



Source: Talga Resources

Other Exploration Projects

In addition to its five graphite projects discussed above, TLG also owns a number of other projects:

- two advanced iron ore projects (Masugnsbyn and Vittangi), located in Norrbotten County in north Sweden with total JORC Resources of 235.6Mt at 30.7% Fe (magnetite).
- the Kiskama IOCG Cobalt-Copper-Gold Project in Sweden
- four gold projects in Western Australia. In August 2015 TLG announced the execution of an Option Agreement for the sale of three of the gold assets to Beatons Creek Gold Pty Ltd. TLG receives a \$50,000 non-refundable deposit and a further \$200,000 within four months, with the balance of the proceeds of up to \$750,000 (\$250,000 per option exercised over each of the three assets) to be received within two years of the date of the agreement. The remaining gold asset not part of the Option Agreement is the Bullfinch Project in the Yilgarn region of Western Australia.

MARKETING AND RELATIONSHIPS

With the primary focus of the Company on eventual low cost commercial scale graphene and graphite production, the bulk of the marketing effort thus far has been focussed on securing technological and research relationships in order to prove concept and optimise the flow sheet. In addition, TLG has been engaging with a number of end-users conducting product R&D involving graphene and has been providing samples produced from its ore, in order to further develop the relationships.

In July 2015 TLG announced the signing of a collaboration term sheet with Haydale Graphene Industries PLC (a UK based graphene functionalization company). Under the terms of the agreement, TLG will supply graphene and graphitic carbon nanomaterials for Haydale to modify for specific applications. The agreement intends that the companies will jointly explore business cooperation opportunities. Haydale is listed on the AIM market and owns a proprietary process to functionalise graphene and other nanomaterials. With facilities in the south of Wales, Haydale is focused on facilitating applications of graphene in fields like inks, sensors, energy storage, photovoltaics, composites, paints and coatings.

In October 2015, TLG announced that it had been accepted as an Associate Member of the European Union founded 'Graphene Flagship' program. With available funding of €1bn the Graphene Flagship program is the largest graphene research platform in the world. The acceptance was alongside companies like Bosch and LEGO. The program was launched in 2013 and the focus to date across a number of science and technology work packages has been on graphene applications and their pathway to benefit European industries and society.

In November 2015, TLG announced the execution of a formal collaboration agreement with the UK steel arm of the Tata Group. The intention of the agreement is to jointly explore opportunities across graphene supply, processing and development of graphene applications. Under the terms of the agreement, TLG will supply graphene and graphitic carbon materials for use across applications in various Tata research programs including, anti-corrosion pigments and conductive, formable, barrier and thermal coatings.

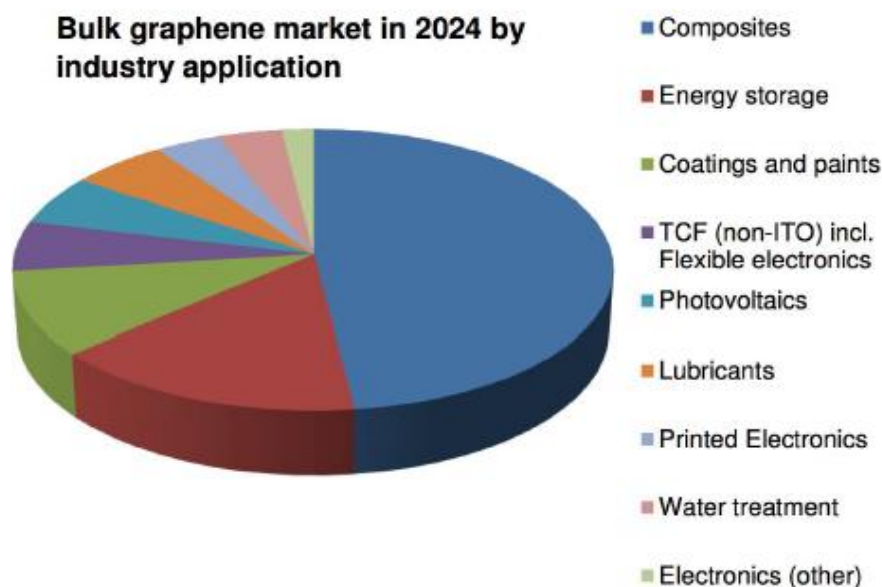
GRAPHENE AND ITS MARKET

Tomes have been written about the new wonder material that is graphene (a one atom thick layer of graphite). The myriad of potential commercial applications (Figure 15) in new products or as a method of enhancing the properties of existing products is extensive. The primary properties of graphene being the strongest (and thinnest) material ever discovered as well as its excellent conductive, impermeability, and flexibility properties make it especially attractive for use in commercial applications. One of the largest potential applications is the additive market including for example; paint and coatings (40Mtpa with an estimated market value \$186bn), asphalt (estimated at over 100Mtpa), and cement and concrete (existing additive market with an estimated value of \$13.6bn).

