



## TALGA TO BUILD GRAPHENE DEMONSTRATION PLANT IN GERMANY

### Highlights:

- Graphene demonstration plant to be constructed in central Germany - targeting 100-200 tonnes per annum output (subject to final design)
- Cost anticipated less than A\$1 million with first output expected towards end of 2015
- Feedstock sourced from Talga's high grade Swedish graphite projects
- Will fast track production of large samples and saleable material for industry
- Location proximal to major end users, world class analytics and existing Talga research program sites in Germany
- Significant local financing and site establishment incentives on offer
- PhD qualified materials scientist appointed to head construction/commissioning schedule

Technology materials development company, **Talga Resources Ltd** (ASX: TLG) ("Talga" or "the Company") is pleased to advise it will build and commission a demonstration-scale graphene production plant in central Germany.

While all costings and engineering are subject to final design work, it is anticipated the plant will cost less than A\$1 million and post commissioning can scale-up to generate an approximate annual graphene output of between 100-200 tpa.

The decision to establish the plant in Germany followed considerable interest in the Company's development by graphene technologists and end-users requiring near term large sample sizes. Talga originally anticipated establishing a pilot scale plant in northern Sweden close to its world-class graphite deposits,

**Fig 1** Location of Talga European operations, with existing rail/road transport route and geographical economic comparison of major world trade centres. Based on presentation and data of State Development Corporation of Thuringia (see References).

### Economic Location Comparison

**New York**....in a radius of 800km

- ▶ 107m potential customers
- ▶ € 3.3Billion GDP

**Tokyo**....in a radius of 800km

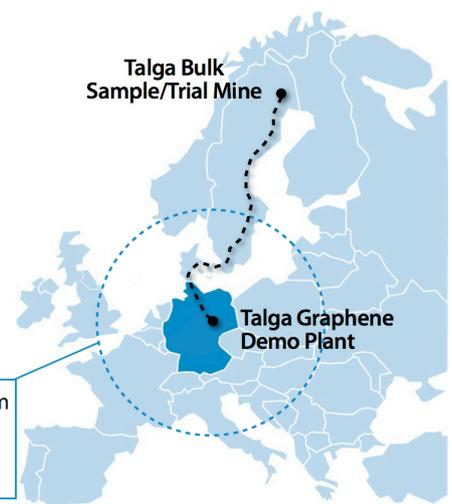
- ▶ 102m potential customers
- ▶ € 3.9 Billion GDP

**Shanghai**....in a radius of 800km

- ▶ 290m potential customers
- ▶ € 1.7 Billion GDP

**Central Germany Site**....in a radius of 800km

- ▶ 280m potential customers
- ▶ € 8.7 Billion GDP



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#### Corporate Information

ASX Code **TLG/TLGO**

Shares on issue **124.59m**

Options (unlisted) **10.90m**

Options (listed) **7.72m**

#### Company Directors

**Keith Coughlan**

Non-Executive Chairman

**Mark Thompson**

Managing Director

**Grant Mooney**

Non-Executive Director

 **ASX Code: TLG**

however, the opportunity to expeditiously produce larger samples to meet development demand created an imperative to set up the initial facility in Germany. While the demonstration plant will allow fast tracking of trial product, Talga expects its future full-scale processing to be undertaken in Sweden.

As a consequence, Talga is forming a wholly owned German subsidiary company, to both build the demonstration scale plant and capitalise on commercial opportunities presenting themselves in this region (see Fig1). The subsidiary will have responsibility to build and operate the locked-cycle demonstration plant in central Germany where both current Talga graphene development programs are operating (Friedrich-Schiller University in Jena and the Centre for Advancing Electronics, Technical University of Dresden - see TLG:ASX dated 17/12/14 and 29/01/15 respectively). Sites are presently being shortlisted (see Fig 2-3) and the ultimate location will ensure that state-of-the-art equipment is available for process optimisation, characterisation and product formulation, in an area home to many potential end users of Talga's graphene products.

The proposed plant will be the first in the world to commercially demonstrate true direct ore-to-graphene process technology capable of delivering industrial volumes for customer samples and/or sale. This can remove roadblocks of volume and cost on the path to graphene commercialisation and enable end users to accelerate development of their graphene-based products. It is expected that, pending Swedish trial mining approval in Q2 2015, graphite ore from Sweden will be transported directly by rail/road to the demonstration plant for maiden processing in Q3 2015.

#### German Government Involvement

German government district agencies have offered a choice of industrial parks with existing suitable premises for lease, advantageous material processing permitting and close proximity to Talga research program graphene analytics. The agencies, State Development Corporation of Thuringia ("LEG") and the Saxony Economic Development Corporation ("SED"), have a mandate to grow industrial technology clusters around research expertise and are strongly encouraging Talga to establish a local presence. Both offer a wide range of operational and investment incentives including non refundable loans (essentially grants) for up to 35% of fixed asset expenditure, public guarantees, labour incentives and generous R & D rebates. Talga is currently conducting due diligence on the financial incentive packages and site location proposals put to the Company.

#### Plant Technical Manager Appointed

Underpinning the German plant decision, Talga has appointed Dr Georg Hochwimmer (Director of German company General Research GmbH) as Talga's resident German Technical Manager to coordinate:

- The establishment of a 100% owned German subsidiary company for Talga, to be called **Talga Advanced Materials GmbH**;

**Fig 2** Industrial Park near Erfurt in central Germany region.



**Fig 3** Talga staff and local government agencies inspecting potential graphene demonstration plant site, Germany.



- Finalisation of the demonstration plant design;
- Construction and commissioning of the plant; and
- Continued liaison with Talga's collaborating research organisations and industry.

Dr Hochwimmer is a former polymer chemist and material scientist who has worked for BASF and other technology companies in Germany. He has strong relationships with industrial groups developing graphene applications in Europe.

Talga Managing Director Mr Thompson said *"The decision to proceed with a demonstration plant followed Talga's success in moving its high-grade Swedish graphite ores from laboratory to bench top scale and replicating graphene process results in multiple countries with several parties. The next stage of development will expand to a locked-cycle demonstration scale plant able to produce meaningful quantities of graphene and by-product graphite for larger customer samples and/or material graphene sales in 2015. Pending final design, the new German plant has the potential to be one of the largest graphene production facilities in Europe."*

**For further information, please contact:**

**Talga Resources Ltd.**

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Managing Director

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#### References:

<http://www.invest-in-thuringia.de/en/>

[http://www.invest-in-saxony.net/en/Hightech\\_Sectors/98072.html](http://www.invest-in-saxony.net/en/Hightech_Sectors/98072.html)

#### About Talga

**Talga Resources Limited** ("Talga") (ASX: TLG) is a Perth headquartered high tech materials company with its own source of integrated supply from multiple advanced and high grade graphite projects in northern Sweden. The flagship project "Vittangi" is at development stage and like the rest of the projects, it benefits from established high quality infrastructure in Sweden including proximity to grid power, road, rail and ports.

Two of the five graphite projects have unique ore that allows graphite and graphene to be liberated at an atomic level in a ground breaking and extremely cost effective way. The graphene produced is of a high quality and suitable for a range of large volume composite and additive applications as well as high technology applications.

Talga's legacy non graphite assets in Sweden and Australia, including a cobalt-rich IOCG, are all to be commercialised to provide funds for the core graphite projects.