While graphene is defined as a single atom layer of graphite, in reality graphene is sold in numerous different forms and layers. Graphene comes in many shapes, lengths, layers, functionalised state and defect levels. There are also currently numerous methods for producing graphene (Figure 16), and each comes with its associated quality volume and cost (Figure 17).

If the market for graphite is opaque, the market for graphene is even worse. As the market for graphene is still in its infancy (R&D or prototype focussed), the prices paid amount to staggering figures of hundreds of thousands of Dollars per kilogram for generally minute quantities while more bulk sample pricing is around hundreds of Dollars per kilogram. We believe that the current market pricing for graphene is not indicative of its longer term pricing based on large volume applications and demand. We note that Talga used a discounted price of \$55/kg for graphene product in its Scoping Study.

Figure 15: Segmentation of industrial applications for bulk graphene by 2024 (Fullerex Data)



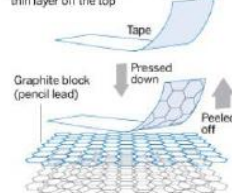
Source: Talga Resources

Figure 16: Methods of graphene production

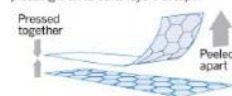
Five recipes for graphene

Mechanical exfoliation

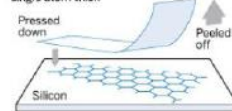
1 A sticky 'tape' is placed on to a block of graphite and then peeled back, stripping a thin layer off the top



2 This layer of carbon is thinned further by pressing it on to other layers of tape



3 The tape is finally pressed on to a very smooth substrate such as silicon then peeled off, leaving a graphene layer a single atom thick

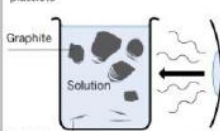


Sample size
Greater than 1mm

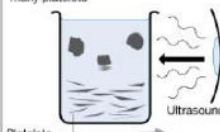
Applications
Research

Chemical exfoliation

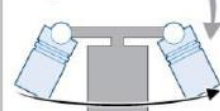
1 Graphite is exposed to a solvent which with the aid of ultrasound causes it to split into individual mono-layer flakes or platelets



2 Prolonged treatment leads to many platelets



3 These mono-layers of graphene can be further enriched by centrifuge

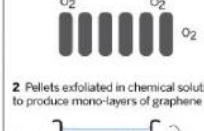


Sample size
Infinite as a layer of overlapping flakes

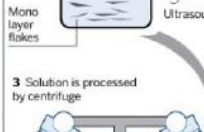
Applications
Coating, paint, ink, composites, transparent conductive layer energy storage and bioapplications

Chemical exfoliation via graphene oxide

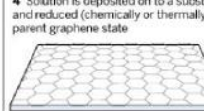
1 Related to chemical exfoliation but graphite pellets are first oxidised



2 Pellets exfoliated in chemical solution to produce mono-layers of graphene



3 Solution is processed by centrifuge

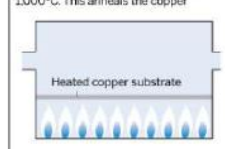


Sample size
Infinite but with larger flake size than simple chemical exfoliation

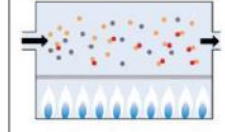
Applications
The same as chemical exfoliation

Chemical vapour deposition

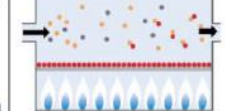
1 A substrate (usually copper) is heated in a furnace at low pressure to about 1,000°C. This anneals the copper



2 Methane and hydrogen gases flow through the furnace



3 Carbon atoms from the methane are deposited on to the copper. They crystallise as a continuous graphene sheet

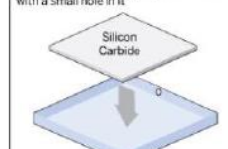


Sample size
About 1m

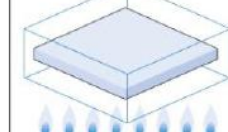
Applications
Photonics, nanoelectronics, transparent conductive layer sensors and bioapplications

Silicon carbide

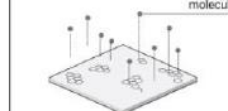
1 A small amount of silicon carbide (about 10mm x 10mm) is placed in a box with a small hole in it



2 The box is sealed in a vacuum or argon and heated to about 1,500°C



3 Silicon molecules 'evaporate' from the surface, leaving a high quality layer of graphene



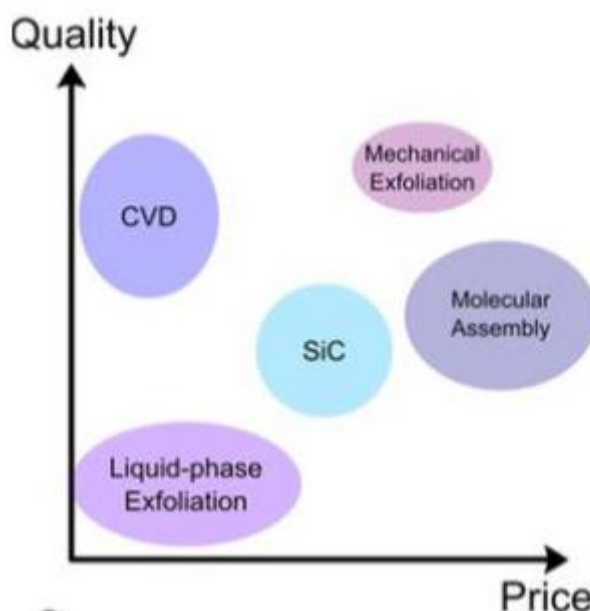
Sample size
About 100mm

Applications
Transistors and other electrical devices

Sources: Benjamin Pollard, Department of Physics, Pomona College; Nature, Review Research; Electronics Weekly

Source: Talga Resources

Figure 17: Price versus quality of different graphene production methods



Source: Talga Resources

CORPORATE AND CAPITAL STRUCTURE

TLG currently has 139.4m ordinary shares on issue. In addition, TLG has 6.86m listed options (TLGO expiry 30/11/15 @35c), and 15.8m unlisted options (various expiry and strike prices with majority expiring in 2016 at between 50-60c).

Top shareholders (as at 9 November 2015) include:

Lateral Minerals Pty Ltd (Mark Thompson)	10.23%
Gregorach Pty Ltd	6.29%
HSBC Nominees (Australia) Ltd	5.30%
UBS Nominees Pty Ltd	3.08%
Top 20 shareholders	47.16%

As at 30 September 2015, TLG had A\$4.02m in cash and has received around A\$300k thus far from the exercise of options. The Company expected that cash outflows for the December 2015 Quarter would amount to A\$1.57m. The Company has no debt.

CATALYSTS

The clear short term catalyst for TLG is the successful demonstration of large scale, low cost graphene production at its pilot testwork facility through the various phases, combined with the relationships developed with end-users developing near term commercial scale applications of graphene. While the Company is currently providing samples free of charge, a further catalyst will be the transition to a revenue model coupled with the successful conclusion of pricing point/s for the graphene products produced.

Longer term, the decision to proceed with a full scale plant development is expected to be a key milestone, as we expect this will be timed with a ramp-up in demand from identified end-users requiring bulk volumes of graphene product for commercial applications.

BOARD OF DIRECTORS

Keith Coughlan – Non-Executive Chairman

Mr Coughlan has almost 30 years experience in stockbroking and funds management where he has been largely involved in the funding and promoting of resource companies listed on the ASX, AIM and TSX. He has advised various companies on the identification and acquisition of resource projects and was previously employed by one of Australia's then largest funds management organisations.

Mr Coughlan is a current executive director of ASX listed European Metals Holdings Limited.

Mark Thompson – Managing Director

Mr Thompson has more than 20 years industry experience in mineral exploration and mining management, working extensively on major resource projects throughout Australia, Africa and South America. He is a member of the Australian Institute of Geoscientists and the Society of Economic Geologists, and holds the position of Guest Professor in Mineral Exploration Technology at both the Chengdu University of Technology and the Southwest University of Science and Technology in China.

Mr Thompson founded and served on the Board of ASX listed Catalyst Metals Ltd and is a Non-Executive Director of Phosphate Australia Ltd.

Grant Mooney – Non-Executive Director

Mr Mooney has a wealth of experience in resources and technology markets that will benefit Talga as it proceeds with the Company's dual graphene/graphite project development at its world-class deposits in Sweden. Mr Mooney serves as Director and Company Secretary to several ASX listed companies including Chair of renewable energy developer, Carnegie Wave Energy Ltd and Director of ASX-listed resource companies, Barra Resources Ltd, Carbine Resources Ltd, Phosphate Australia Ltd and Wild Acre Metals Limited. Mr Mooney is a member of the Institute of Chartered Accountants in Australia.

INVESTMENT RISKS

TLG is subject to a number of investment risks. The key investment risks include but are not limited to the following:

Fledgling Graphene Market - The market for graphene products is in its infancy and commercial scale applications requiring bulk volumes of product may not eventuate in a reasonable investment timeframe.

Commodity price risk - The market for graphite exhibits price volatility as with every other commodity and therefore holds commodity price risk. The market price for graphene is potentially inflated at current levels and would likely decline to a level that better reflects the economic reality of bulk commercial applications. This level may be dramatically lower than currently estimated.

Geological risk - The actual production characteristics of an ore body may be significantly different from initial interpretations and expectations, particularly in TLG's case given the unique processing route intended.

Capital Expenditure and operating risk - The risk that the capital and operating costs exceed budget and/or exhaust the available funding due to unforeseen circumstances before project completion, and reduce the profitability and free cash generation of the project.

Exchange rate risk - TLG's product sales are in US\$, its costs may be in multiple currencies and it reports in A\$, leading to exchange rate risk.

Liquidity risk - The ability of TLG to pay its creditors from its cash balances or cash generation when the payment is due.



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